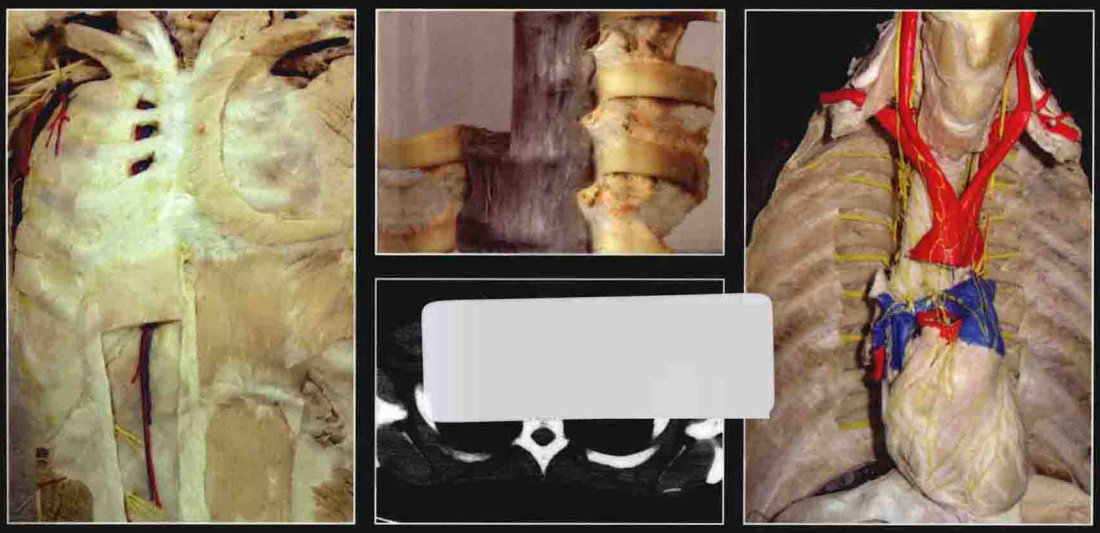
临床手术解剖彩色图谱

Colour Atlas of Cardio-Thoracic Surgery Operation Anatomy

心胸外科手术解剖彩色图谱



总主编／席焕久

主　编／赵宝东　隋鸿锦　陈建军　郑德宇

人民軍醫出版社

PEOPLE'S MILITARY MEDICAL PRESS

内容提要

本书由解剖学专家与心、胸外科专家合作编写而成，力求把解剖基础知识与临床应用结合起来。全书以心、胸外科临床手术需要为依据，清晰地反映了胸部各脏器的结构、形态、位置、毗邻关系，大血管和重要神经的分支、分布、走行等。全书分为 4 部分，分别为胸壁及心胸外科手术入路层次解剖，胸腔脏器的解剖、组织、病理及影像诊断，胸部断层解剖和 CT，心、胸外科手术步骤及示意图。书中共有彩图 970 余幅，黑白图 90 余幅，中英文双语标注，内容实用、贴近临床、便于查阅，适于各级心、胸外科医师、实习医师、医学院校师生等阅读参考。

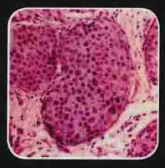

实体解剖图


术中照片图


断层解剖图


断层 CT 图


手术示意图


相关病理图

策划编辑　郭　颖

封面设计　吴朝洪

ISBN 978-7-5091-7219-3

销售分类　心胸外科学

定价：150.00元

临床手术解剖彩色图谱

心胸外科手术解剖彩色图谱

COLOUR ATLAS OF CARDIO-THORACIC SURGERY OPERATION ANATOMY

总主编　席焕久

主　编　赵宝东　隋鸿锦　陈建军　郑德宇

副主编　王　玮　程明堯　刘学政　单　伟

矫黎东　薛占瑞

人民軍醫出版社

PEOPLE'S MILITARY MEDICAL PRESS

北　京

图书在版编目（CIP）数据

心胸外科手术解剖彩色图谱/赵宝东等主编．--北京：人民军医出版社，2014.1
ISBN 978-7-5091-7219-3

Ⅰ．①心… Ⅱ．①赵… Ⅲ．①心脏外科手术－图谱②胸部外科手术－图谱 Ⅳ．①R654.2-64②R655-62

中国版本图书馆 CIP 数据核字（2013）第 288947 号

策划编辑：郭 颖 **文字编辑**：刘海芳 高 磊 **责任审读**：陈晓平
出版发行：人民军医出版社 **经 销**：新华书店
通信地址：北京市 100036 信箱 188 分箱 **邮 编**：100036
质量反馈电话：（010）51927290；（010）51927283
邮购电话：（010）51927252
策划编辑电话：（010）51927300-8153
网址：www.pmmp.com.cn

印刷：三河市潮河印业有限公司 **装订**：胜宏达印装有限公司
开本：787 mm×1092 mm 1/16
印张：24.5 **字数**：326 千字
版、印次：2014 年 1 月第 1 版第 1 次印刷
印数：0001-2500
定价：150.00 元

版权所有 侵权必究
购买本社图书，凡有缺、倒、脱页者，本社负责调换

内容提要

本书由解剖学专家与心、胸外科专家合作编写而成，力求把解剖基础知识与临床应用结合起来。全书以心、胸外科临床手术需要为依据，清晰地反映了胸部各脏器的结构、形态、位置、毗邻关系，大血管和重要神经的分支、分布、走行等。全书分为4部分，分别为胸壁及心胸外科手术入路层次解剖，胸腔脏器的解剖、组织、病理及影像诊断，胸部断层解剖和CT，心、胸外科手术步骤及示意图。书中共有彩图970余幅，黑白图90余幅，中英文双语标注，内容实用、贴近临床、便于查阅，适于各级心胸外科医师、实习医师、医学院校师生等阅读参考。

编著者名单

总 主 编 席焕久

主　　编 赵宝东　隋鸿锦　刘学政

副 主 编 陈建军　王　玮　程明亮　矫黎东　左中夫　雷　镇　刘素伟　阎文柱　于胜波

编　　者

郑德宇、单　伟、曾瑞霞（辽宁医学院解剖教研室）

马云胜（辽宁医学院组织胚胎教研室）

陈学军、薛占瑞（辽宁医学院病理解剖教研室）

王　刚、张祥林、雷　震（辽宁医学院附属第一医院放射线科）

黄　波（辽宁医学院附属第一医院胸外科）

于胜波、隋鸿锦（大连医科大学解剖教研室）

矫黎东（首都医科大学宣武医院）

王　玮、林　清、徐剑文（福建医科大学解剖教研室）

陈建军、雍刘军（成都医学院）

王明鹤、刘起颖、张新增、赵建伟、蒋孝东（郑州高等医学专科学校）

标本制作 刘　杰　刘学元　李德荣　刘　杰　高海滨　谢拥军　聂　政　张　更　徐榕清　赵　顺　詹占隆　曹伟冰　吉晓磊　刘会民　李建培

图片处理、照相 李亚范　刘　浩　陈秀丽　王爱芳　白青青

前　言

人体解剖学图谱是高等医学院校学生和医务工作者学习、认识人体结构和功能的重要工具。近年来，国内有许多解剖学图谱相继问世，但尚缺乏一部为临床手术学科服务、与临床手术相配套、较系统和全面适合临床医生和学生使用的手术解剖学图谱。为此，由辽宁医学院、大连医科大学、福建医科大学、首都医科大学、成都医学院、郑州医学高等专科学校六所院校的人体解剖学、组织胚胎学、病理解剖学和临床影像、手术学科专家共同编绘了《临床手术解剖彩色图谱》。此图谱包括《妇产科手术解剖彩色图谱》《腹部外科手术解剖彩色图谱》《心胸外科手术解剖彩色图谱》和《头颈外科手术解剖彩色图谱》四部，供临床工作者参考。

《心胸外科手术解剖彩色图谱》共有图 1070 张，其中彩图 979 张，黑白图 91 张。此图谱的特点是：

一、该图谱对每一个脏器的观察包括宏观的解剖、微观的组胚、常见疾病的病理（大体和镜下）及临床影像诊断和外科手术操作步骤及过程，真正把基础知识与临床知识结合起来。

二、以临床心胸外科手术需要，密切结合临床实际，较清楚地反映了手术过程中各层次结构，各器官的形态、位置、毗邻、血管、神经。

三、该图谱的图像是在实物解剖及临床手术过程中拍摄的，层次结构清楚、完整，病理标本典型、影像诊断技术先进、定位准确、手术过程照片清晰、真实，基础与临床结合紧密，更接近临床实践；为了更清楚地了解各部的结构，在实物照片后还绘制相应的彩图。

四、为临床诊断需要，胸部做了正常人体连续横断面解剖，并以相对应的 CT 片相配套，以便学习掌握。

五、图谱中的名词用中英文双语标注，便于应用。

本书编写过程中，得到了参编单位领导和同志们的支持与帮助，在此一并表示感谢。由于时间紧迫，水平所限，对书中疏误之处，敬请读者及同道在应用中多提宝贵意见，以便进一步完善与修改。

赵宝东

目　录

第一部分　胸壁及心胸外科手术入路层次解剖　1

一、胸壁解剖　1
二、心胸外科手术入路　2
三、胸壁正中切口图解　10
四、胸壁前外侧斜切口图解　13

第二部分　胸腔脏器的解剖、组织、病理及影像诊断　17

一、胸廓的解剖　17
二、胸腔脏器及血管、神经　35
三、胸部各脏器的解剖、组织、病理及影像　45

第三部分　胸部断层解剖和 CT　233

第四部分　心胸外科手术步骤及示意图　257

一、二尖瓣置换术　257
二、主动脉瓣置换术　278
三、房间隔缺损直接缝合术　289
四、房间隔缺损补片缝合术　294
五、室间隔缺损修补术　300
六、冠状动脉搭桥术　309
七、乳腺癌根治性切除术——保留胸大肌、胸小肌　317
八、乳腺癌根治术——保留胸大肌　326
九、乳癌根治性切除术　331
十、乳房局限肿块切除术　342

十一、食管良性肿瘤摘除术 348
十二、肺局部切除术 355
十三、肺上叶切除术 362
十四、左全肺切除术 369
十五、胸腺良性肿瘤切除术 374
十六、胸膜顶部神经纤维瘤切除术 380

一、胸壁解剖



图 1–1 胸壁浅层

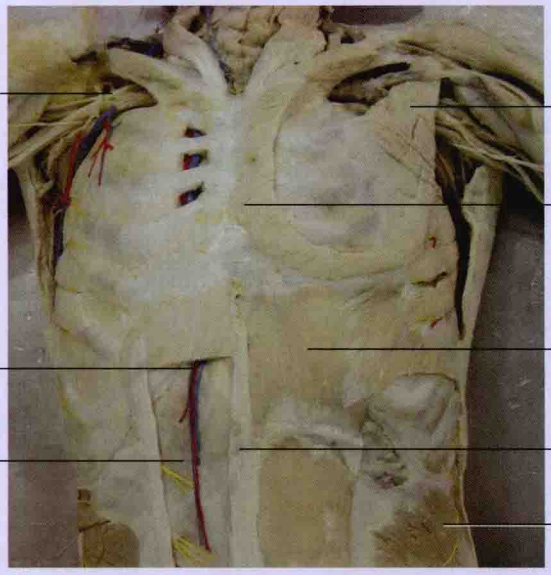


图 1–2 胸壁深层

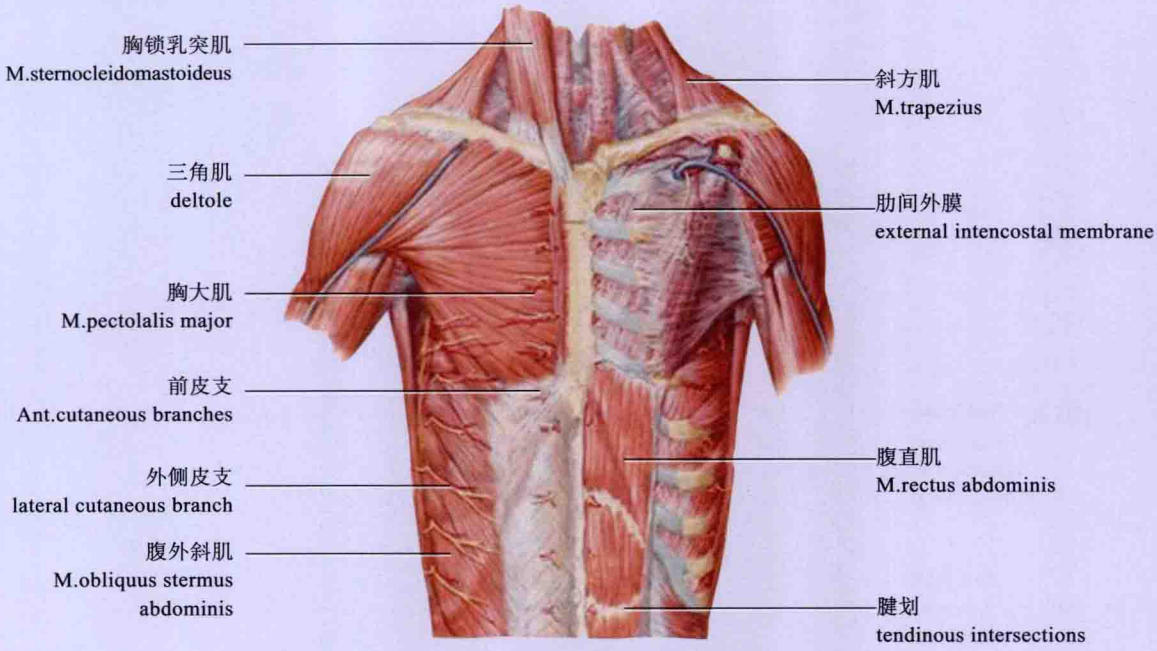


图 1–3 胸壁肌肉

二、心胸外科手术入路

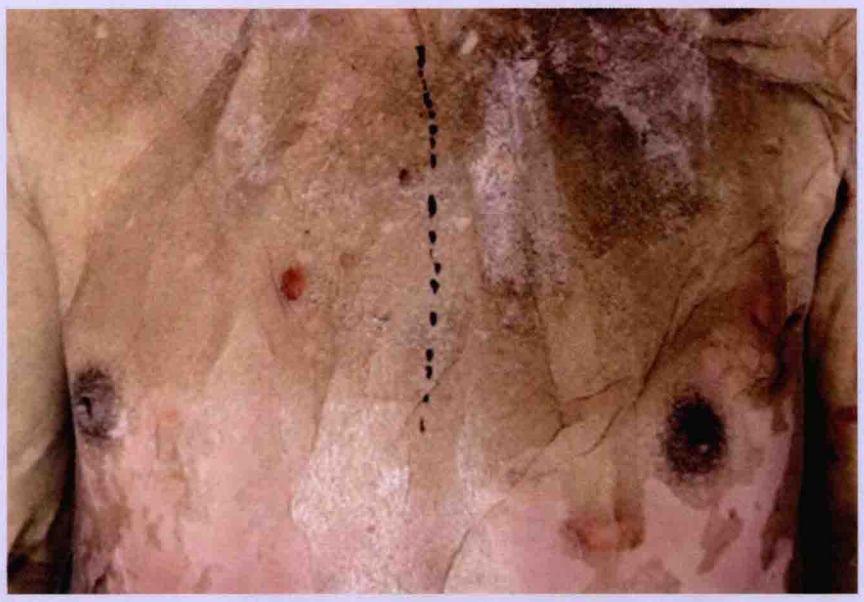


图 1–4 胸前壁正中切口标示



图 1–5 切开皮肤和浅筋膜并劈开胸骨

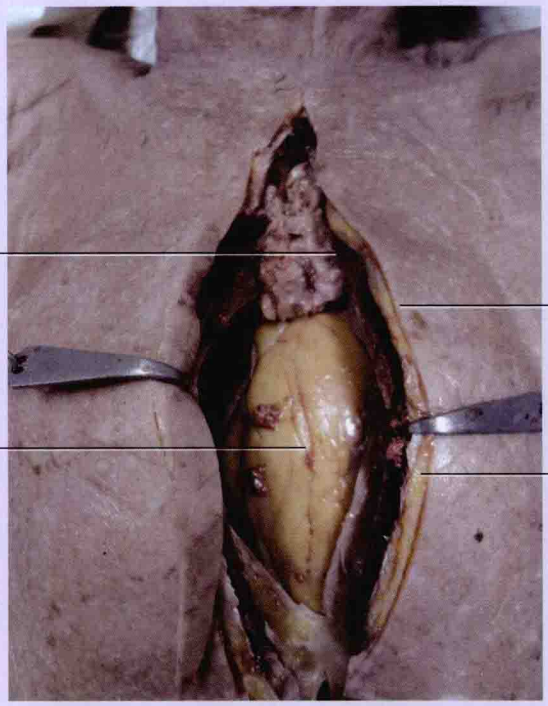


图 1–6 暴露心包及胸腺



图 1-7　胸侧壁皮肤斜切口（由肩胛下角下两横指呈弧形沿第 5 肋至锁骨中线）



图 1-8　切开皮肤



图 1-9 暴露背阔肌



图 1-10 切断背阔肌



图 1-11 牵开背阔肌，暴露前锯肌



图 1-12 切断前锯肌

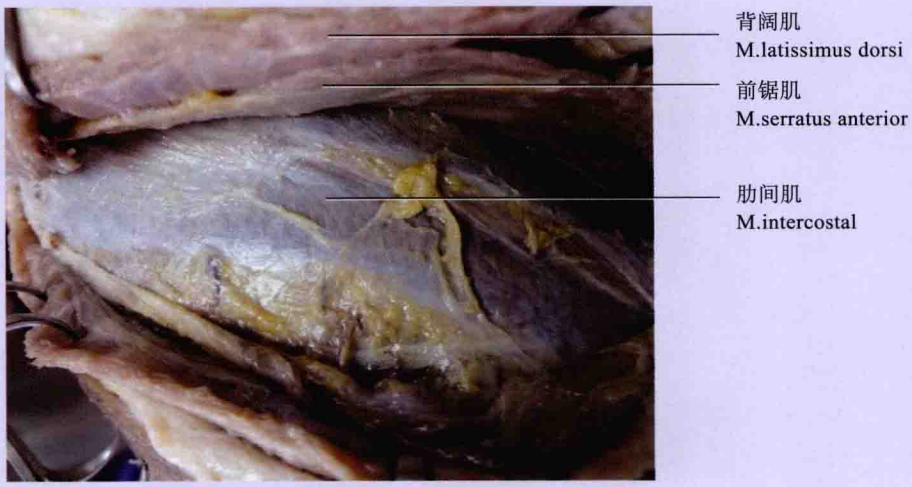


图 1–13 显露肋骨及肋间肌

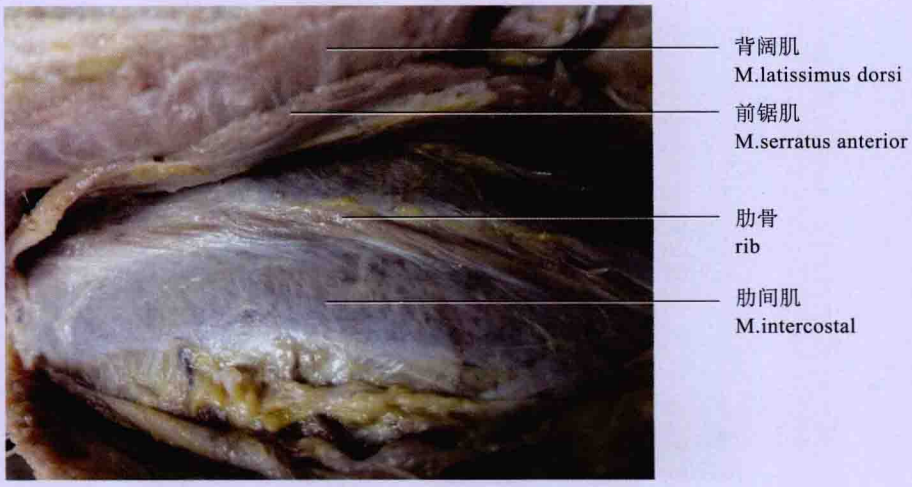


图 1–14 显露第 5 肋骨及肋间肌

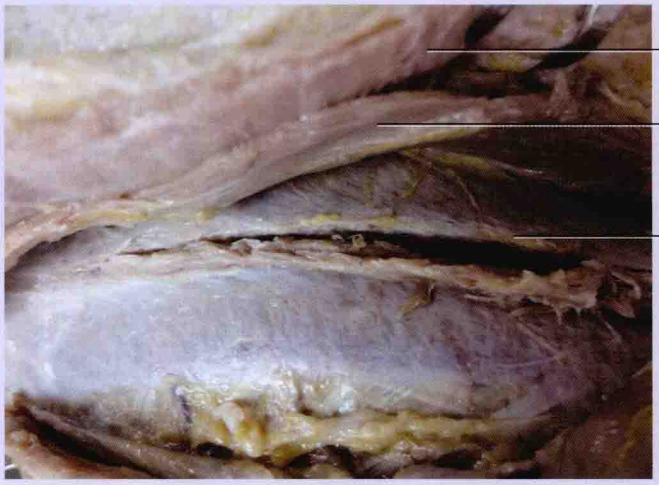


图 1–15　切开肋间肌

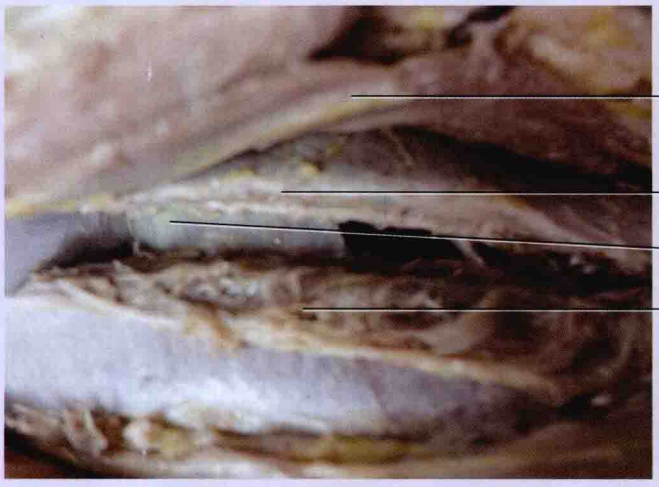


图 1–16　暴露壁胸膜（1）



图 1-17 暴露壁胸膜（2）

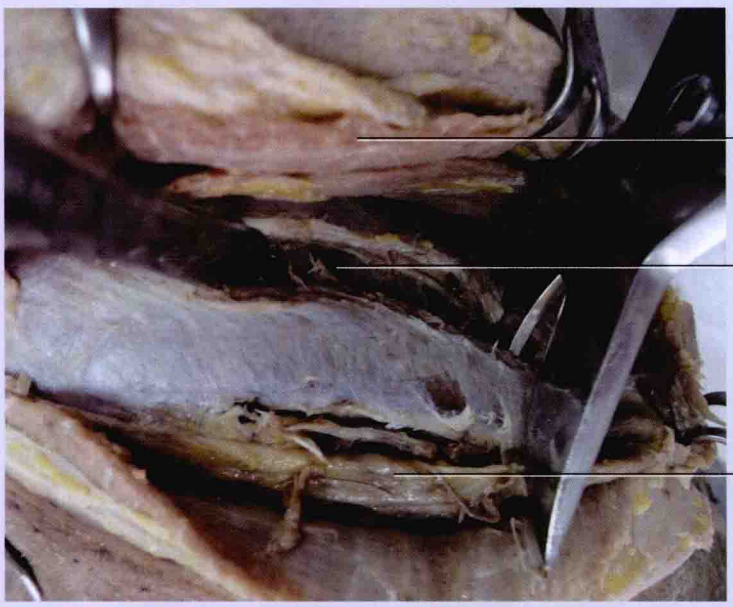


图 1-18 剪断第 5 肋骨



图 1–19　移除剪断的肋骨，暴露壁胸膜及肋间血管和神经

三、胸壁正中切口图解

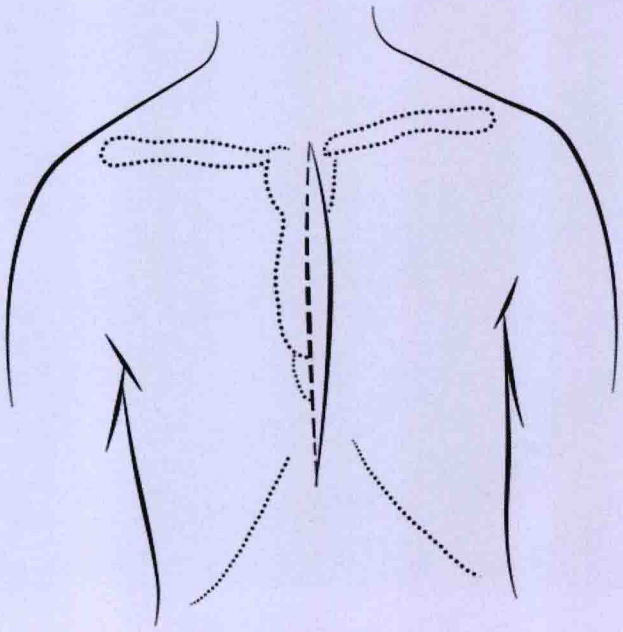


图 1–20　自胸骨切迹起沿胸前壁中线向下切开皮肤，到达剑突下方 4 ~ 5cm 腹壁白线上端，亦可采用弧形切口

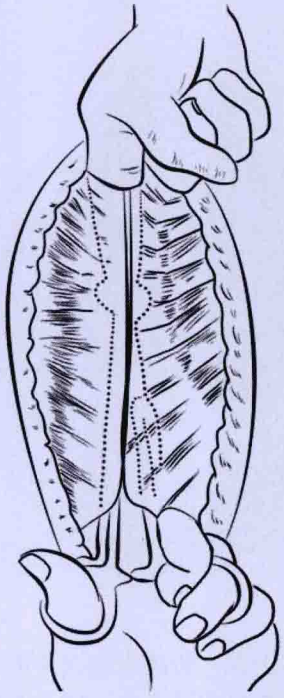


图 1-21 用手术巾覆盖切口边缘皮肤，剥离胸骨甲状肌的胸骨附着处

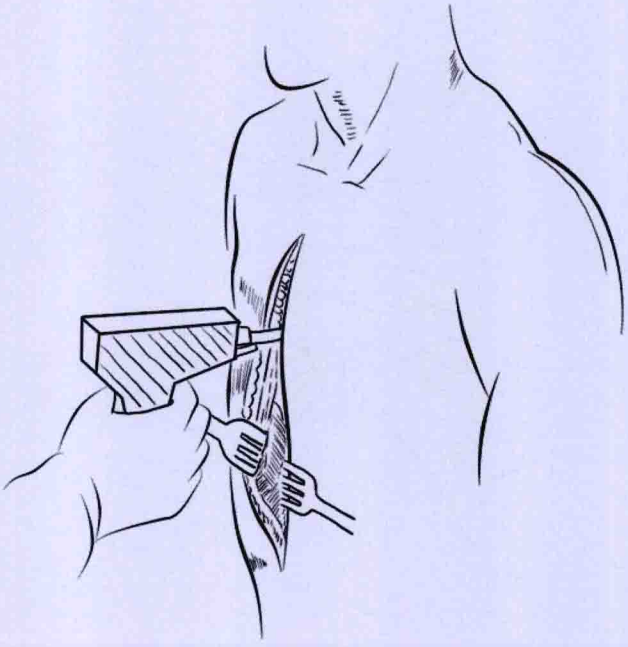


图 1-22 用胸骨锯纵向锯开胸骨

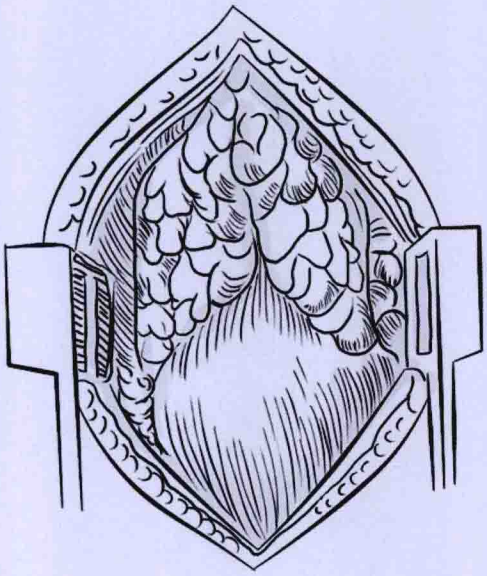


图 1–23　胸骨骨髓腔用少量骨蜡填压止血，骨膜出血点用电凝止血，放入胸骨撑开器，将胸膜推向两侧，即可显露胸腺和前纵隔及心包；切开心包即可显露心脏

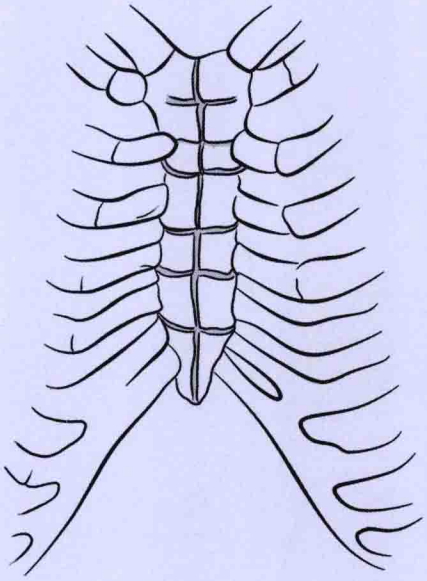


图 1–24　在左、右胸骨片的上下部各穿孔绕置金属线 3 ~ 4 根，牢固地对合结扎固定胸骨

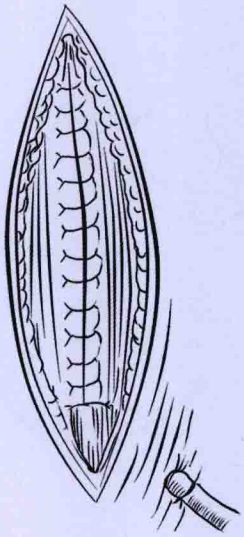


图 1-25 间断缝合皮下组织和皮肤

四、胸壁前外侧斜切口图解

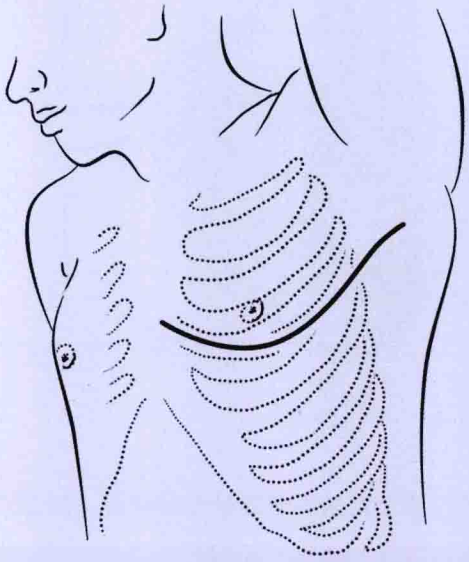


图 1-26 自选定的肋间部位从胸骨缘起做皮肤弧形切口，沿选定肋间隙到达腋中线

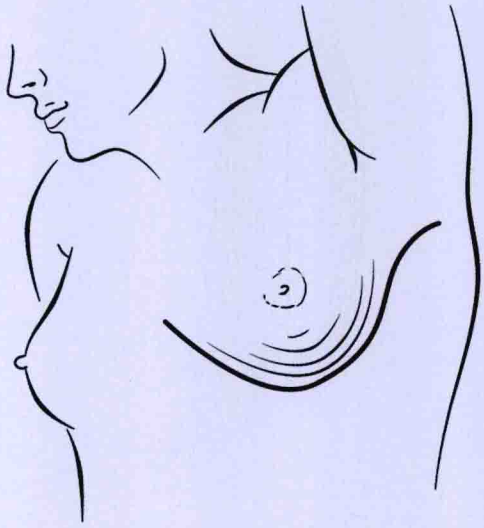


图 1–27　女性病人切口应绕过乳房下缘

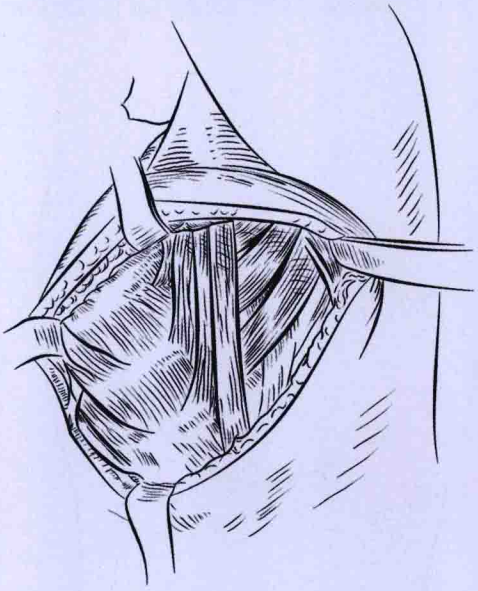


图 1–28　在乳腺后方与胸大肌筋膜之间游离疏松的结缔组织，将皮肤与乳腺向上翻转，显露选定的肋间隙

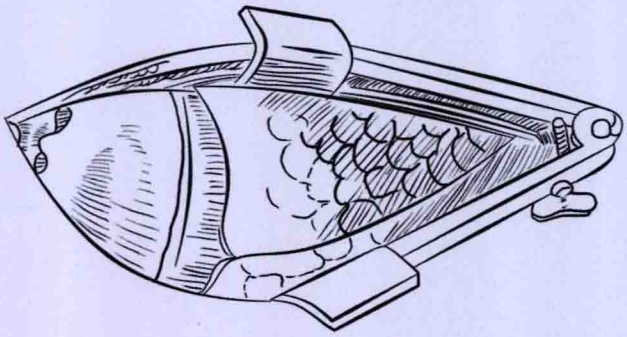


图 1-29 切开皮肤后用手术巾覆盖切口上下缘皮肤，切断胸大肌、胸小肌和前锯肌，在选定的肋间隙切开肋间肌及壁胸膜，进入胸膜腔，用肋骨撑开器扩张切口

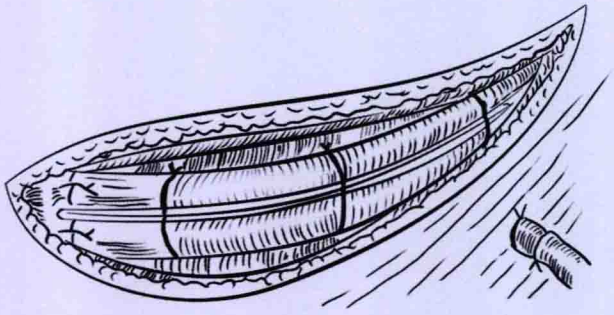


图 1-30 术野显露欠满意者，可在胸廓内血管外侧切断切口上缘或下缘 1 根或 2 根肋软骨

一、胸廓的解剖

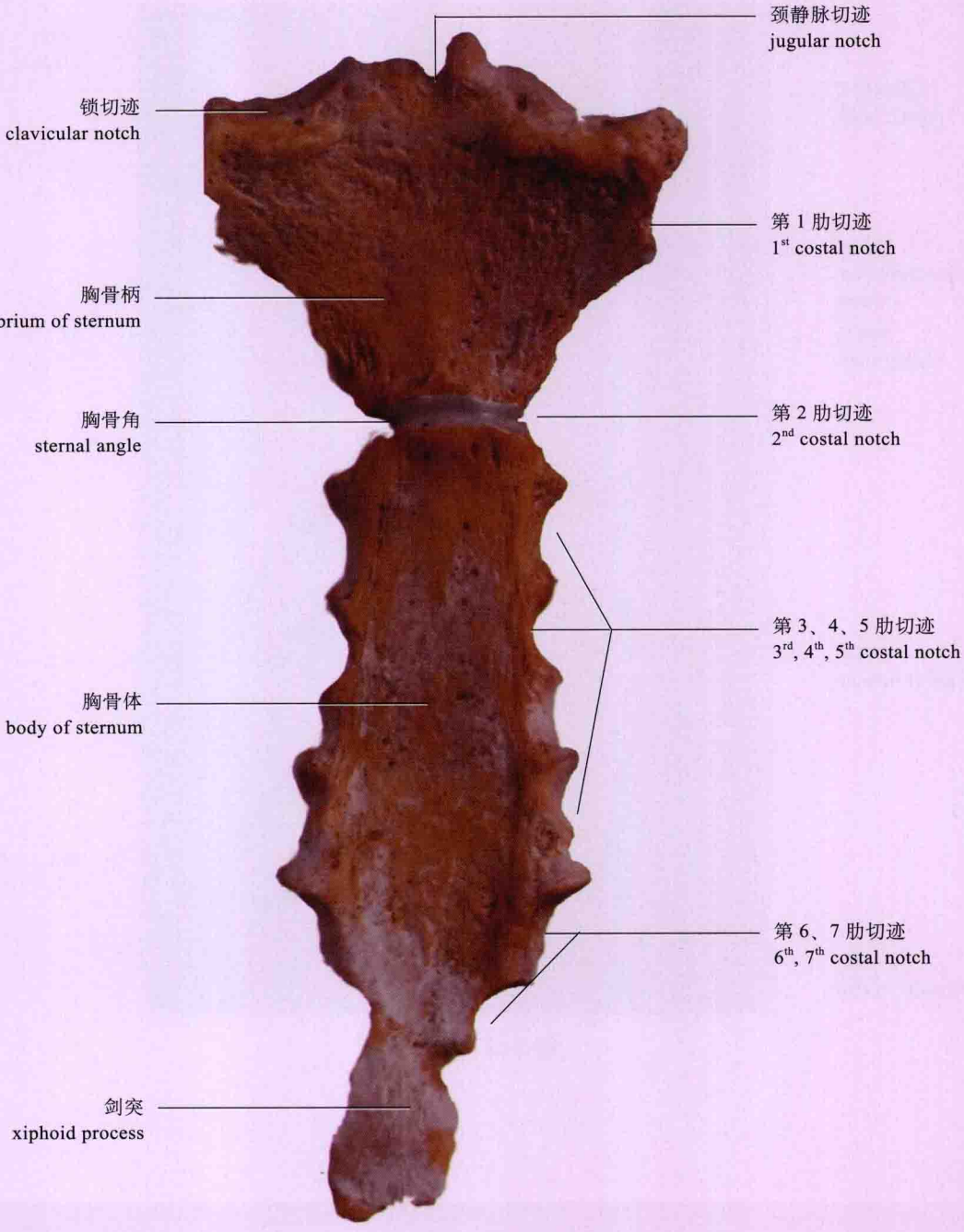


图 2-1 胸骨（前面观）

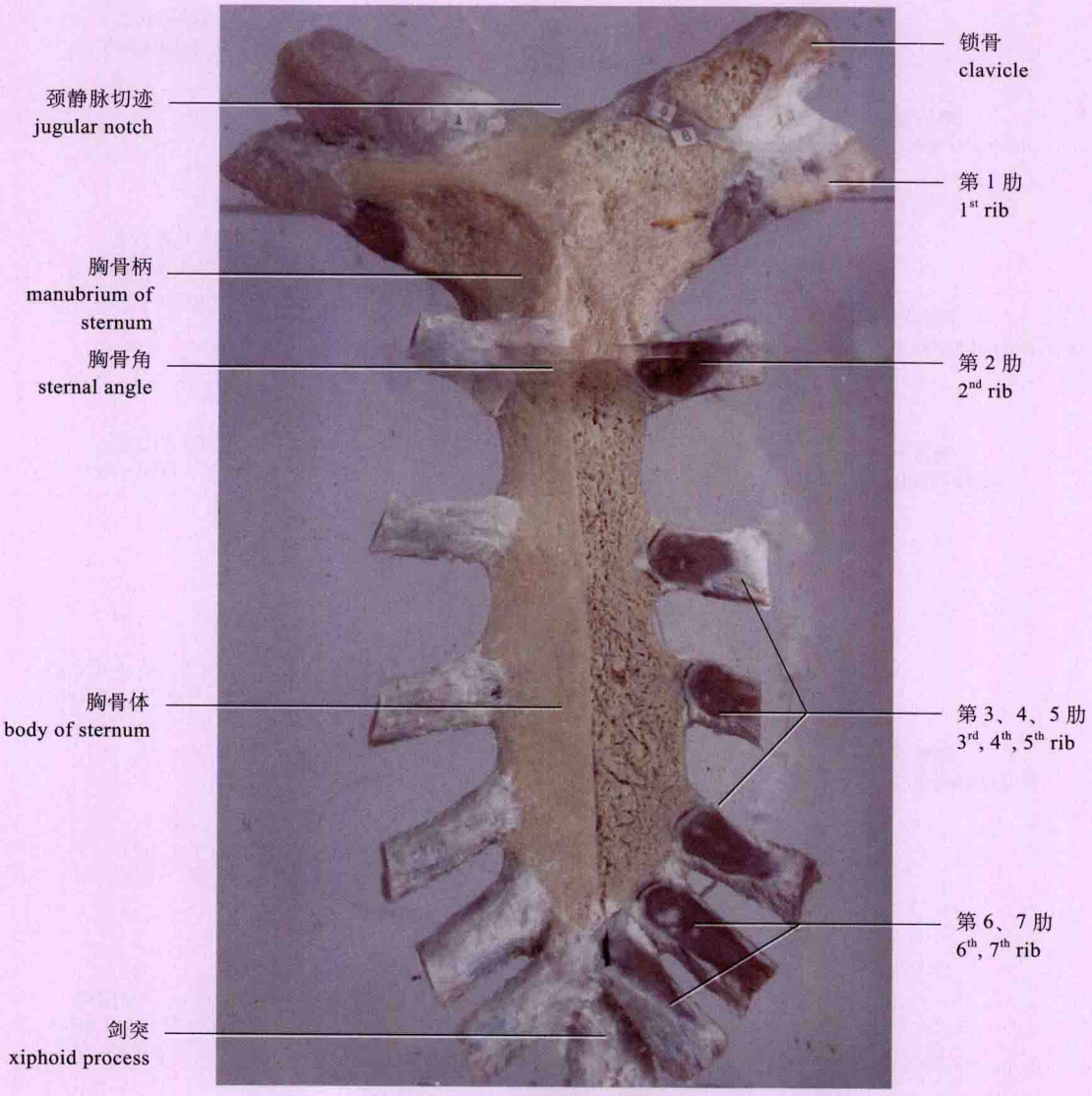

锁骨
clavicle
颈静脉切迹
jugular notch
第 1 肋
1st rib
胸骨柄
manubrium of sternum
胸骨角
sternal angle
第 2 肋
2nd rib
胸骨体
body of sternum
第 3、4、5 肋
3rd, 4th, 5th rib
第 6、7 肋
6th, 7th rib
剑突
xiphoid process

图 2-2 胸肋关节

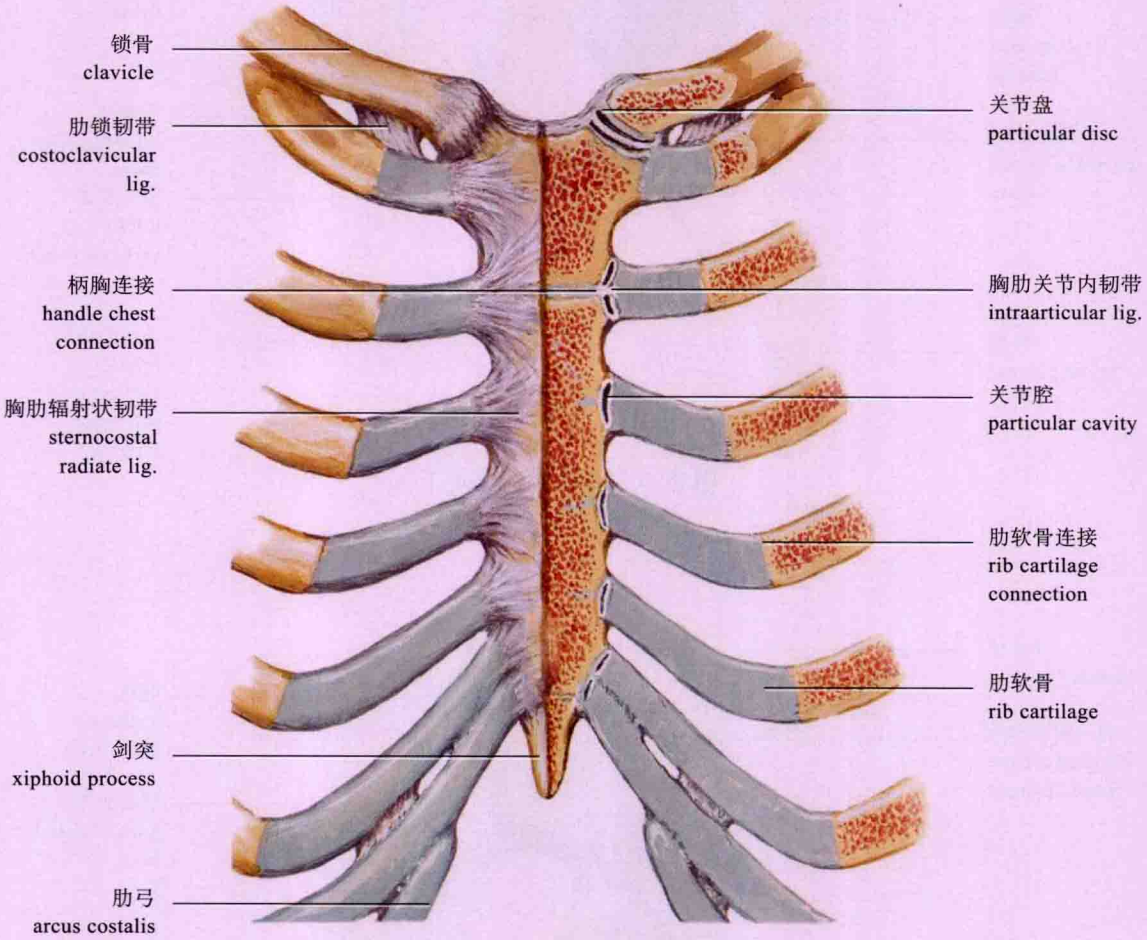

锁骨
clavicle
肋锁韧带
costoclavicular
lig.
柄胸连接
handle chest
connection
胸肋辐射状韧带
sternocostal
radiate lig.
剑突
xiphoid process
肋弓
arcus costalis
关节盘
particular disc
胸肋关节内韧带
intraarticular lig.
关节腔
particular cavity
肋软骨连接
rib cartilage
connection
肋软骨
rib cartilage

图 2-3 胸肋关节

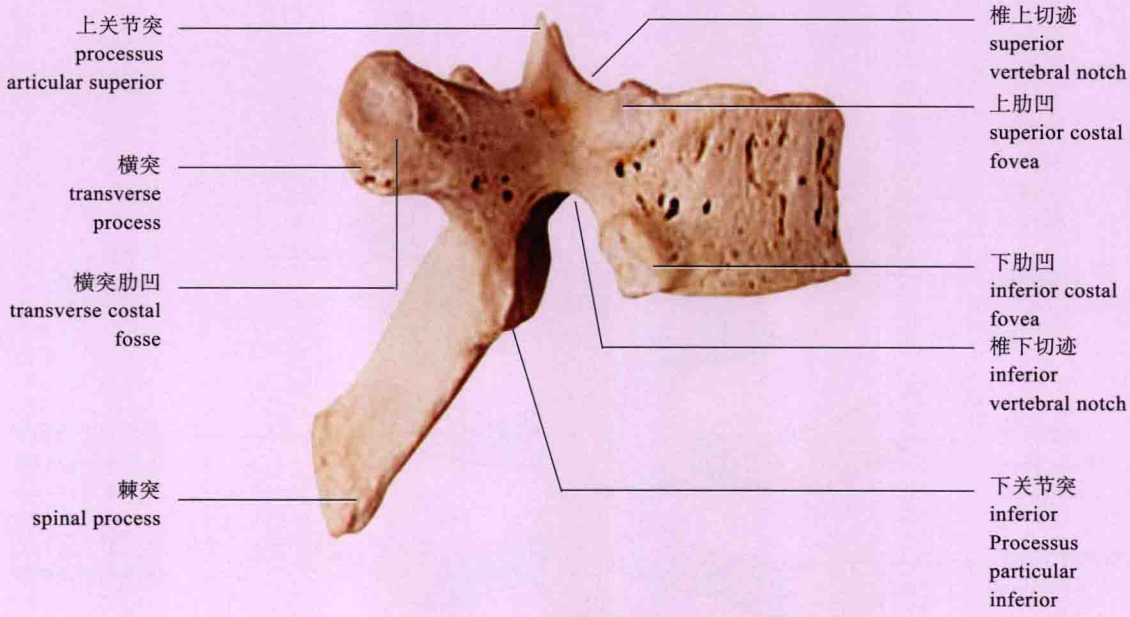


图 2-4 胸椎（侧面观）

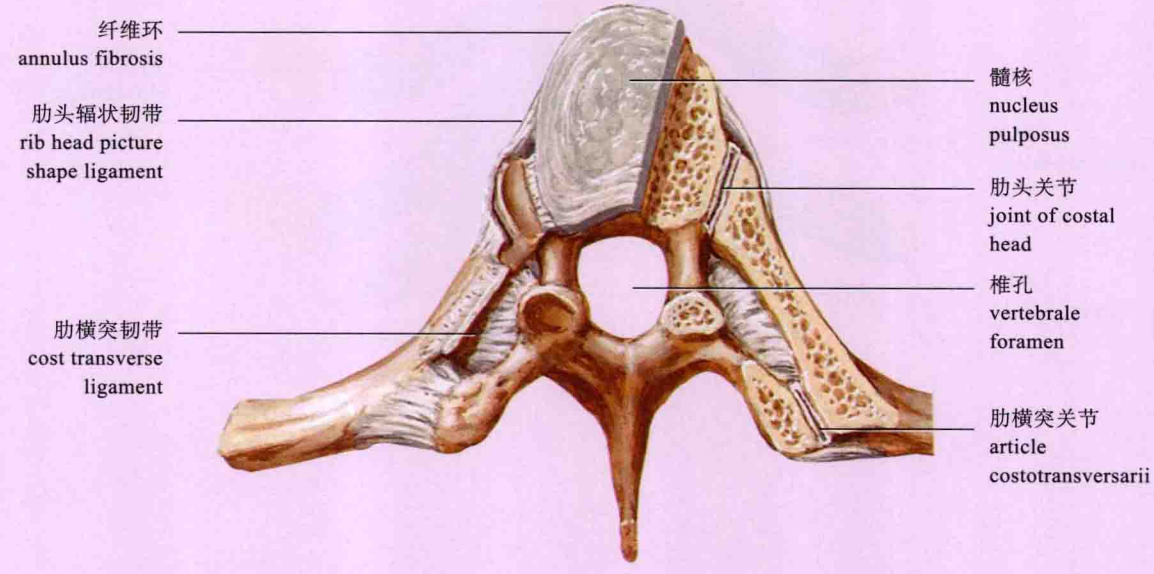


图 2-5 肋椎关节（上面观）


肋角
costal angle
肋体
costal body
肋沟
costal groove
肋结节
costal tubercle
肋颈
costal neck
肋头
costal head

图 2-6 肋骨

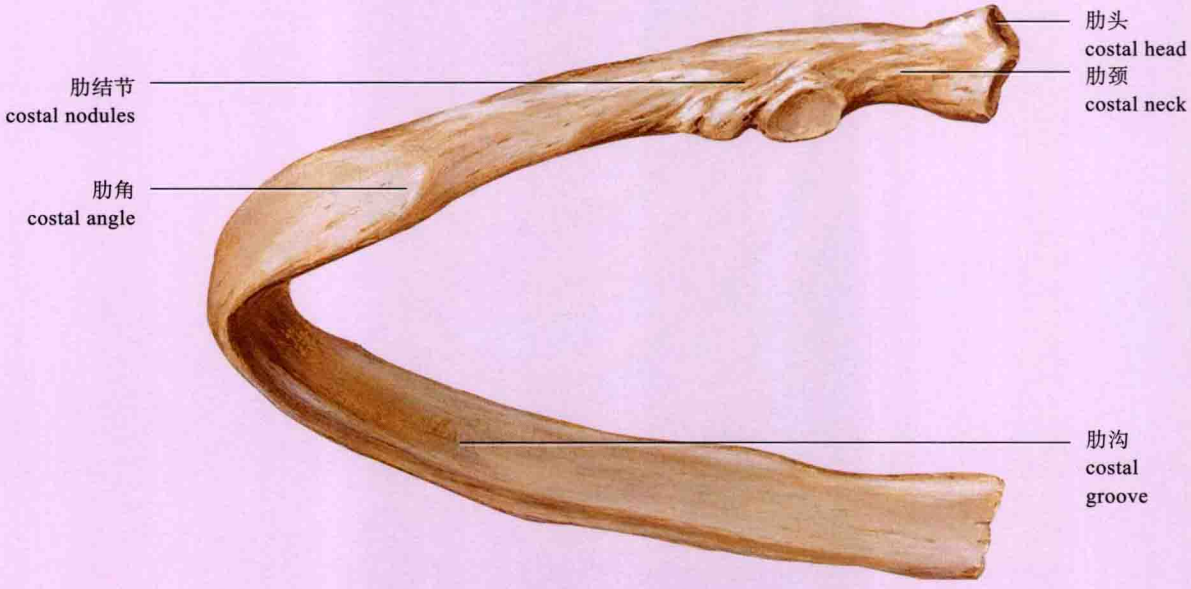

肋结节
costal nodules
肋角
costal angle
肋头
costal head
肋颈
costal neck
肋沟
costal groove

图 2-7 肋骨

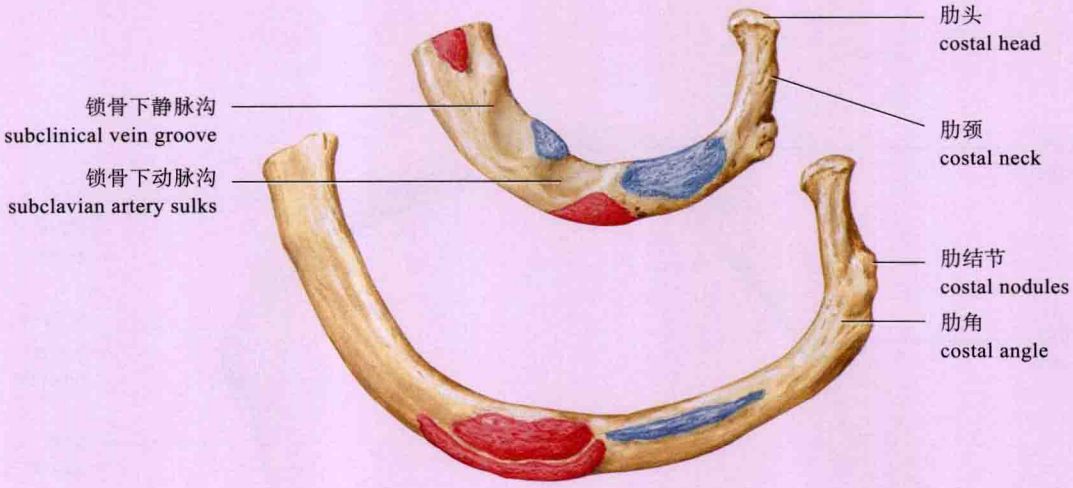


图 2-8 第 1 肋和第 2 肋（上面观）



图 2-9 肋骨

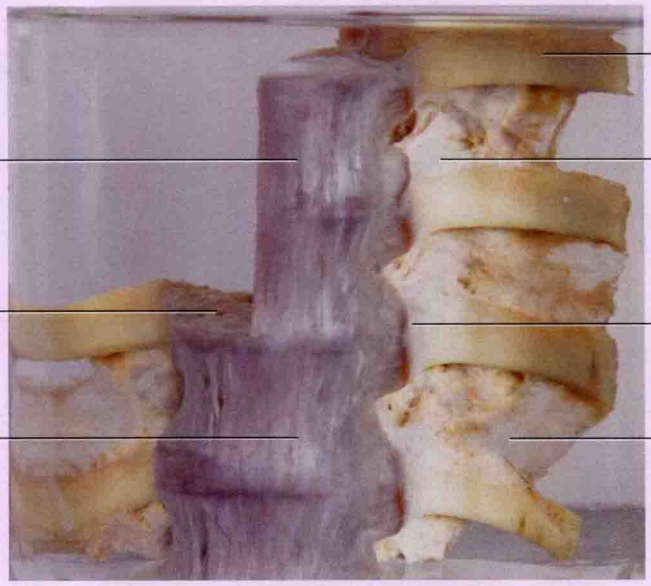


图 2–10 肋椎关节（前面观）

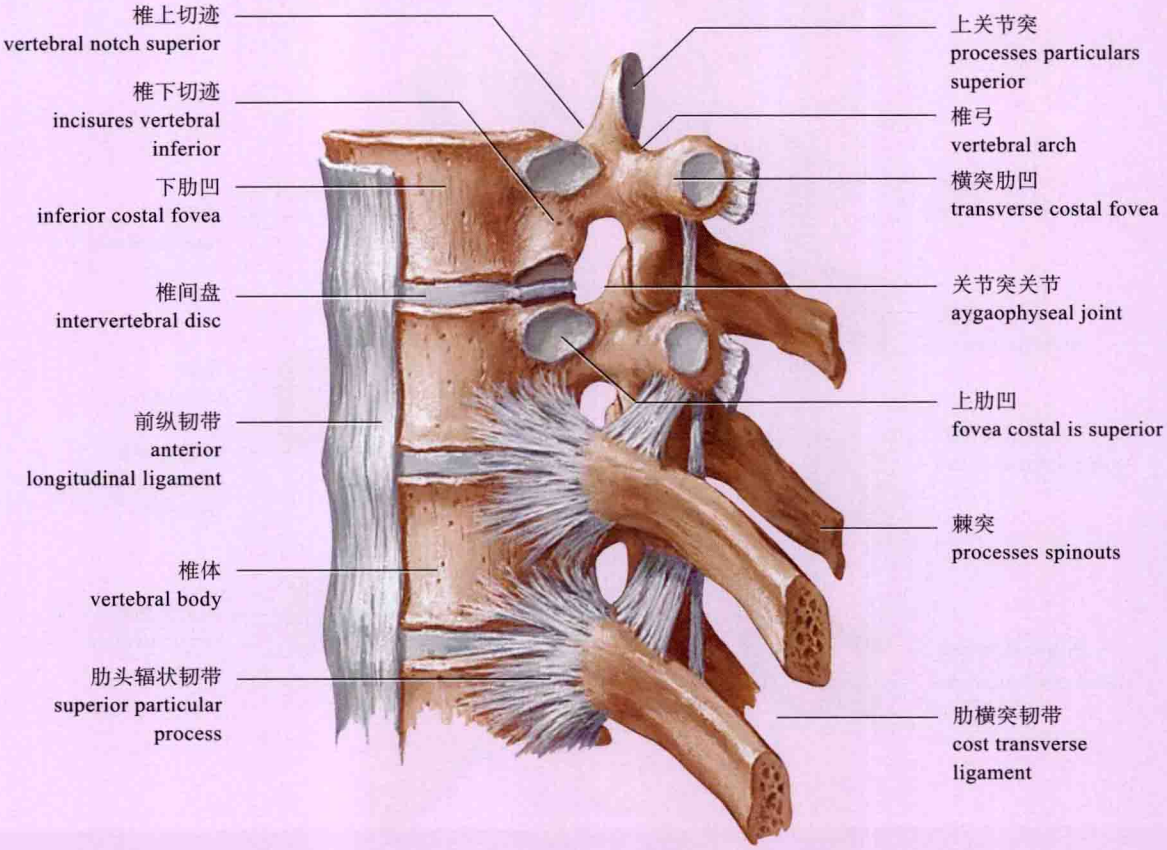


图 2–11 肋椎关节（侧面观）

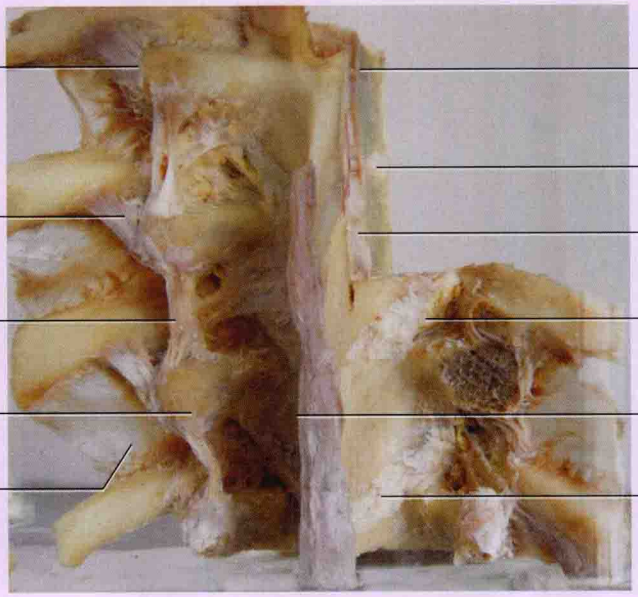


图 2–12 肋椎关节（后面观）

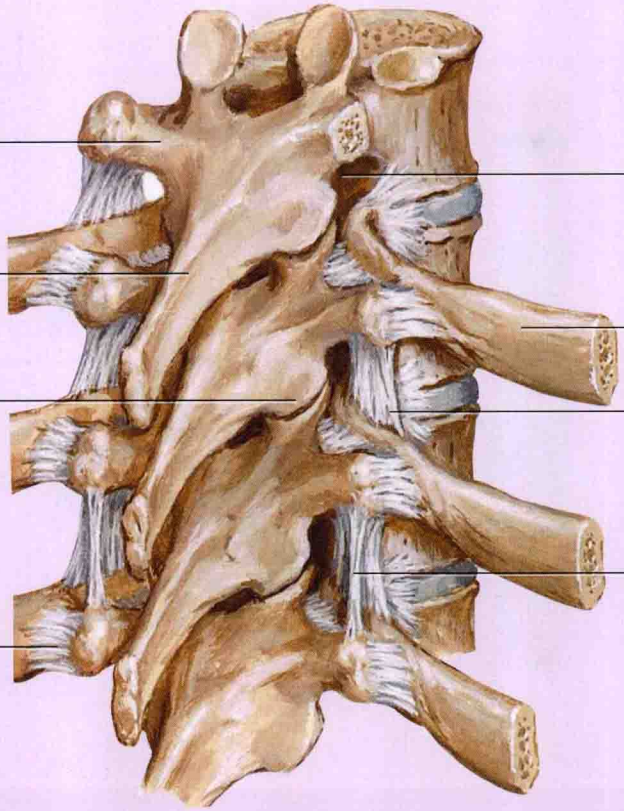


图 2–13 肋椎关节（后面观）


关节盘
particular disc
胸骨柄
manubrium of sternum
胸骨角
sternal angle
胸骨体
body of sternum
胸肋关节
sternocostal joint
剑突
xiphoid process
锁骨
clavicle
肋间外肌
musculi
intercostales
externi
肋间内肌
musculi
intercostales
interni
胸廓内动脉
A.internal thoracic
肋间前动脉
A.anterior
intercostals
第 7 肋软骨
7th costal
cartilage

图 2–14 胸前壁（外面观）


锁骨
clavicle
胸廓内动脉
A.internal thoracic
胸横肌
musculus transversus thoracis
胸骨
sternum
肋间内肌
musculi intercostales interni
剑突
xiphoid process
肋弓
costal arch

图 2-15 胸前壁（内面观）

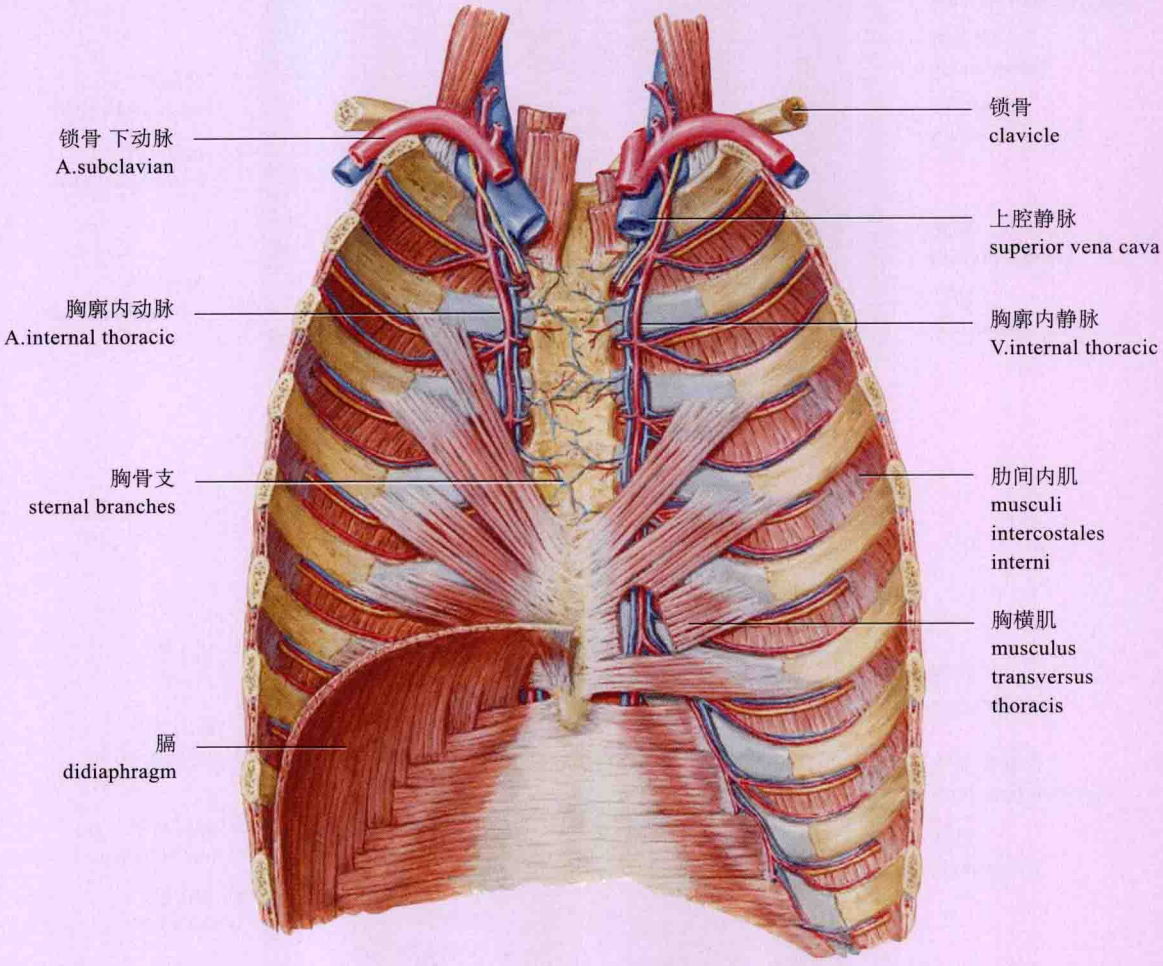


图 2-16 胸壁血管、神经（内面观）



图 2-17 肋的连接（前面观）

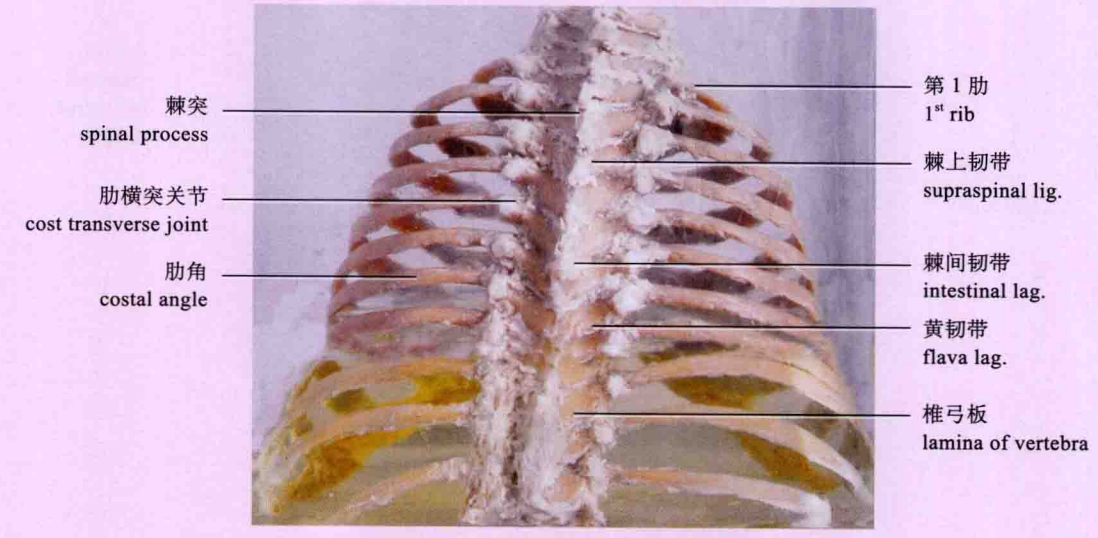


图 2-18 肋的连接（后面观）

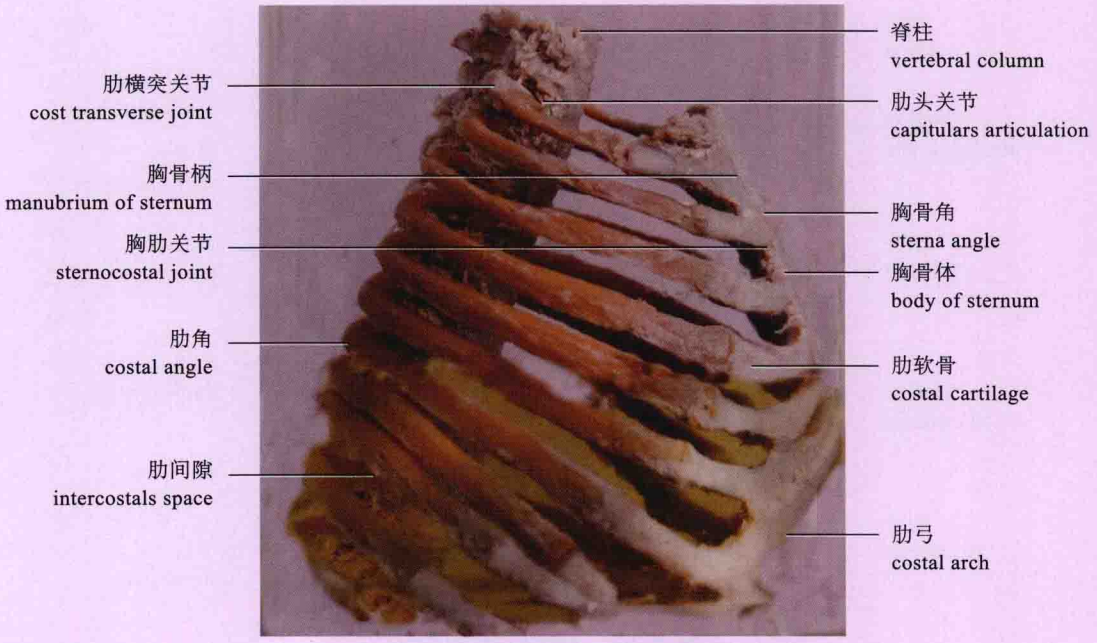


图 2-19 肋的连接（侧面观）

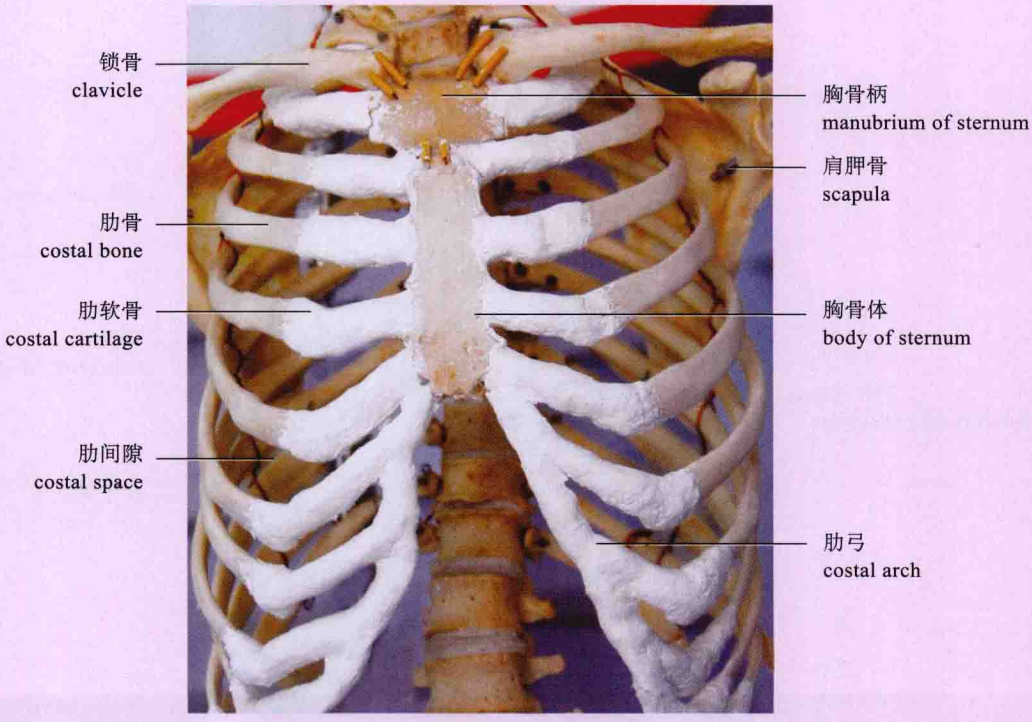


图 2-20 胸廓（前面观）

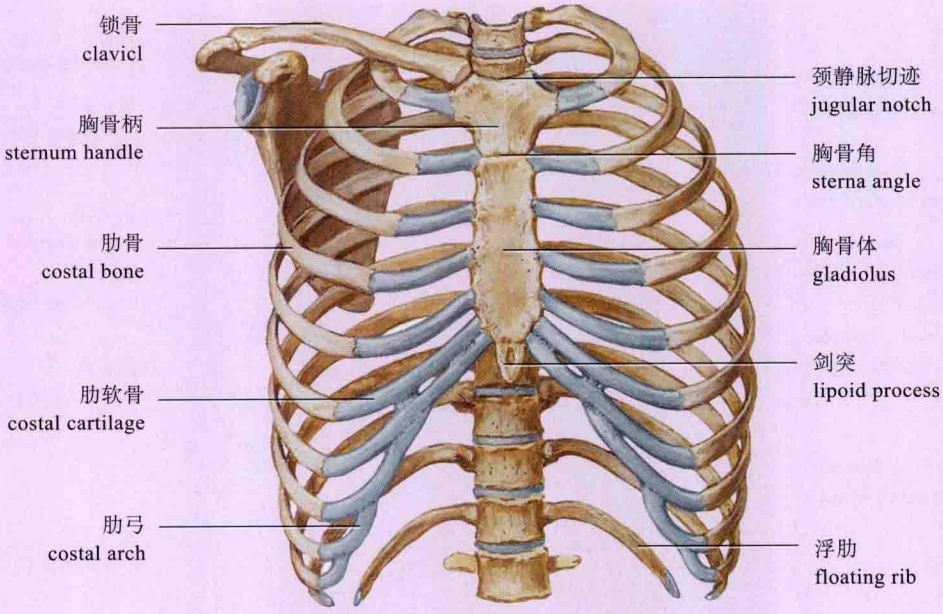


图 2-21 胸廓（前面观）

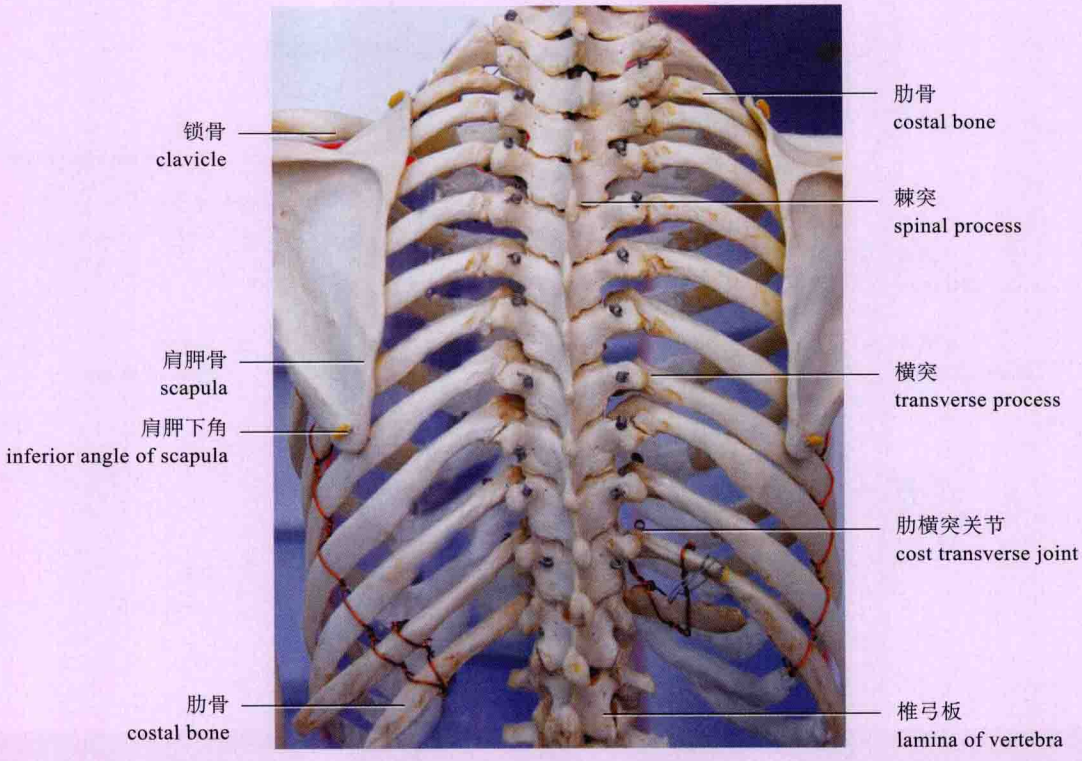


图 2-22 胸廓（后面观）

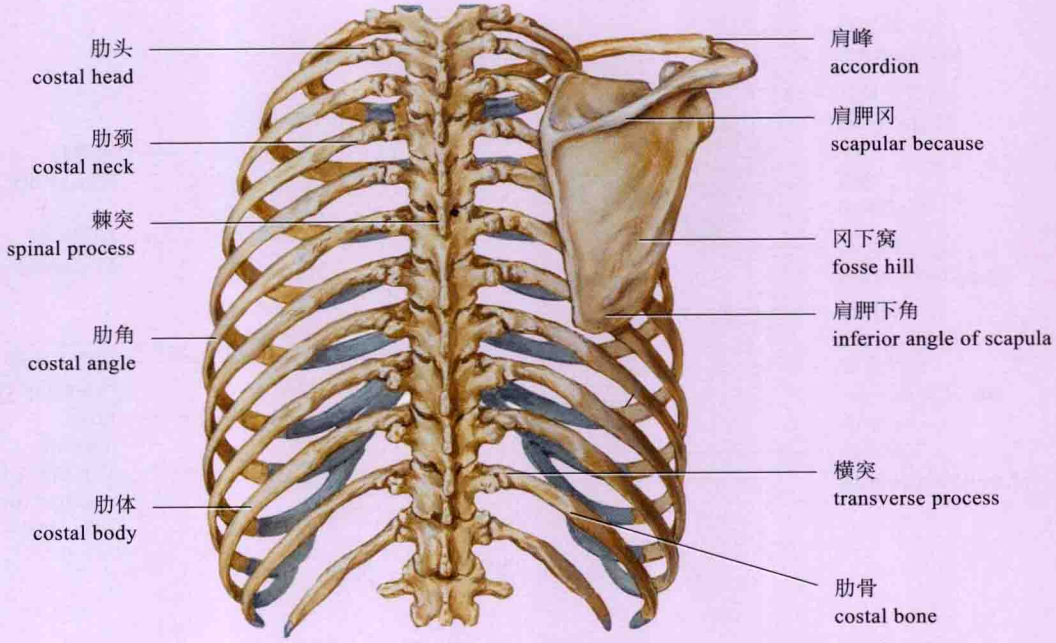


图 2-23 胸廓（后面观）

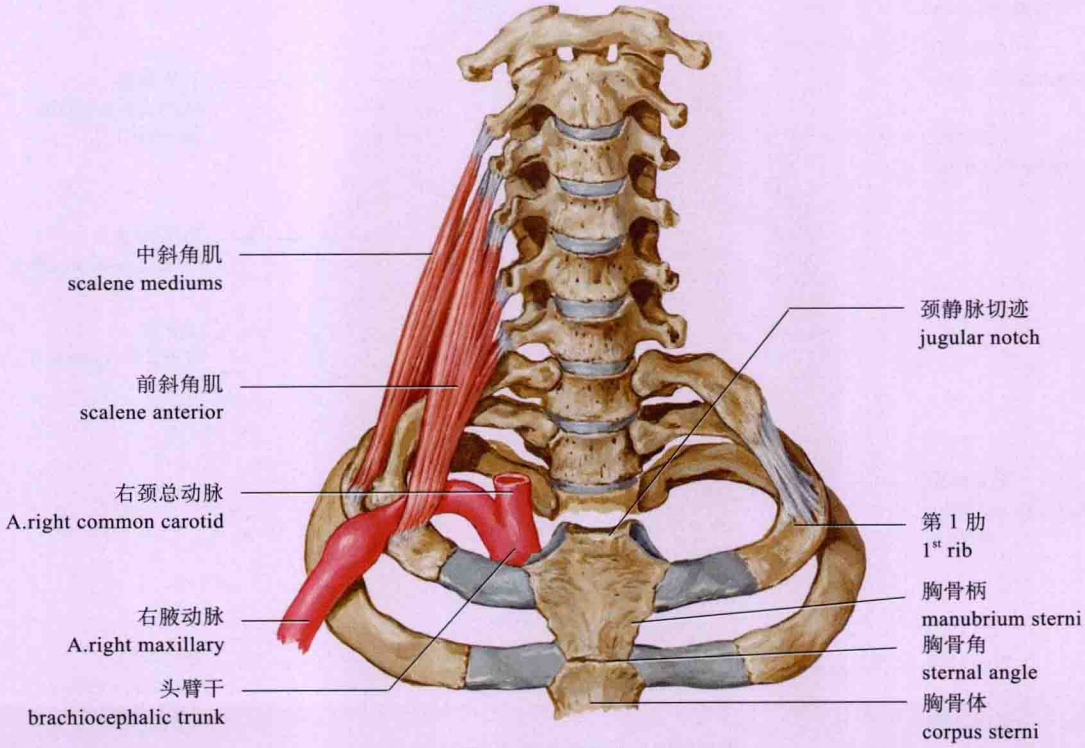


图 2-24 胸廓上口

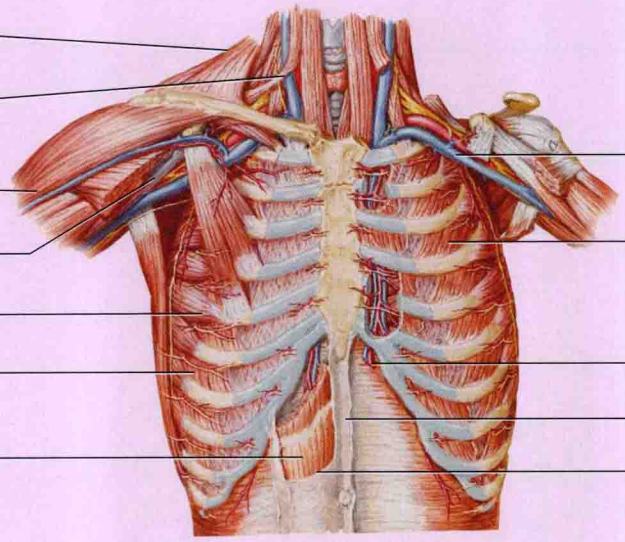


图 2-25 胸壁血管、神经

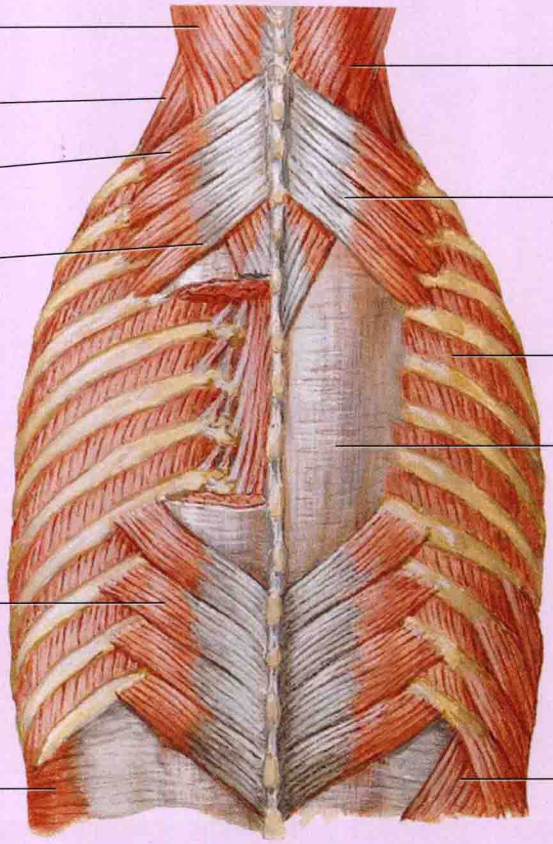


图 2-26 胸壁肌肉（后面观）

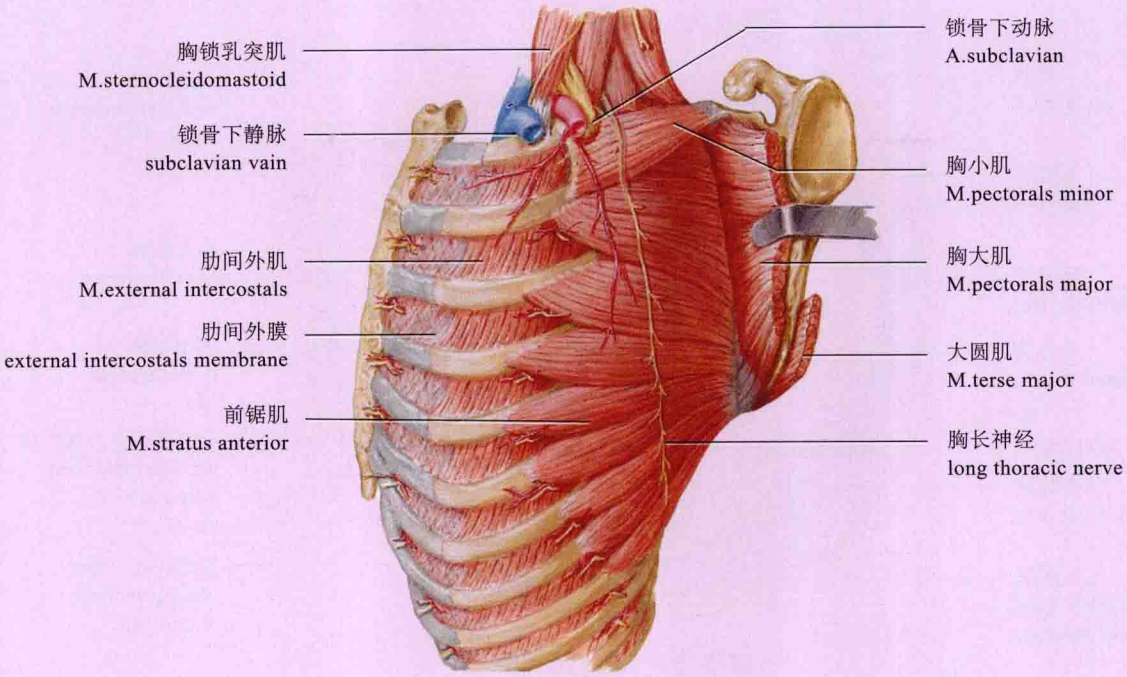


图 2-27 胸壁肌肉（侧面观）

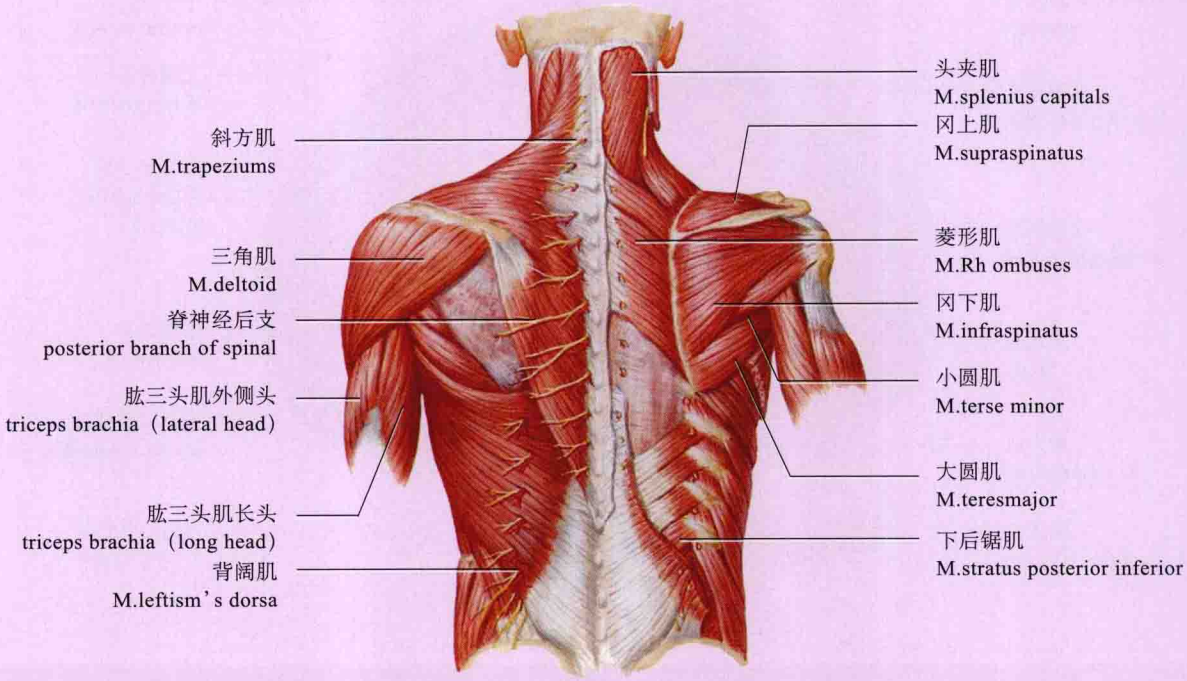


图 2-28 背部肌肉

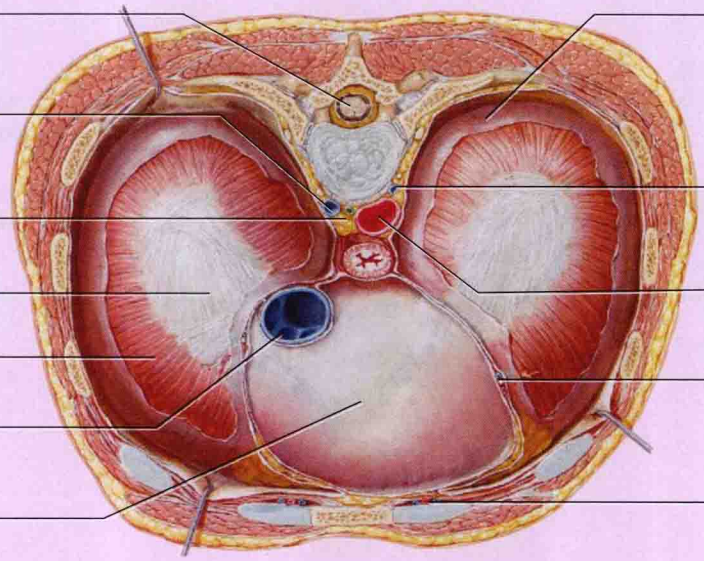


图 2-29 膈（上面观）

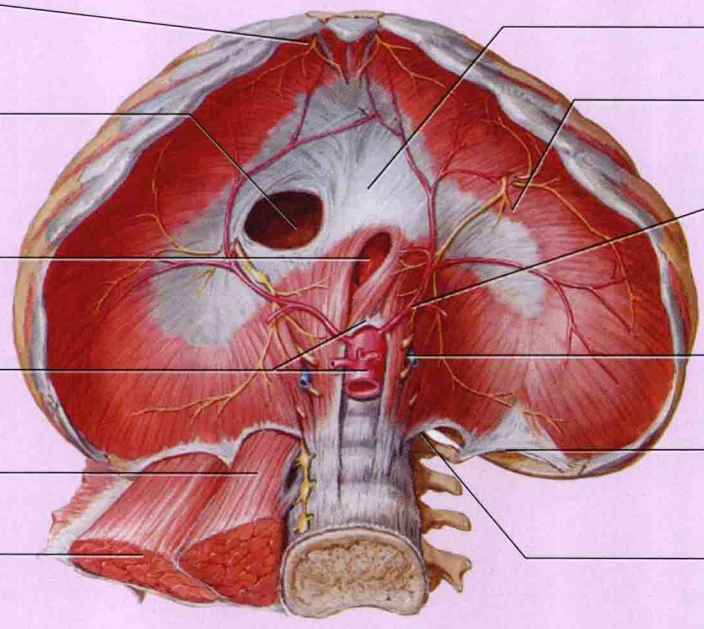


图 2-30 膈（下面观）

二、胸腔脏器及血管、神经

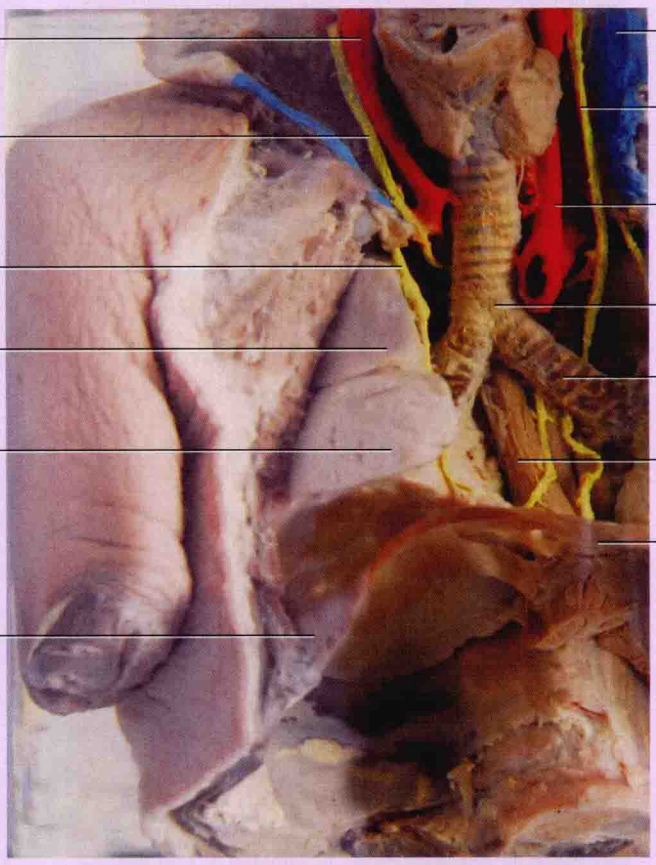


图 2-31 胸腔脏器（前面观）

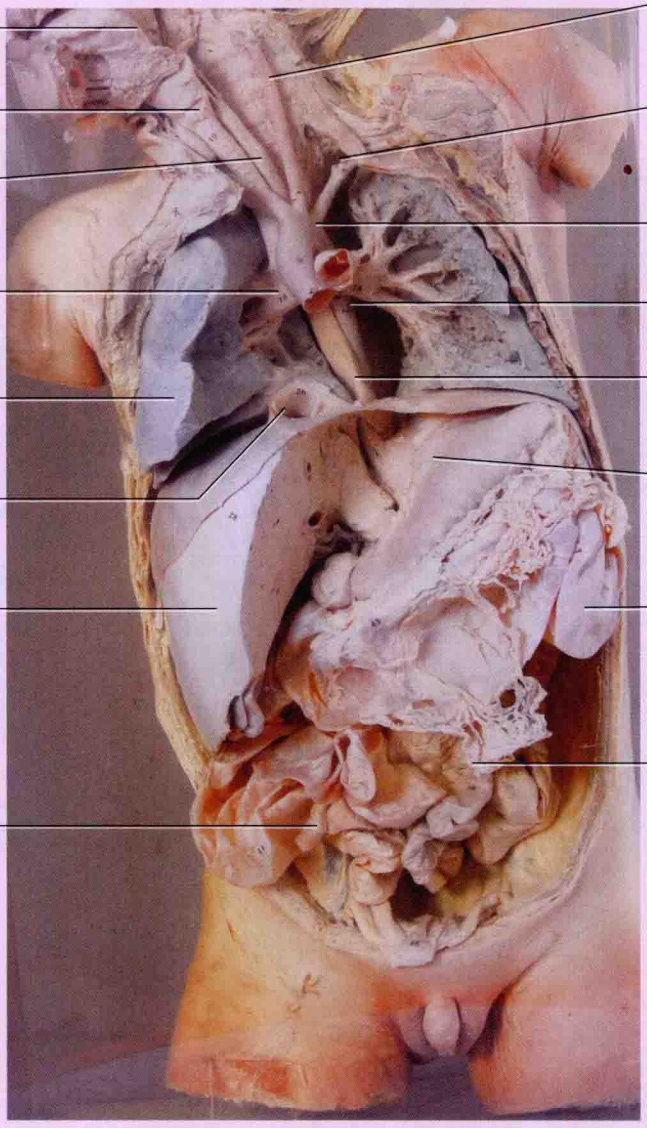


图 2-32 胸腹腔脏器（前面观）

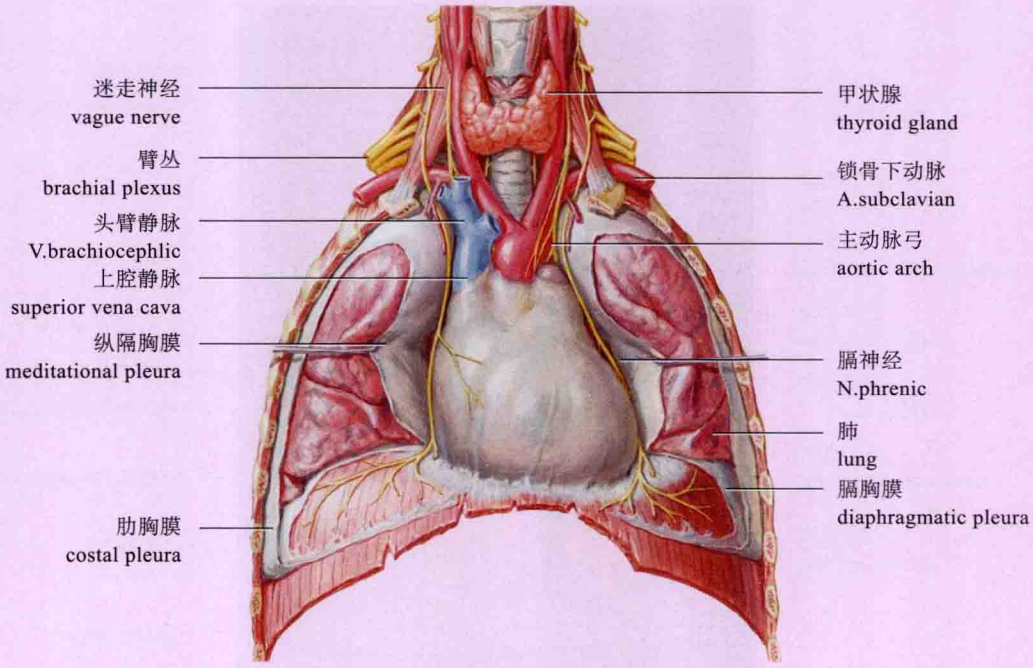


图 2-33 胸腔脏器



图 2-34 心脏及出入心脏的血管



图 2-35 心脏及其周围的神经

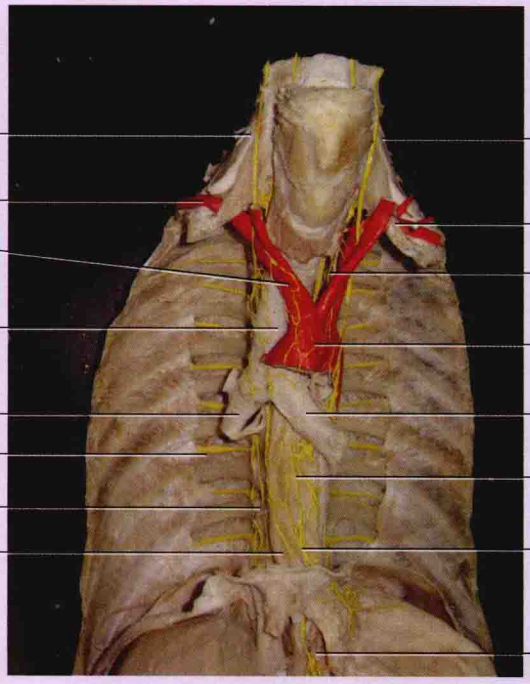


图 2-36 迷走神经及食管神经丛

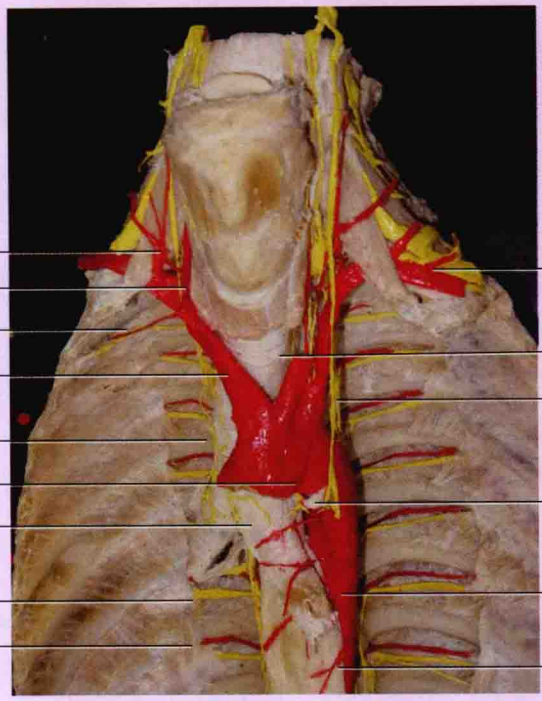


图 2-37 食管的血管及毗邻

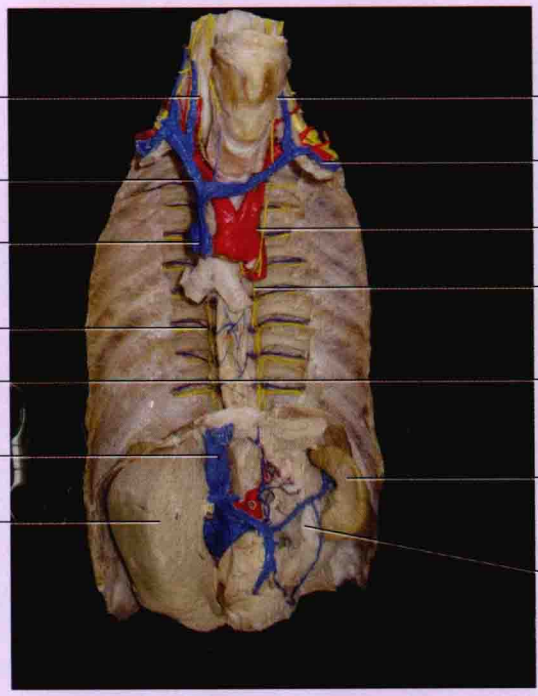


图 2-38 上下腔静脉及胸壁、食管的静脉

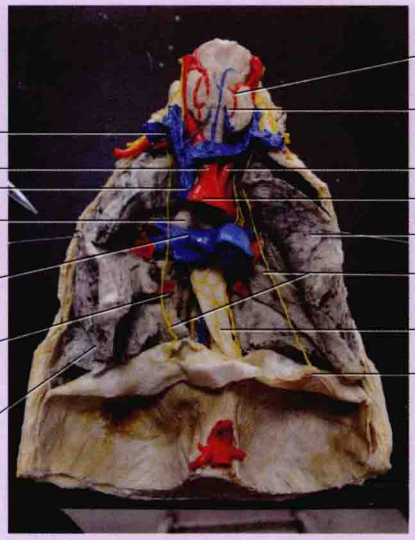


图 2-39 肺、食管及其周围的神经、血管

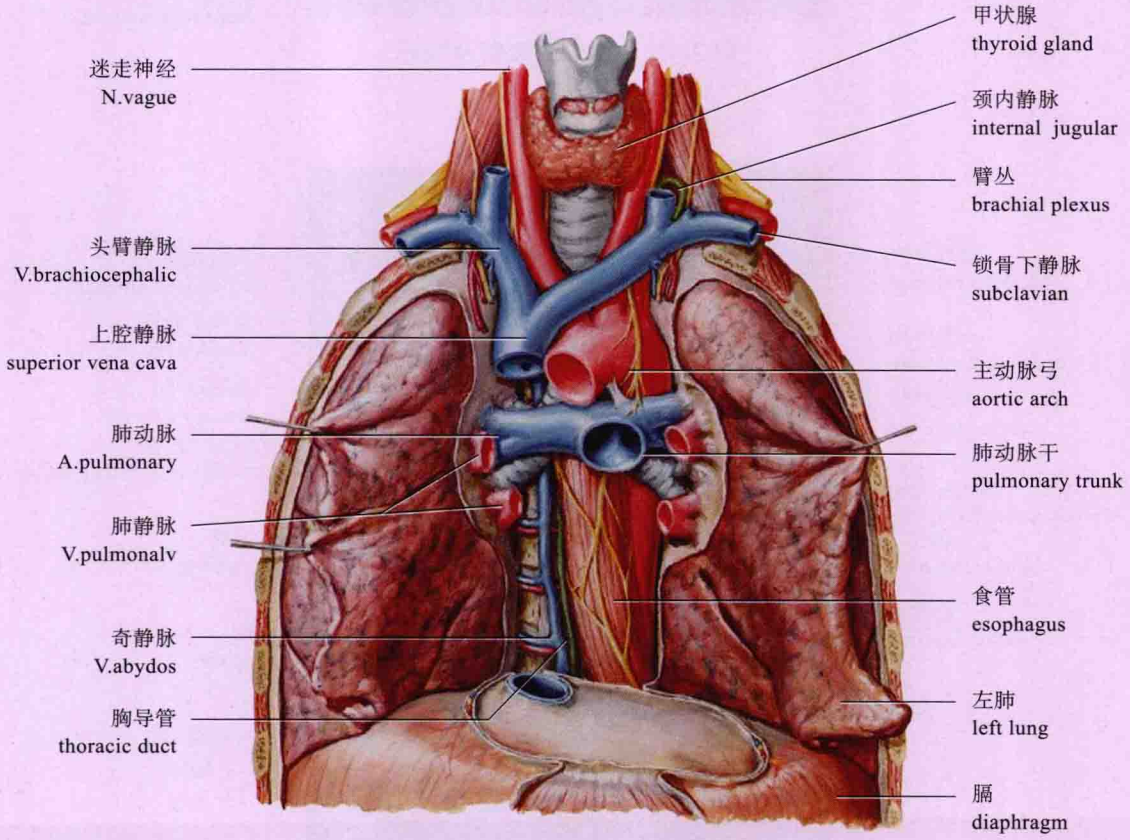


图 2-40 胸腔内血管、神经

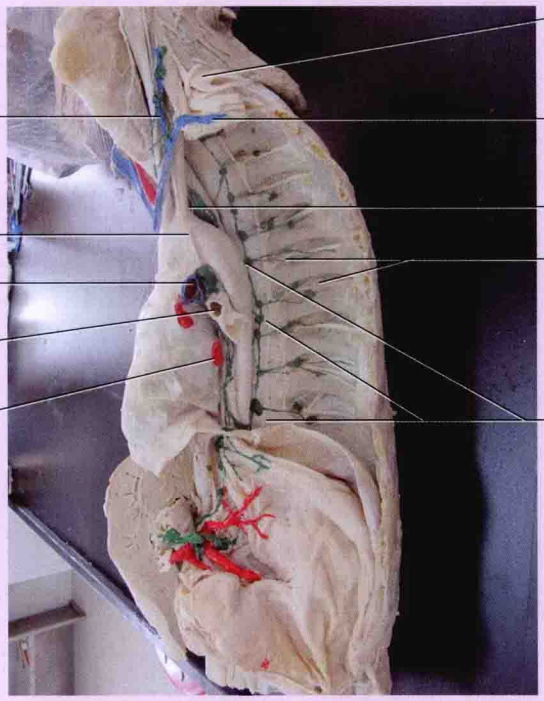


图 2-41 纵膈左面观

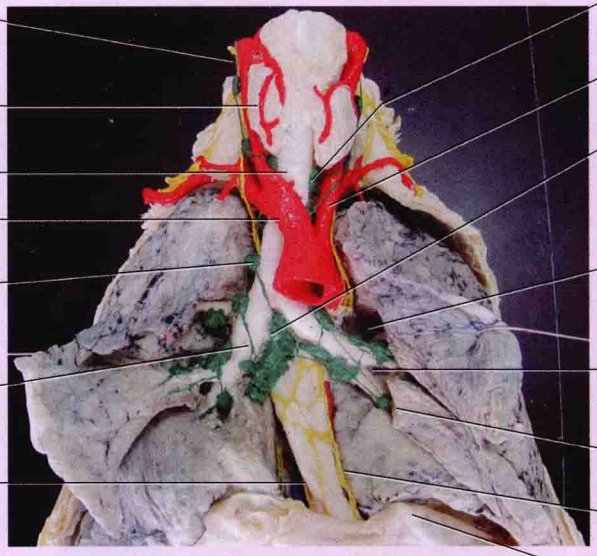


图 2-42 肺、支气管和气管的淋巴结

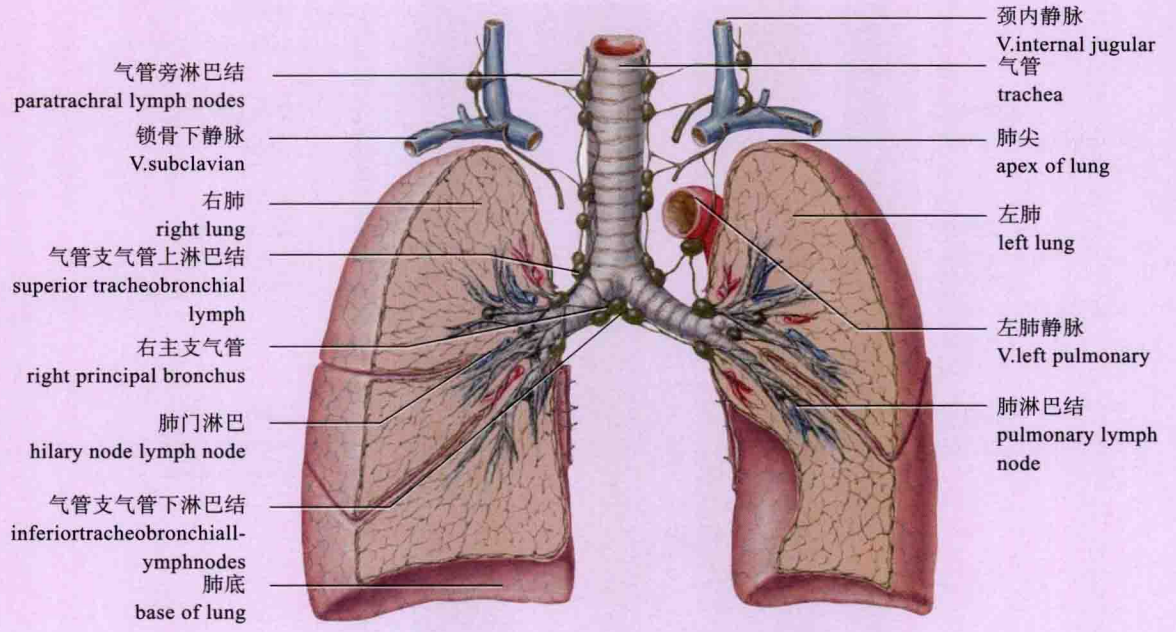


图 2-43 肺门淋巴结

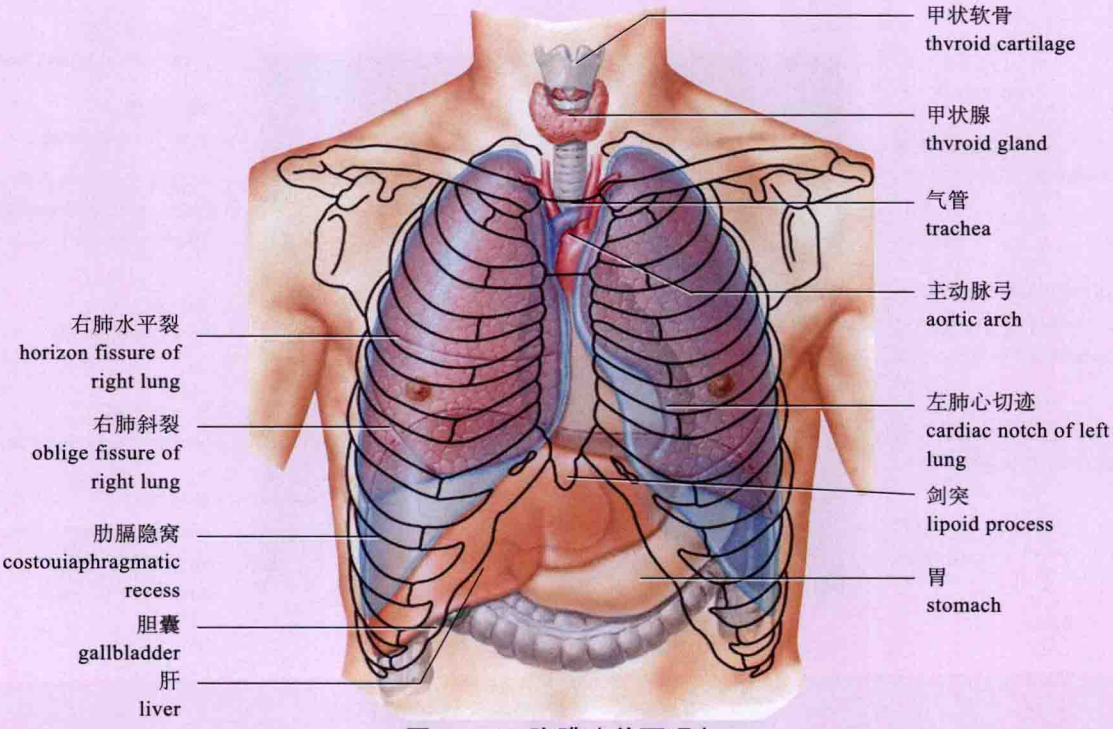


图 2-44 胸膜（前面观）

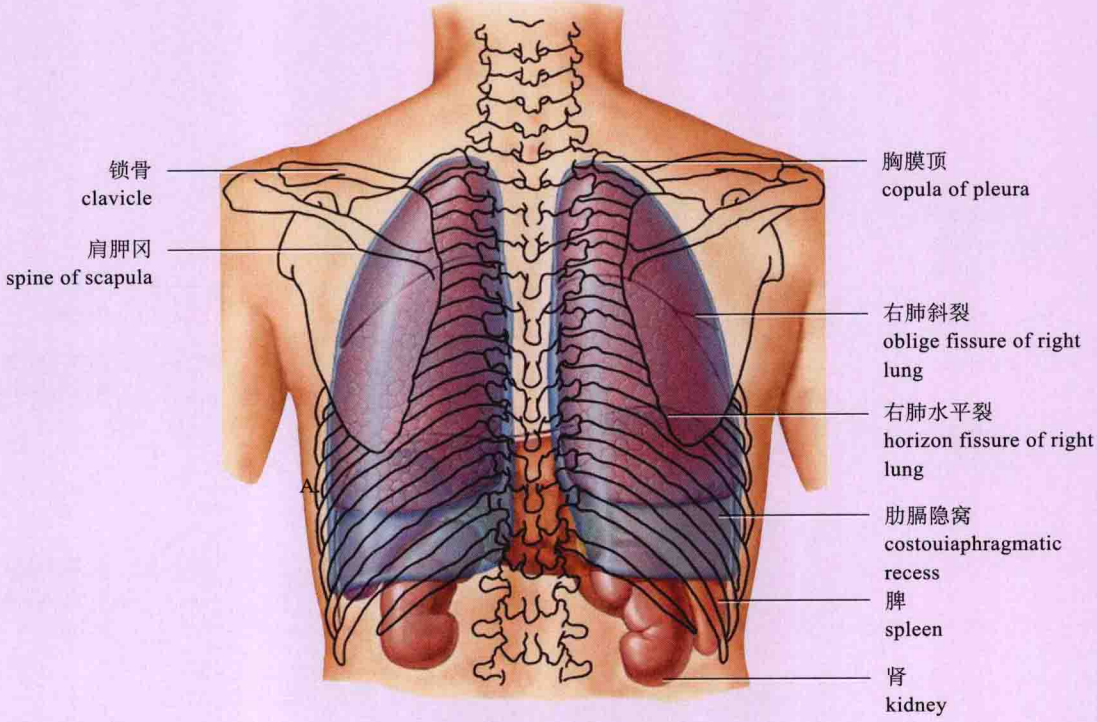


图 2-45 胸膜（后面观）

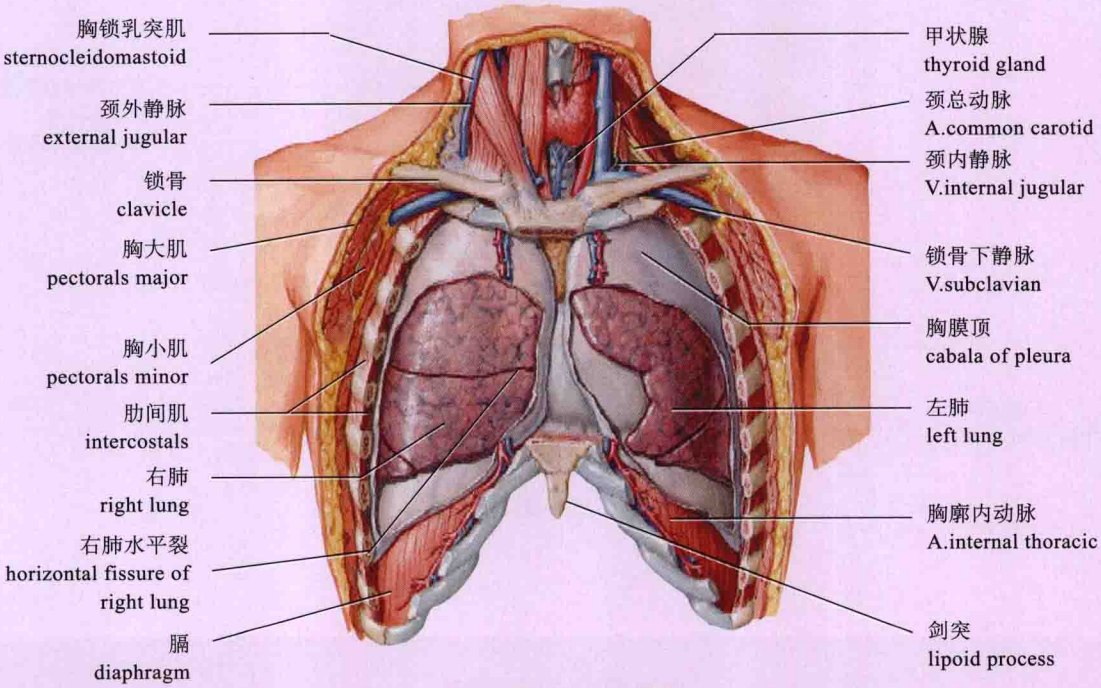


图 2-46 肺和胸膜

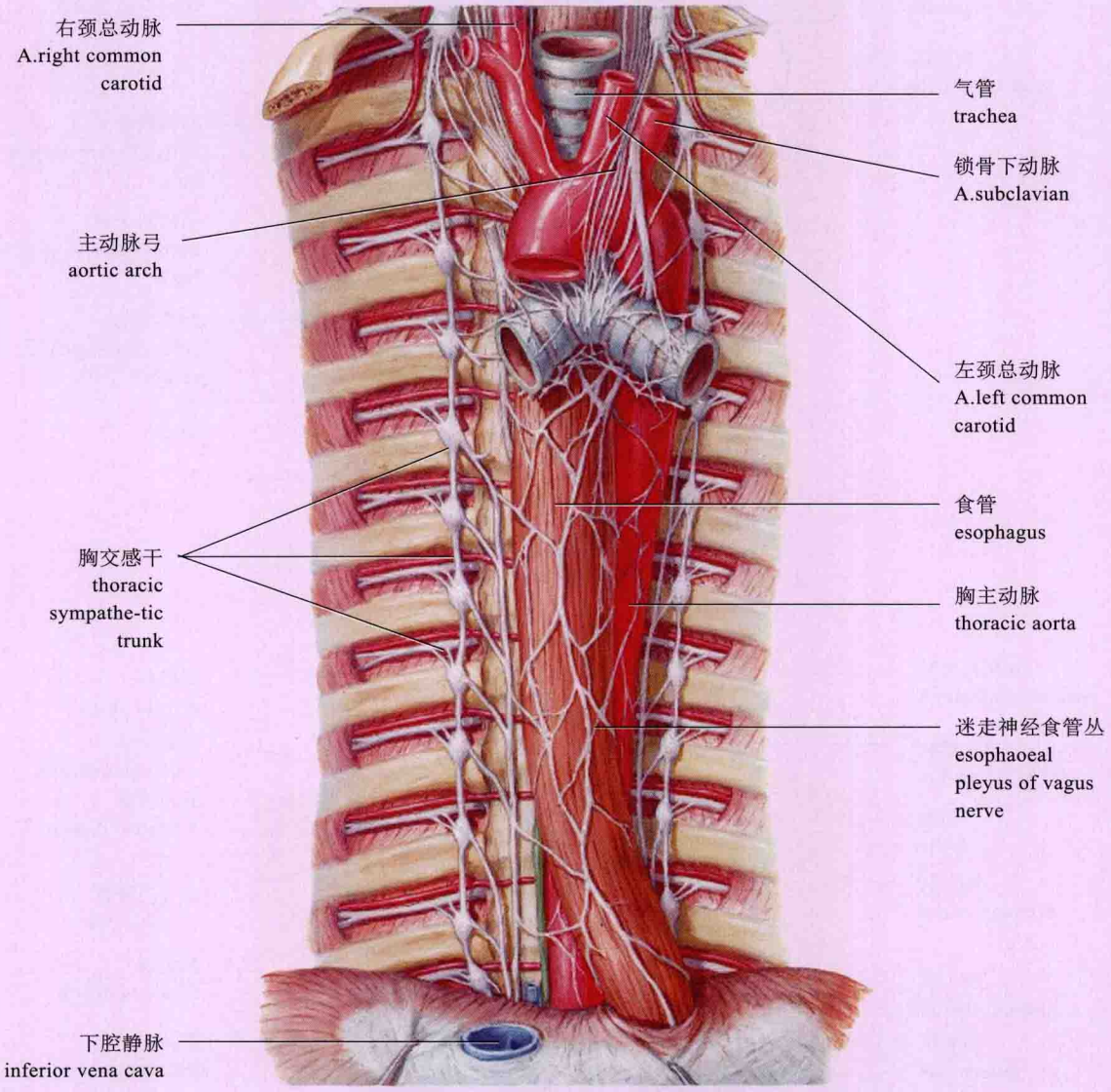


图 2-47 迷走神经和胸交感干

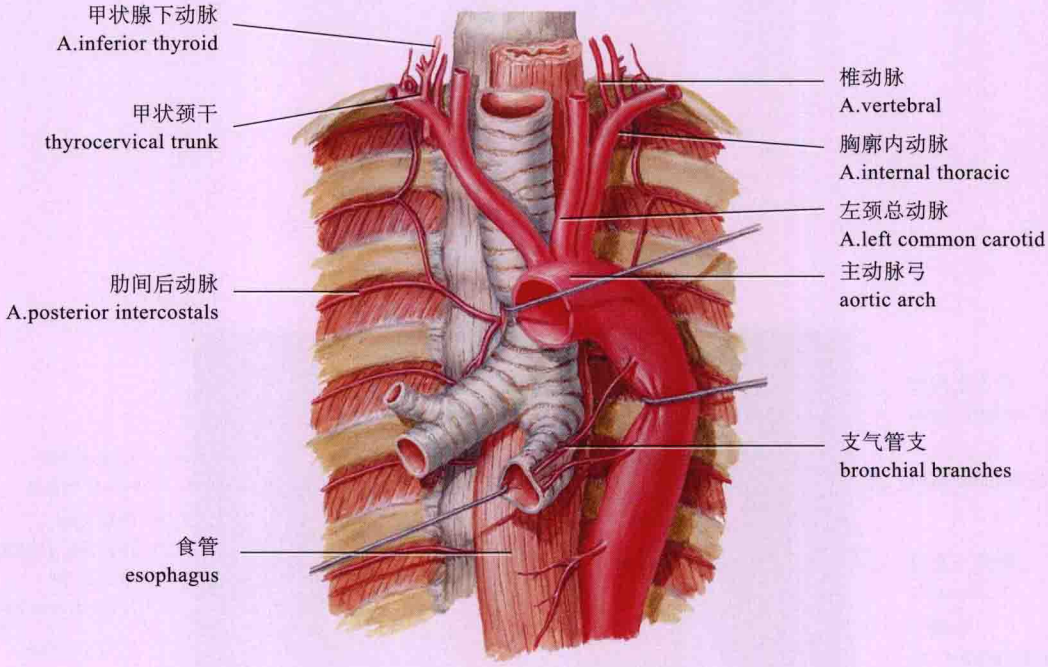


图 2-48 支气管动脉

三、胸部各脏器的解剖、组织、病理及影像

（一）食管

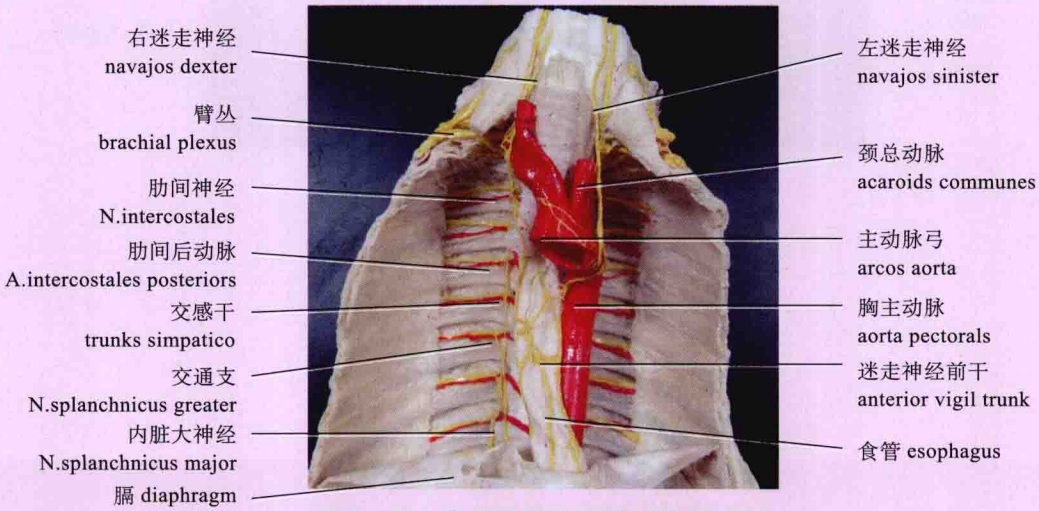


图 2-49 食管与胸主动脉的位置关系

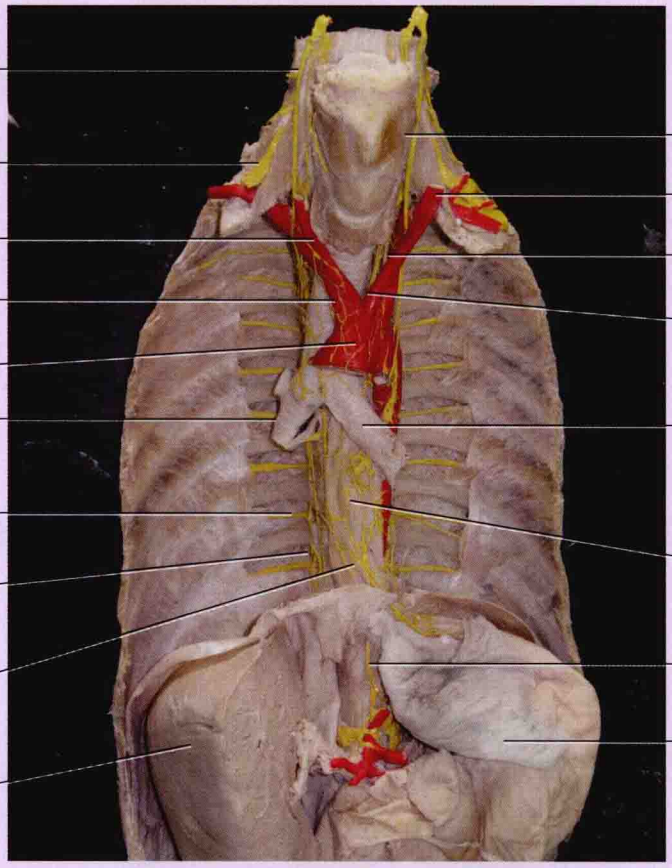


图 2-50 迷走神经及食管神经丛

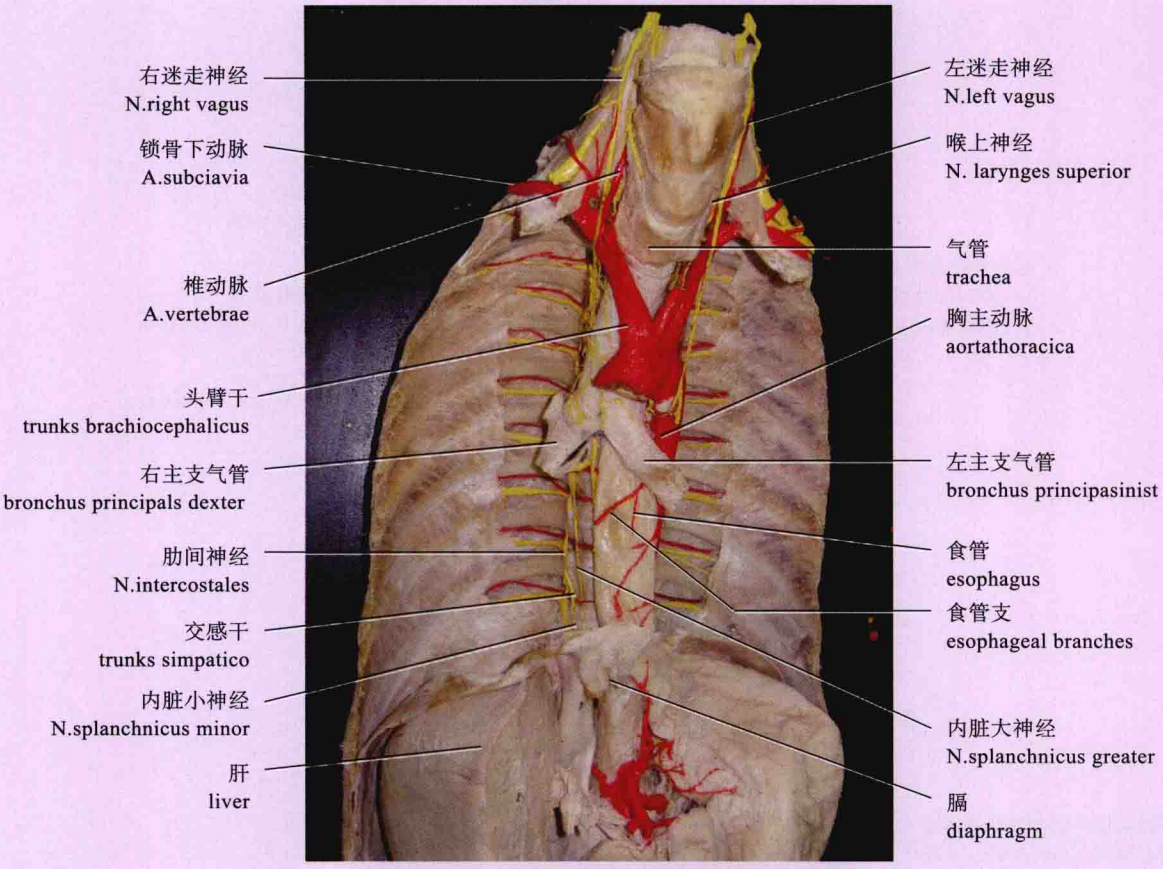


图 2-51 迷走神经、胸部交感干及食管的血管

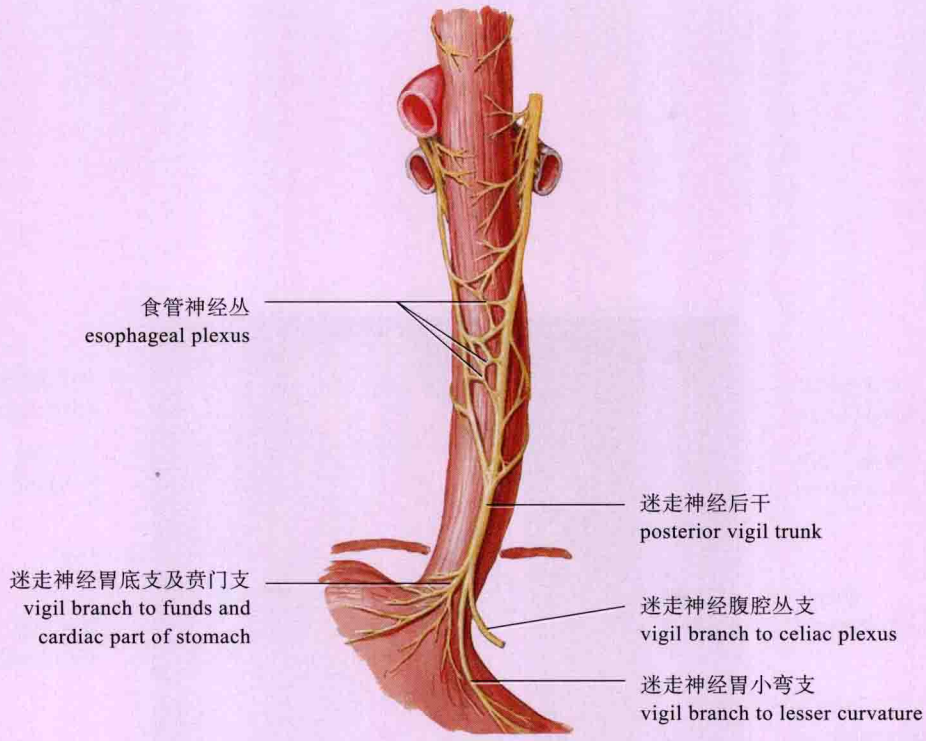


图 2-52 食管的神经

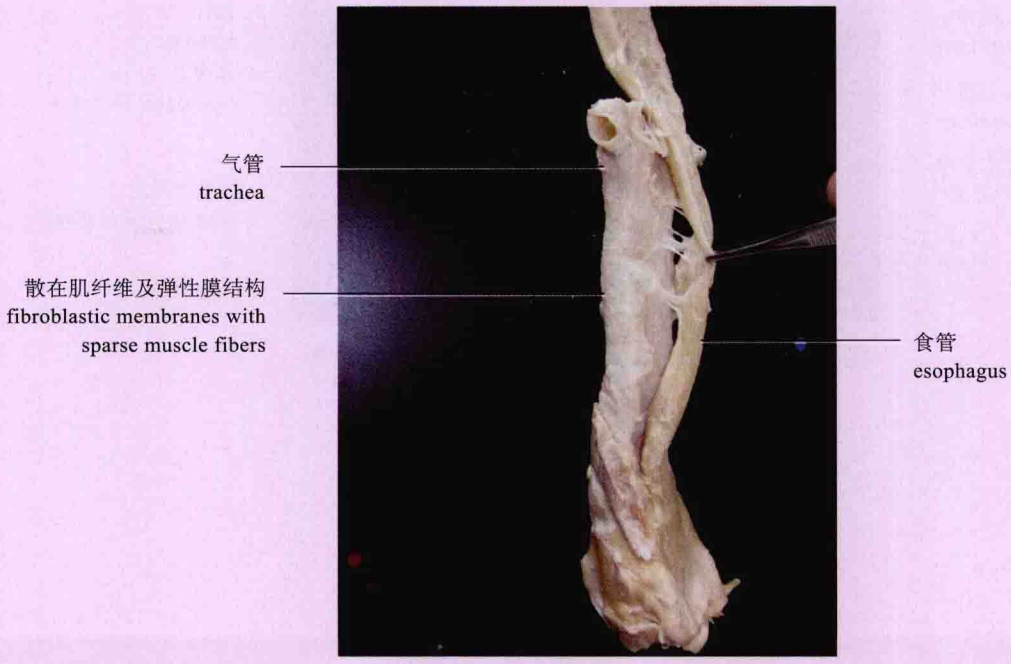


图 2-53 食管与气管

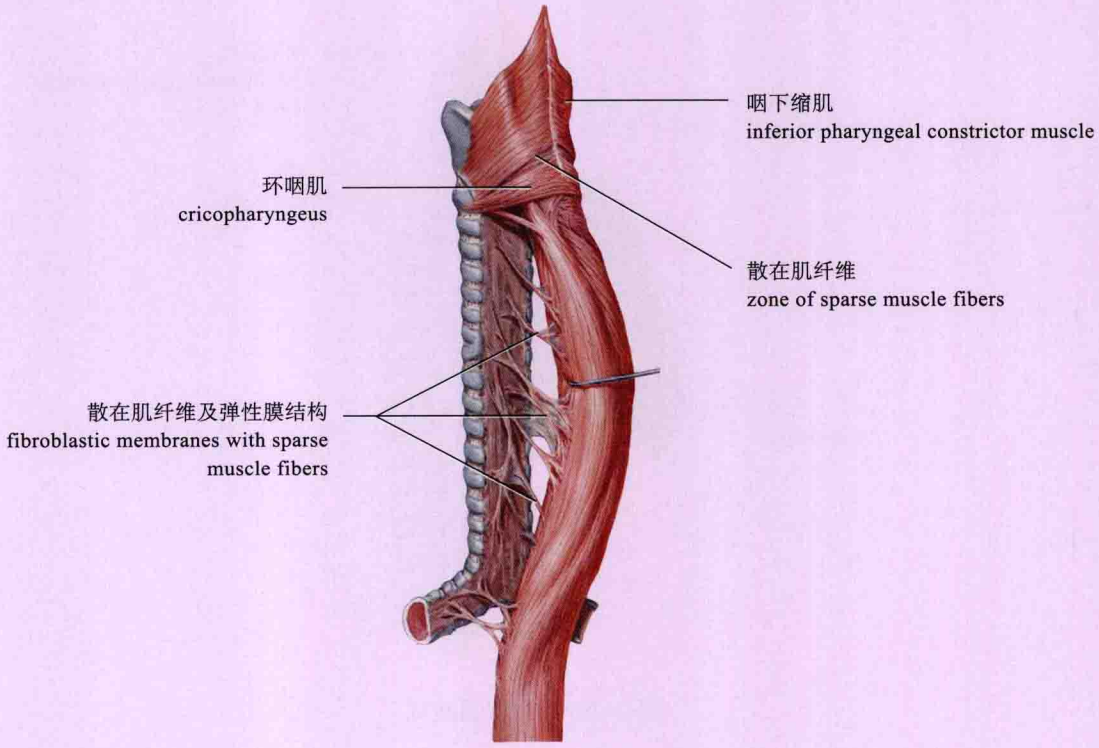


图 2-54 食管与气管

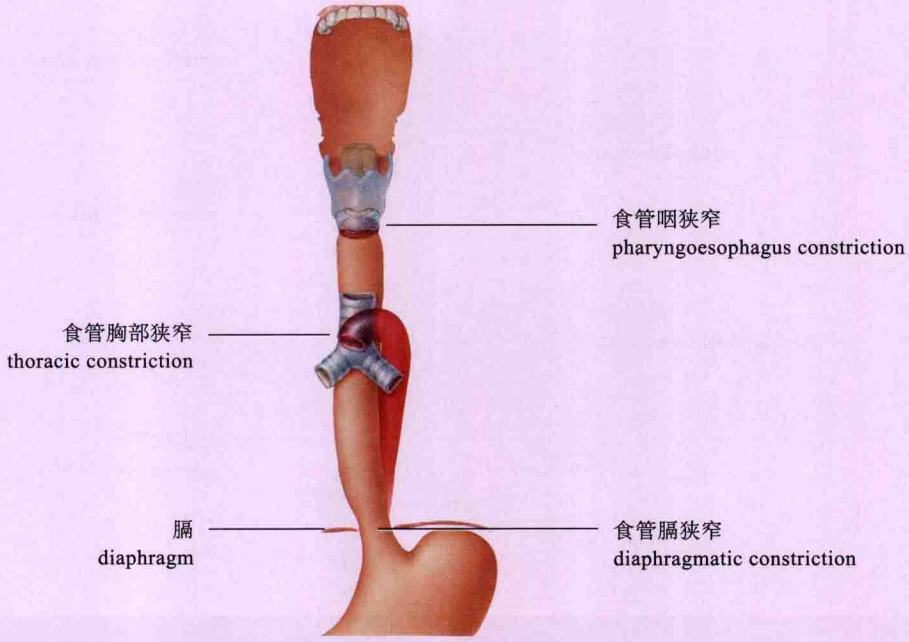


图 2-55 食管的狭窄

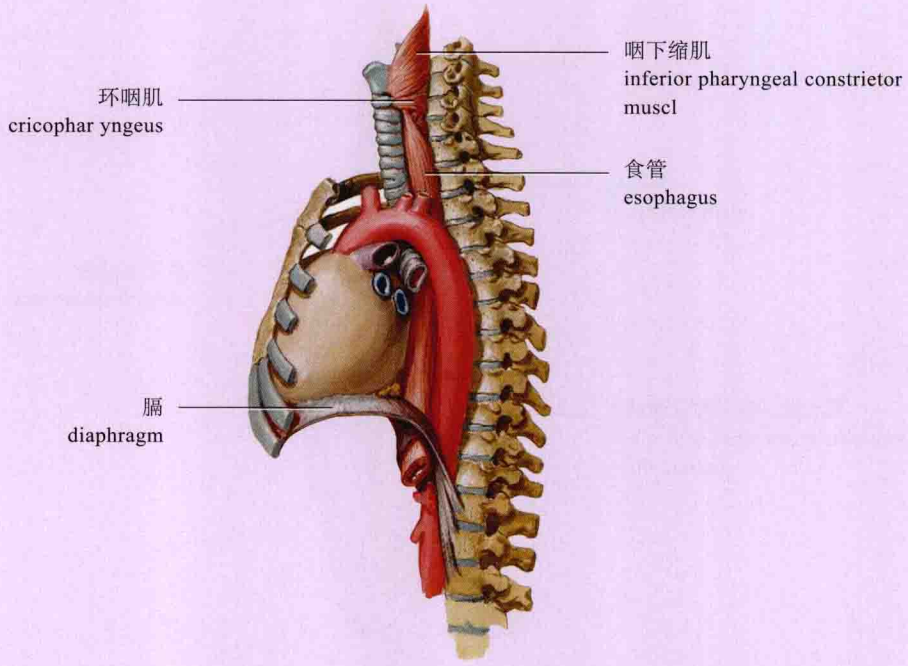


图 2-56 食管的毗邻

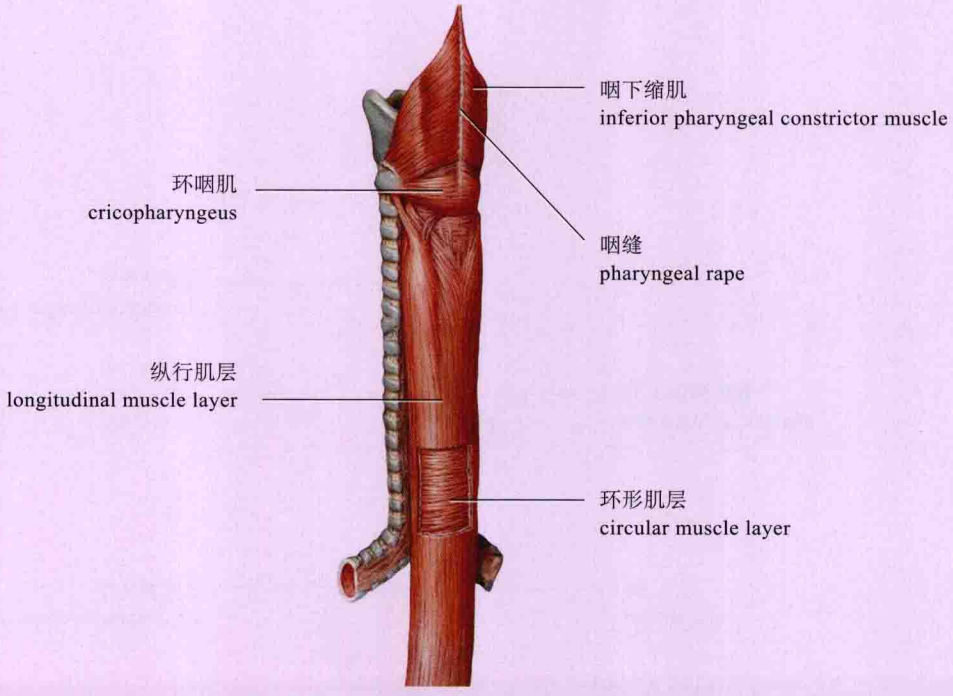


图 2-57 食管肌

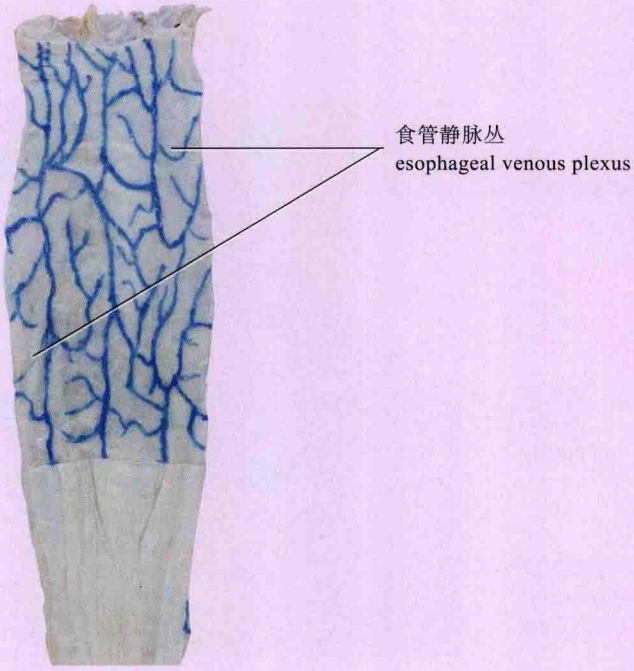


图 2-58　食管黏膜下静脉丛

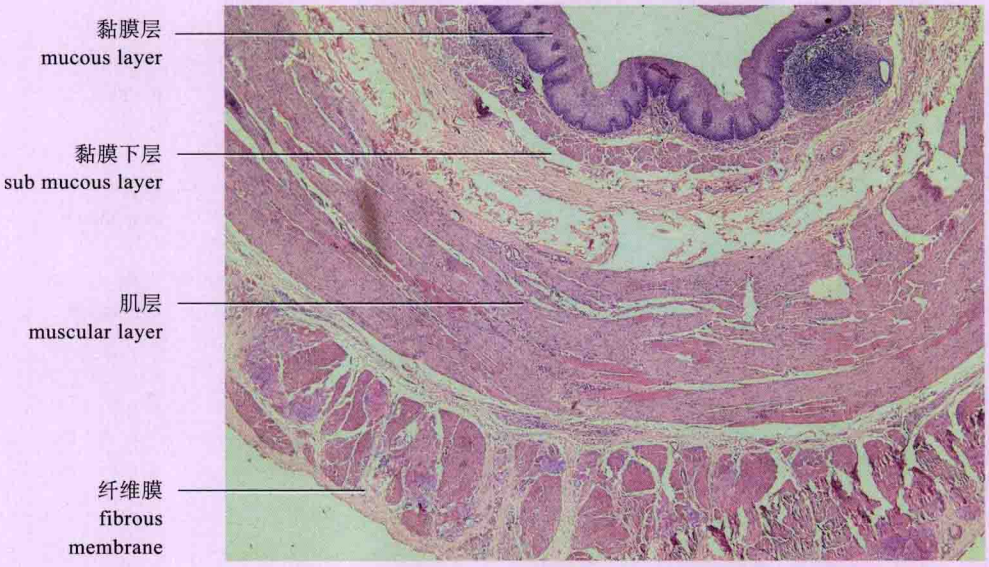


图 2-59　食管壁镜下结构图（HE×40）

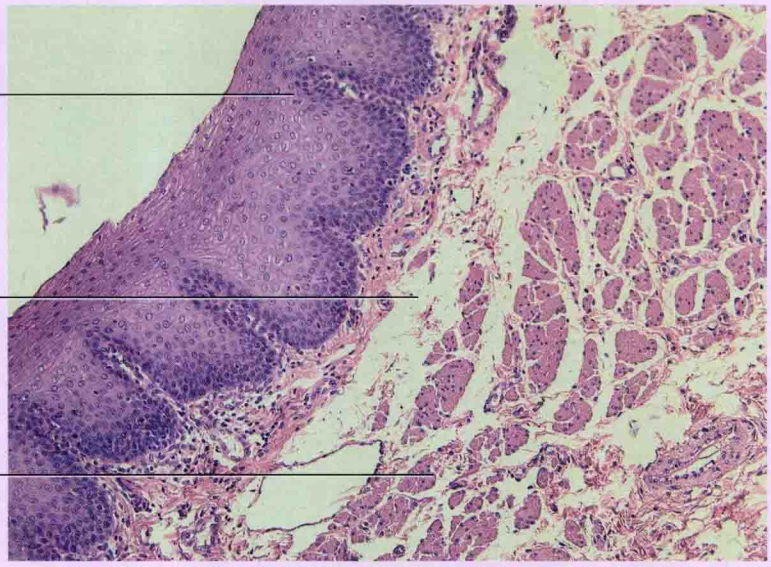


图 2—60　食管黏膜层结构（HE × 100）

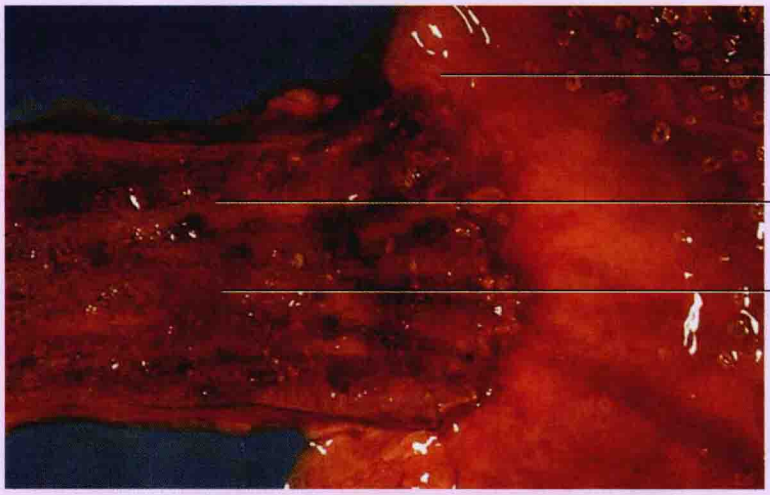


图 2–61　念珠菌性食管炎（candida esophagi tis）
食管下段和胃可见黄褐色（膜状物）及充血

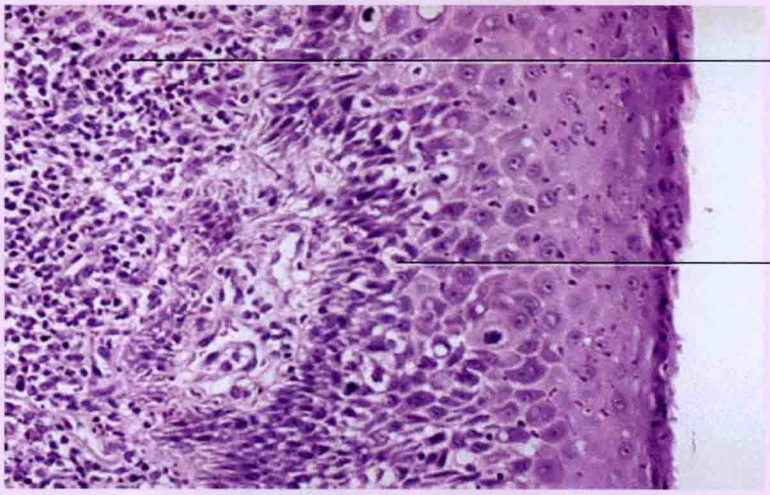


图 2-62　急性食管炎（acute esophagi tis）（HE×200）
鳞状上皮下可见大量中性粒细胞浸润

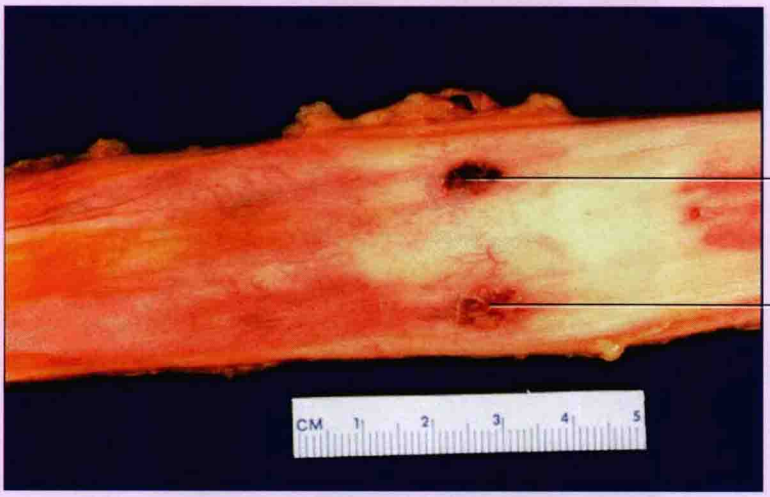


图 2-63　食管溃疡（ulcer of the esophagus）
食管中段可见多个溃疡伴有出血



图 2-64 食管溃疡

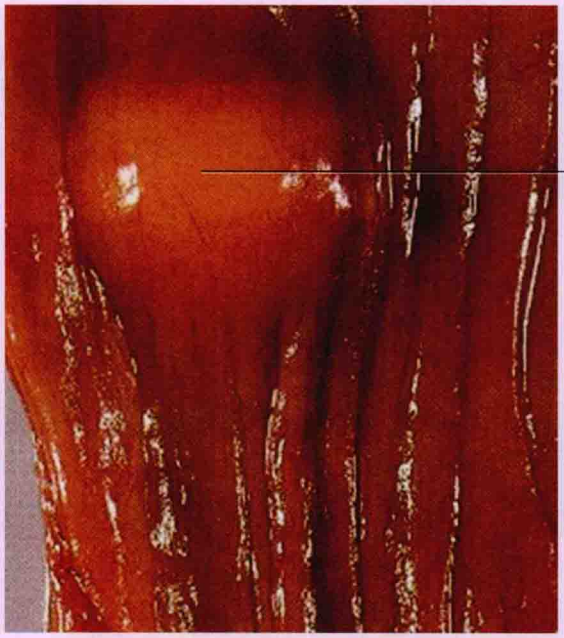


图 2-65 食管平滑肌瘤（esophageal leiomyoma）
可见黏膜下一表面光滑的球形瘤体



图 2-66 食管平滑肌瘤

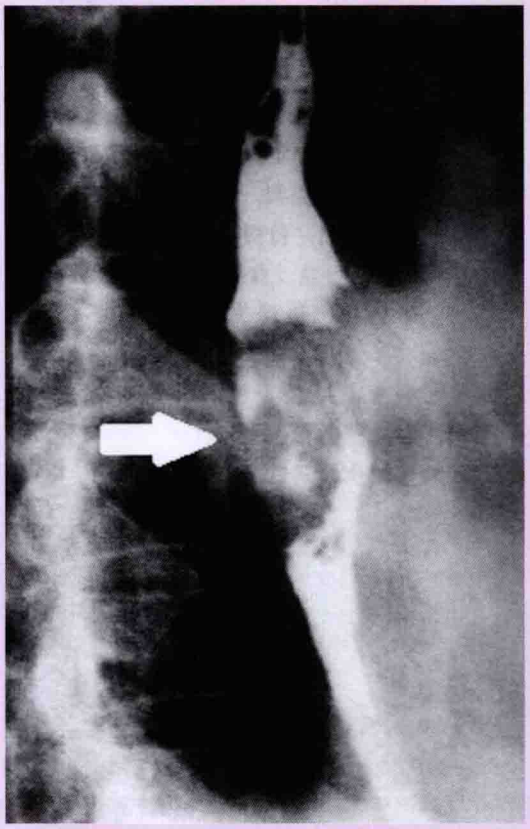


图 2-67 食管平滑肌肉瘤

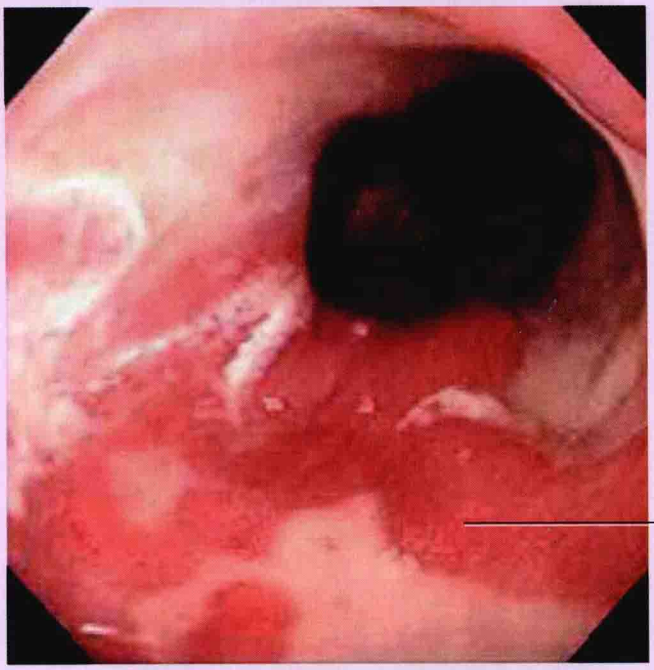


图 2-68 Barrett 食管（Barrett's esophagus）
可见正常的食管黏膜为灰白色，Barrett 食管黏膜为红色斑片状

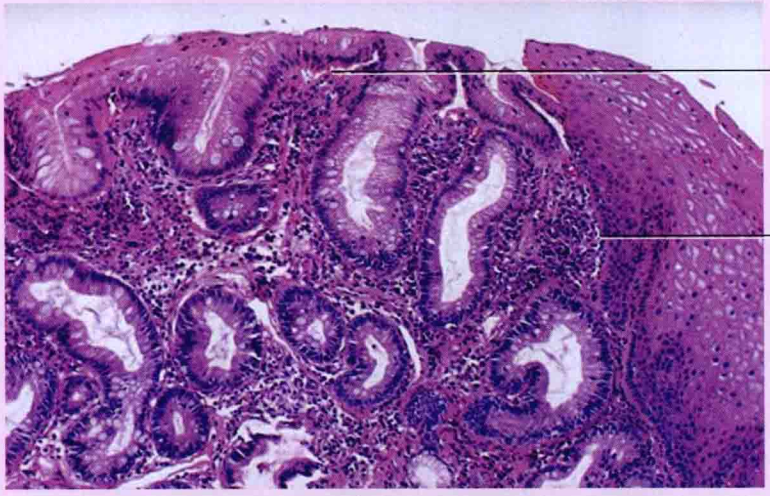


图 2-69 Barrett 食管（Barrett's esophagus）（HE × 100）
长期的胃食管反流，导致食管的鳞状上皮被柱状上皮取代（化生）



图 2-70　食管静脉曲张（esophageal varices）
可见食管下段静脉曲张膨出，破裂后引起大出血

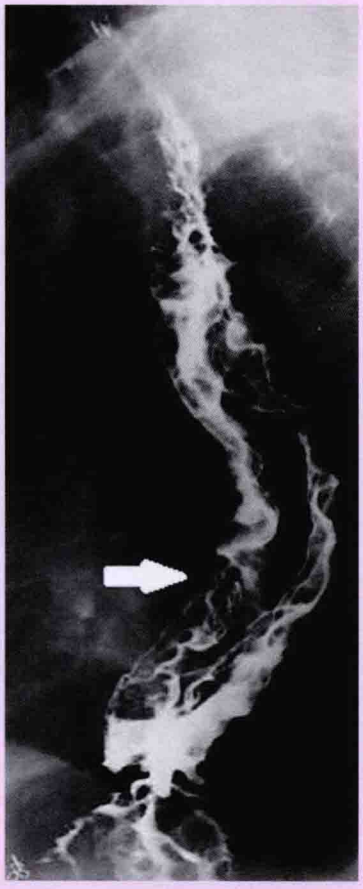


图 2-71　食管静脉曲张

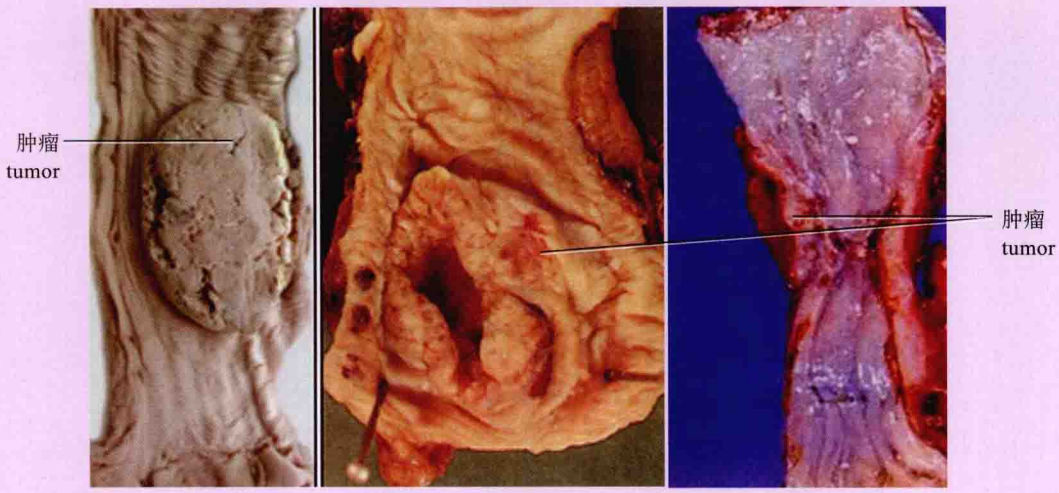


图 2-72 食管癌（carcinoma of esophagus）
可见三型：蕈伞型（左）、溃疡型（中）和缩窄型（右）

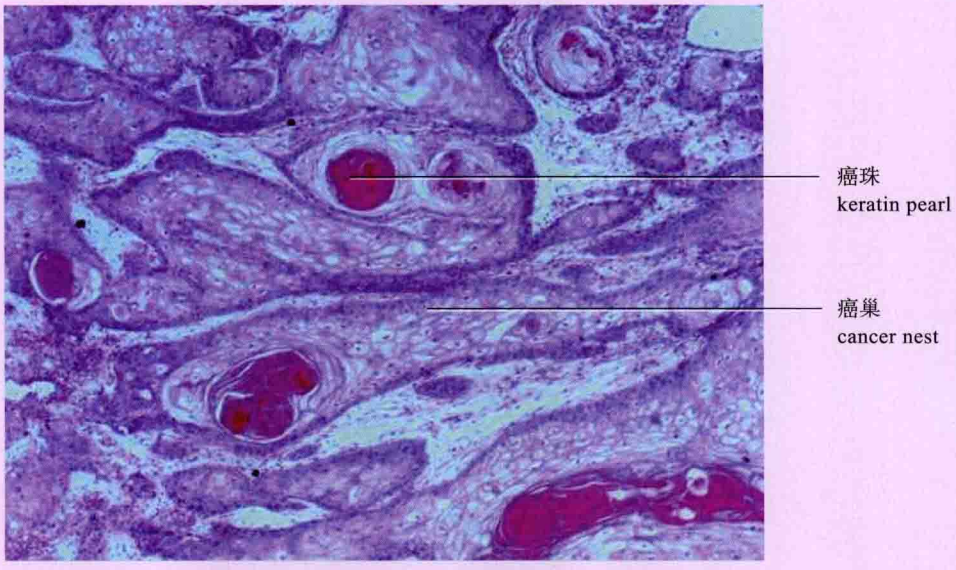


图 2-73 食管癌（carcinoma of esophagus）（HE × 100）
高分化鳞癌，可见明显的癌巢和癌珠

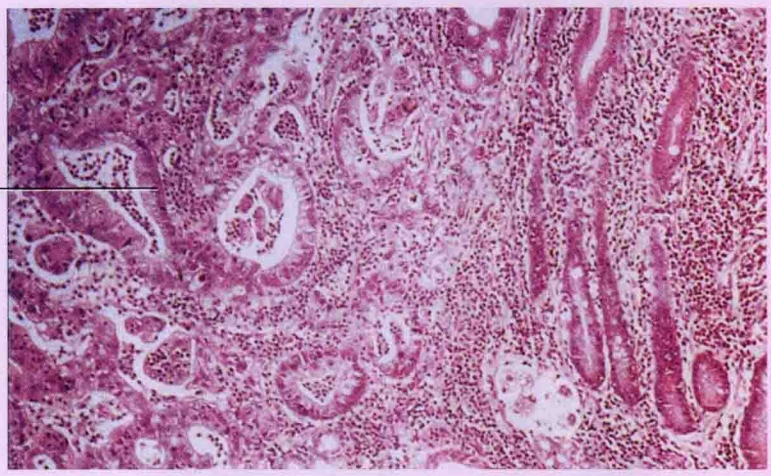


图 2-74　食管癌（carcinoma of esophagus）（HE × 200）

食管管状腺癌，可见癌细胞呈大小不等的腺管状排列，细胞常不规则的排列多层，核大小不一，核分裂像多见

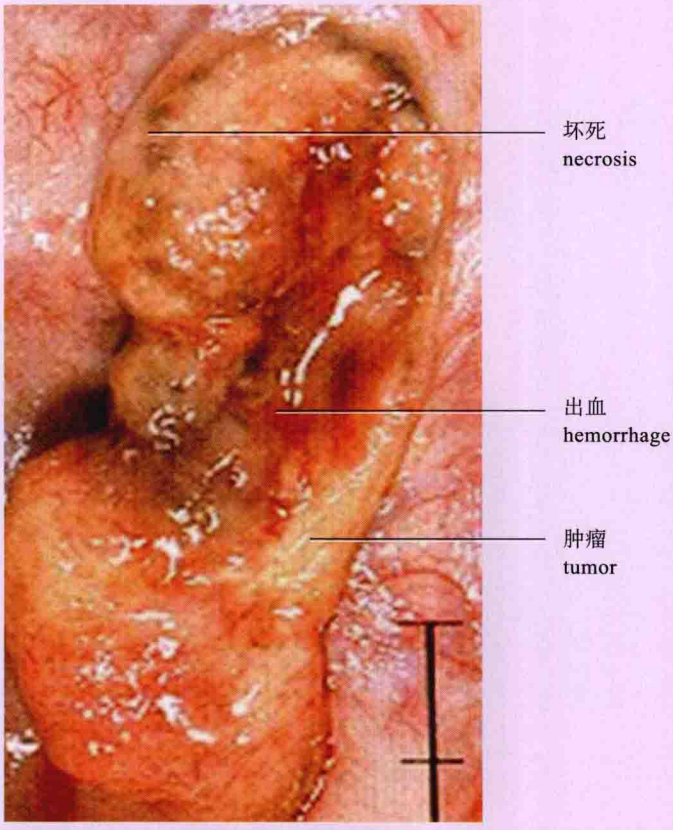


图 2-75　食管癌肉瘤（carcinosarcoma of esophagus）

食管壁可见鱼肉样肿块，表面出血坏死

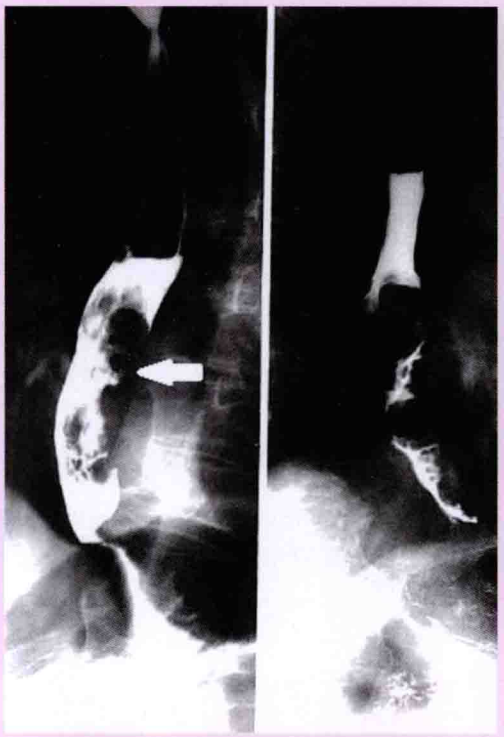


图 2–76　食管癌溃疡型

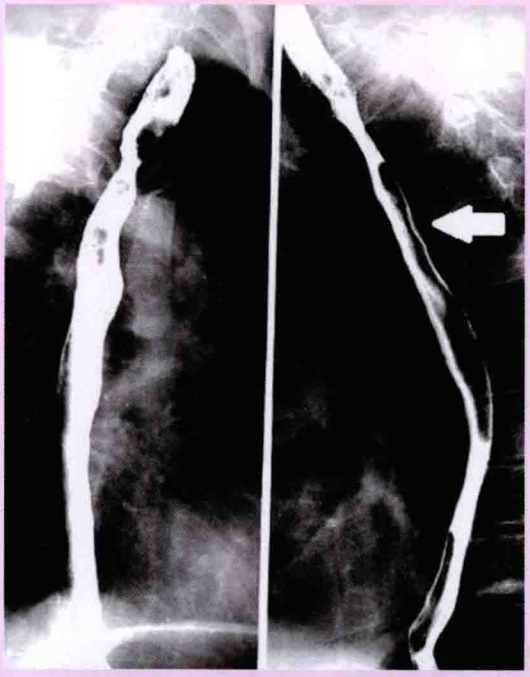


图 2–77　食管癌增生型

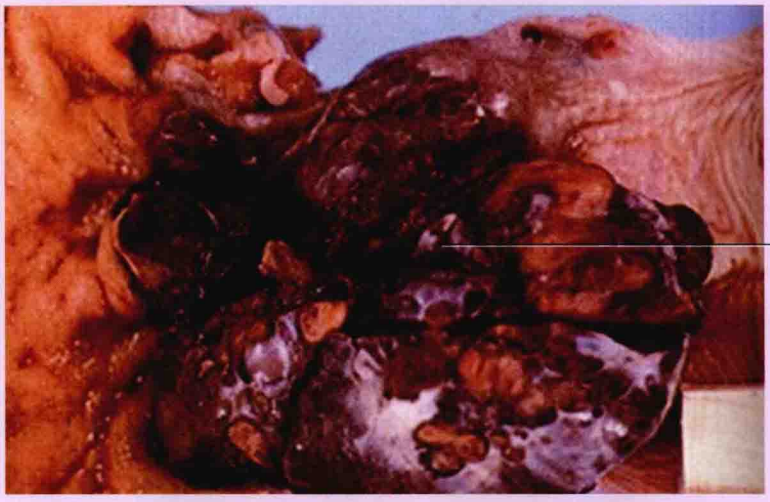


图 2–78 食管恶性黑色素瘤（malignant melanoma in esophagus）
突出于黏膜的黑色蕈样肿物表面可见坏死

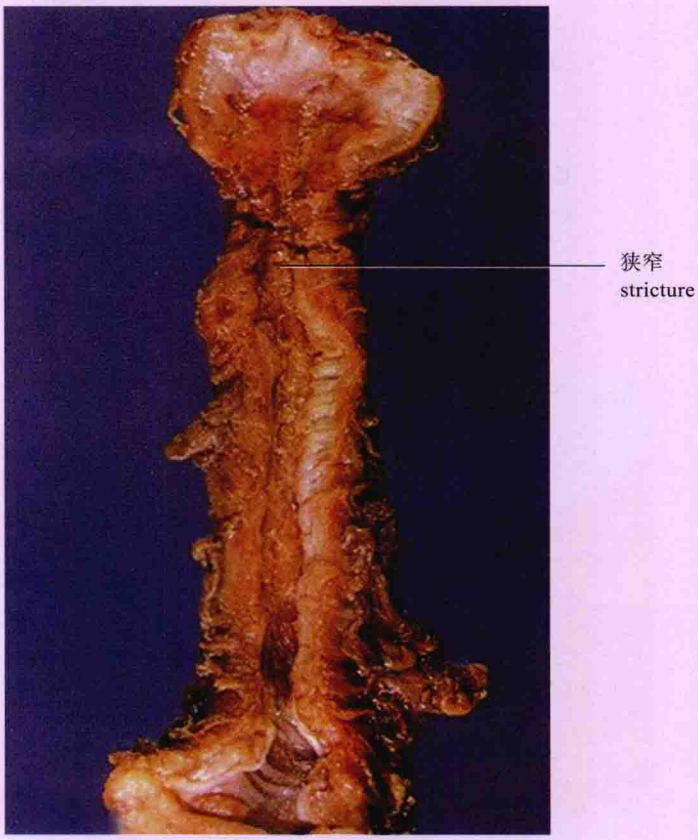


图 2–79 食道狭窄（oesophageal stricture）
食管壁增厚，管腔明显变窄



图 2-80 食道失弛缓症（oesophageal echolalia）
贲门括约肌处于失弛缓状态，贲门部肥厚，上段食管扩张

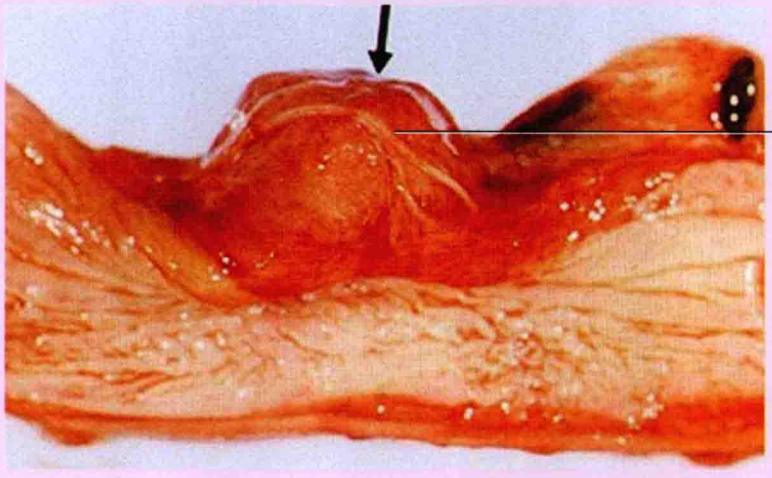


图 2-81 食管憩室（diverticulum of the esophagus）
食管局部向外膨隆形成憩室，可诱发食管炎症，并造成穿孔

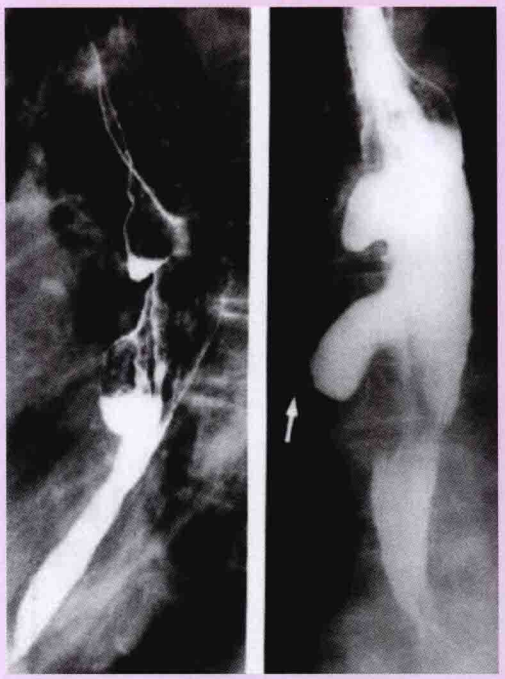


图 2-82　食管憩室

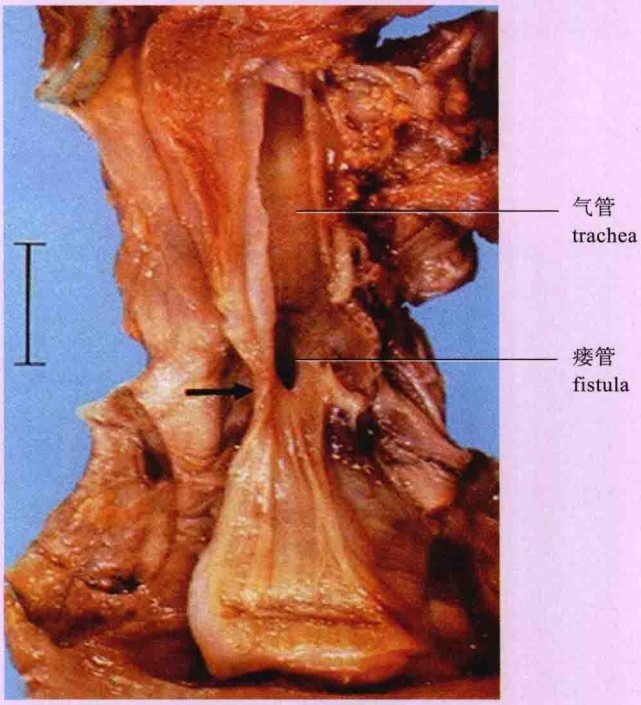


图 2-83　先天性气管食管瘘（congenital tracheoesophageal fistula）
气管分叉处与食管相通，瘘管形成（箭示）

（二）心脏

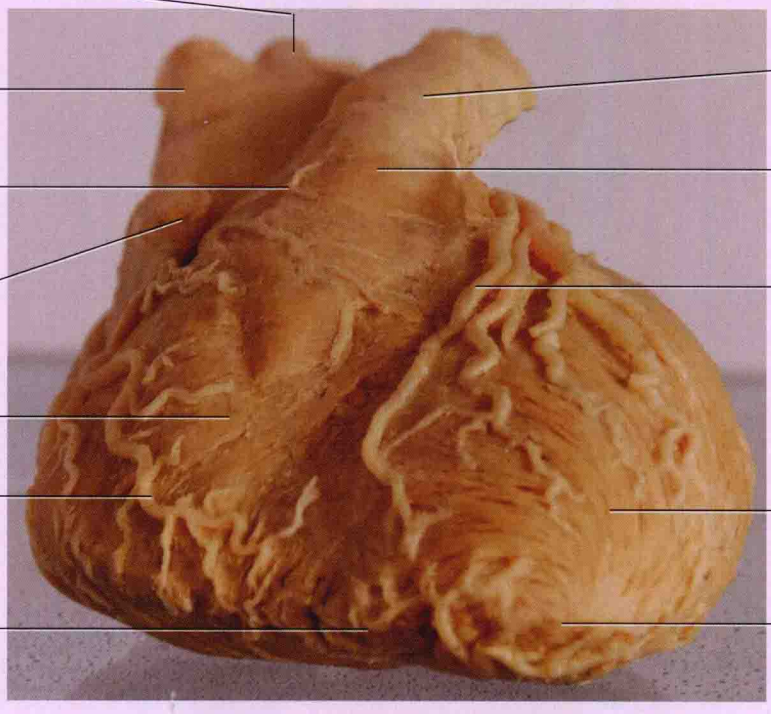


图 2-84　心脏的外形（前面观）

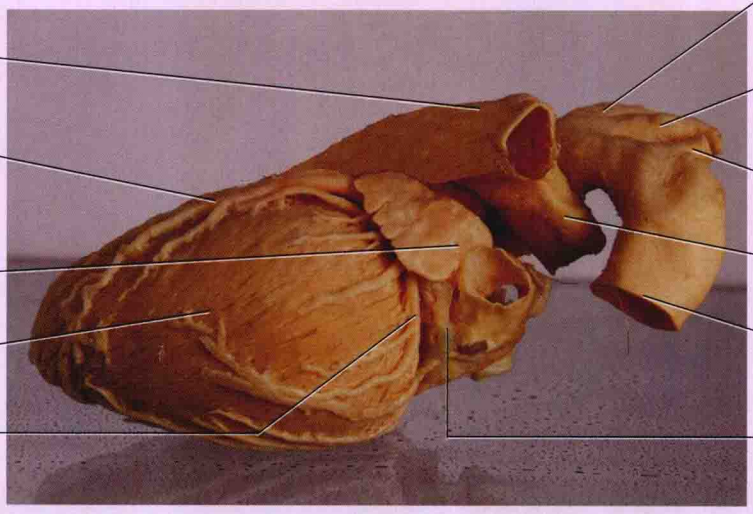


图 2-85　心脏的外形（左侧面观）

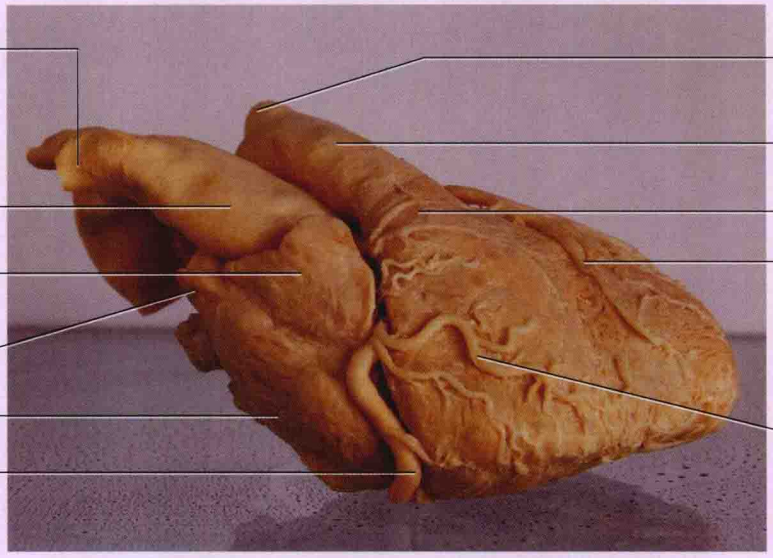


图 2-86 心脏的外形（右侧面观）

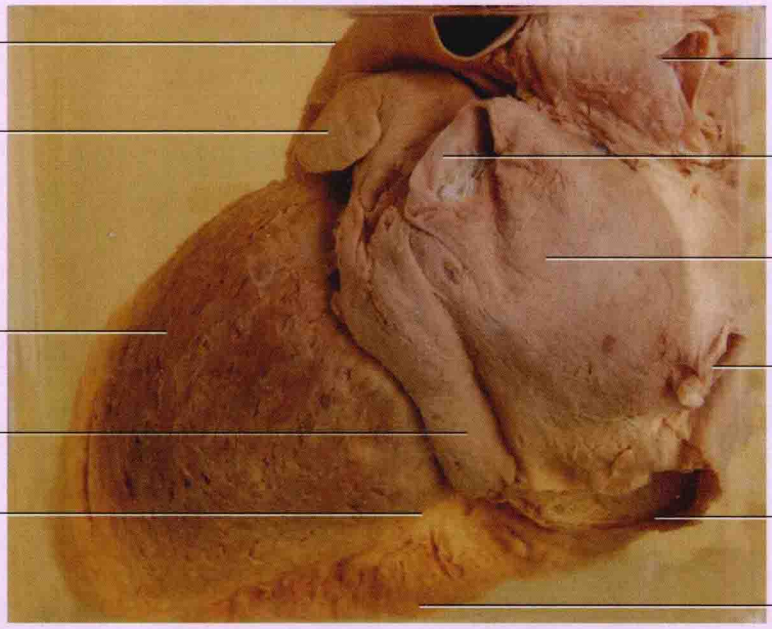


图 2-87 心脏的外形（膈面）

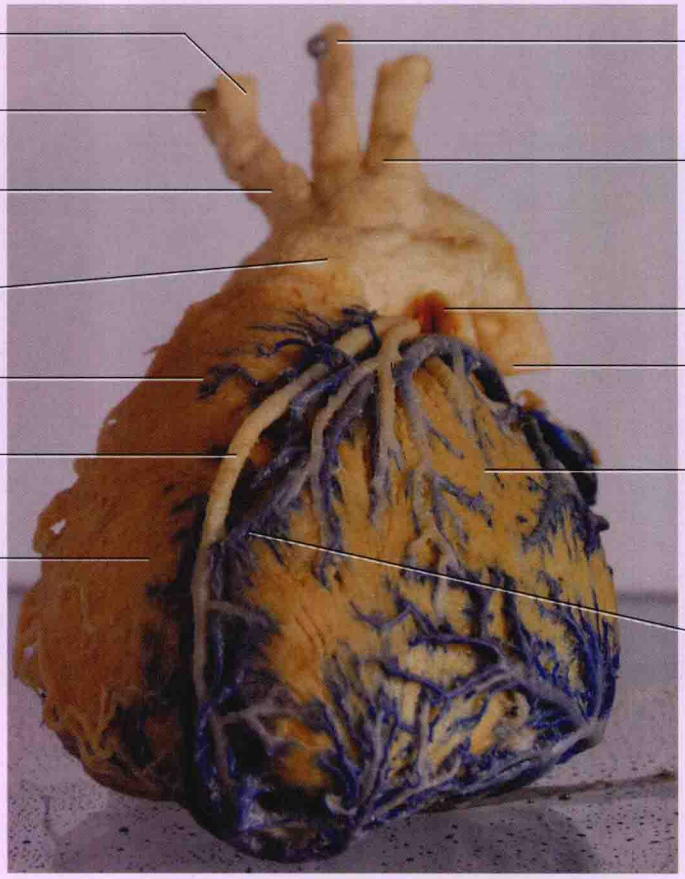


图 2-88 心脏的外形和血管（前面）

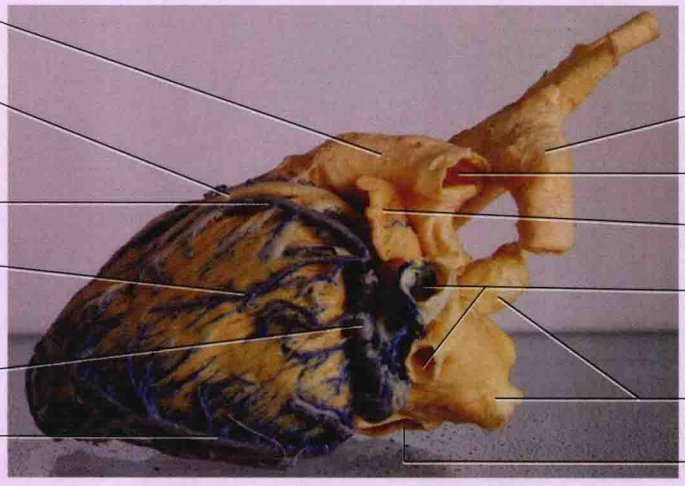


图 2-89 心脏的外形和血管（左侧面）

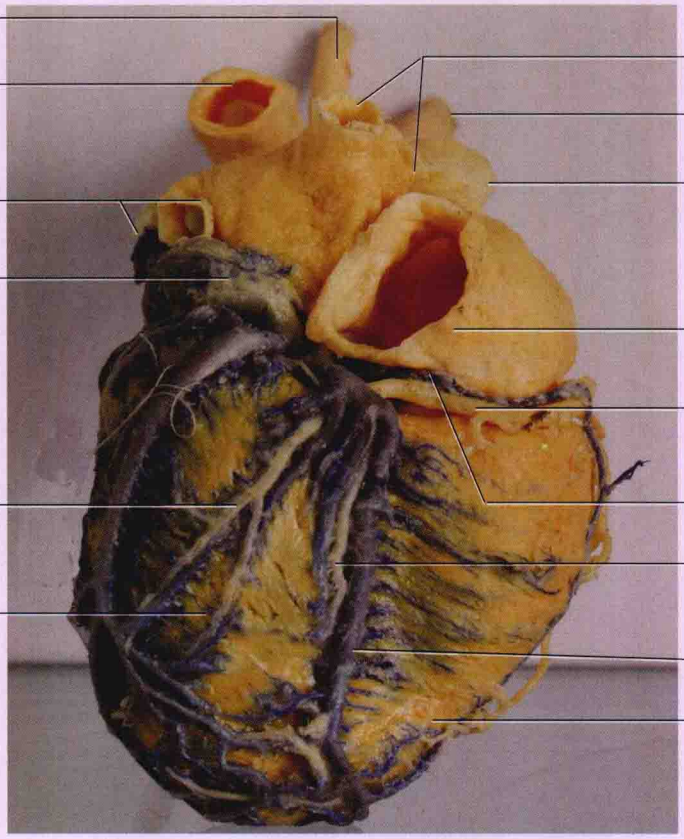


图 2-90 心脏的外形和血管（膈面）

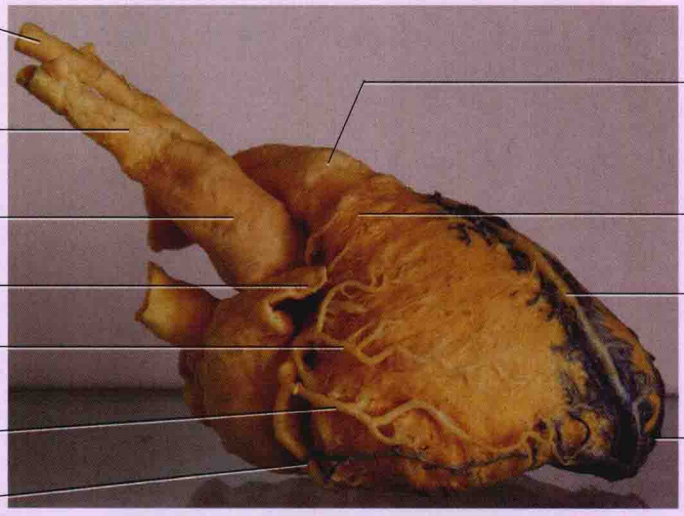


图 2-91 心脏的外形和血管（右侧面）

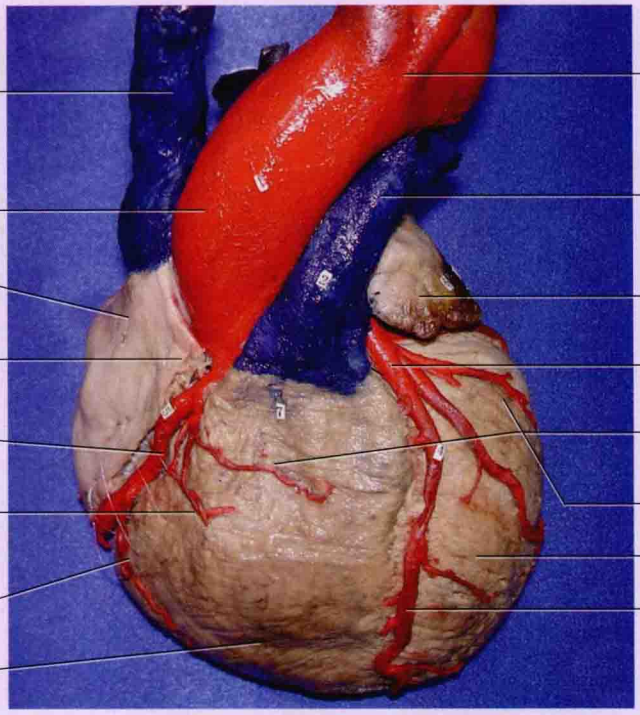


图 2-92 左、右冠状动脉（前面观）



图 2-93 左、右冠状动脉（后面观）

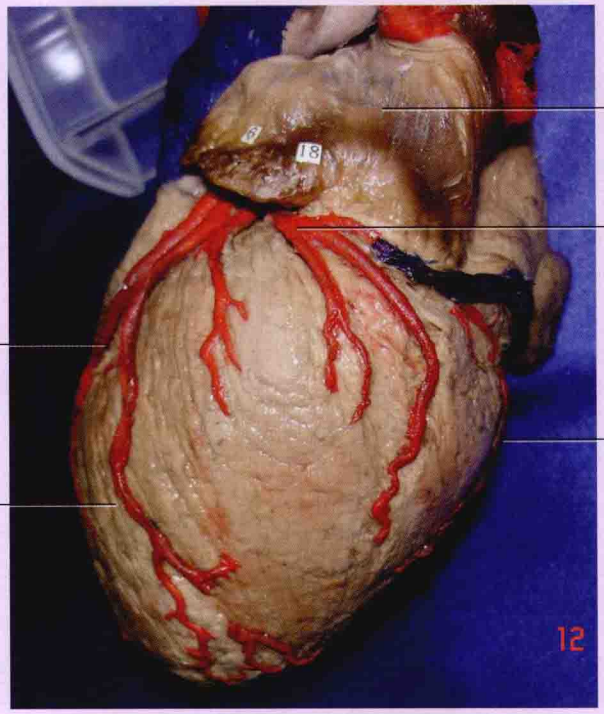


图 2-94 左冠状动脉的分支（心脏左侧面）

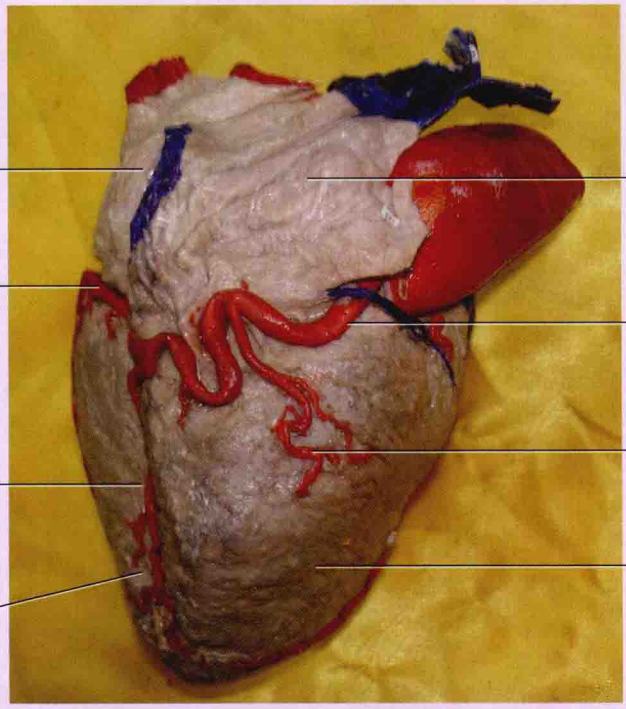


图 2-95 右冠状动脉的分支（心脏膈面观）

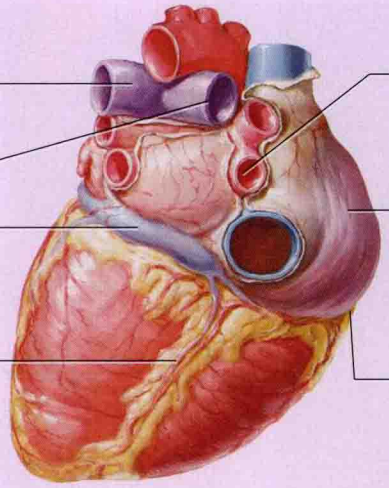


图 2-96 心脏的外形（膈侧面）

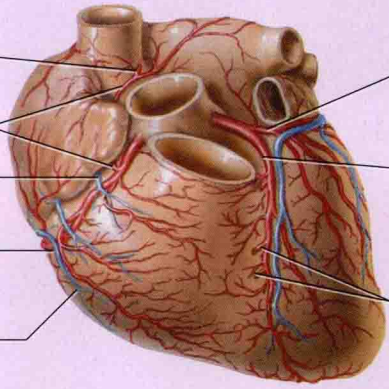


图 2-97 心脏的血管（胸肋面）

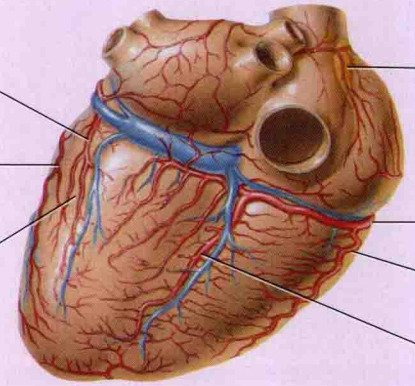


图 2-98 心脏的血管（膈面）

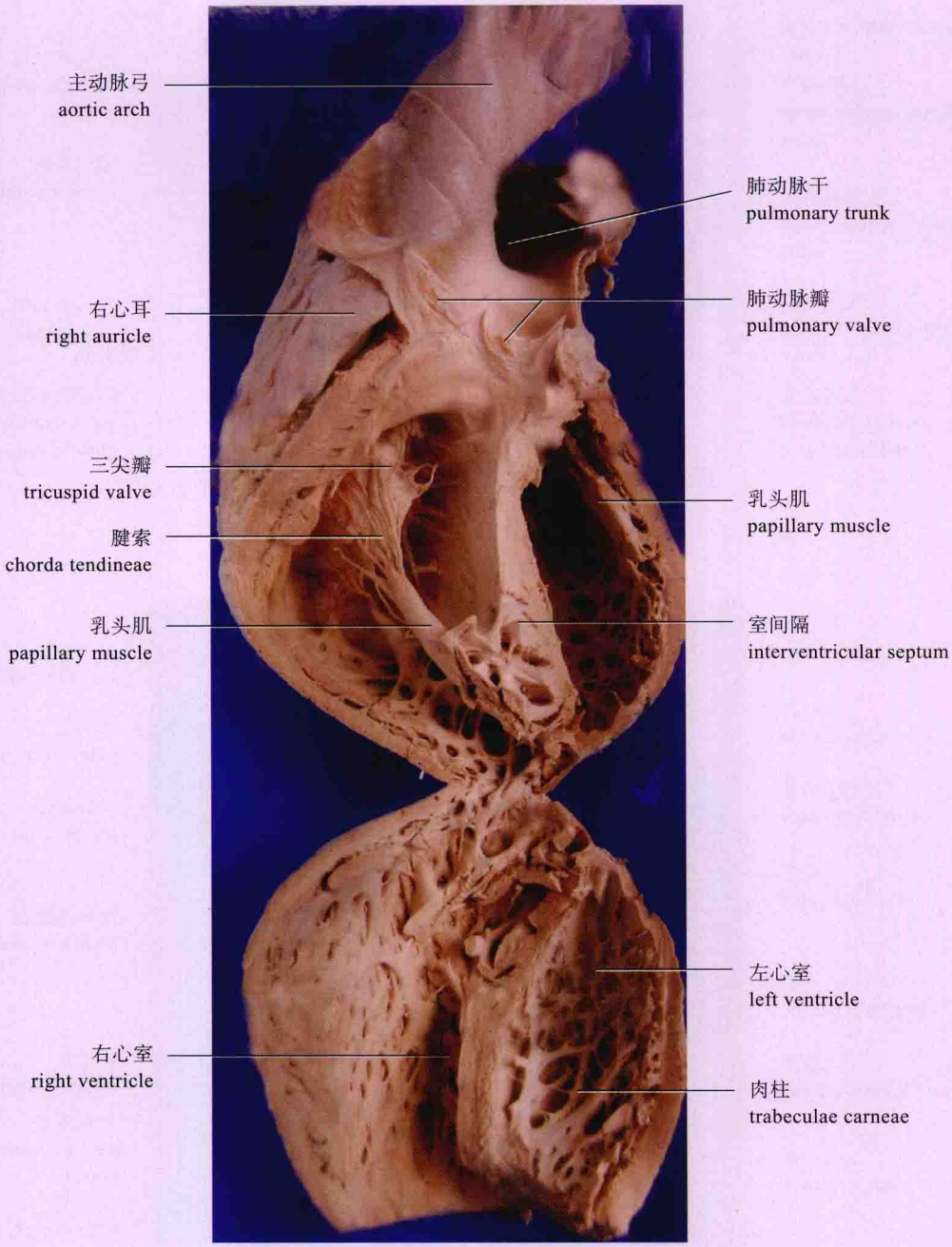

主动脉弓
aortic arch
肺动脉干
pulmonary trunk
右心耳
right auricle
肺动脉瓣
pulmonary valve
三尖瓣
tricuspid valve
乳头肌
papillary muscle
腱索
chorda tendineae
乳头肌
papillary muscle
室间隔
interventricular septum
左心室
left ventricle
右心室
right ventricle
肉柱
trabeculae carneae

图 2-99 左、右心室内腔

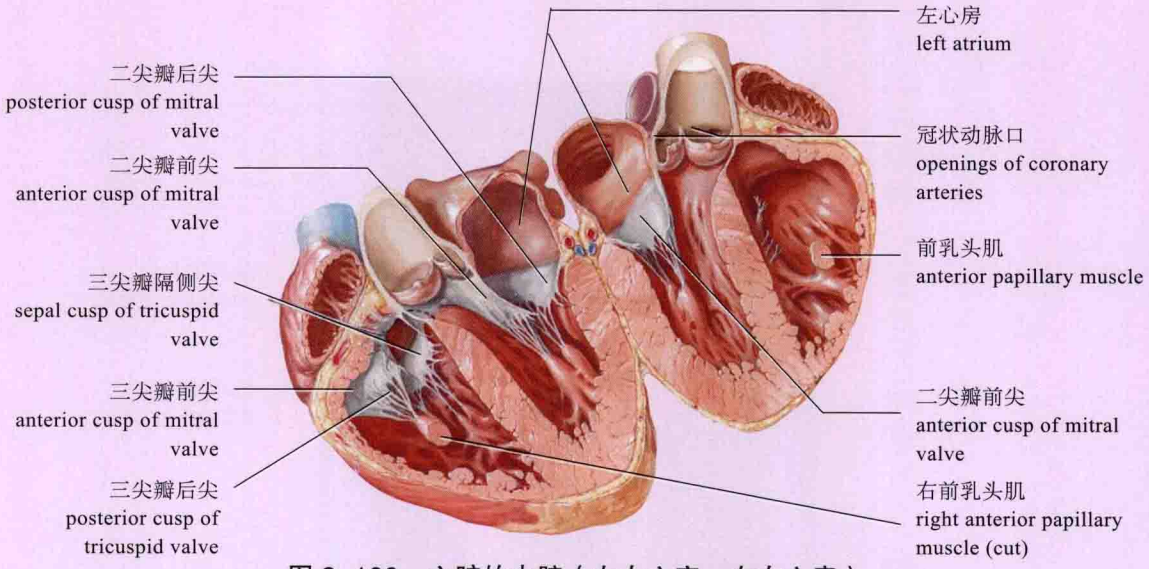


图 2-100 心脏的内腔（左右心室、左右心房）

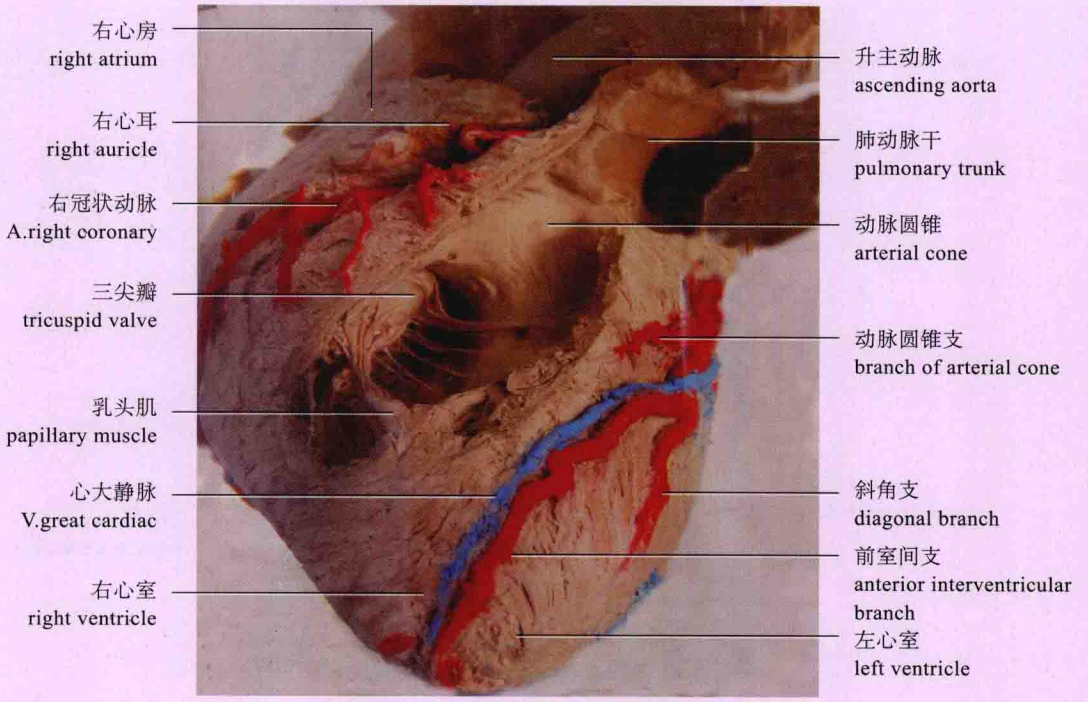


图 2-101 右心室内腔

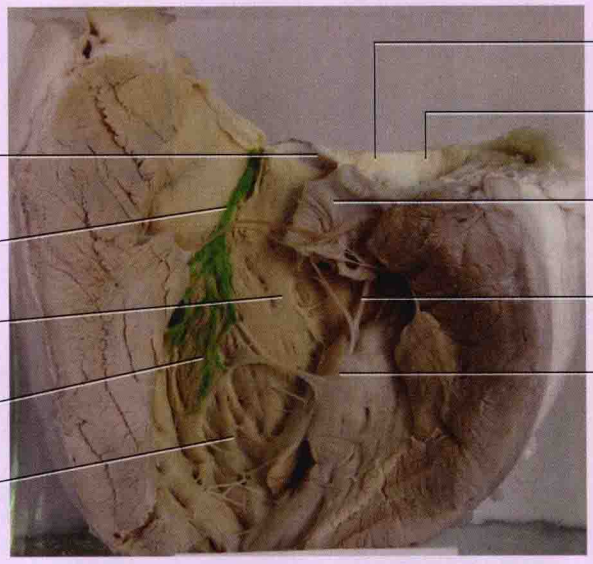


图 2-102 左心室传导系统



图 2-103 左室内腔

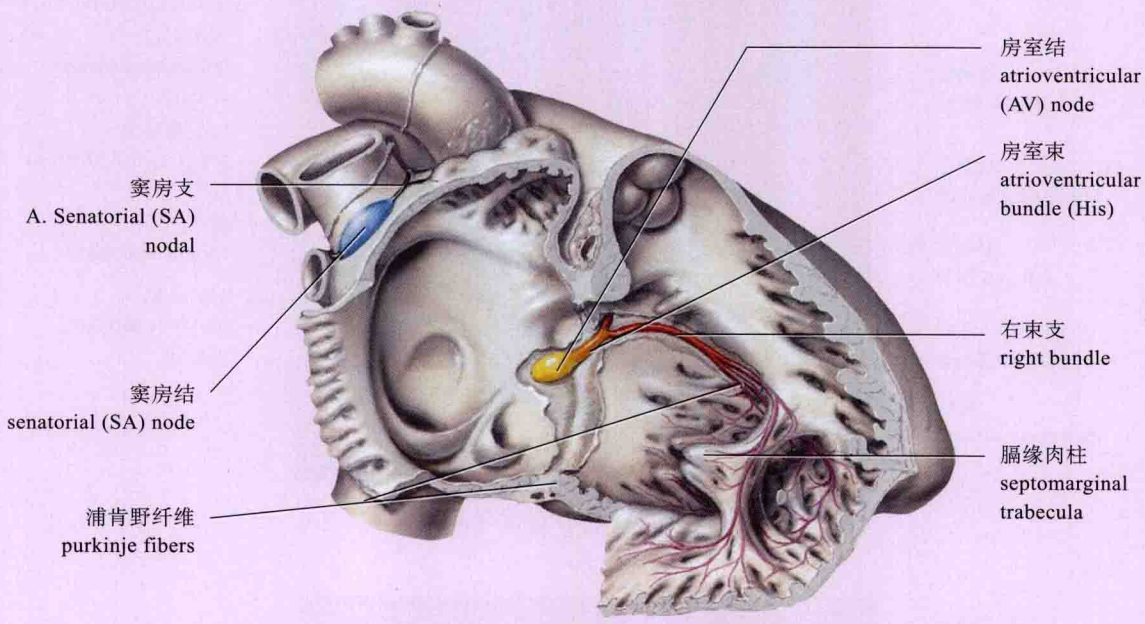


图 2-104 心的传导系统（1）

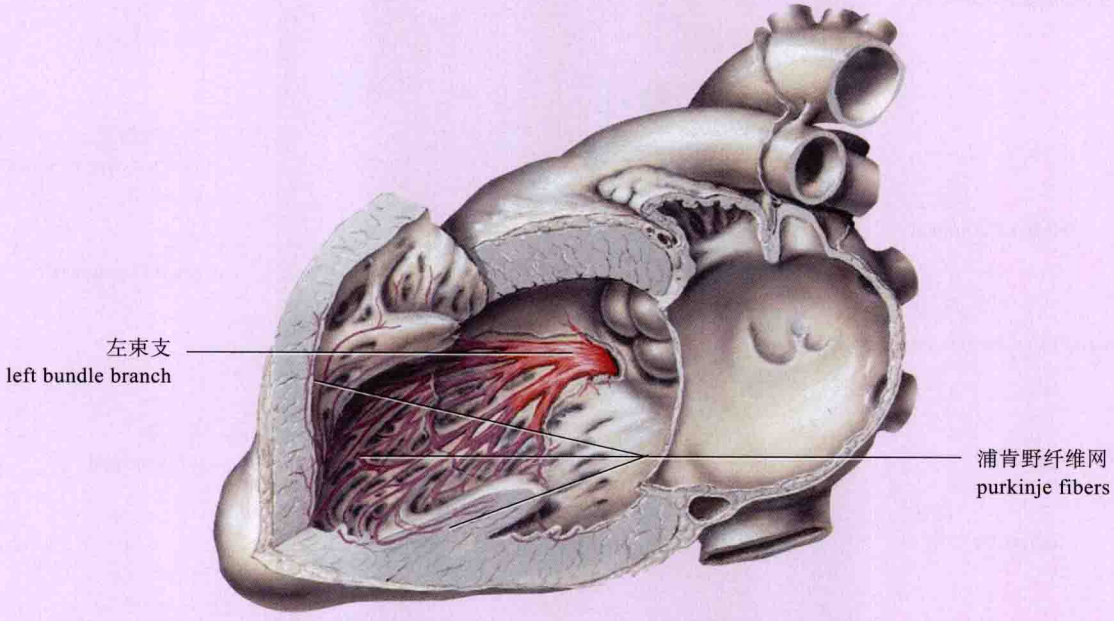


图 2-105 心的传导系统（2）

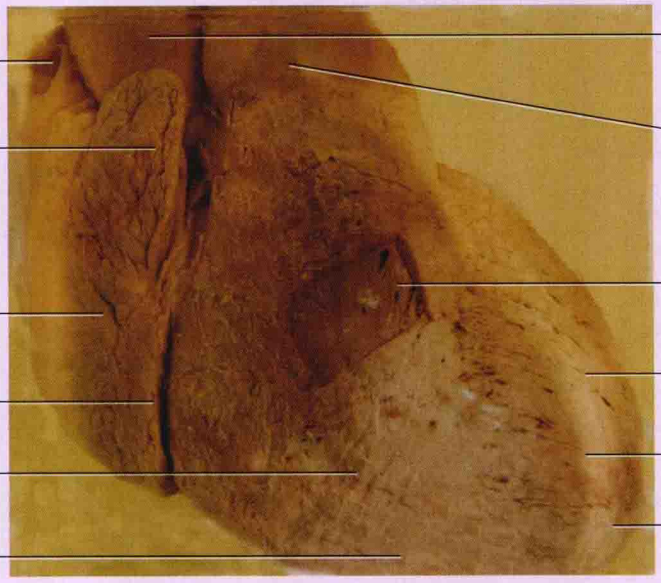


图 2-106 心肌

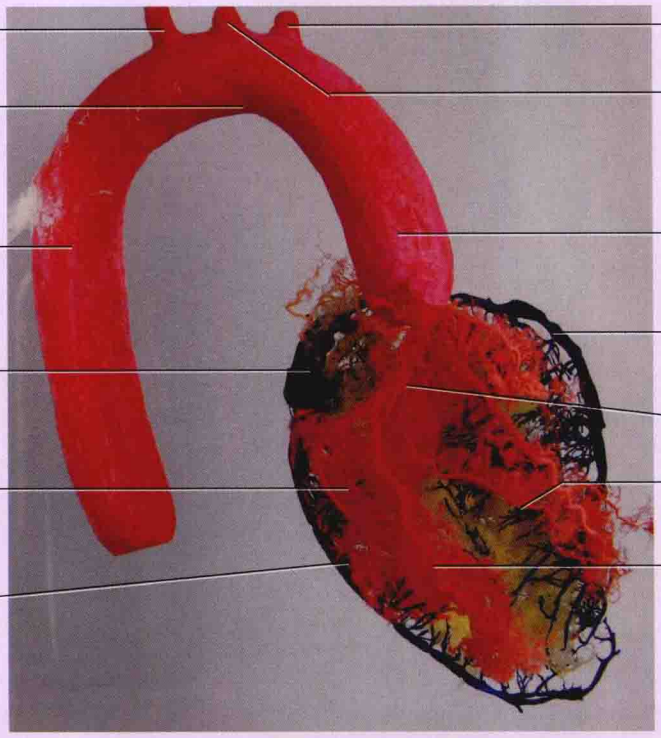


图 2-107 心脏的血管（右侧面观）

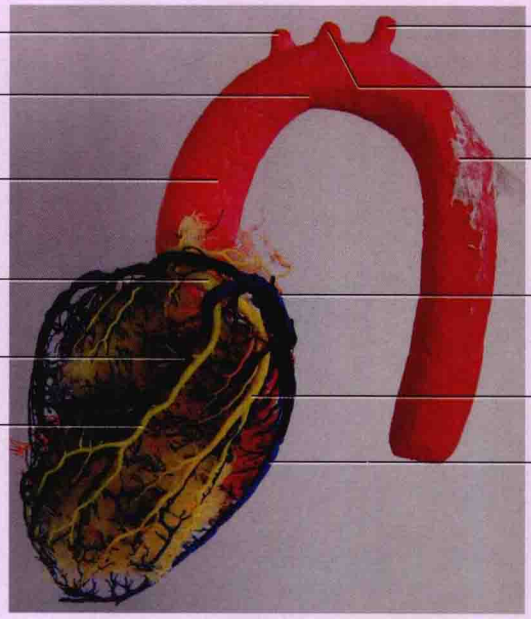


图 2-108 心脏的血管（左侧面观）

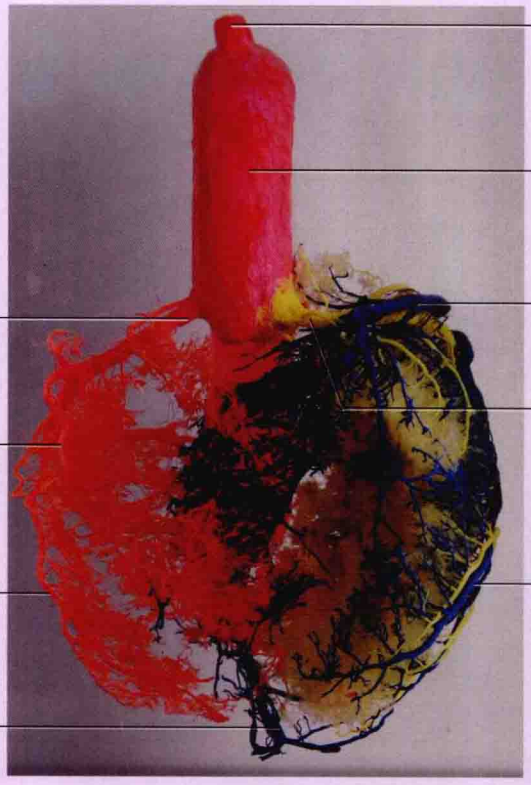


图 2-109 心脏的血管（前面观）

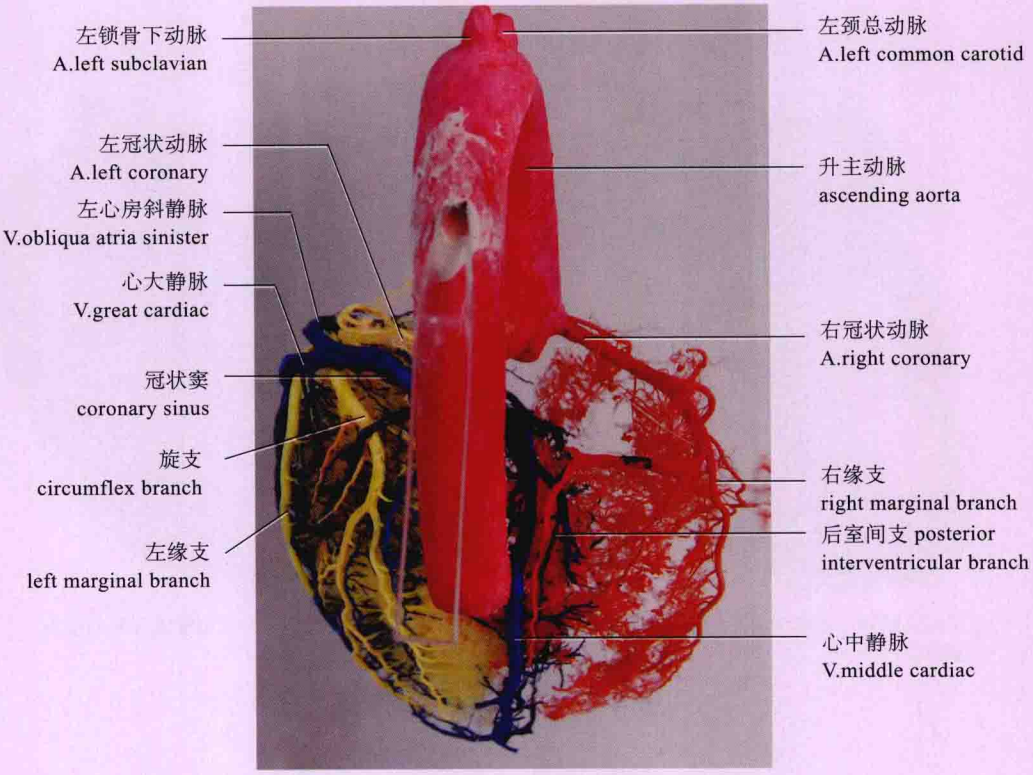
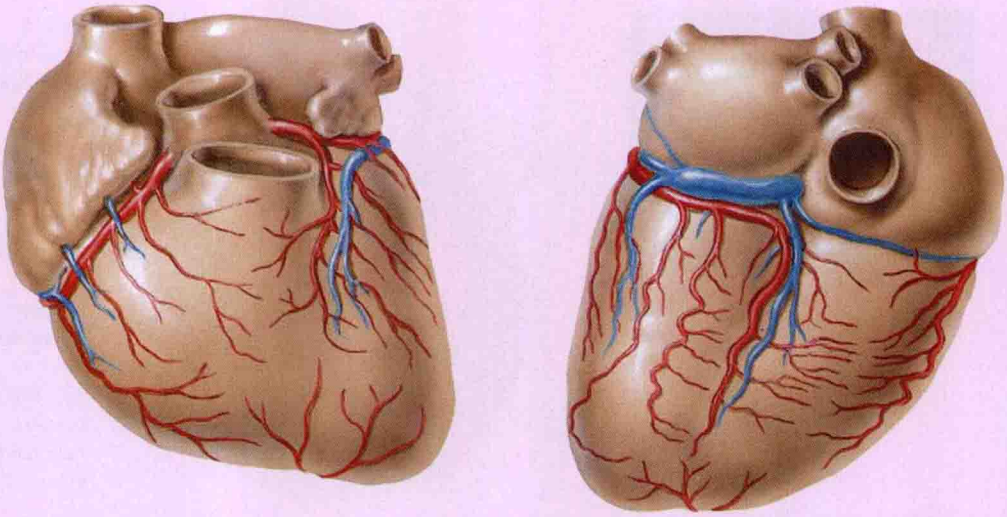


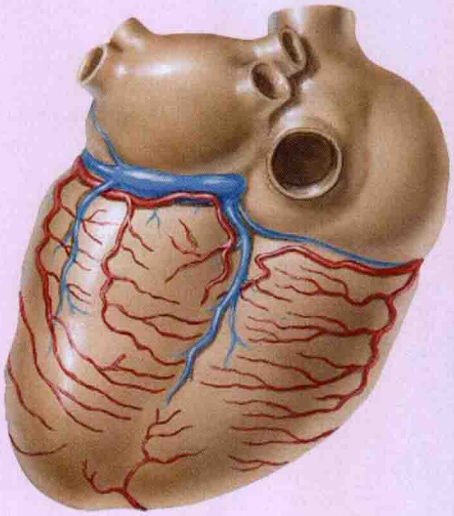
图 2-110 心脏的血管（后面观）



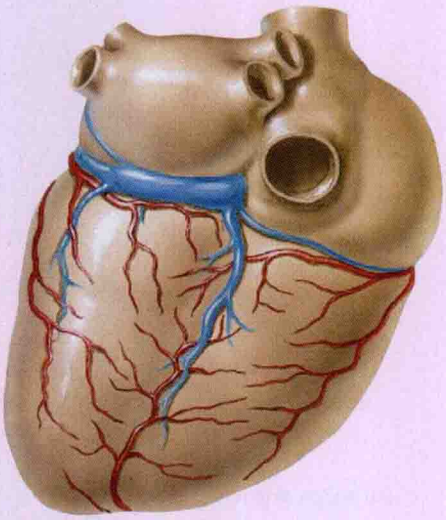
起自左冠状动脉的前室间支较短，心尖前面由起自右冠状动脉的后室间支供血

后室间支通常起自右冠状动脉，偶见起自左冠状动脉旋支

图 2-111 左冠状动脉的变异

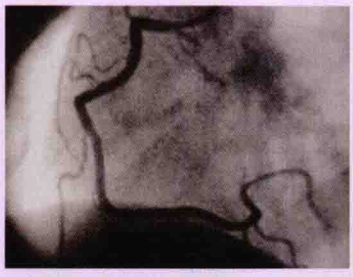


后室间支缺如，该区域主要由左右冠状动脉旋支供血



后室间支缺如，该区域主要由延长的前室间支供血

图 2-112 右冠状动脉的变异



冠脉造影
arteriogram

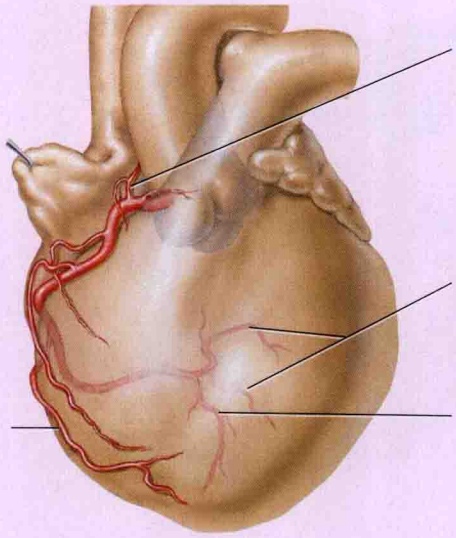


图 2-113 右冠状动脉血管造影

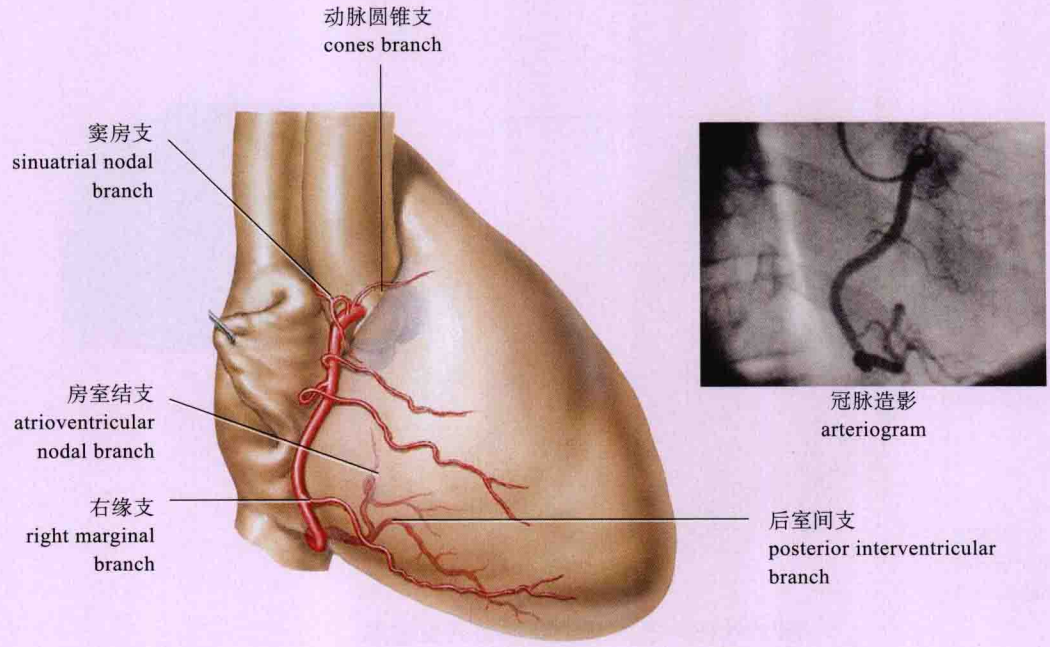


图 2-114 右冠状动脉窦房支造影

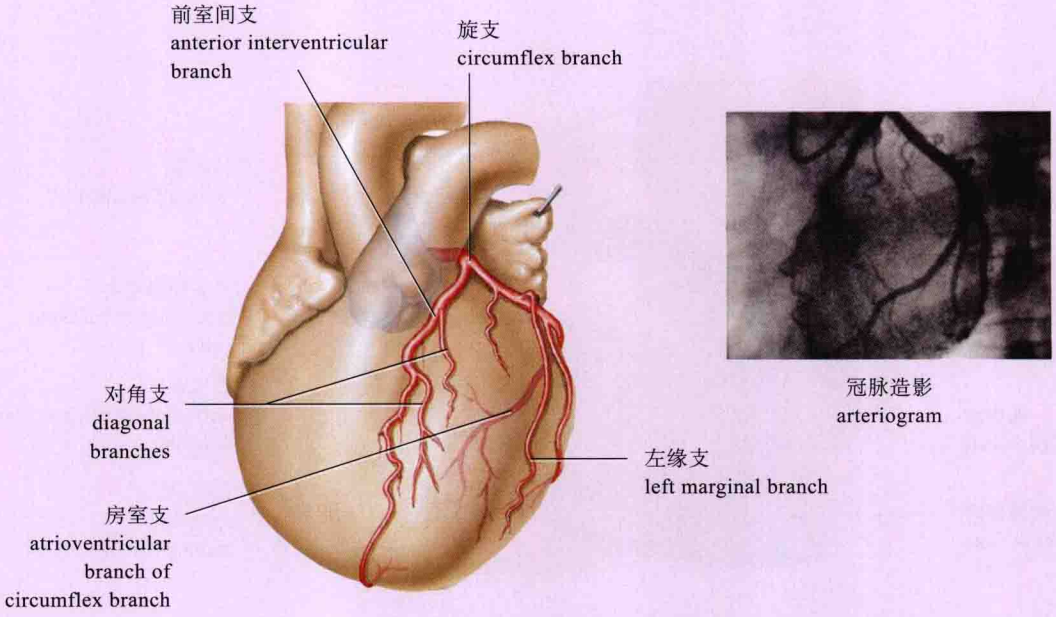


图 2-115 左冠状动脉左缘支造影

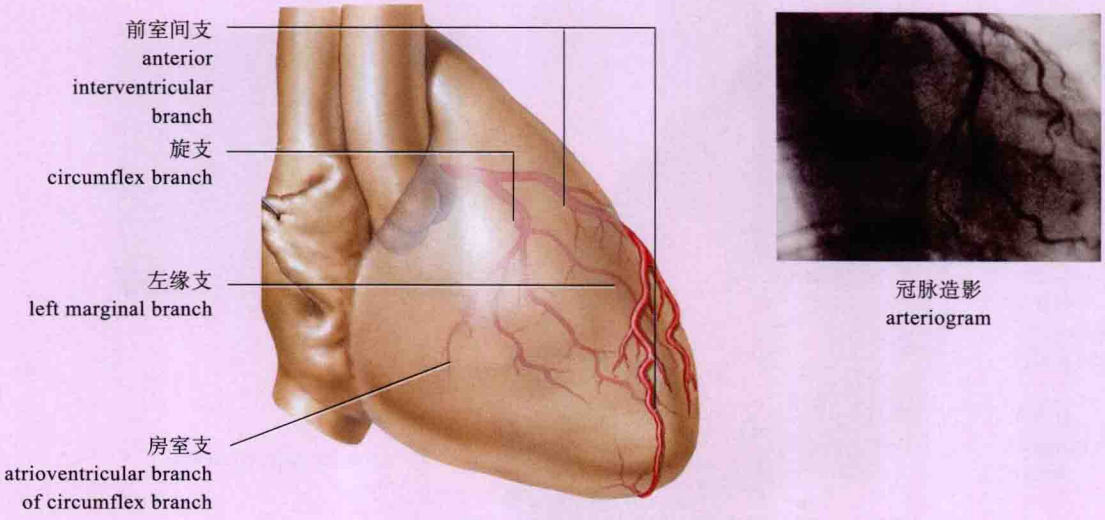


图 2-116 左冠状动脉前室间支造影

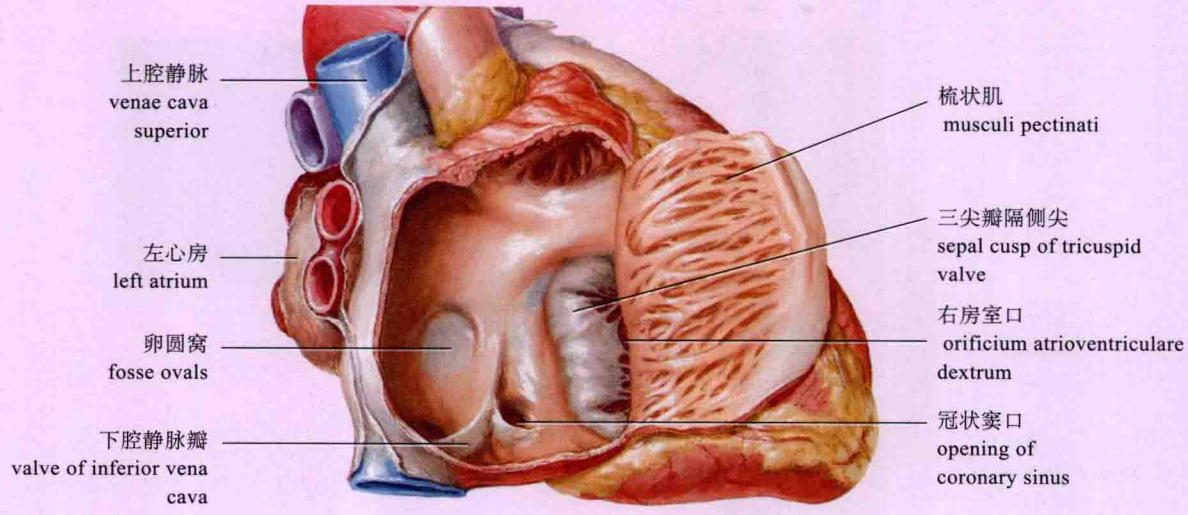


图 2-117 右心房内腔

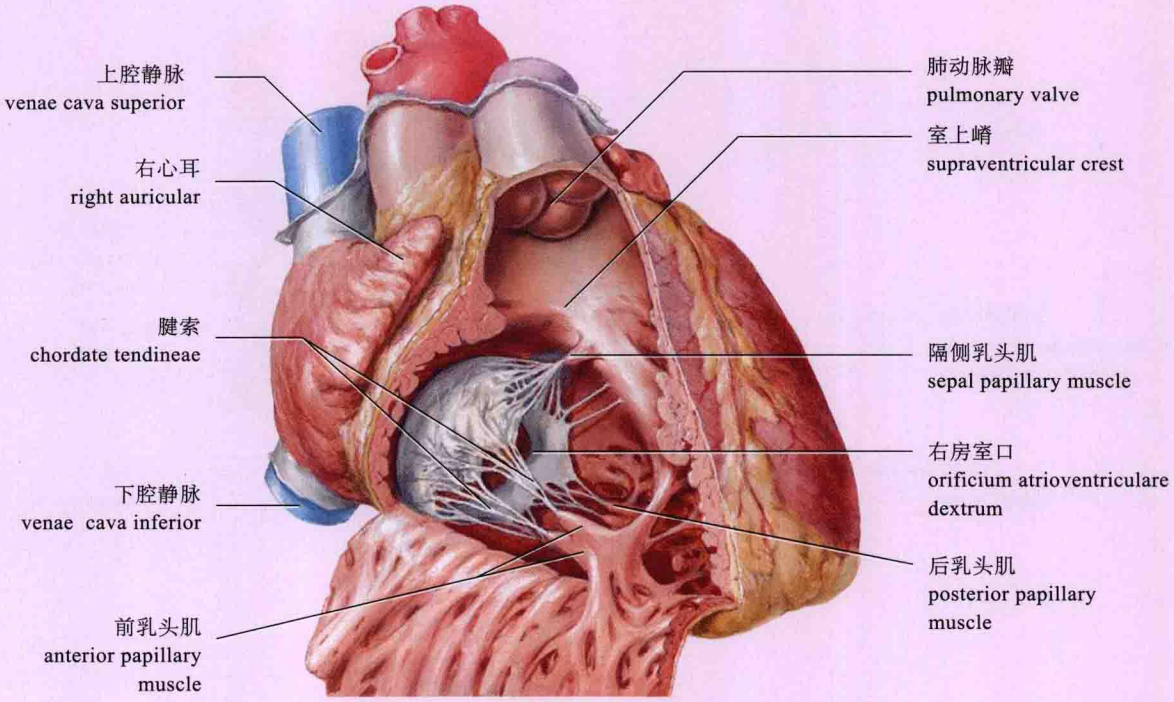


图 2–118 右心室内腔

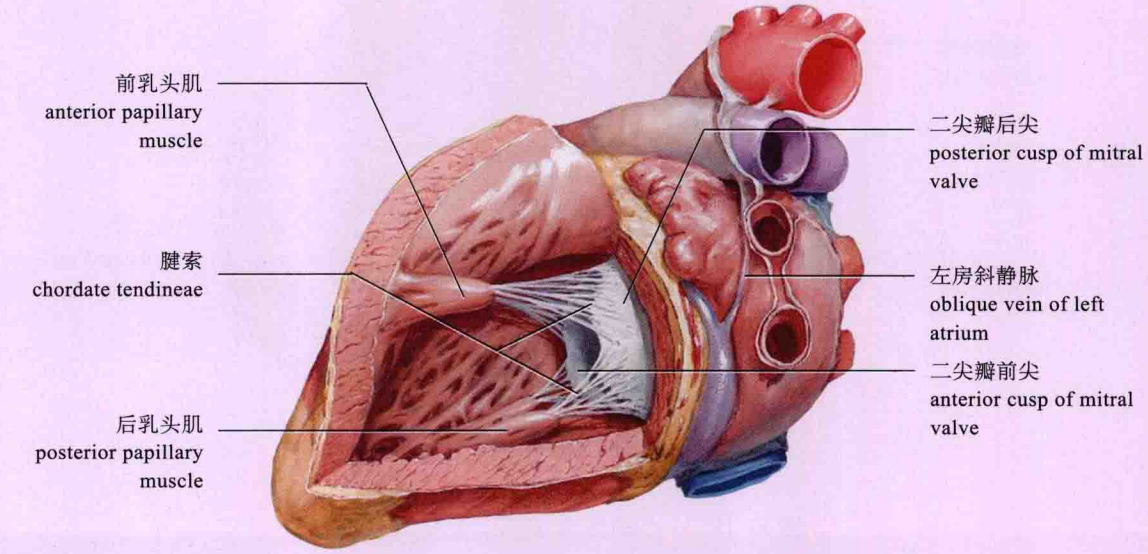


图 2–119 左心室内腔

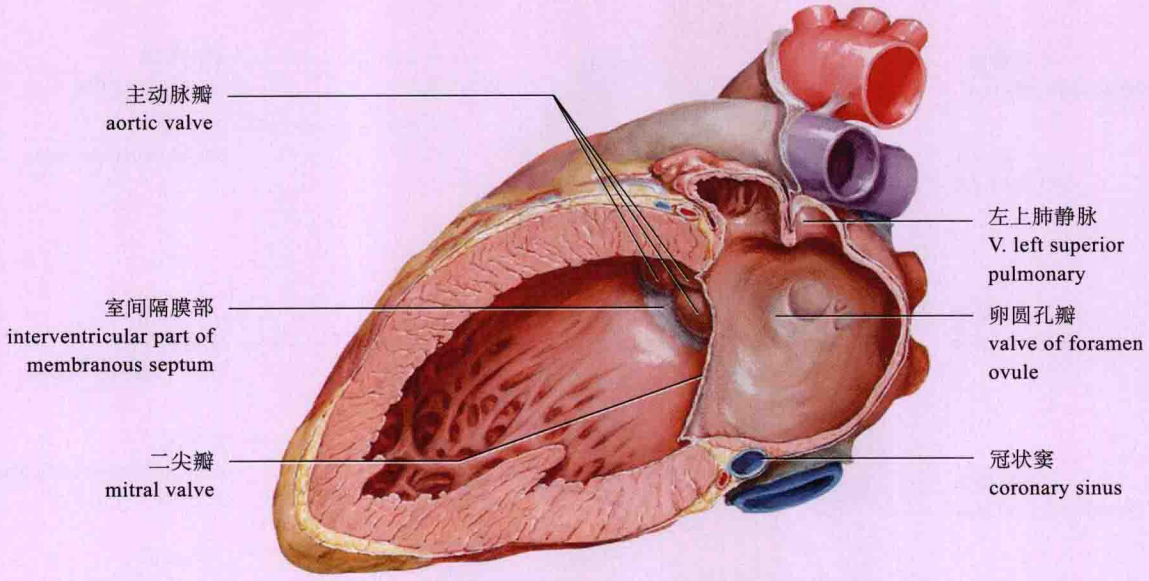


图 2-120 左心房、左心室内腔

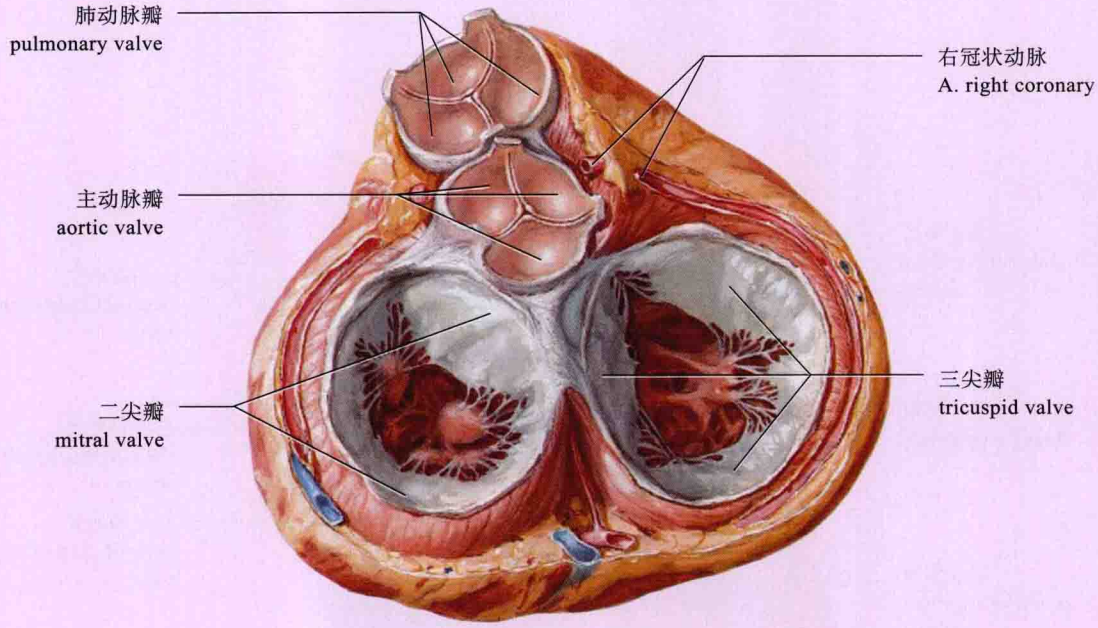


图 2-121 心的结缔组织支架和瓣膜 (1)

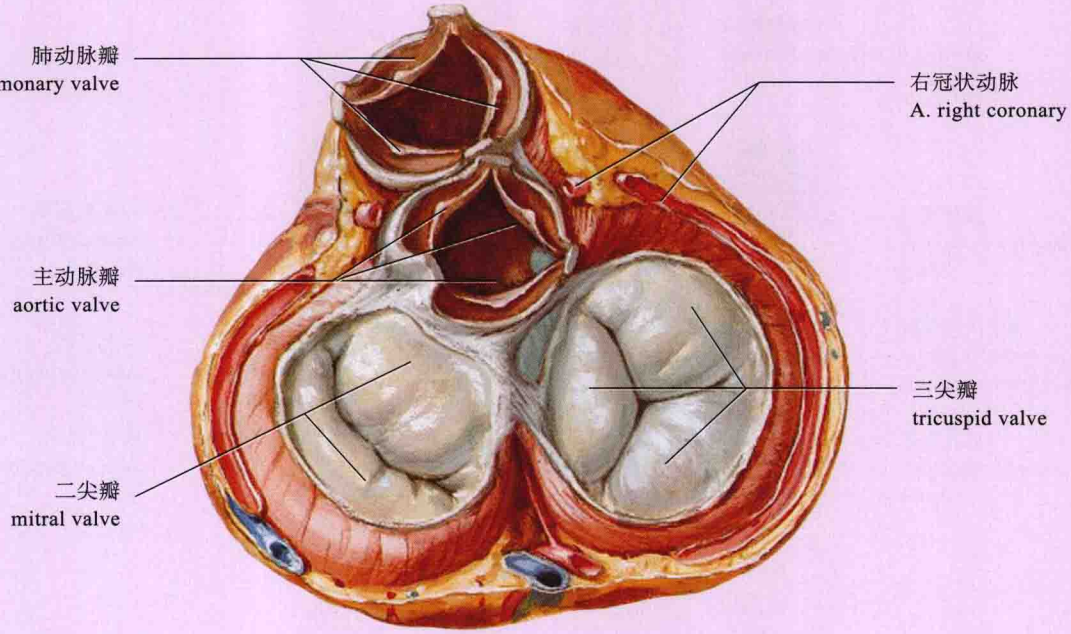


图 2-122 心的结缔组织支架和瓣膜 (2)

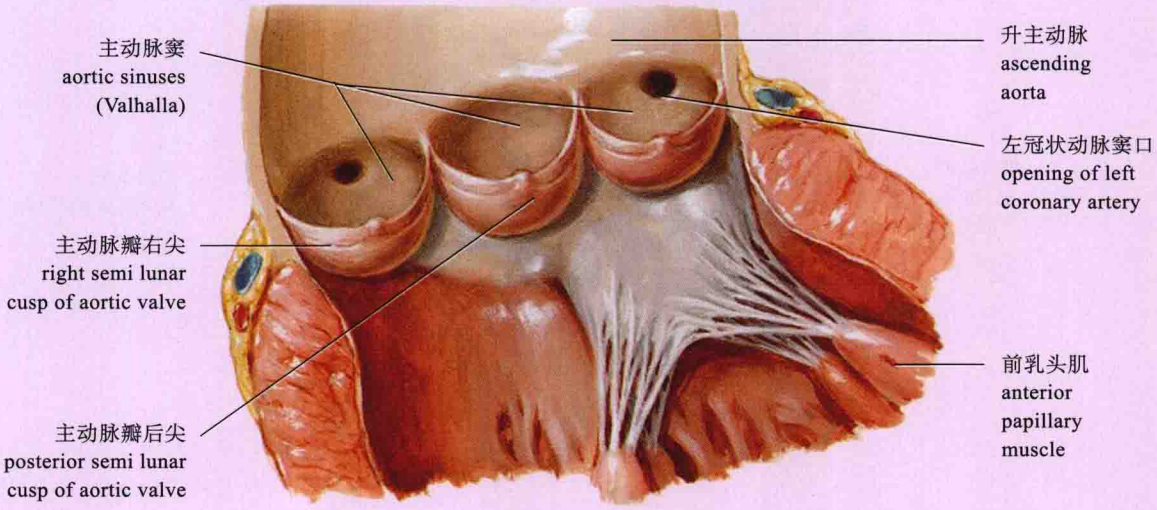


图 2-123 主动脉瓣

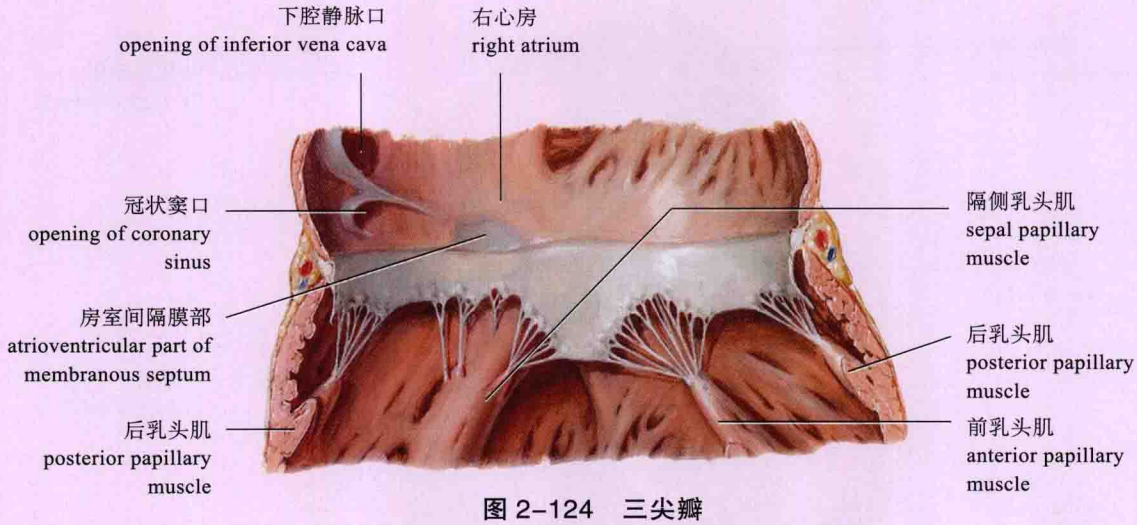


图 2-124 三尖瓣

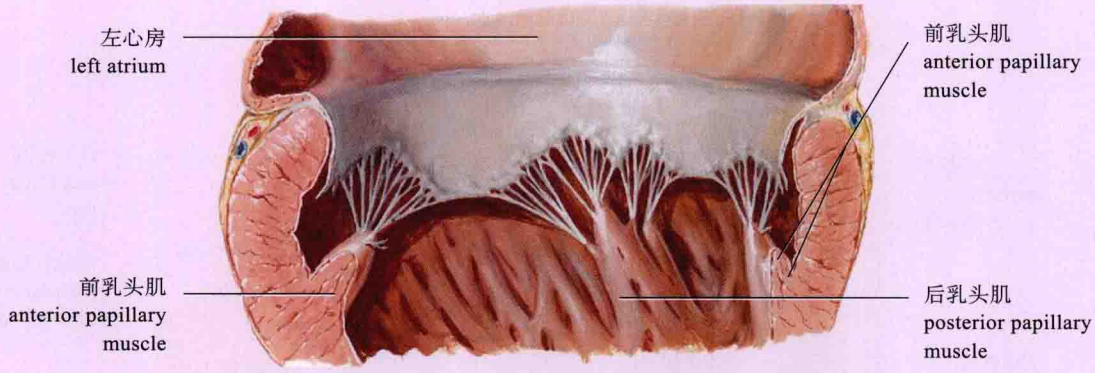


图 2-125 二尖瓣

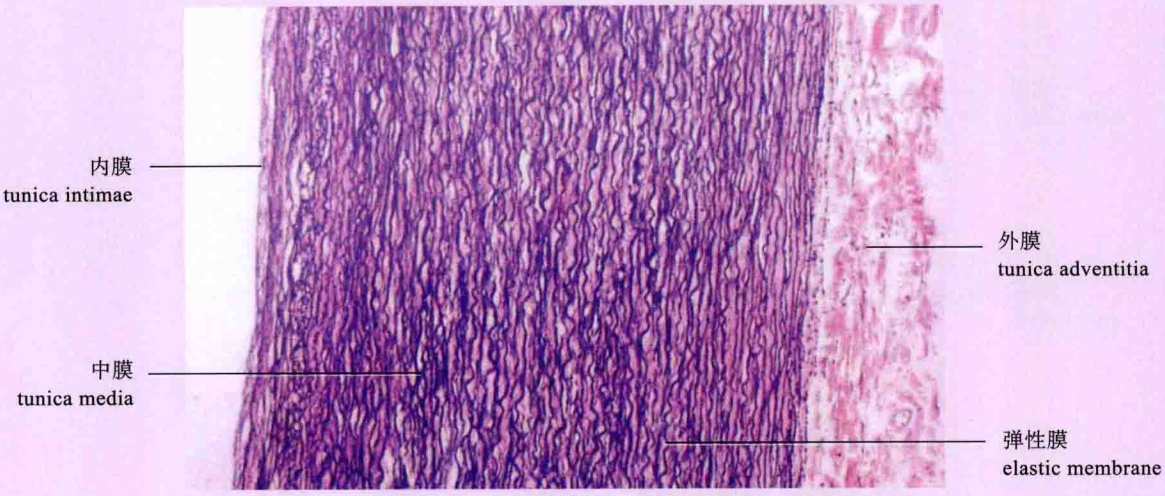


图 2-126　主动脉镜下（HE×100）

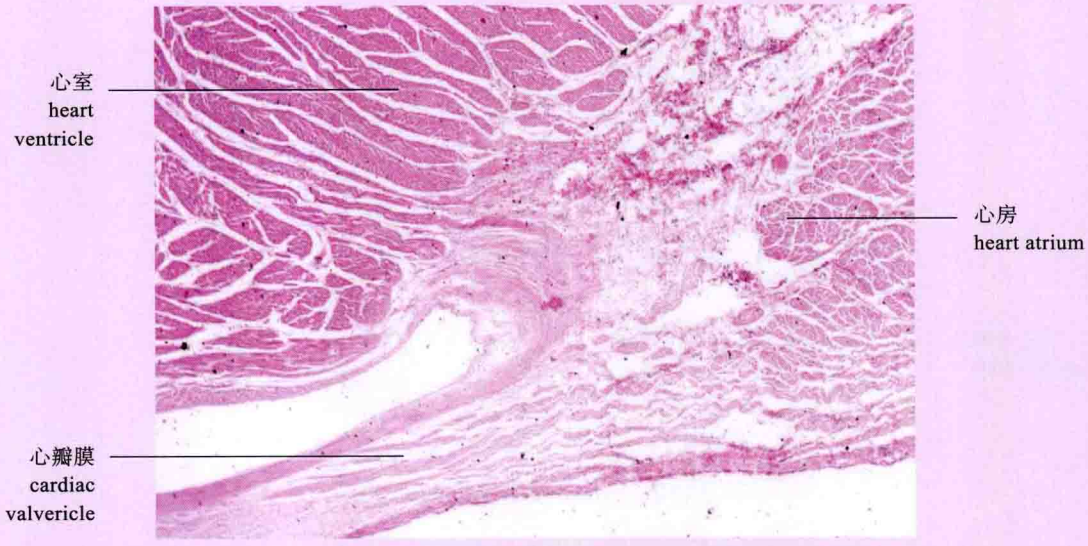


图 2-127　心脏镜下（HE×100）



图 2-128　心脏镜下（HE×100）

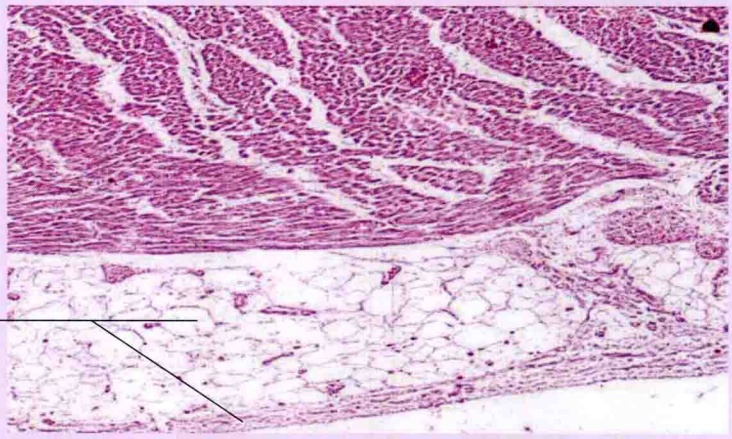


图 2-129　心脏镜下（HE×100）

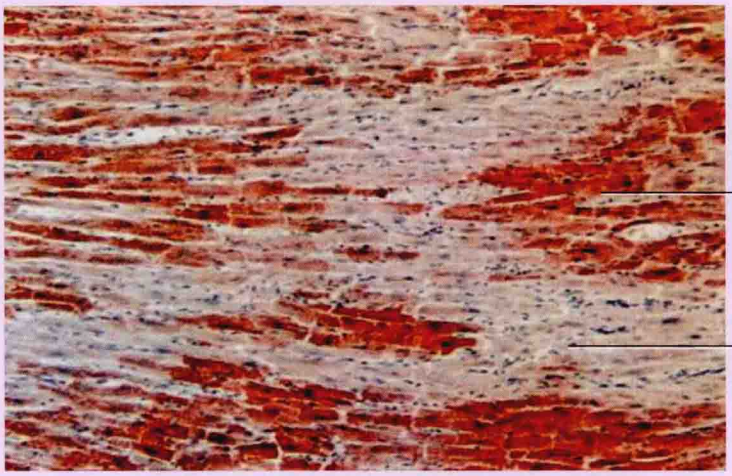


图 2-130　心肌脂肪变性（fatty degeneration of heart muscles）（苏丹红 ×100）

光镜下，心肌脂肪变性区域被苏丹Ⅲ染料着色呈桔红色

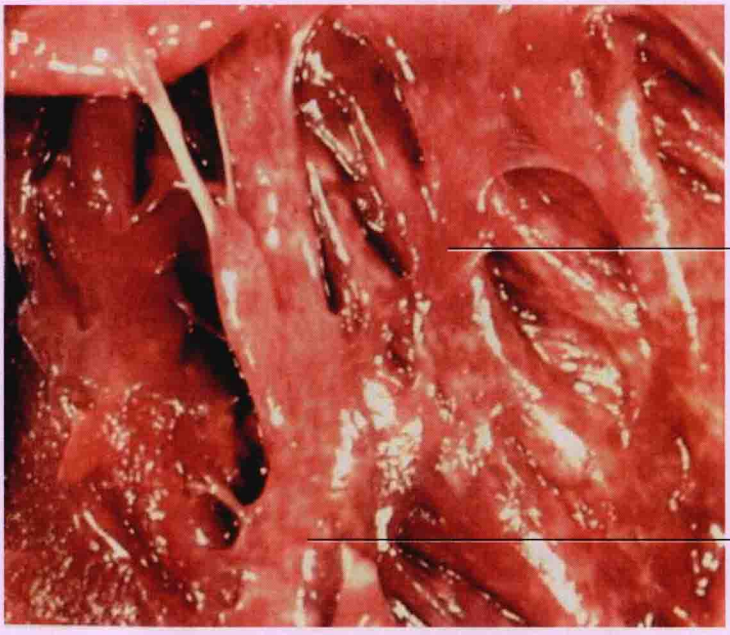


图 2-131　心肌脂肪变性（fatty degeneration of heart muscles）

左心室心内膜下见红黄相间呈“虎斑”状外观，黄白色区域为脂肪变性处，红色区域为相对正常处（虎斑心）

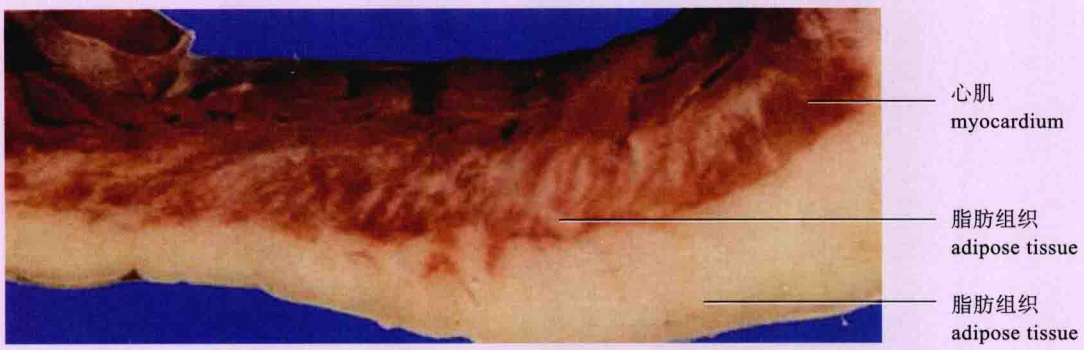


图 2-132 心肌脂肪浸润（fatty infiltration of heart muscles）

心外膜处大量脂肪细胞增生，严重者可向心肌间浸润

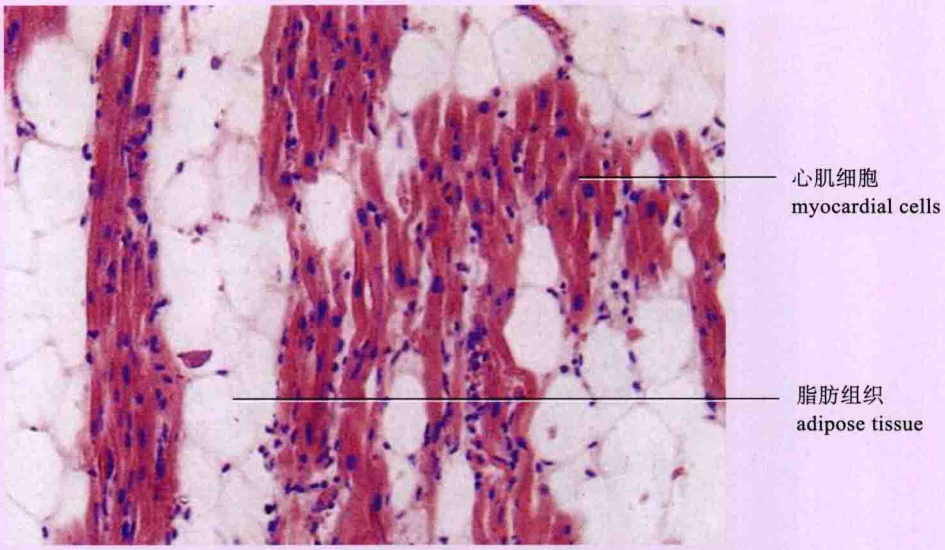


图 2-133 心肌脂肪浸润（fatty infiltration of heart muscles）(HE × 100)

心肌间质内见脂肪组织



图 2-134　心肌萎缩（myocardial atrophy）(HE×200)

萎缩的心肌细胞形态不规则，近胞核两端胞质内出现棕黄色颗粒状脂褐素沉积（心肌褐色萎缩）

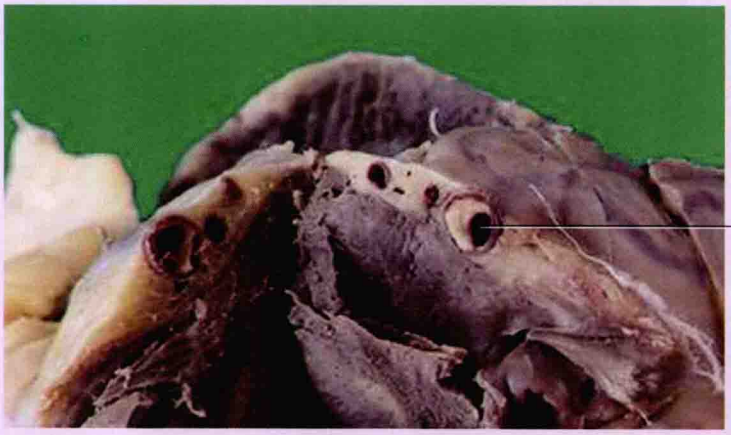


图 2-135　冠状动脉粥样硬化（coronary atherosclerosis）

冠状动脉偏心性狭窄，管腔变小，可见灰黄色粥样斑块

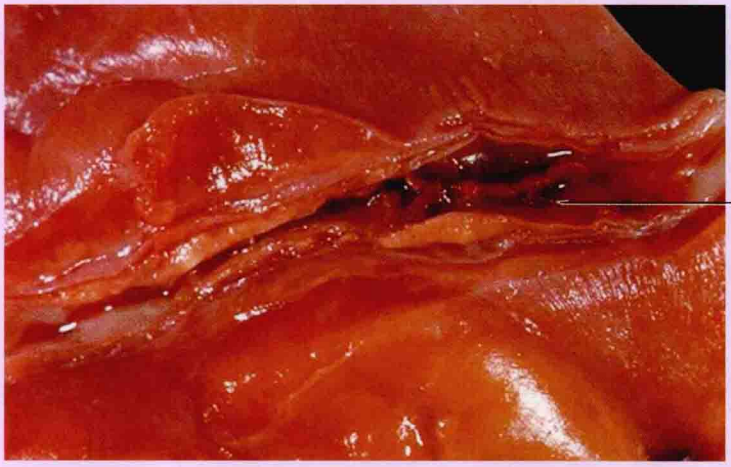


图 2–136 冠状动脉血栓形成（coronary thrombosis）

剖开的冠状动脉内可见一血栓

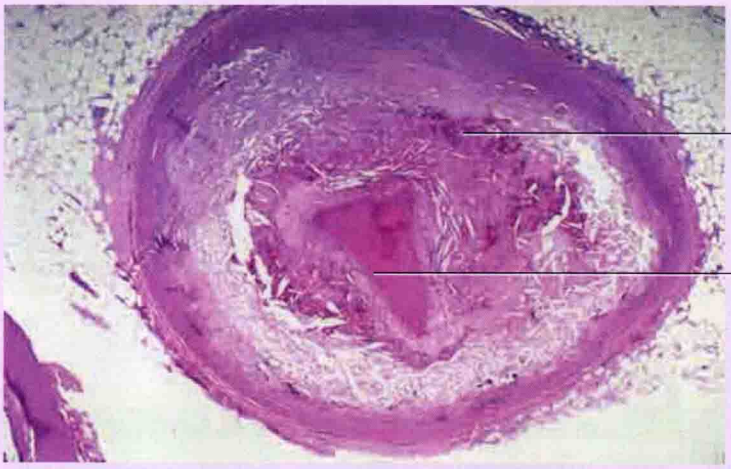


图 2–137 冠状动脉粥样硬化（coronary atherosclerosis）(HE × 40)

冠状动脉严重狭窄，腔内可见血栓；动脉壁因粥样斑块明显增厚

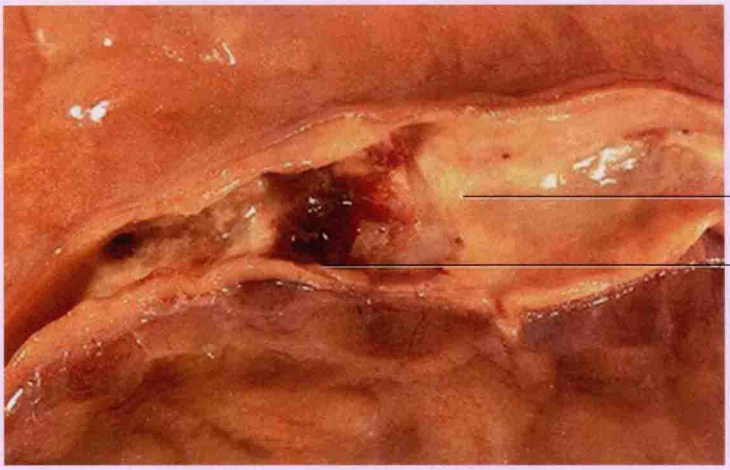


图 2–138　冠状动脉粥样硬化（coronary atherosclerosis）

冠状动脉不光滑有粥样硬化，伴出血

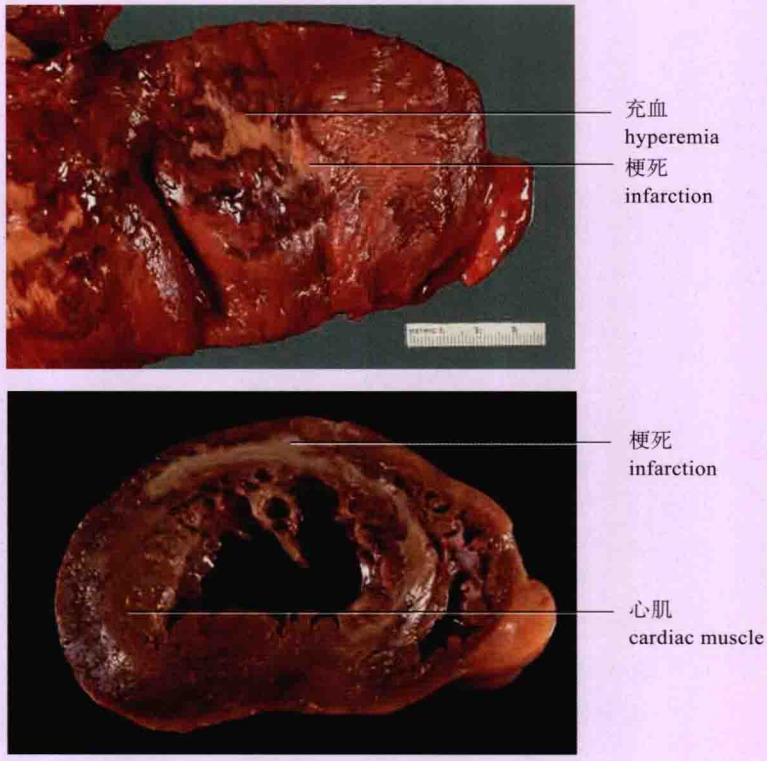


图 2–139　心肌梗死（myocardial infarction）

心脏的表面及切面可见不规则的梗死灶，灶周围有充血出血带

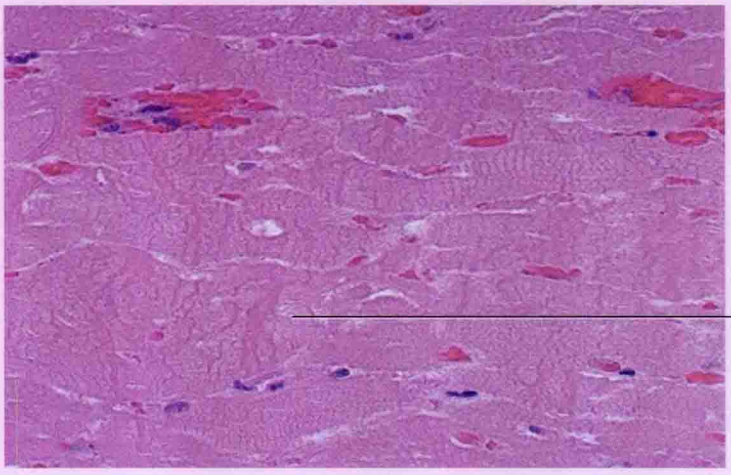


图 2–140 心肌梗死（myocardial infarction）(HE × 100)
心肌梗死的早期变化，细胞核消失，肌浆红染可见收缩带

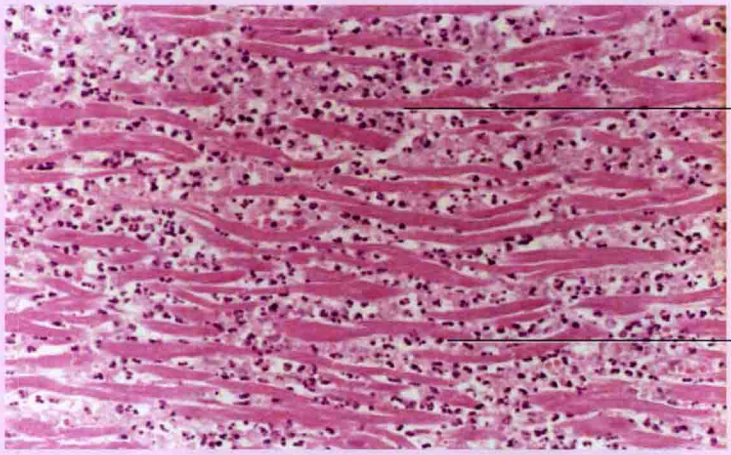


图 2–141 心肌梗死（myocardial infarction）(HE × 100)
心肌梗死的 2～3d，肌纤维呈条索状，中性粒细胞浸润达高峰

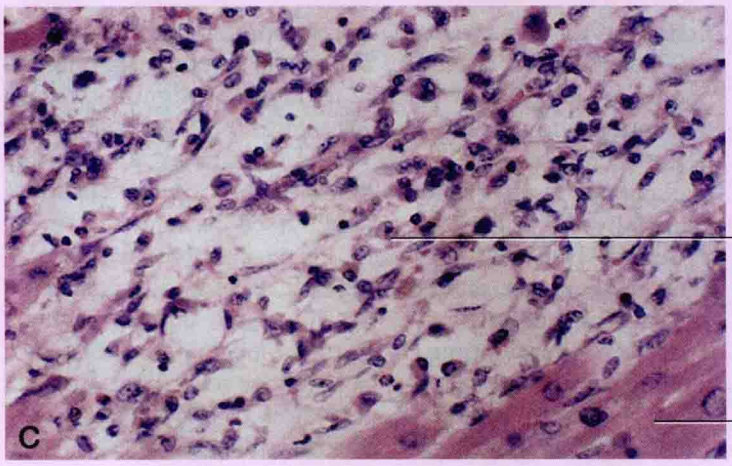


图 2–142　心肌梗死（myocardial infarction）(HE × 200)
巨噬细胞浸润，坏死的心肌细胞被吸收；右下正常心肌

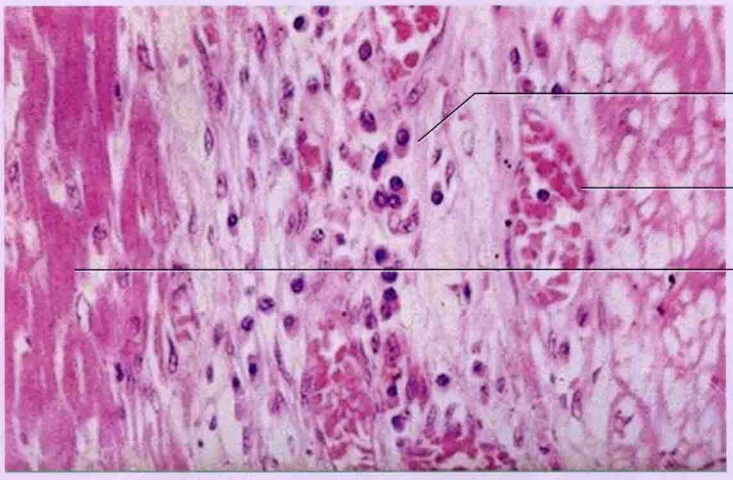


图 2–143　心肌梗死（myocardial infarction）(HE × 200)
坏死区结构消失，肉芽组织增生（成纤维细胞、新生毛细血管）

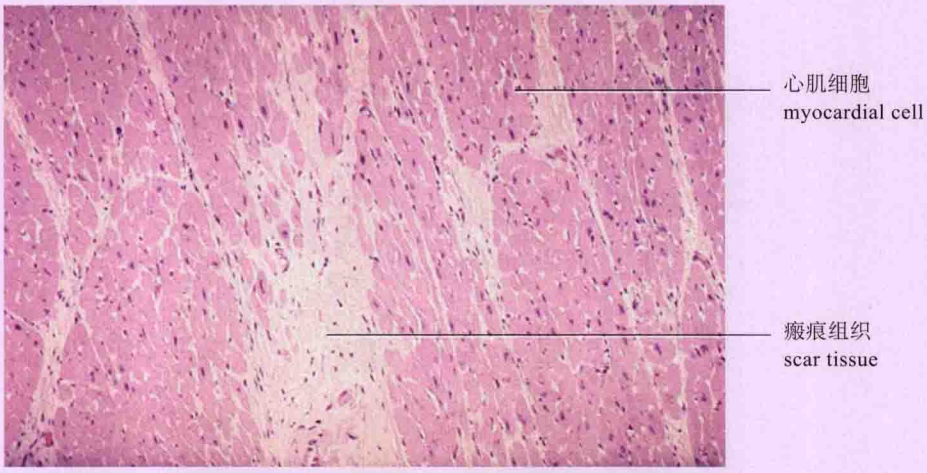


图 2-144 心肌梗死（myocardial infarction）(HE × 40)
心肌纤维间可见纤维瘢痕组织，为梗死后机化所致

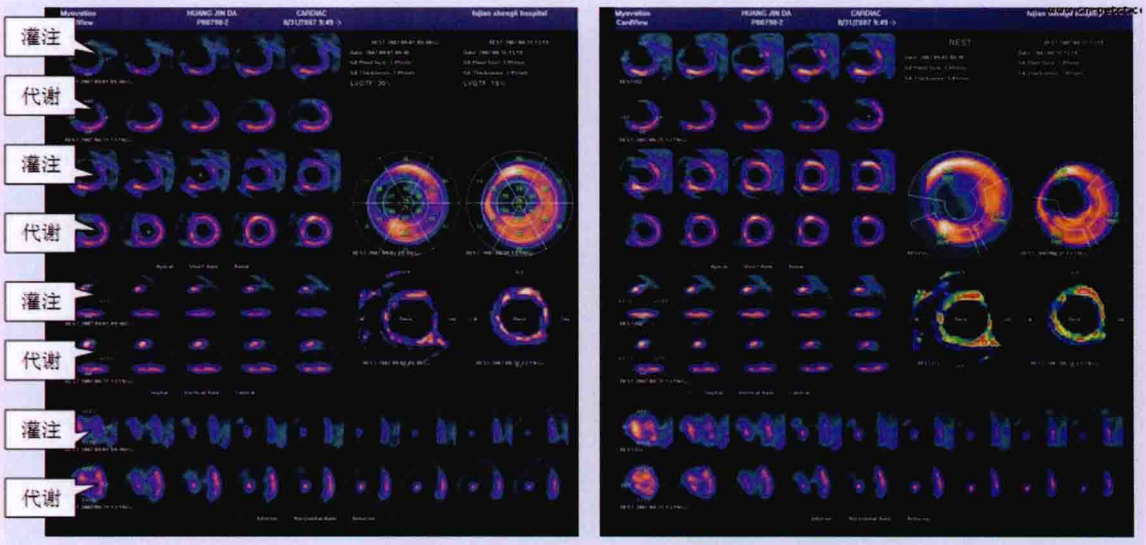


图 2-145 心肌梗死



图 2-146　心脏破裂（cardiaco rupture）

心肌梗死严重的合并症，造成心包填塞而引起猝死。箭头示破裂处

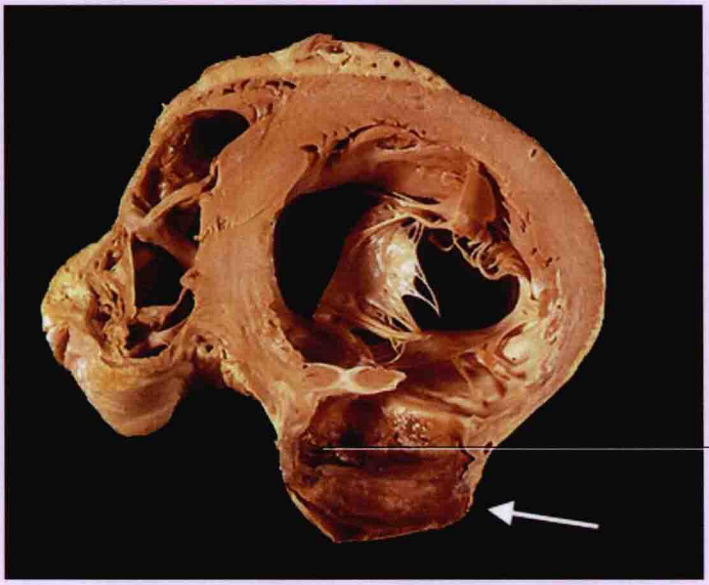


图 2-147　室壁瘤（ventricular aneurysm）

心室壁局部向外膨出（箭示），内可形成血栓

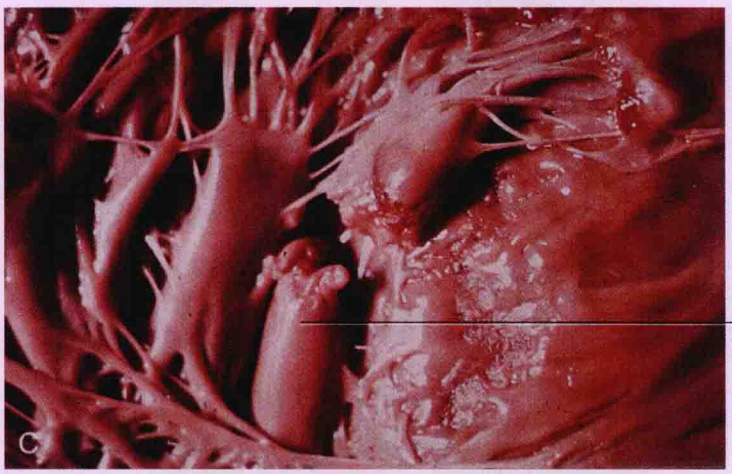


图 2-148 乳头肌断裂（rupture of papillary muscle ）

二尖瓣部分乳头肌断裂引起二尖瓣急性关闭不全，导致急性左心衰竭

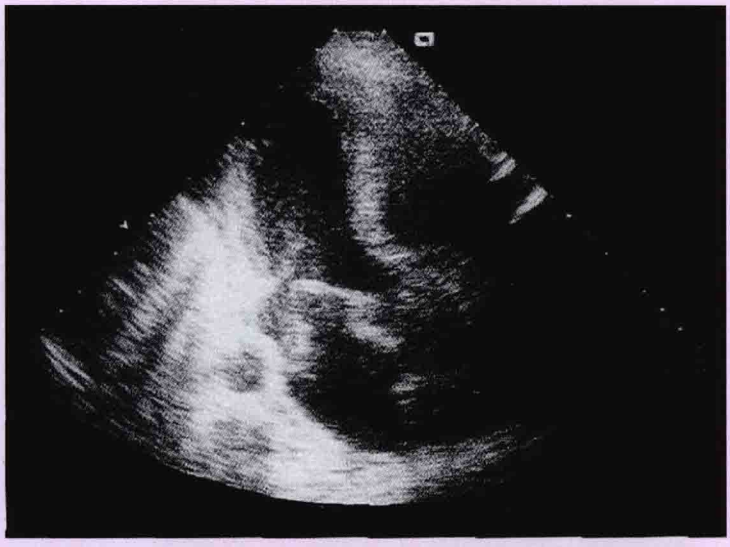


图 2-149 乳头肌断裂 US



图 2–150　左心房球形血栓（ball thrombus in the atrium）

左心房内可见一球形血栓

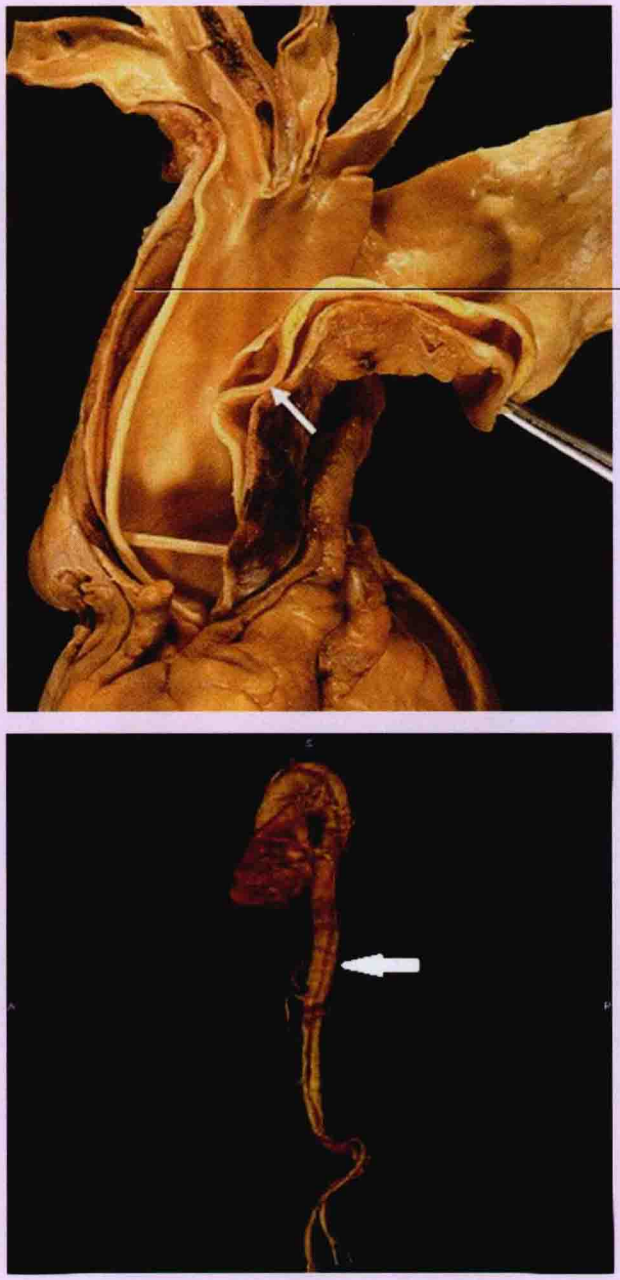


图 2-151　夹层动脉瘤（dissecting aneurysm）

升主动脉中膜撕裂形成动脉瘤（箭示）

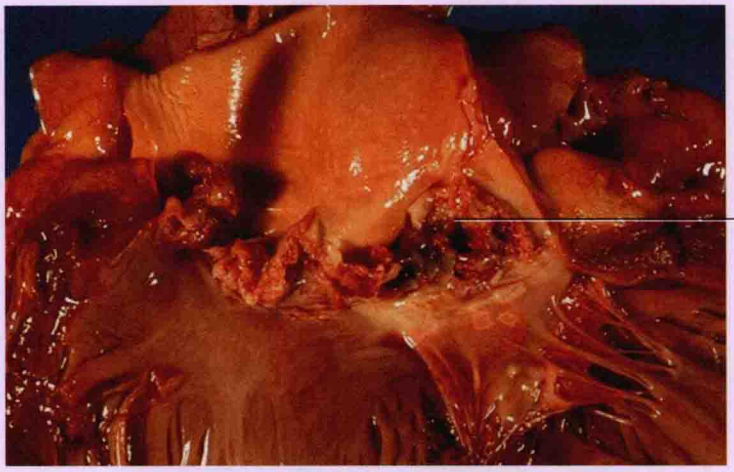


图 2-152　急性感染性心内膜炎（acute infective endocarditic）

主动脉瓣可见较大的、红褐色赘生物，质脆，易脱落

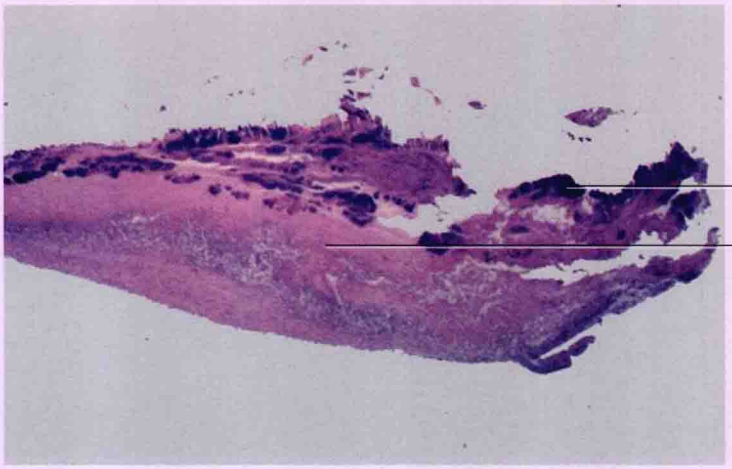


图 2-153　急性感染性心内膜炎（acute infective endocarditis）

赘生物由纤维素和血小板构成的白色血栓、炎细胞和细菌菌落等构成，脱落后引起栓塞

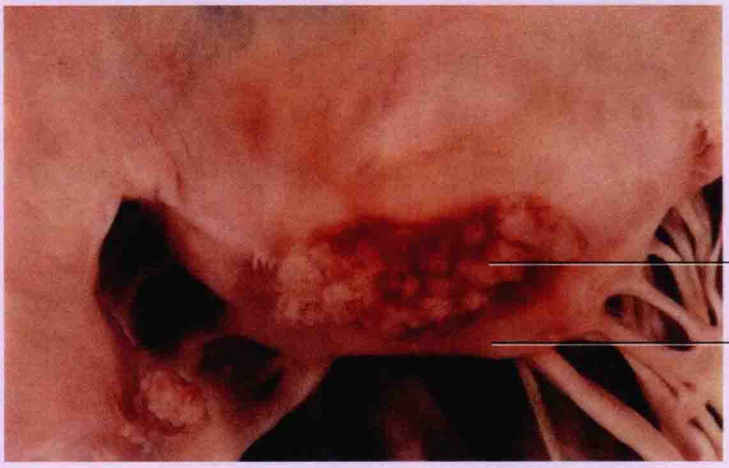


图 2–154　亚急性感染性心内膜炎（subacute infective endocarditis）

瓣膜上可见菜花状赘生物，质松脆，易破碎、脱落。瓣膜增厚，变形



图 2–155　急性风湿性心内膜炎（acute rheumatic endocarditis）

瓣膜闭锁缘处形成单行排列的粟粒大小的疣状赘生物

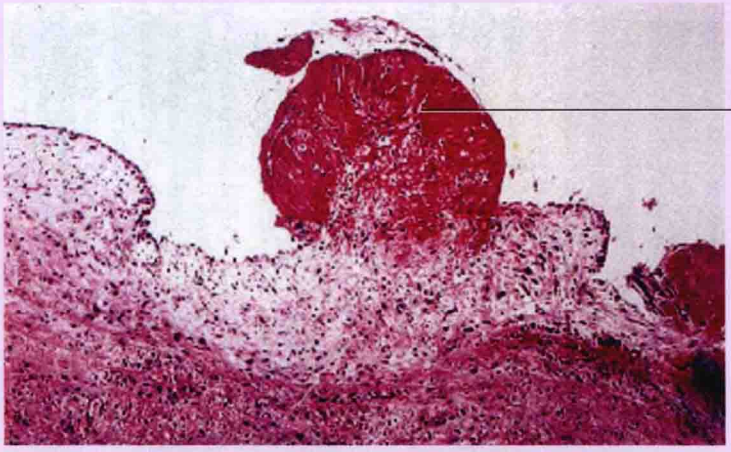


图 2–156　急性风湿性心内膜炎（acute rheumatic endocarditis）
赘生物为血小板和纤维素构成的白色血栓

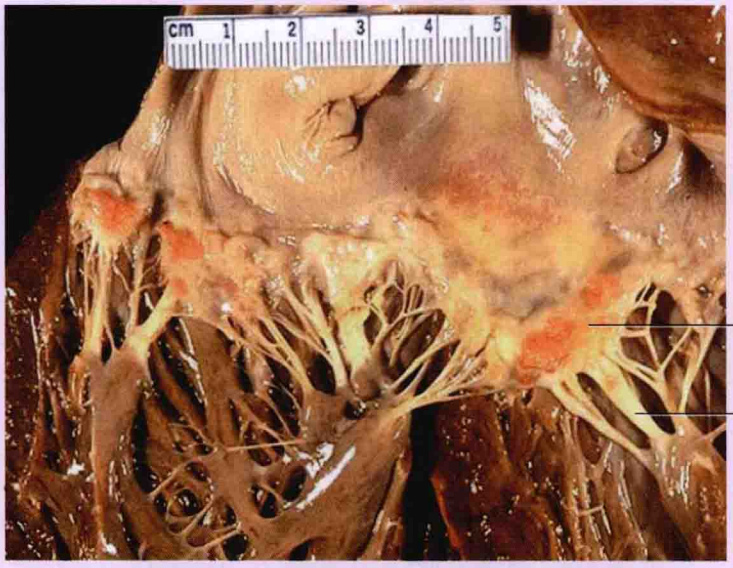


图 2–157　风湿性心内膜炎（rheumatic endocarditis）
赘生物机化，瓣膜增厚，腱索融合、增粗

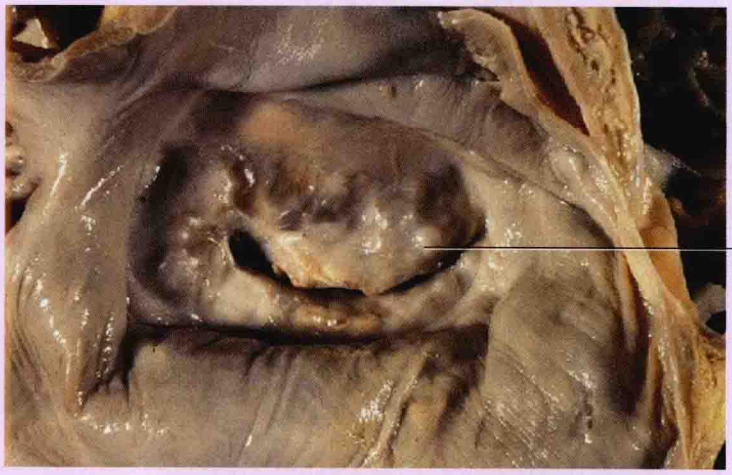


图 2–158　二尖瓣狭窄（mitral stenosis）
瓣膜增厚变硬，瓣膜口变小如鱼口状

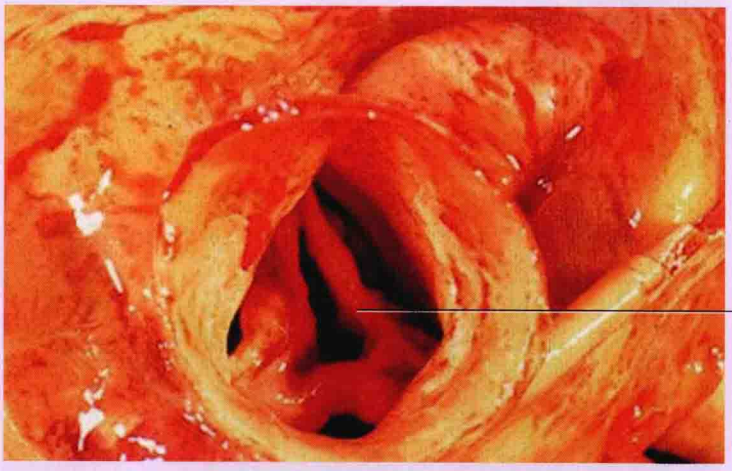


图 2–159　主动脉瓣狭窄（aortic valve stenosis）
风湿性心脏病，主动脉瓣基底部粘连，瓣膜肥厚，瓣口面积变小

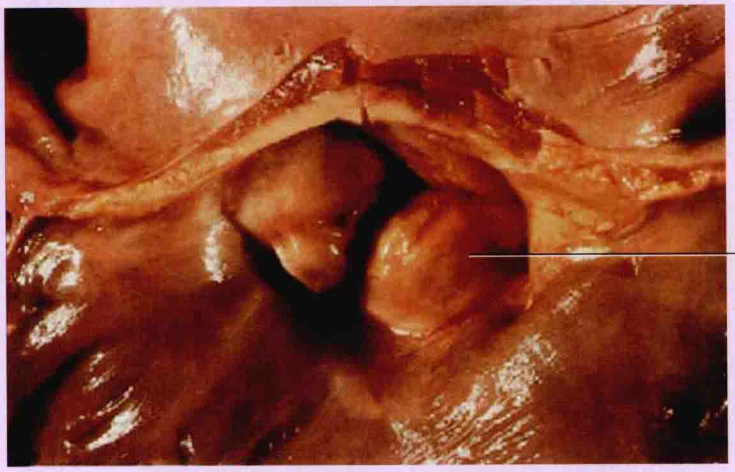


图 2-160　主动脉瓣狭窄伴关闭不全（aortic stenosis and insufficiency）

主动脉瓣粘连、增厚、变硬，既不能充分打开，也不能完全闭合



图 2-161　风湿性心肌炎（rheumatic myocarditis）(HEX40)

心肌间质内，风湿小体或阿少夫小体的形成

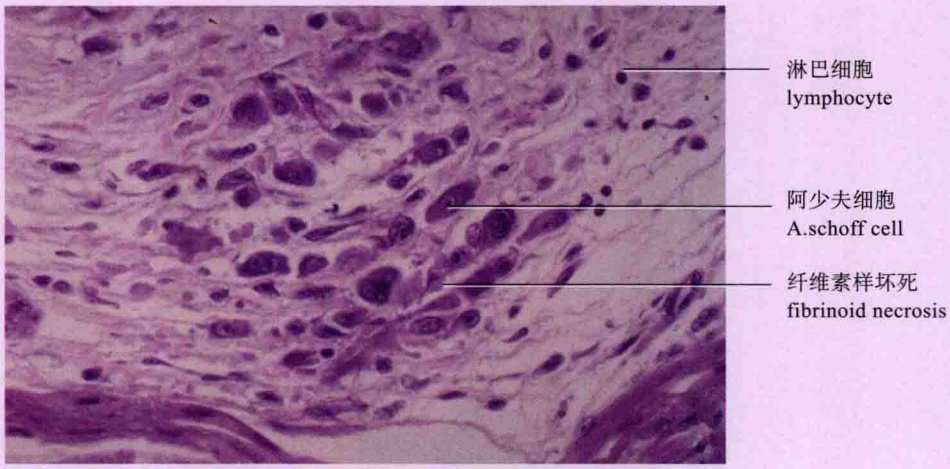


图 2-162 阿少夫小体（Aschoff body）(HEX200)
阿少夫小体由阿少夫细胞、纤维素样坏死以及少量炎细胞组成

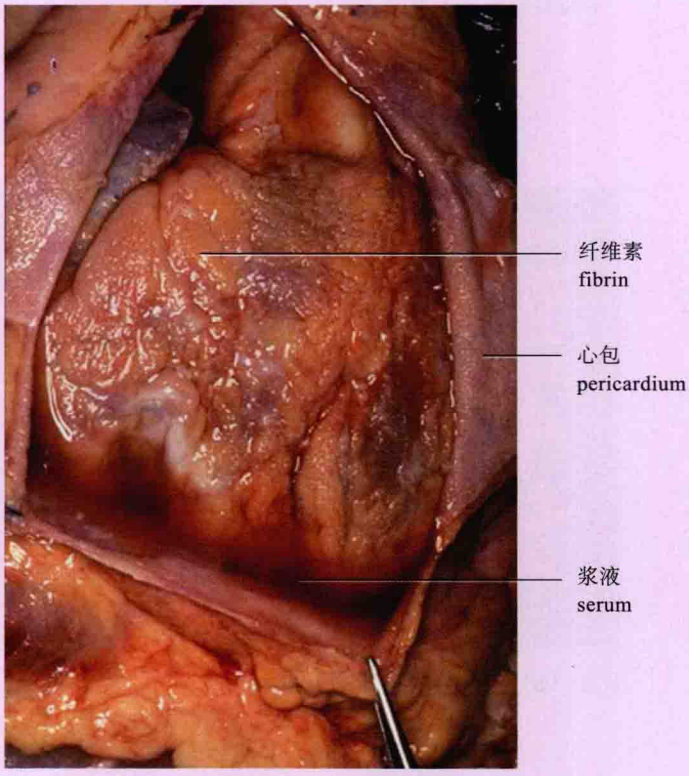


图 2-163 浆液纤维素性心包炎（serofibrinous pericarditis）
心脏表面可见大量纤维素，心包腔内有浆液渗出

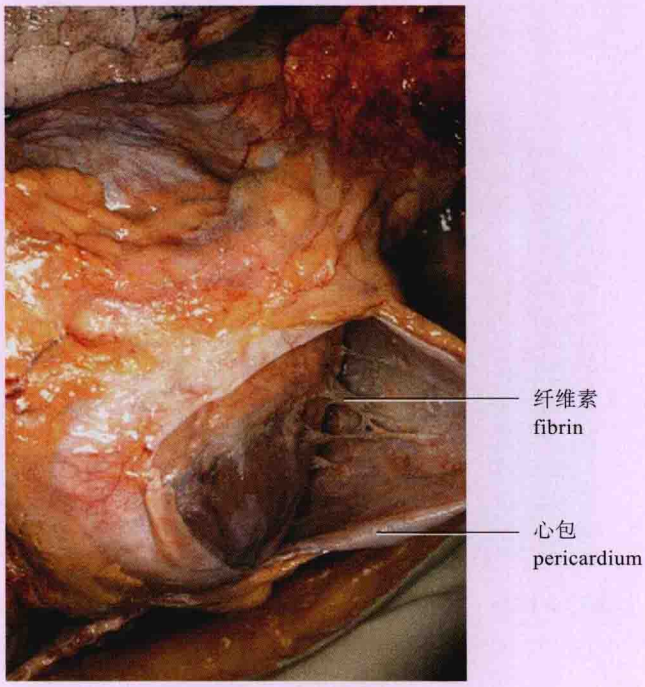


图 2–164　纤维素性心包炎（fibrinous pericarditis）

心包可见粘连的纤维素

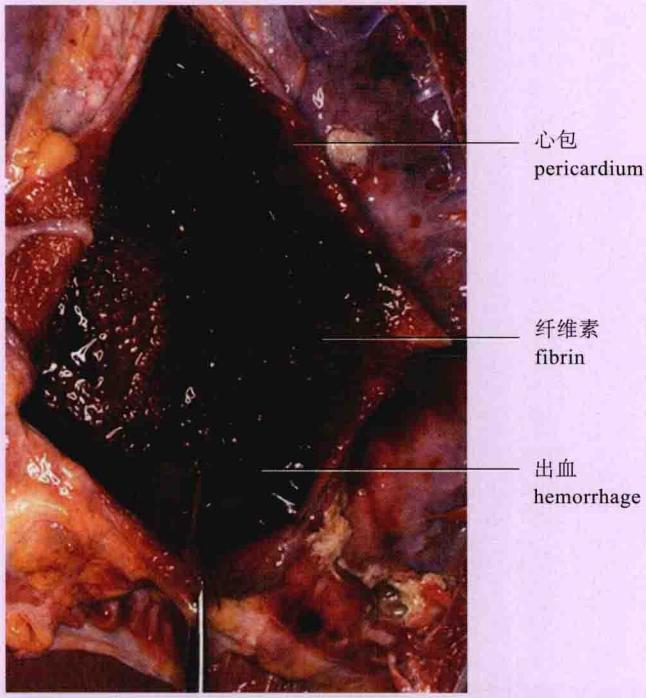


图 2–165　出血性心包炎（hemorrhagic pericarditis）

心包腔内既有纤维素渗出，同时伴有出血

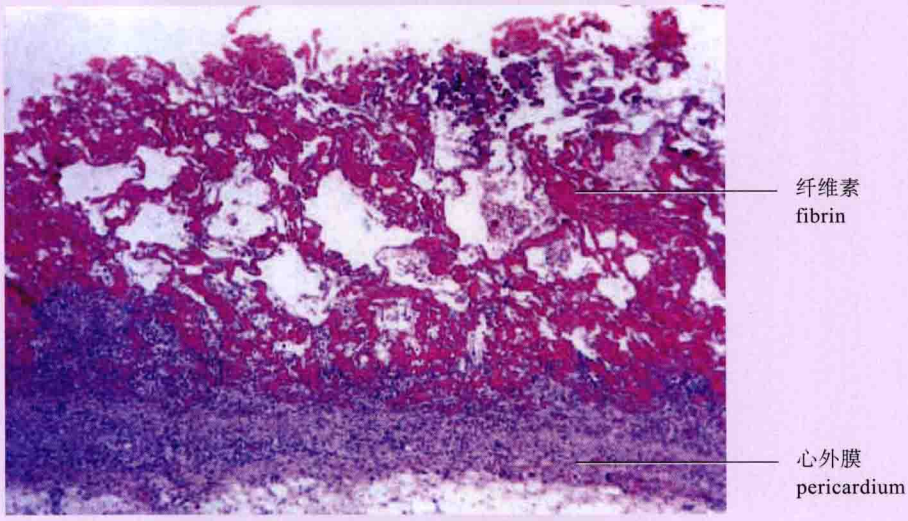


图 2–166 纤维素性心包炎（fibrinous pericarditis）(HEX40)
心包膜表面间皮细胞脱落，大量红染的纤维素渗出

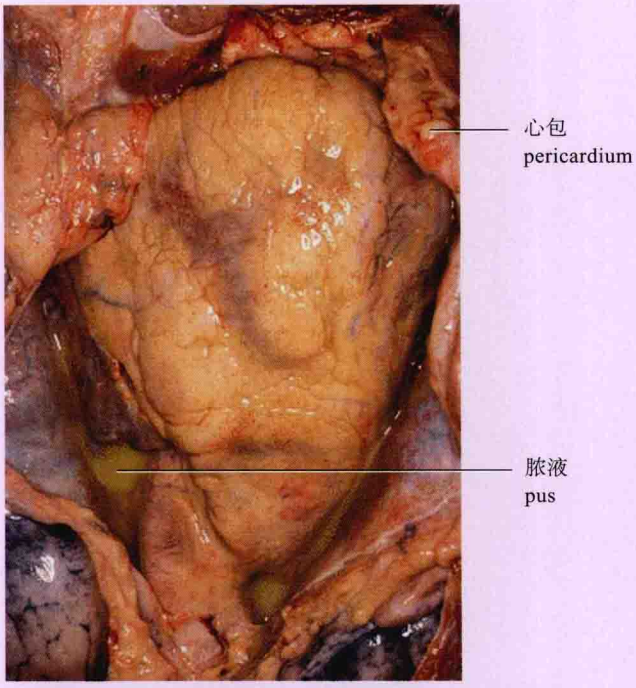


图 2–167 化脓性心包炎（purulent pericarditis）
心包腔内可见黄色脓性渗出物

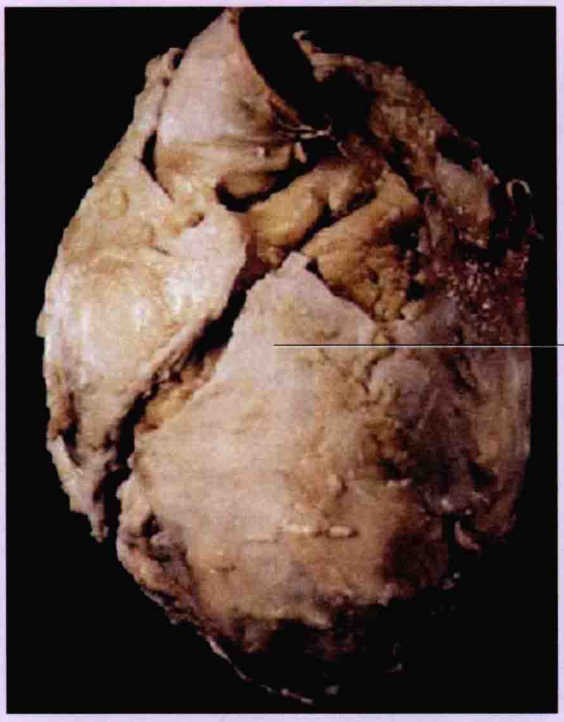


图 2-168　缩窄性心包炎（constrictive pericarditis）

由于心包腔内渗出物机化和瘢痕形成，心包增厚包裹心脏，至心脏舒张期充盈受限，严重影响心输出量

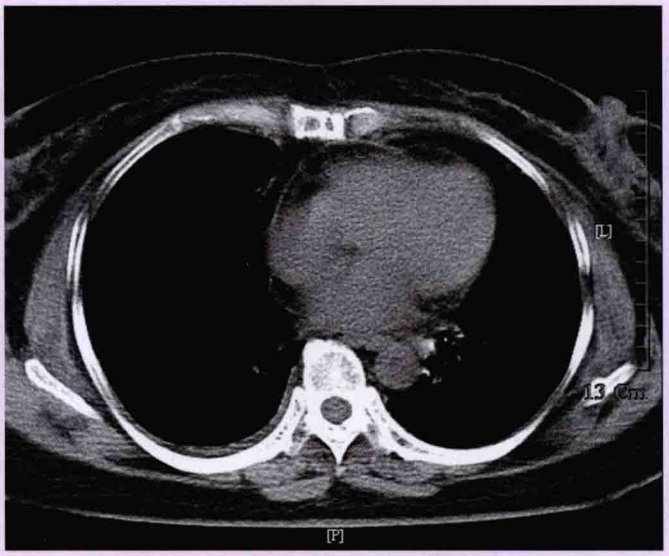


图 2-169　缩窄性心包（1）

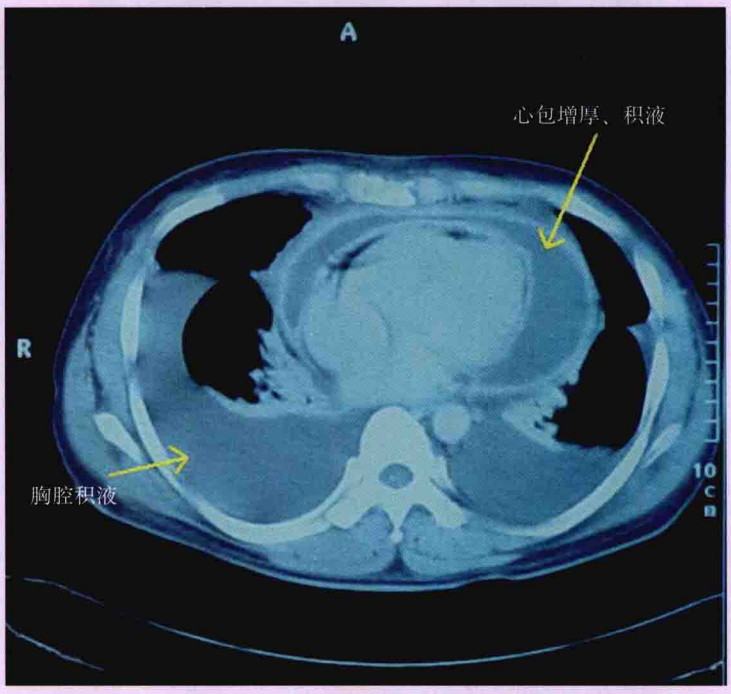


图 2–170 缩窄性心包（2）

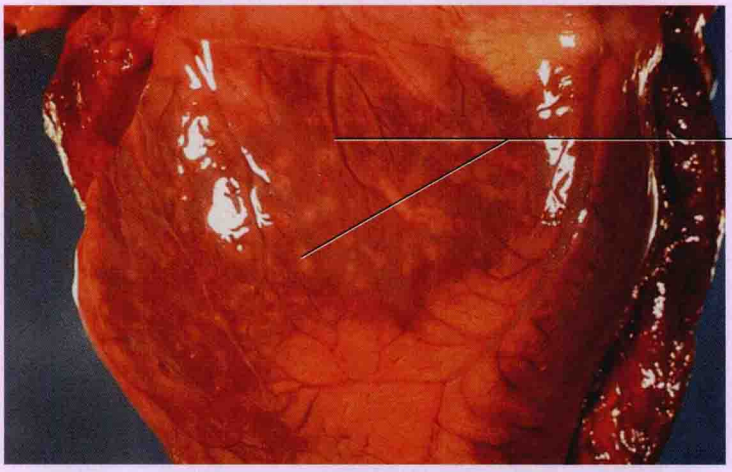


图 2–171 心脏小脓肿（microabscesses of the heart）
心脏表面可见多个灰黄色小脓肿

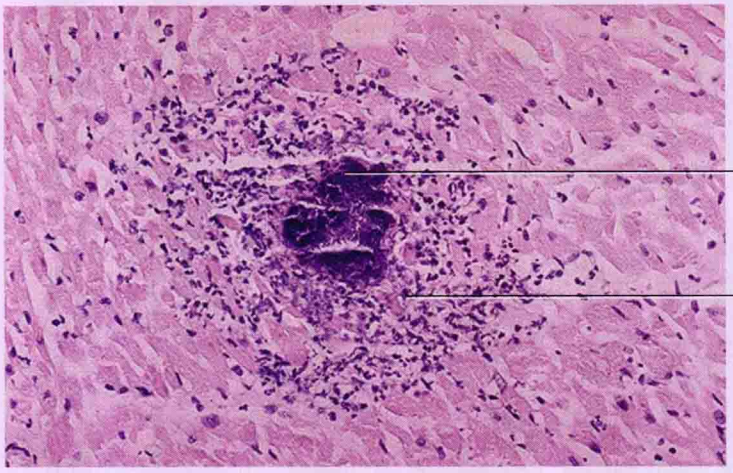


图 2-172 心脏小脓肿（microabscesses of the heart）(HEX100)

心肌间可见一小的脓肿灶。中间蓝色为菌落，周围炎细胞浸润

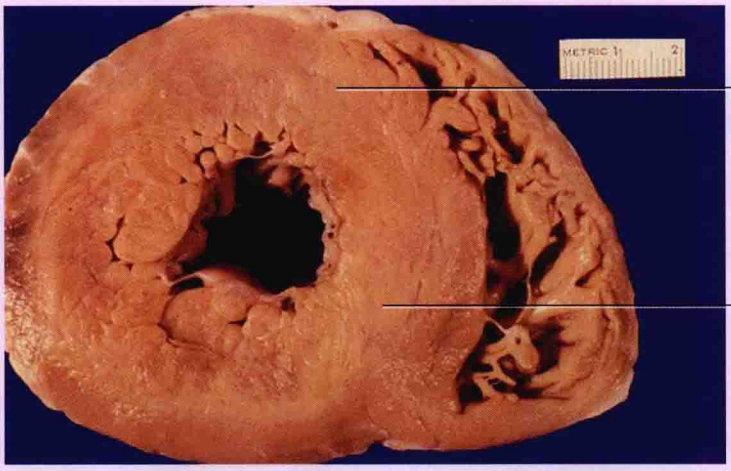


图 2-173 高血压性心脏病（hypertensive heart disease）

心脏体积增大，重量增加，左心室壁明显增厚，心腔没有扩张

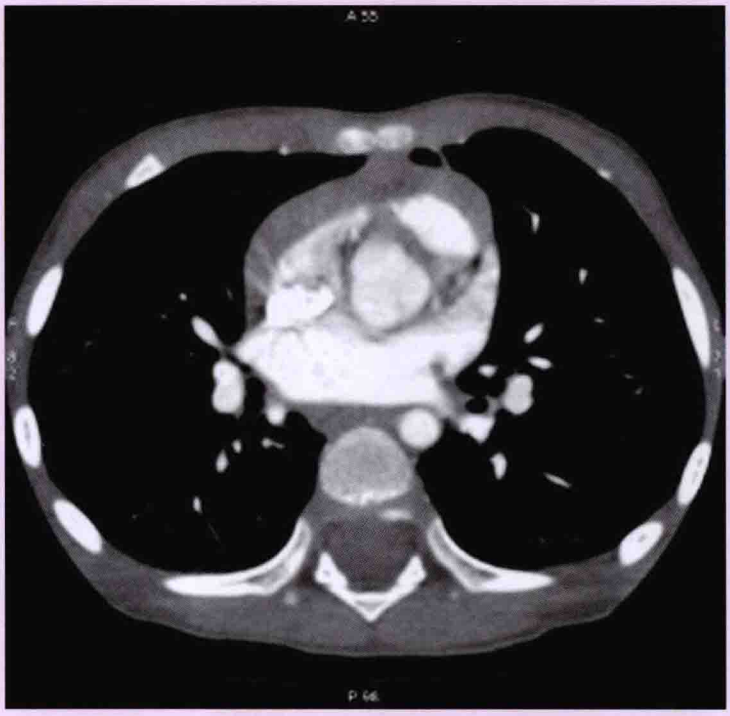


图 2-174 高血压性心脏病

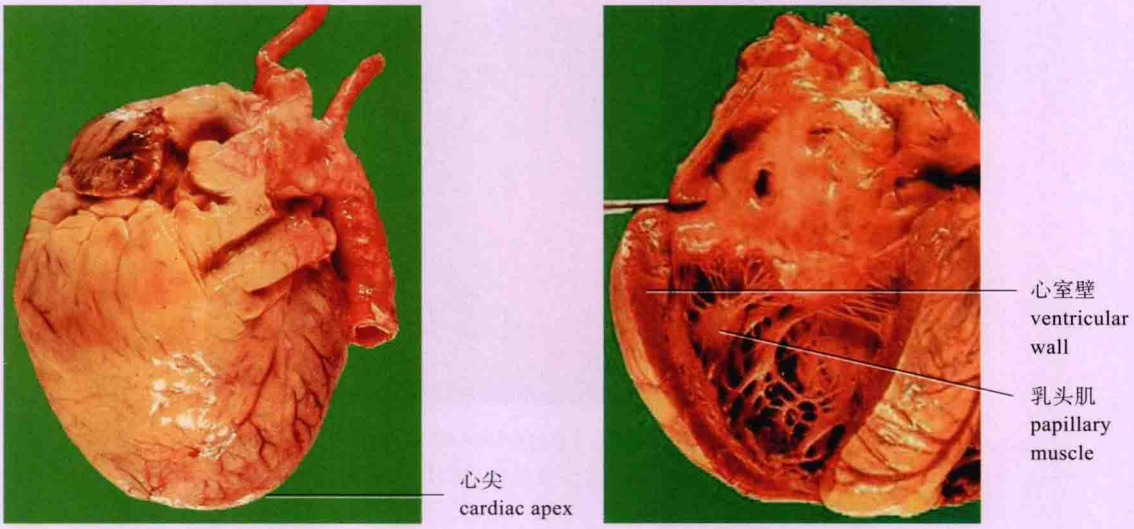


图 2-175 慢性肺源性心脏病（chronic cur culminate）

心脏体积增大，重量增加，右心室占据心尖部，外观钝圆。右心室肥厚，心腔扩张，乳头肌和肉柱增粗，前壁肌层厚度超过 5mm

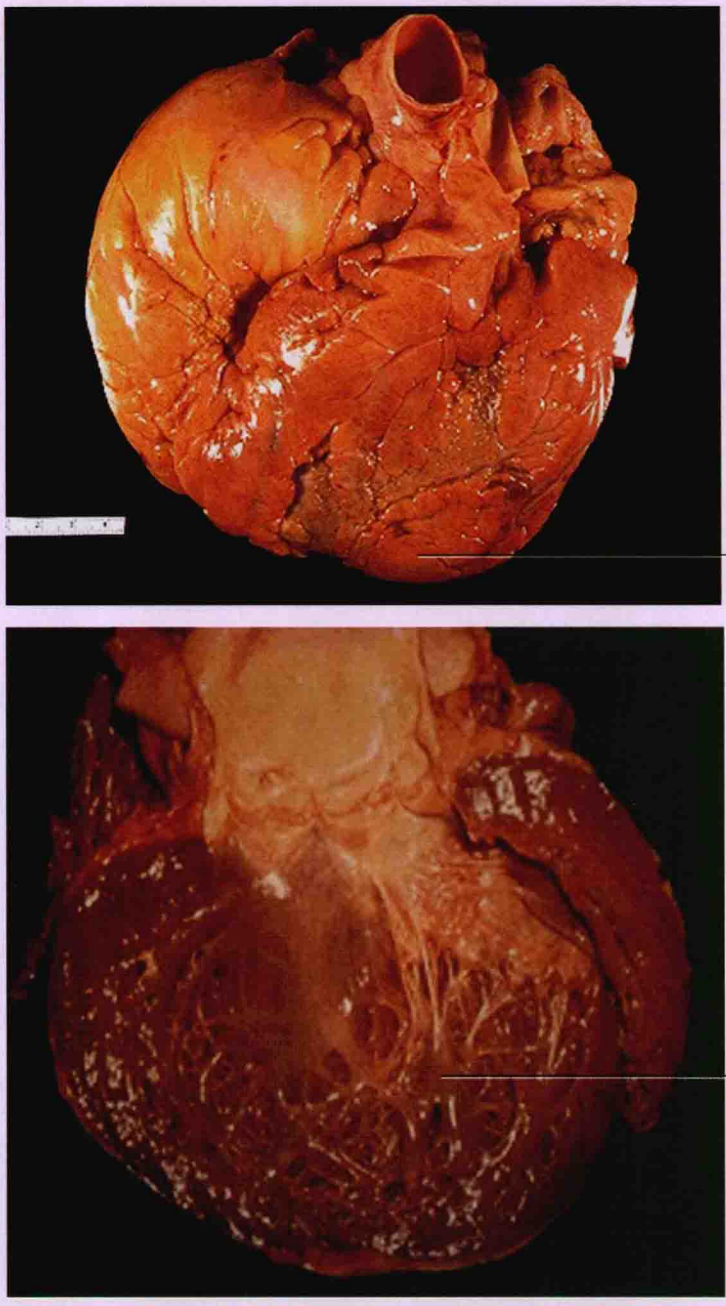


图 2–176　扩张性心肌病（dilated cardiomyopathy）

心脏体积增大，重量增加，心室扩张，心尖钝圆形，肉柱和乳头肌扁平

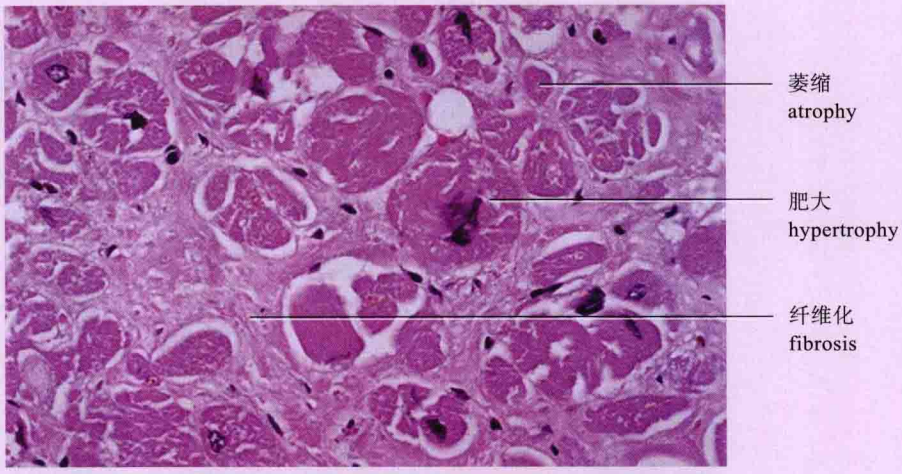


图 2-177 扩张性心肌病（dilated cardiomyopathy）(HEX40)
心肌细胞不均匀肥大、伸长；肥大和萎缩心肌交错排列；心肌间质纤维化

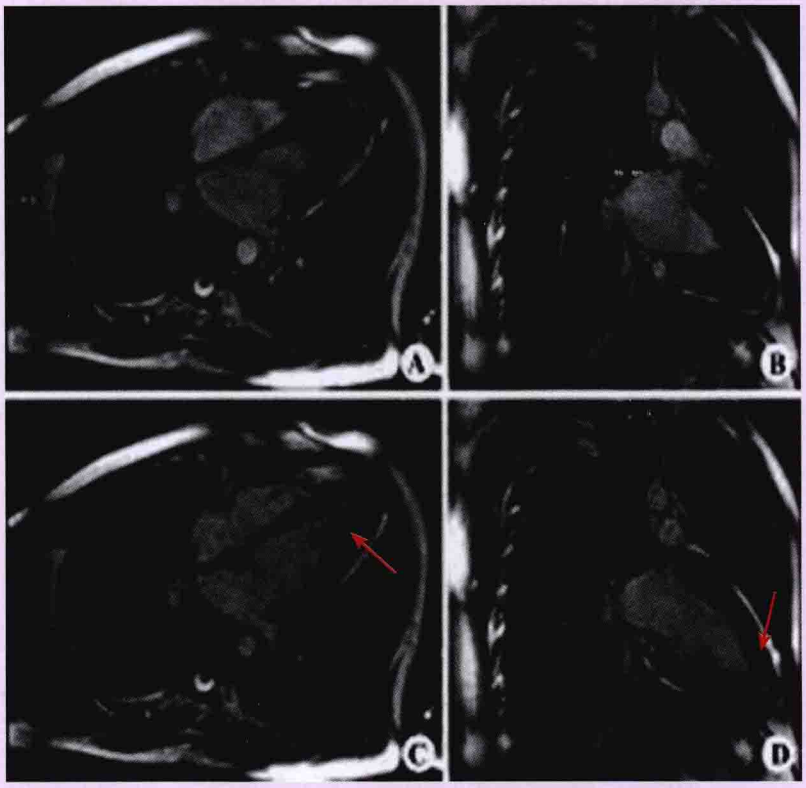


图 2-178 扩张性心肌病 MR

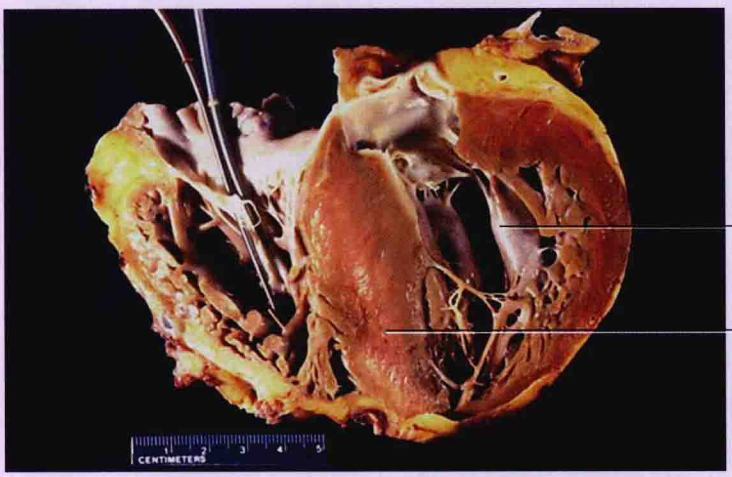


图 2-179　肥厚性心肌病（hypertrophic cardiomyopathy）
心脏体积增大，重量增加，室间隔尤其增厚

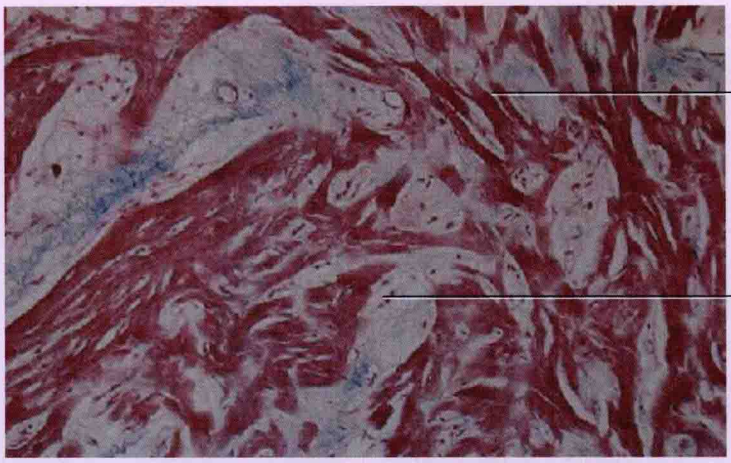


图 2-180　肥厚性心肌病（hypertrophic cardiomyopathy）(HEX40)
心肌细胞肥大排列紊乱，间质纤维化

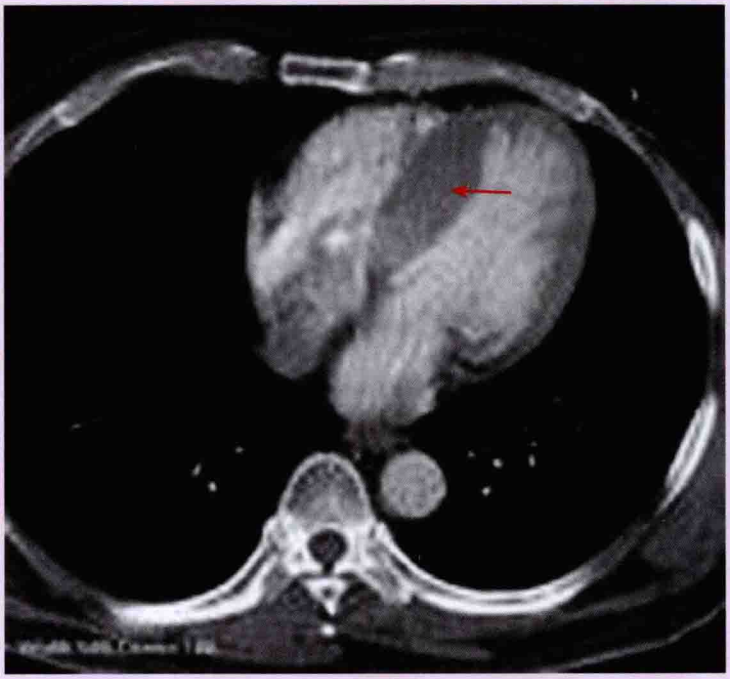


图 2-181 肥厚性心肌病

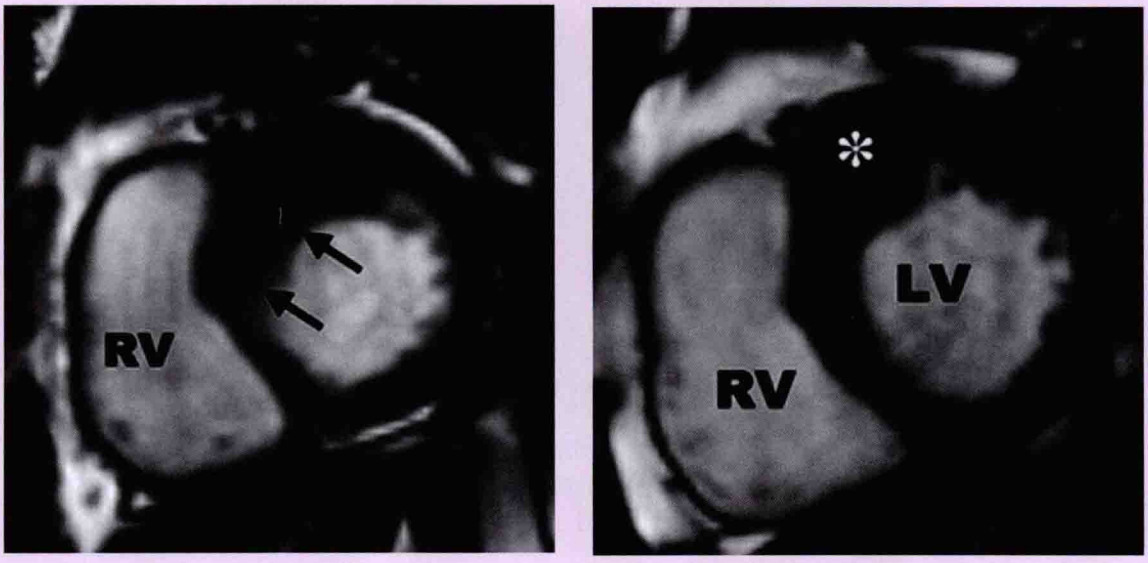


图 2-182 肥厚性心肌病

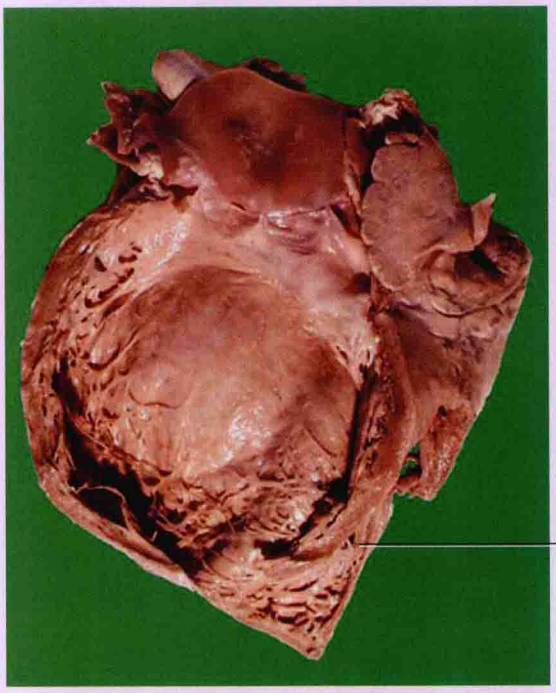


图 2-183　克山病（keshan disease）

心脏不同程度增大，重量增加，心腔扩大，心室壁变薄，心尖尤明显

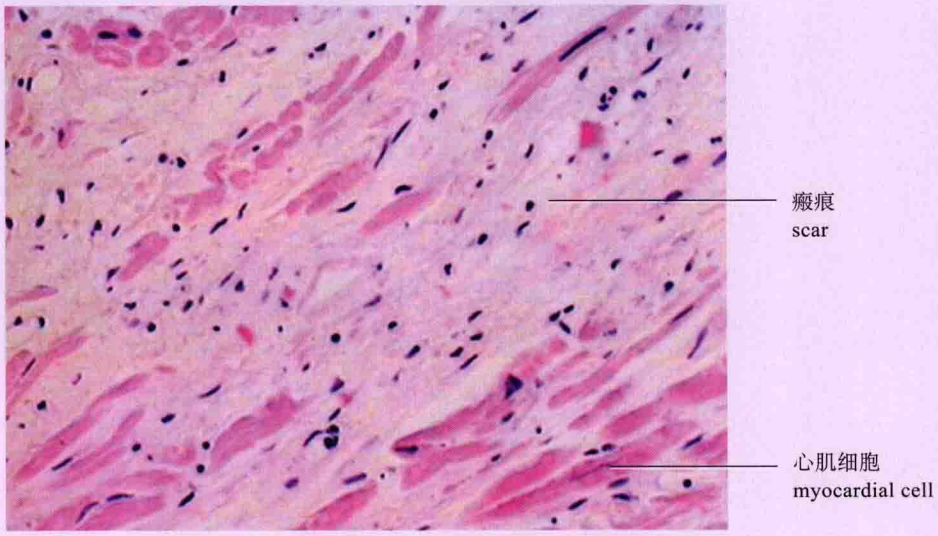


图 2-184　克山病（keshan disease）(HEX100)

心肌细胞不同程度的变性坏死，坏死修复形成瘢痕

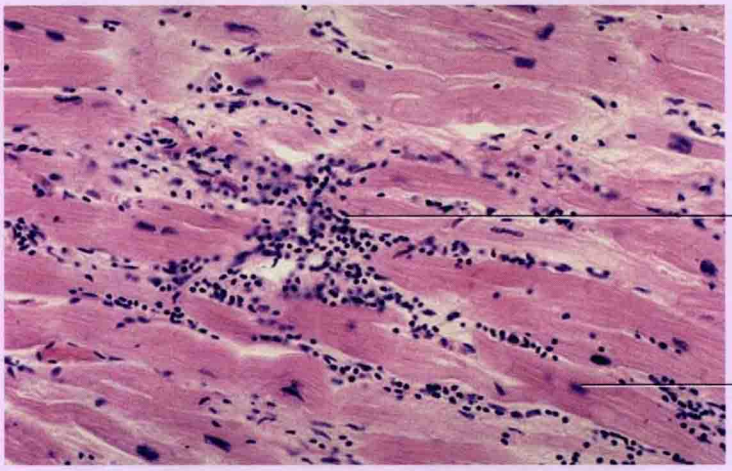


图 2-185 病毒性心肌炎（viral myocarditis）(HEX100)
心肌间质水肿，淋巴细胞浸润



图 2-186 心脏横纹肌瘤（cardiac rhabdomyoma）
左心室可见一灰白色瘤体

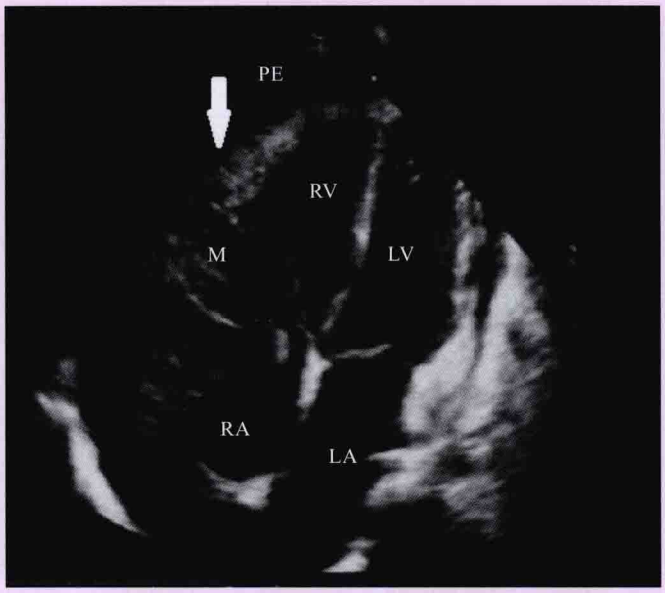


图 2–187　心脏横纹肌病 US

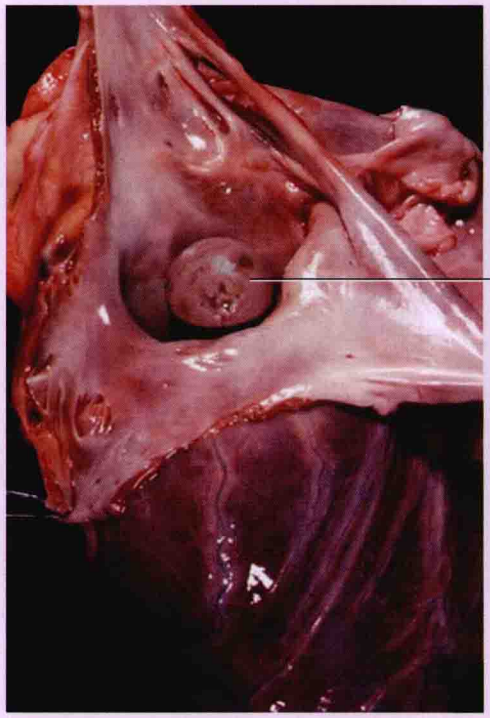


图 2–188　心房黏液瘤（atria maxima）

心脏最常见的一种良性肿瘤。大小不等，多为单发，分叶或乳头状，半透明胶冻状，质软易碎

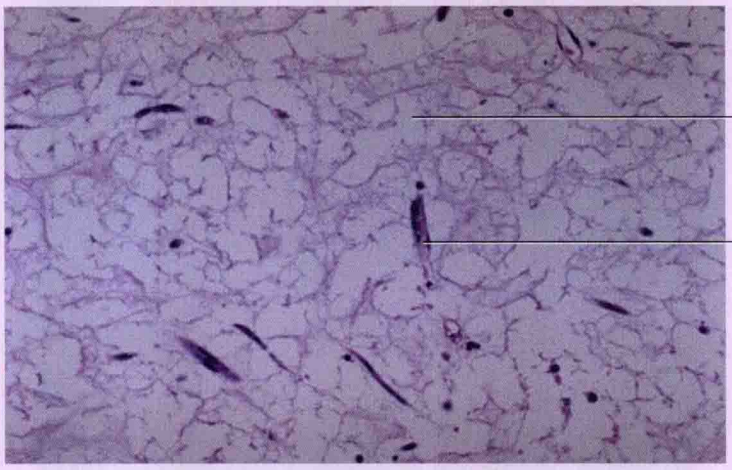


图 2-189 黏液瘤（myxoma）(HEX100)
瘤细胞周围大量的黏液基质

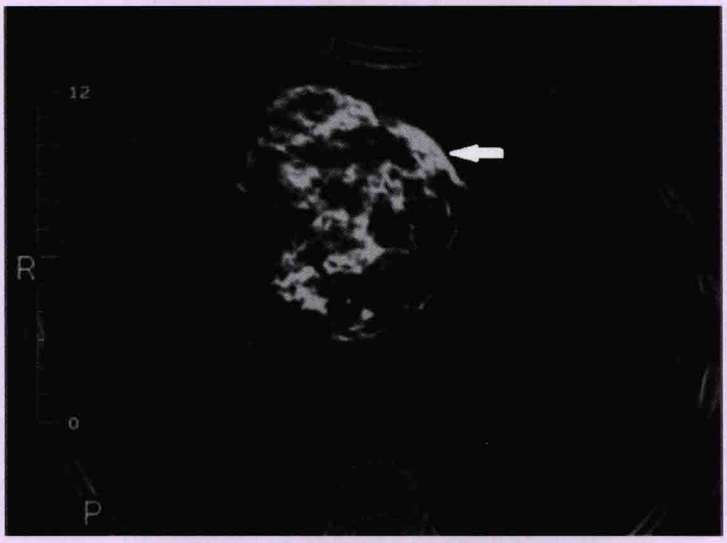


图 2-190 心脏黏液瘤

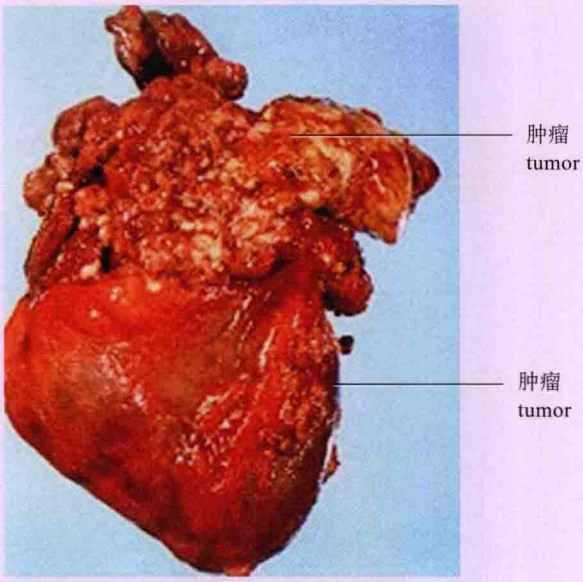


图 2–191　心脏间皮瘤（mesothelioma of heart）

心底部肿瘤呈结节状外观，灰白色。心外膜充血伴纤维素性肥厚。左心室中部心外膜面有散在的肿瘤小结节

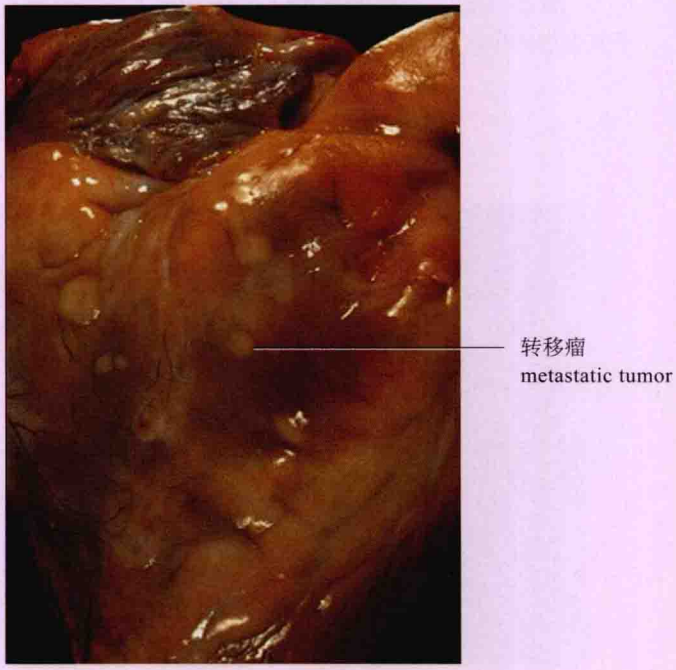


图 2–192　心脏转移瘤（metastatic tumor to the heart）

心脏转移瘤较原发瘤常见。心脏表面可见多个转移瘤

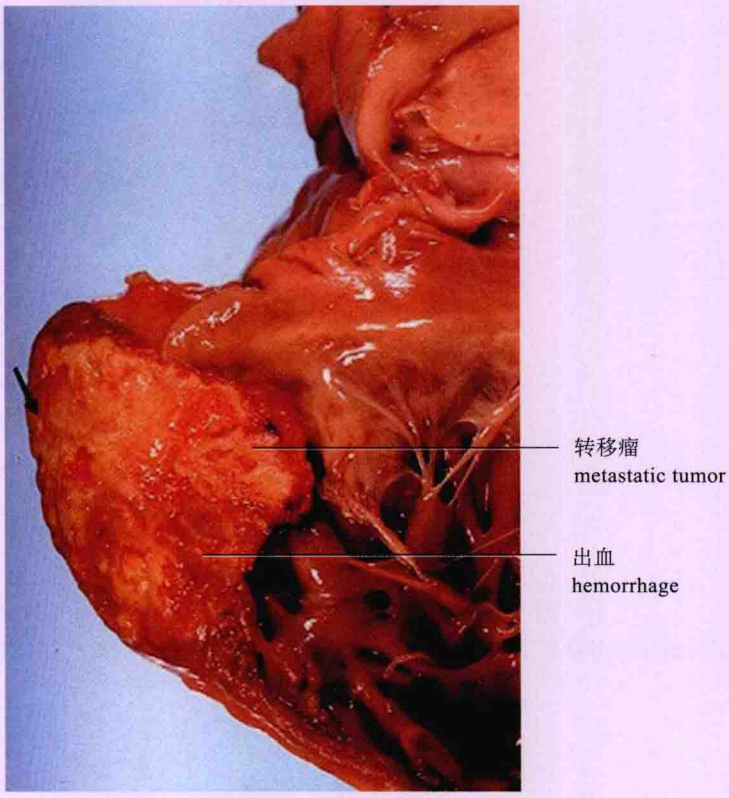


图 2-193 心脏转移瘤（metastatic tumor to the heart）
子宫颈癌转移，右心室心肌内见境界清楚的黄白色转移灶，部分有出血坏死

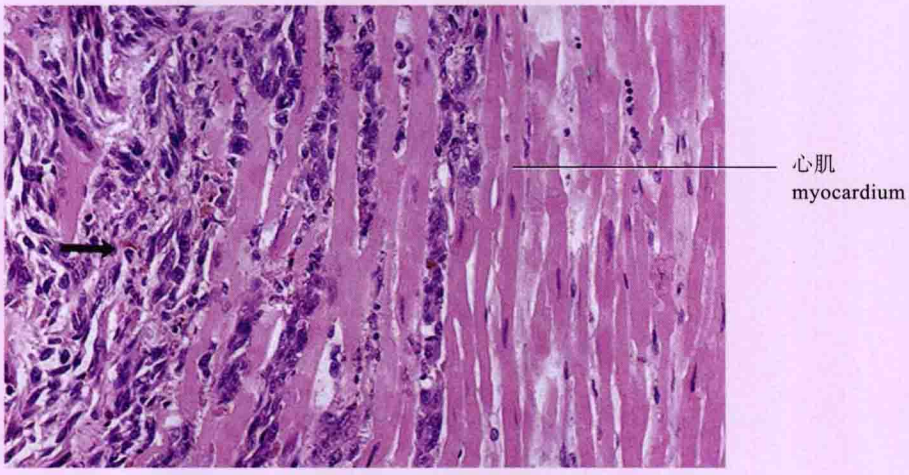


图 2-194 转移性黑色素瘤（metastatic melanoma）(HEx100)
心肌细胞间可见大量含有黑色素的瘤细胞（箭头所示）

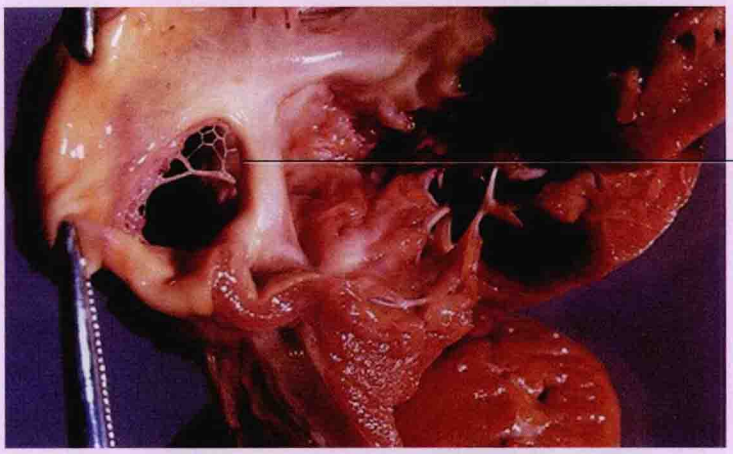


图 2-195 卵圆孔开放（patent foramen ovale）
病人心脏，卵圆孔完全开放



图 2-196 房间隔缺损（atria sepal defect）
由右心房观。房间隔呈巨大缺损

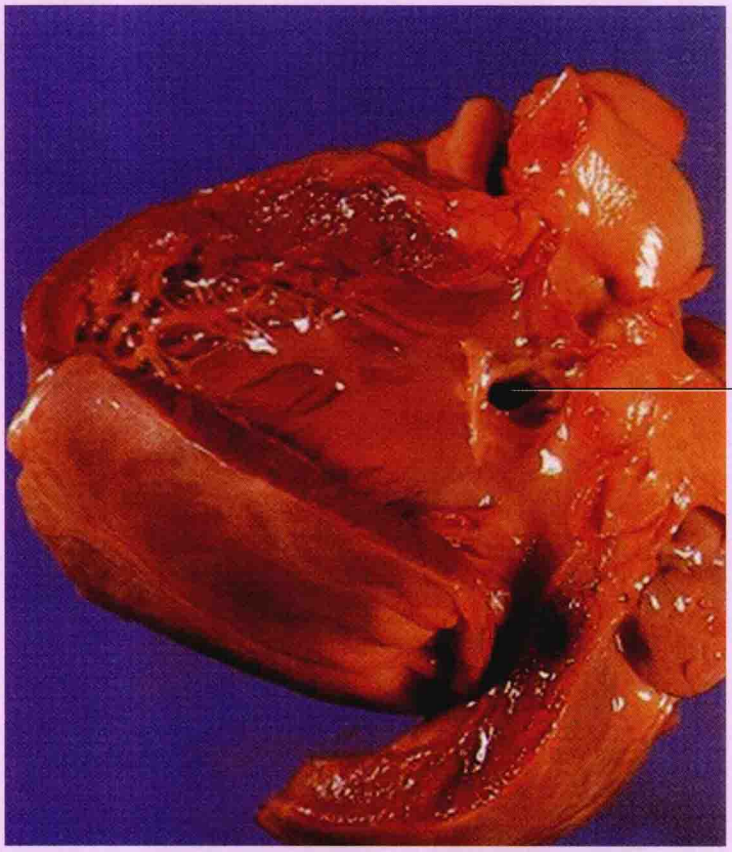


图 2-197　室间隔缺损（ventricular sepal defect）

左心室室间隔膜部可见直径约 1.2cm 的卵圆形缺损

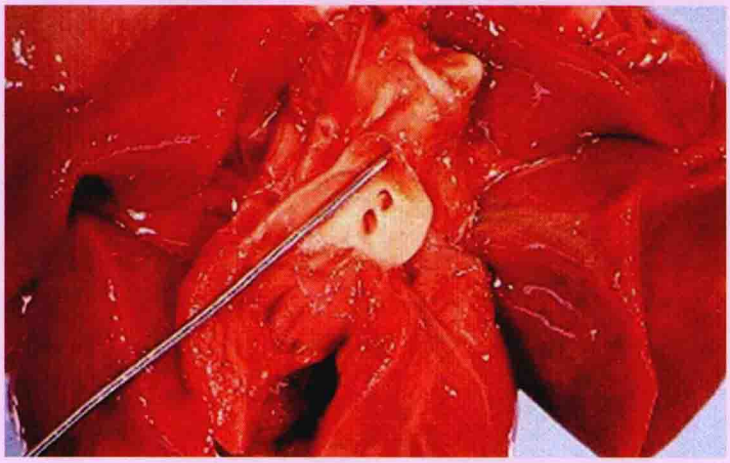


图 2-198　动脉导管未闭（patent ducts arterosus）

探针示未闭的动脉导管

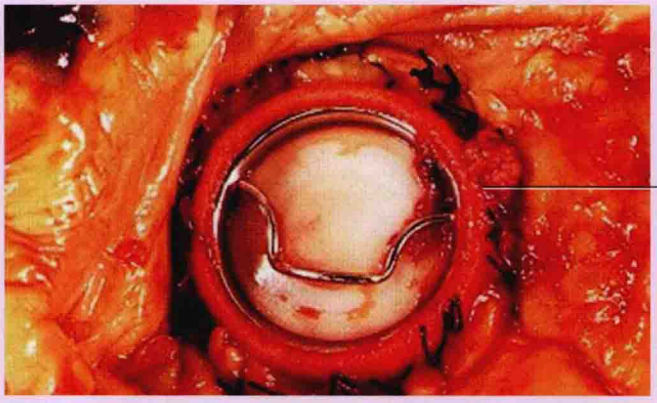


图 2-199　置换瓣膜血栓形成（thrombus formation on the replaced valve）

风湿性心瓣膜病行人工置换，缝合处球状血栓形成

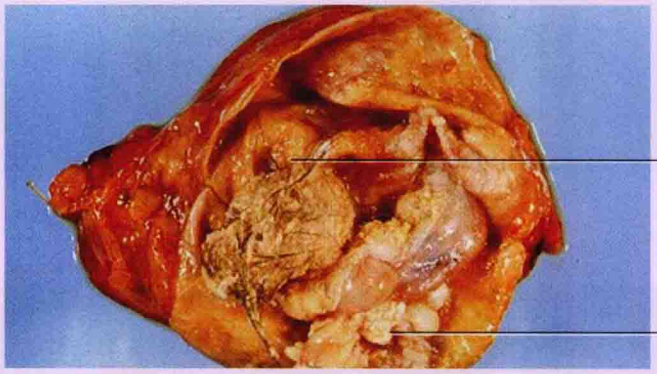


图 2-200　纵隔畸胎瘤（teatime in mediastinum）

前纵隔畸胎瘤，肿瘤境界清楚，可见脂类与毛发

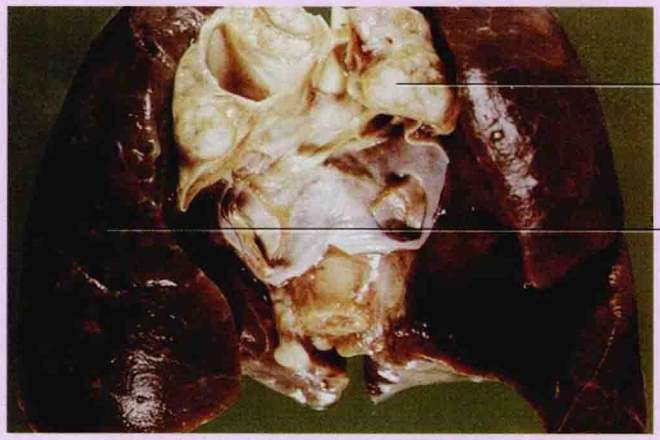


图 2-201　纵隔淋巴结结核（tuberculosis of lymph nodes in mediastinum）

纵隔淋巴结形成结核结节，肺实质内见粟粒性结核结节



图 2–202　冠状动脉粥样硬化

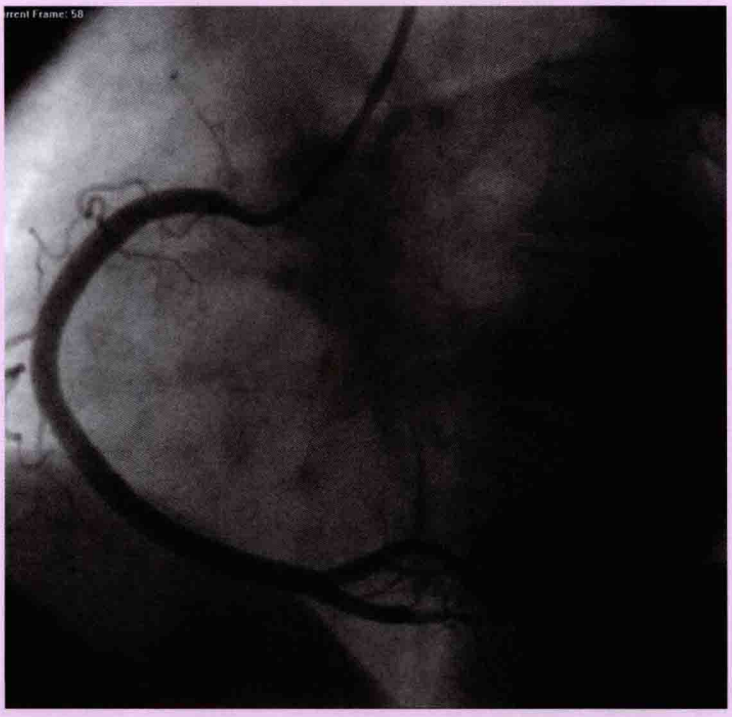


图 2–203　右冠状动脉造影

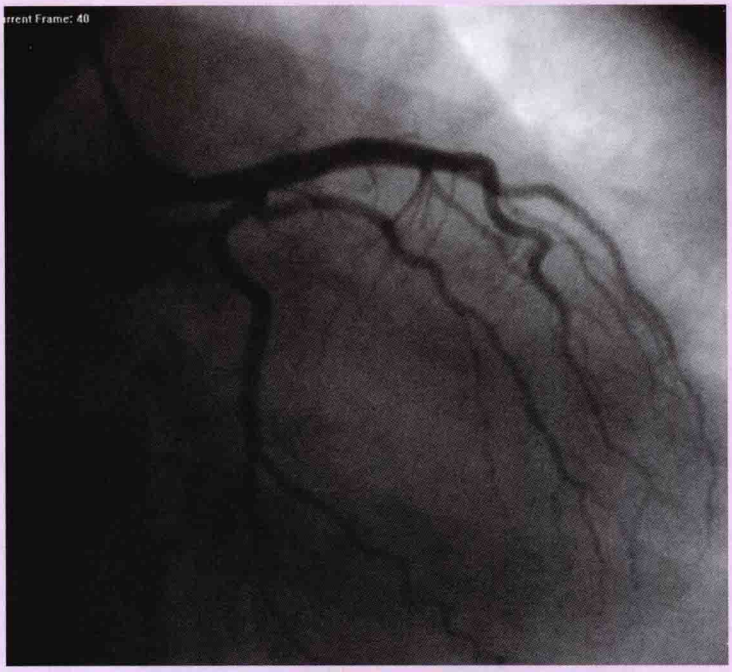


图 2-204 左冠状动脉造影

（三）肺、气管、支气管

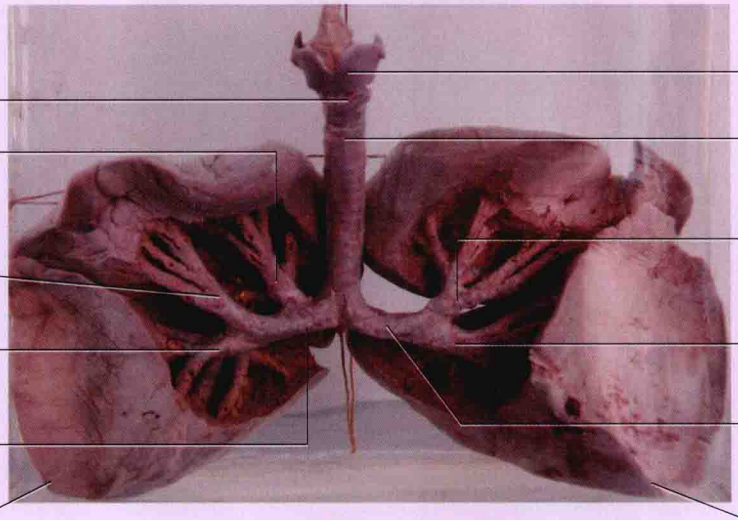


图 2-205 气管、支气管及肺

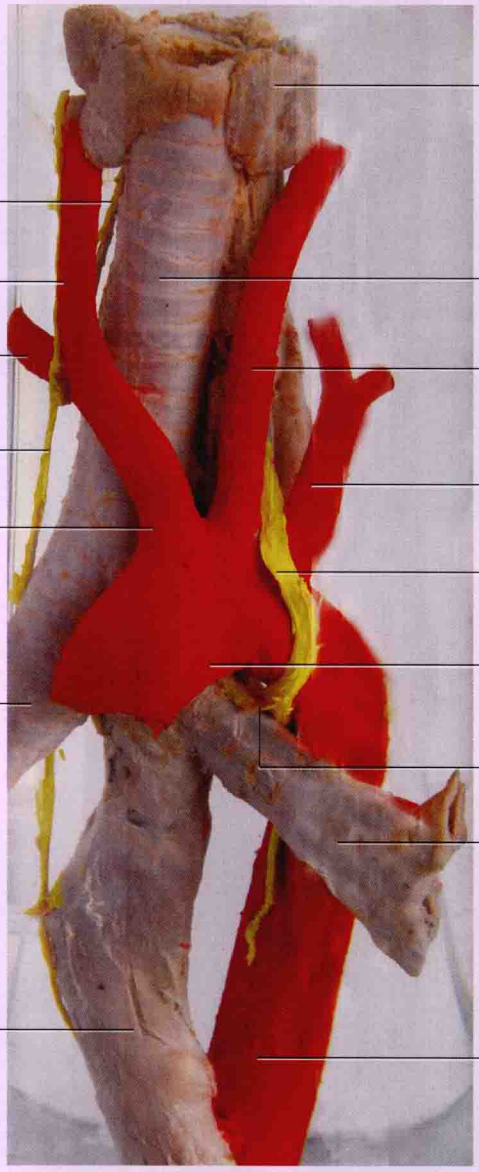

甲状腺
thyroid gland
右喉返神经
N.right recurrent laryngeal
气管软骨
tracheal cartilage
右颈总动脉
A.right common carotid
左颈总动脉
A.left common carotid
右锁骨下动脉
A.right subclavian
左锁骨下动脉
A.left subclavian
右迷走神经
N.right vague
左迷走神经
N.left vague
头臂干
brachiocephalic trunk
主动脉弓
aortic arch
右主支气管
right principal bronchus
左喉返神经
N.left recurrent laryngeal
左主支气管
right principal bronchus
食管
esophagus
降主动脉
descending aorta

图 2-206 气管的毗邻

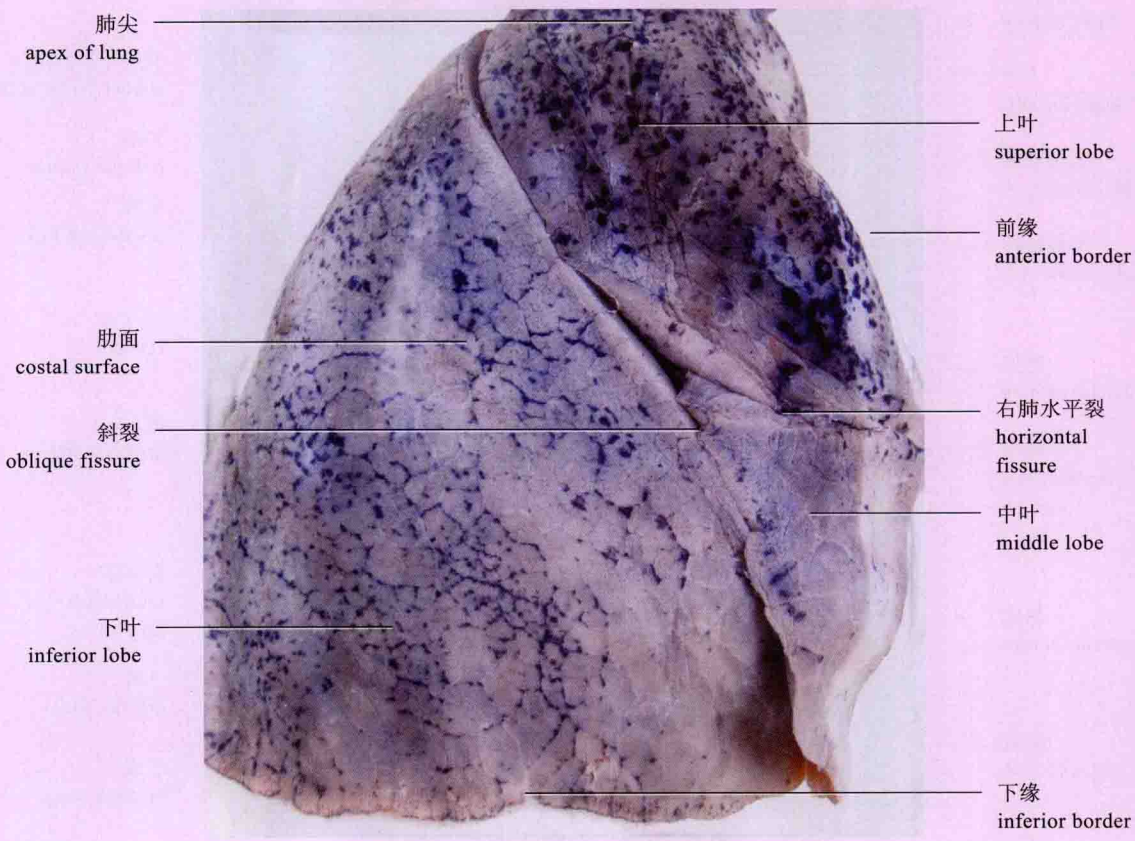

肺尖
apex of lung
上叶
superior lobe
前缘
anterior border
肋面
costal surface
斜裂
oblique fissure
右肺水平裂
horizontal
fissure
中叶
middle lobe
下叶
inferior lobe
下缘
inferior border

图 2-207　右肺（前面观）

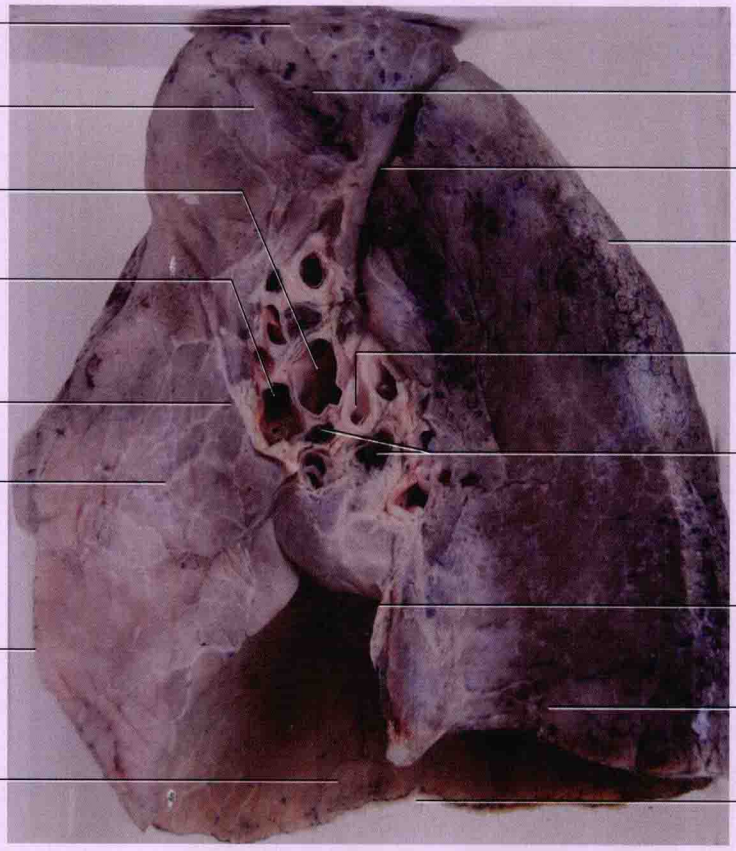


图 2-208 右肺（内侧面观）

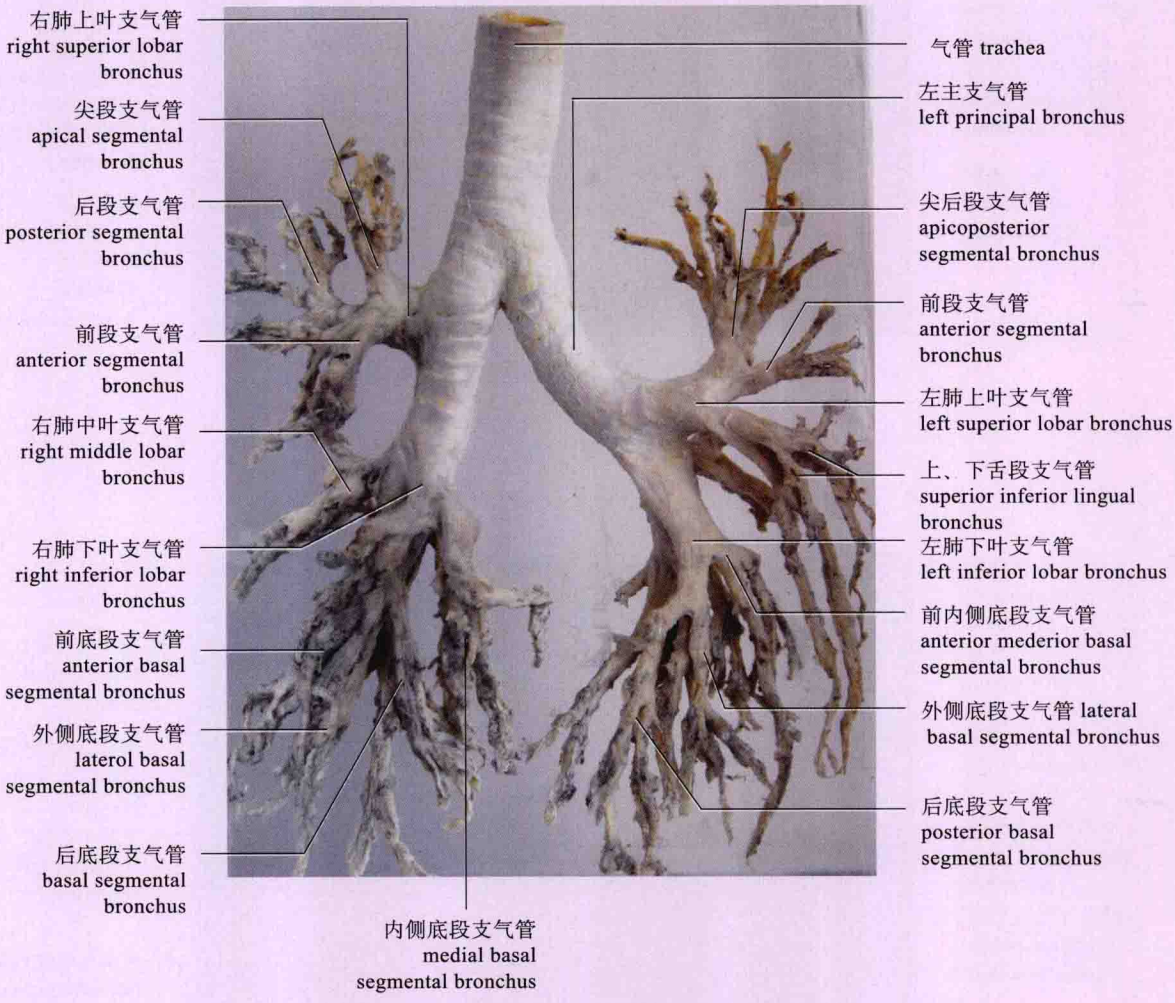


图 2-209 气管和支气管

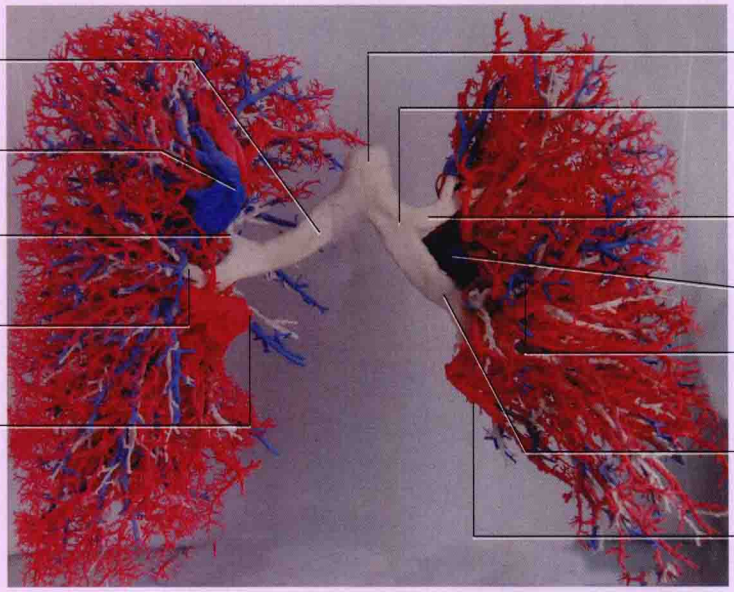


图 2-210 左、右肺的血管（后面观）

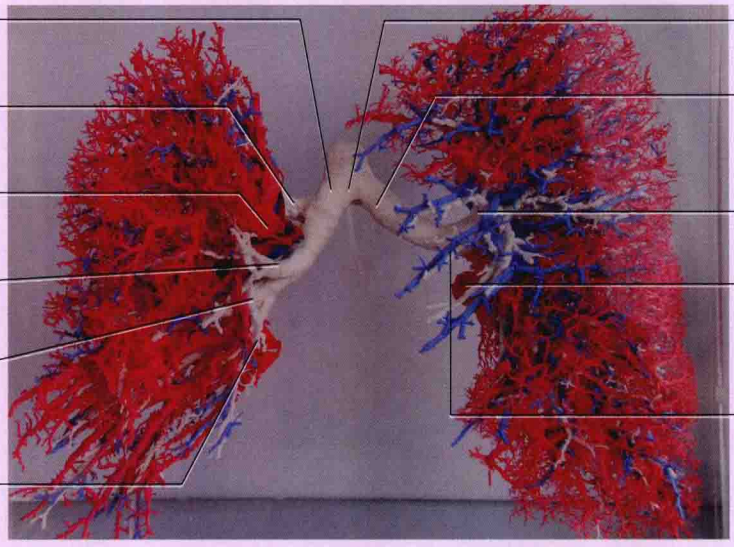


图 2-211 左、右肺的血管（前面观）

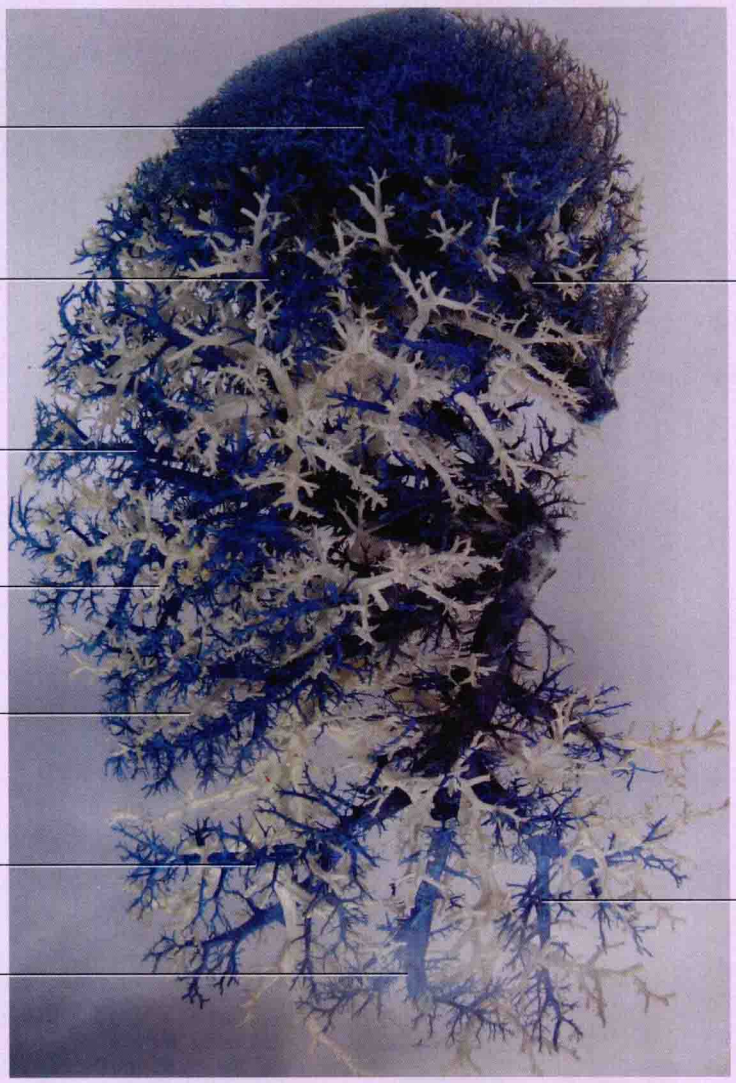

尖段
apical segment
后段
posterior segment
内侧段
medial segment
外侧段
lateral segment
尖（上）段
apical (superior)
segment
前底段
anterior basal
segment
外侧底段
lateral basal
segment
前段
anterior
segment
后底段
posterior basal
segment

图 2-212 右肺的肺段

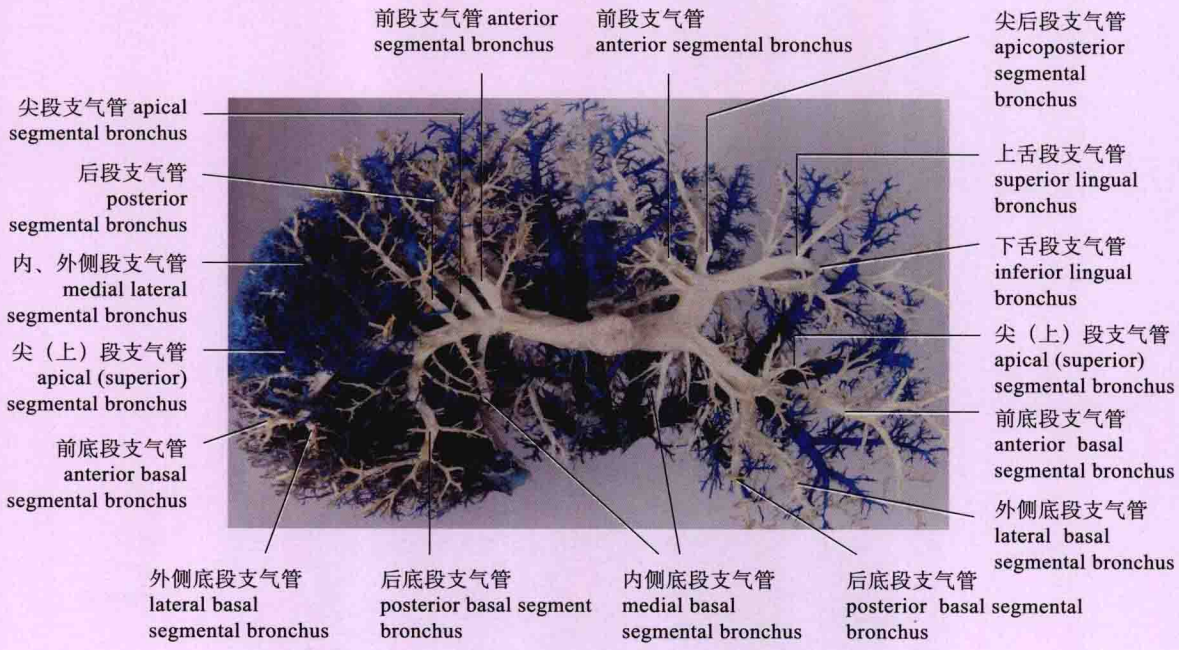


图 2-213 左、右肺的肺段

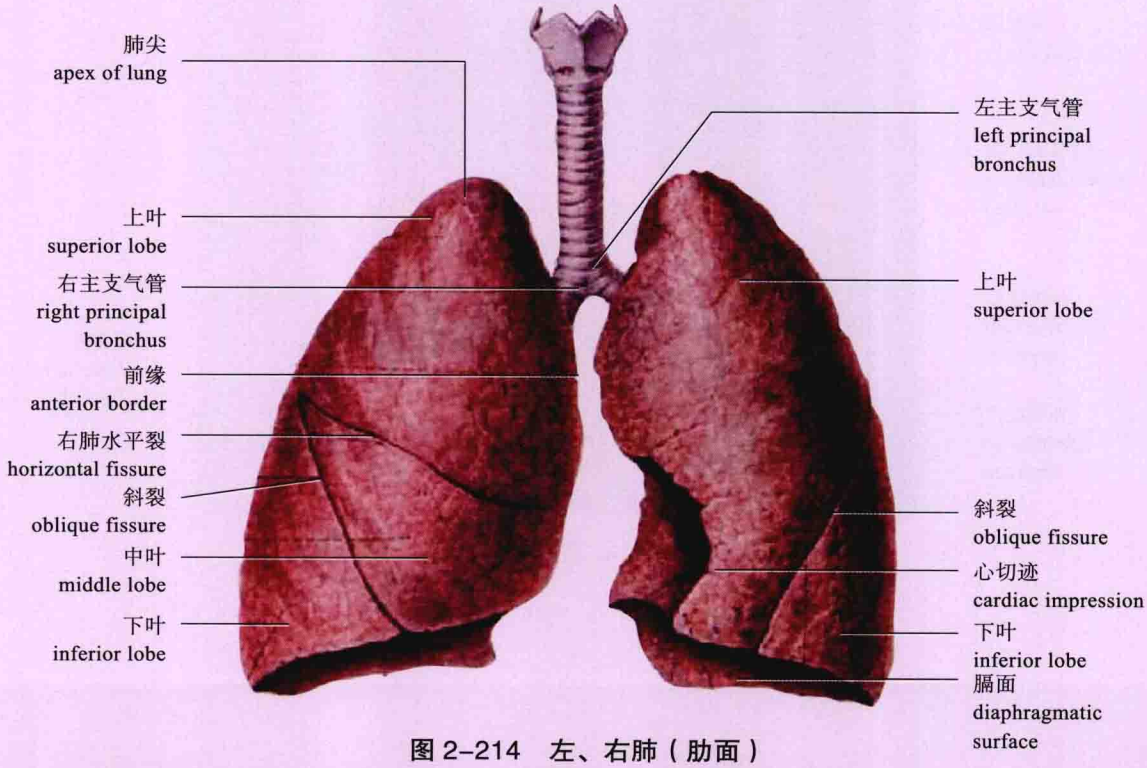


图 2-214 左、右肺（肋面）

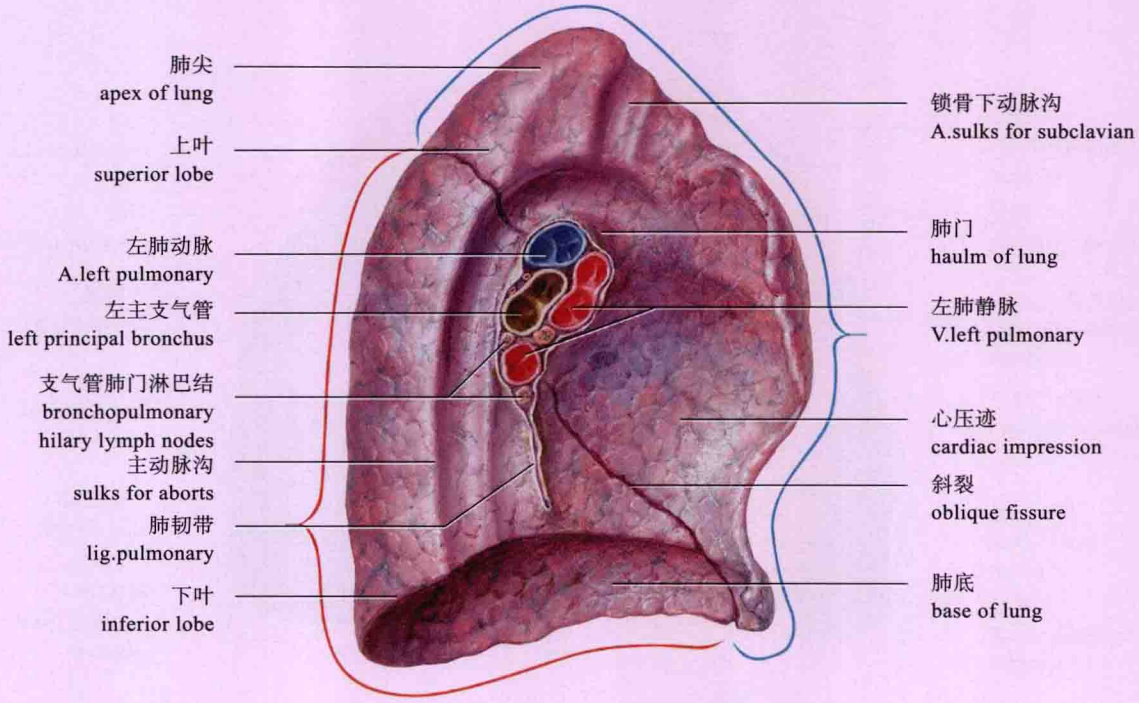


图 2–215 左肺（内侧面）

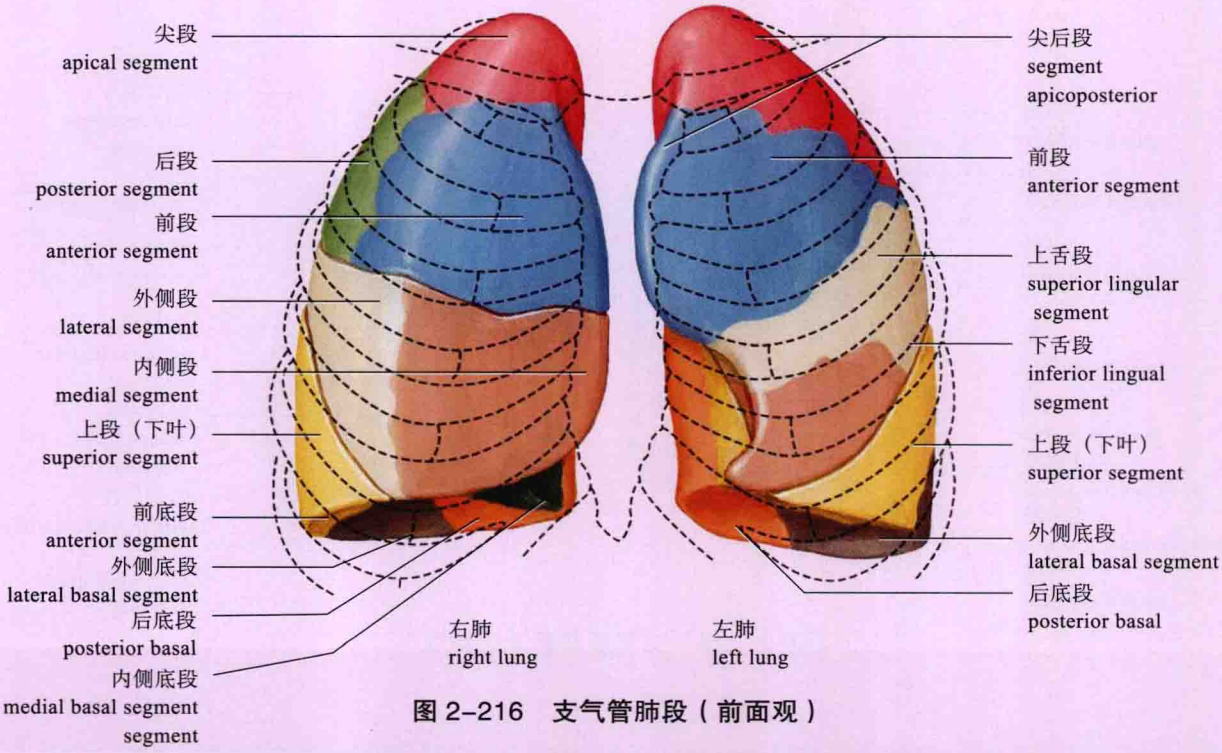


图 2–216 支气管肺段（前面观）

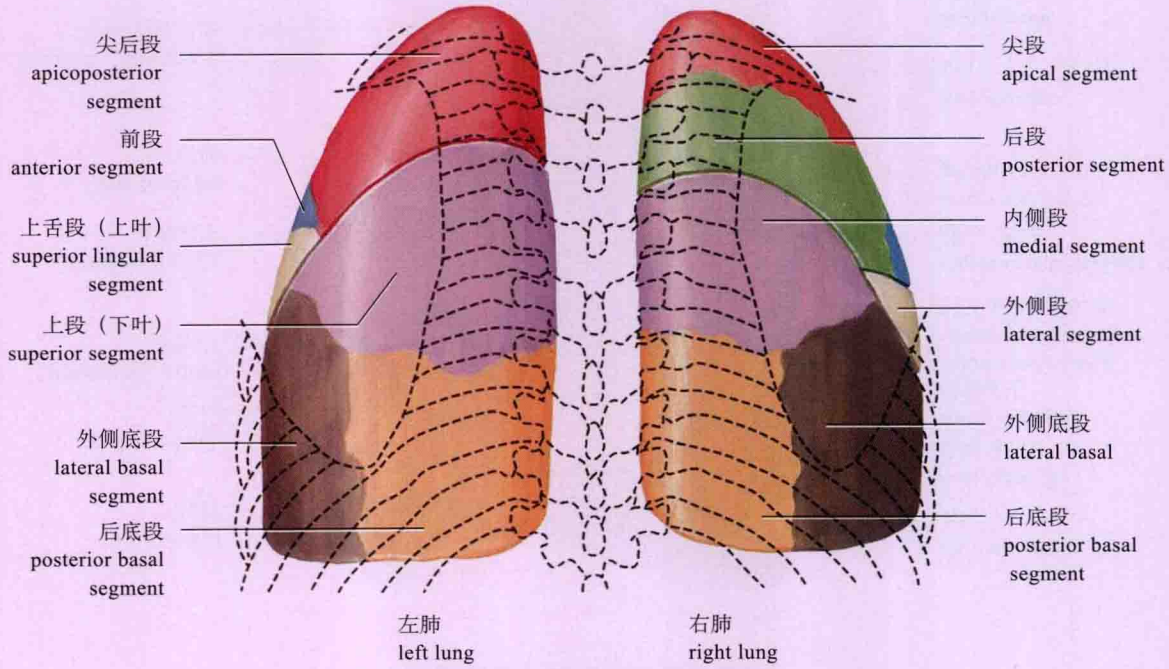


图 2–217　支气管肺段（后面观）

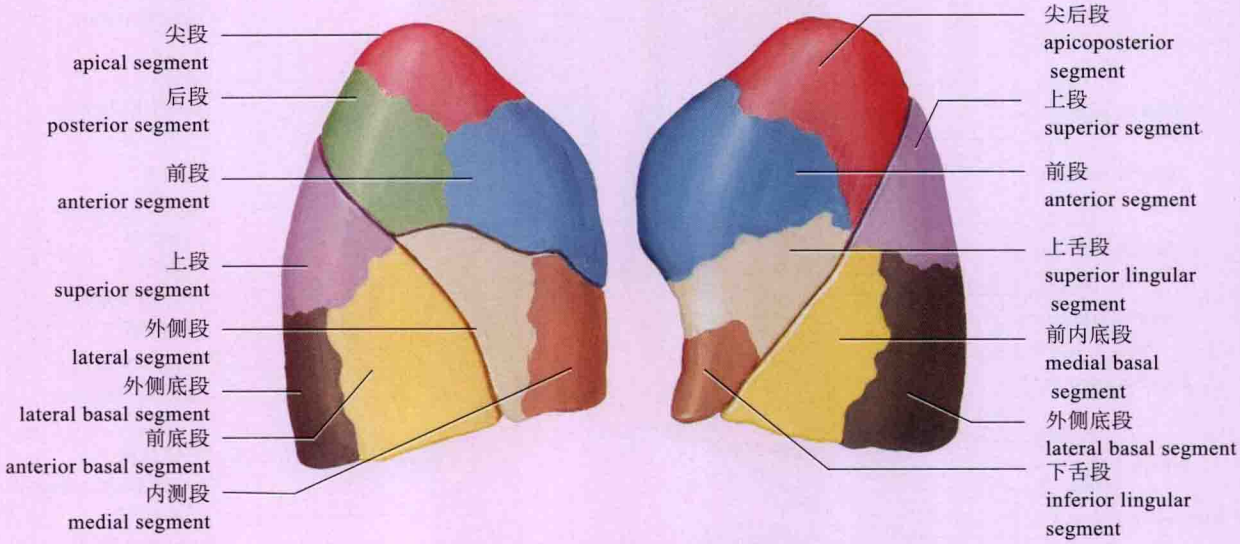


图 2–218　支气管肺段（前面观）

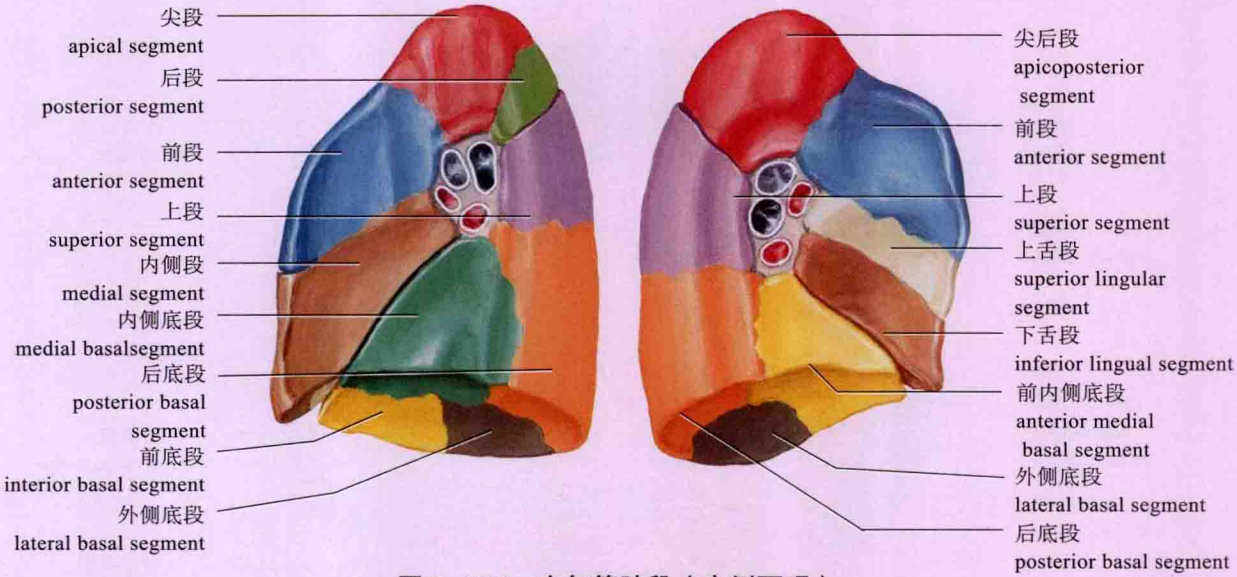


图 2-219 支气管肺段（内侧面观）

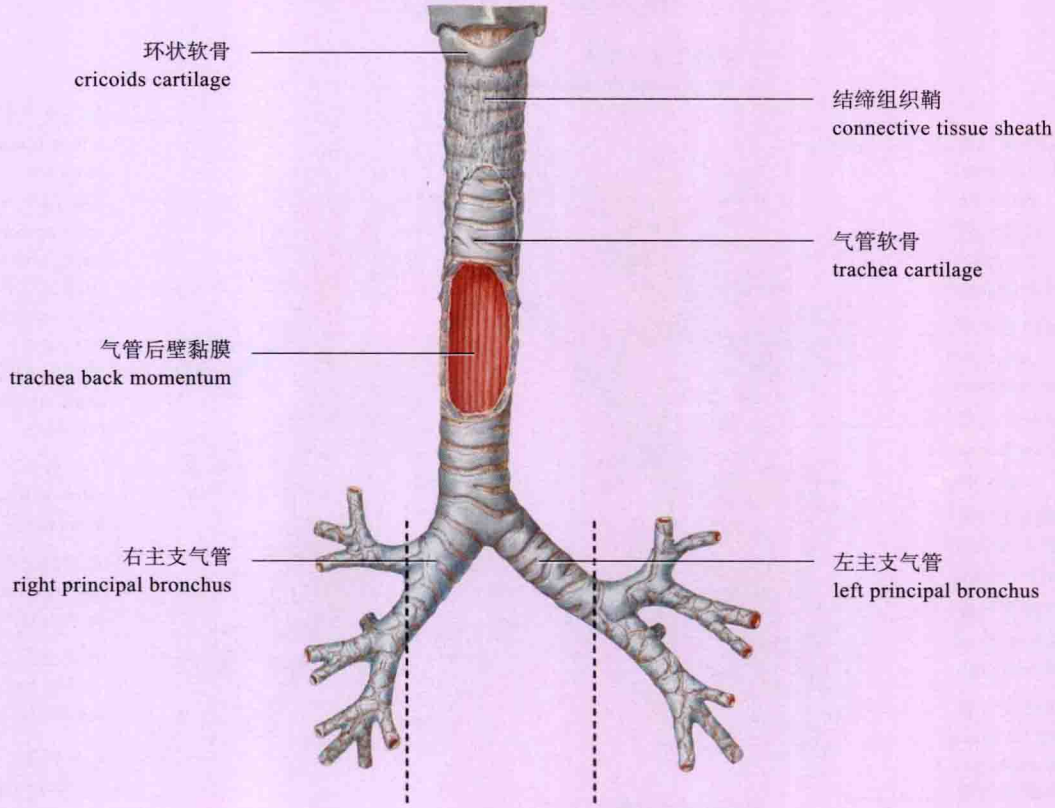


图 2-220 气管和主支气管（前面观）

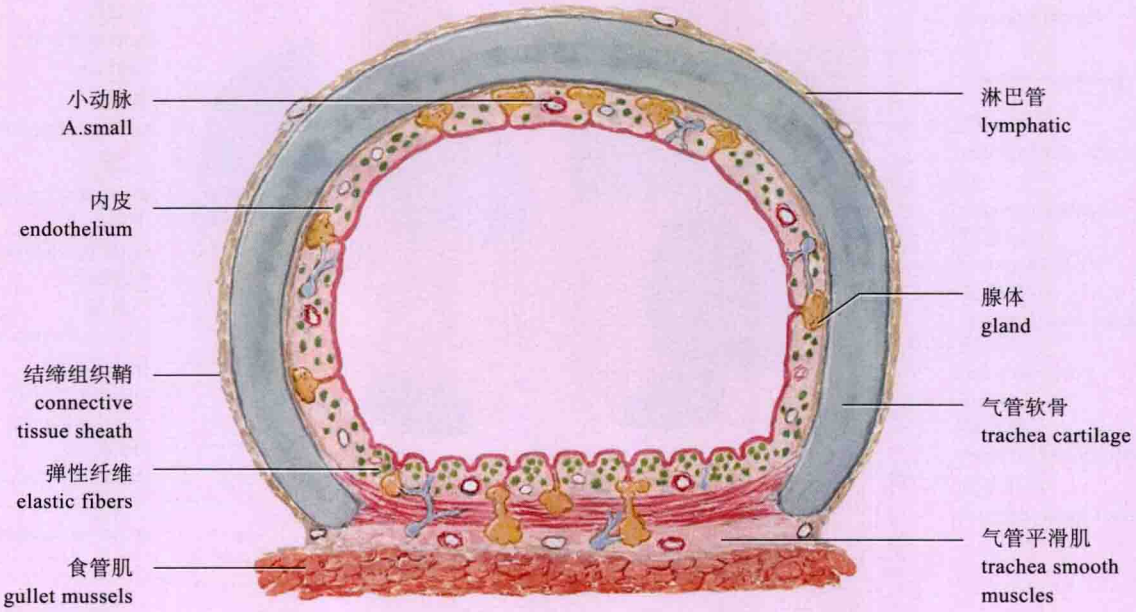


图 2-221 气管横断面

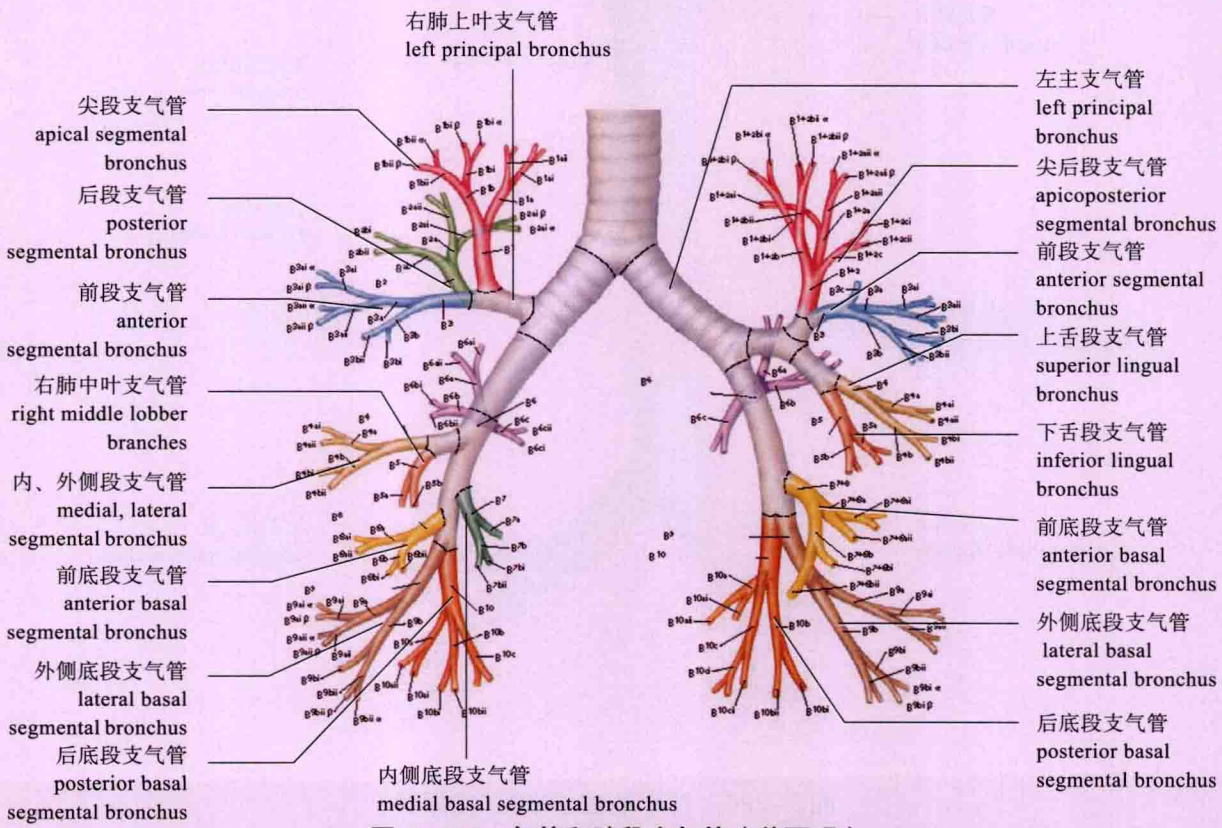


图 2-222 气管和肺段支气管（前面观）

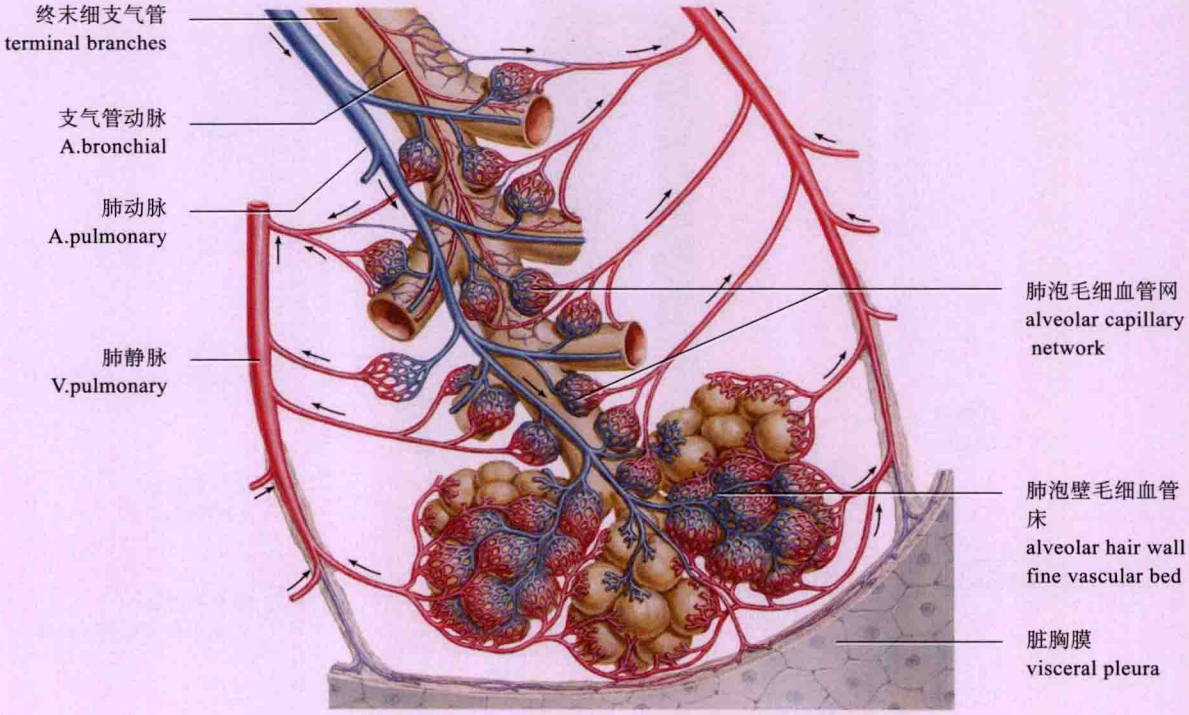


图 2-223 肺泡（模式图）

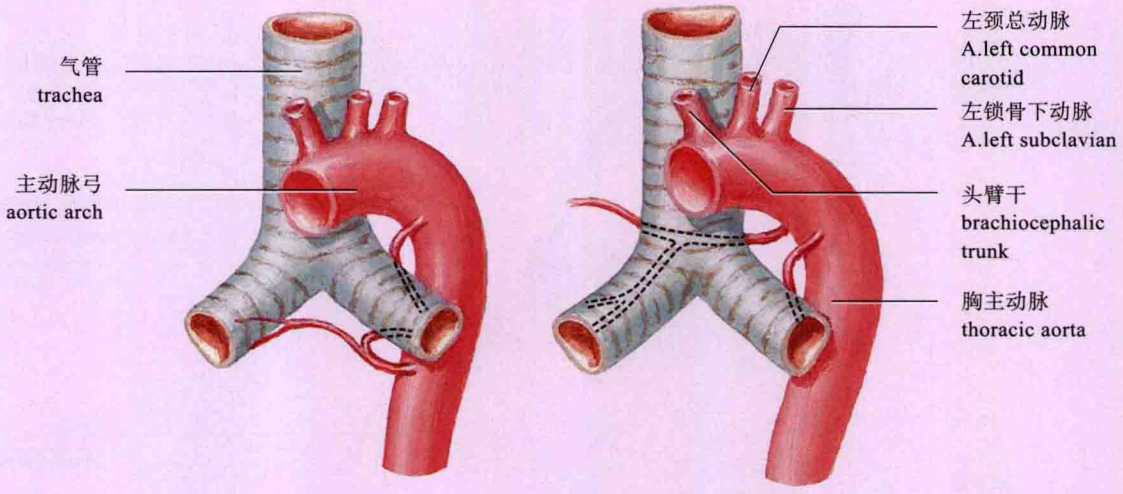


图 2-224 支气管动脉

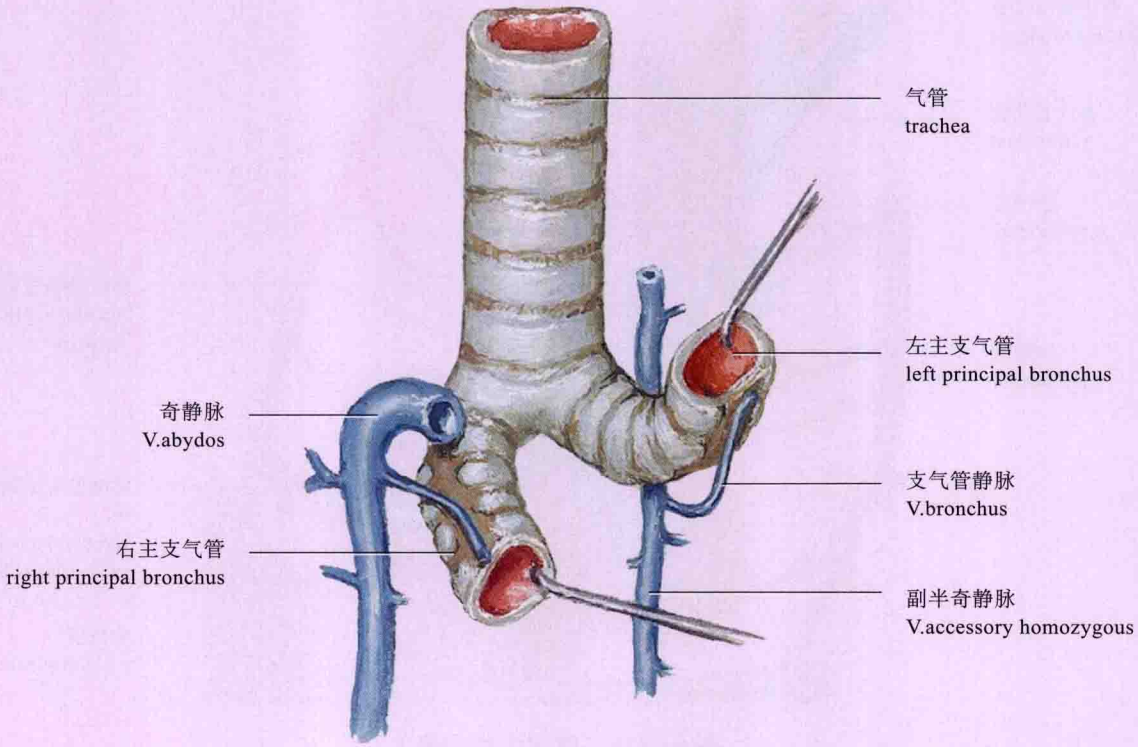


图 2-225 支气管静脉

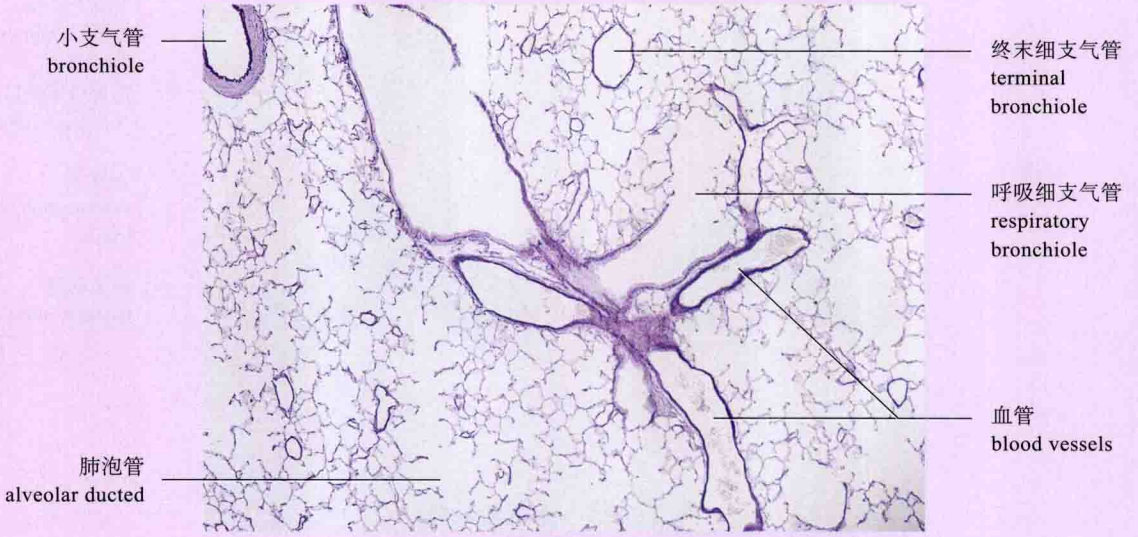


图 2-226 肺镜下（HE×40）

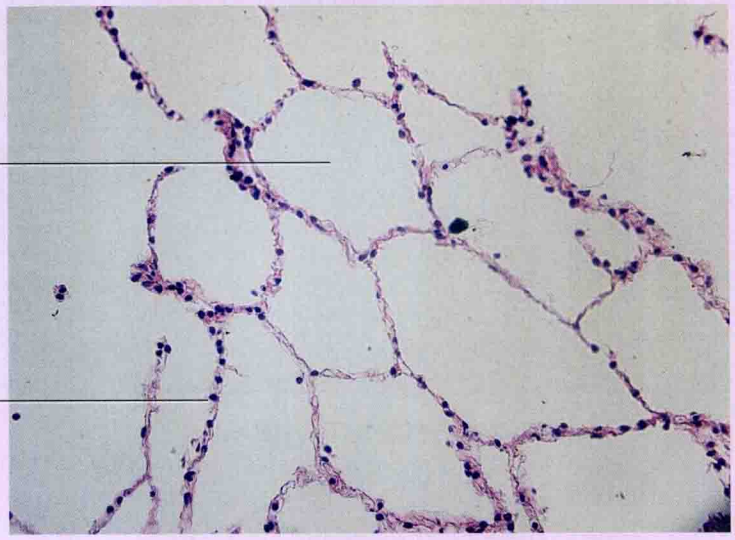


图 2-227　肺镜下（HE×200）



图 2-228　气管镜下（HE×40）



图 2-229 气管镜下（HE×100）



图 2-230 肺淤血（congestion of the lungs）

肺体积增大，重量增加，暗红色，新鲜标本切面流出泡沫状红色血性液体



图 2-231　肺淤血（congestion of the lungs）(HE × 100)

肺泡壁毛细血管扩张充血，肺泡腔内可见水肿液、红细胞、巨噬细胞和心力衰竭细胞

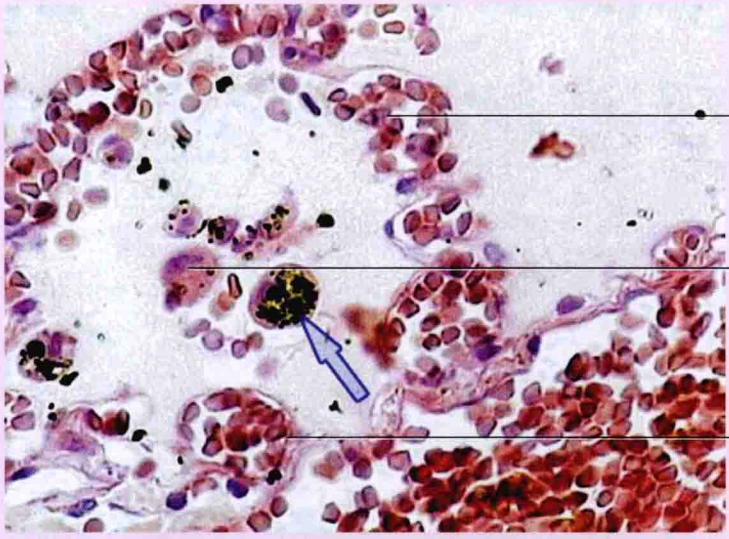


图 2-232　肺淤血（congestion of the lungs）(HE × 200)

肺泡腔内可见红细胞、巨噬细胞和心力衰竭细胞（蓝箭示）

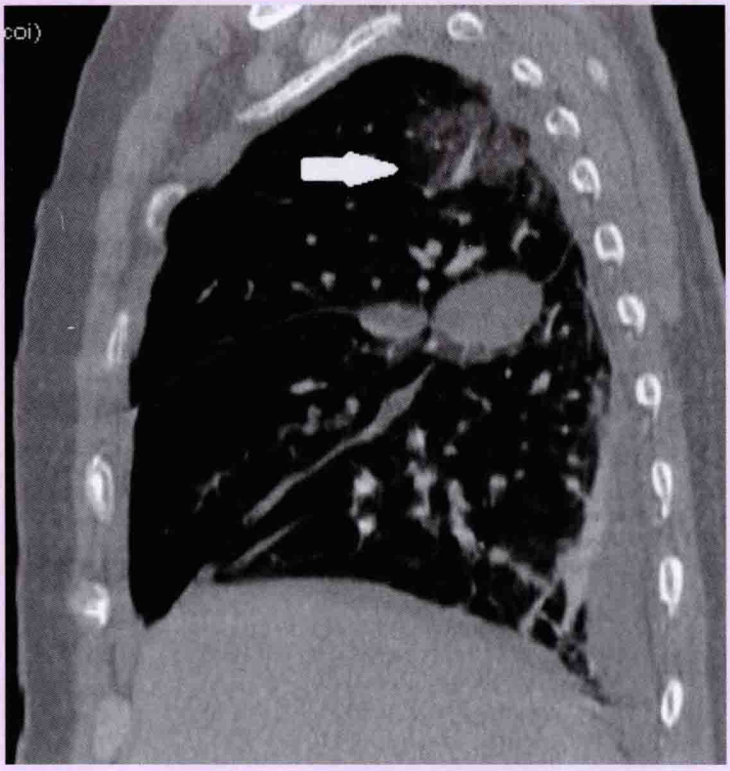


图 2-233 肺淤血

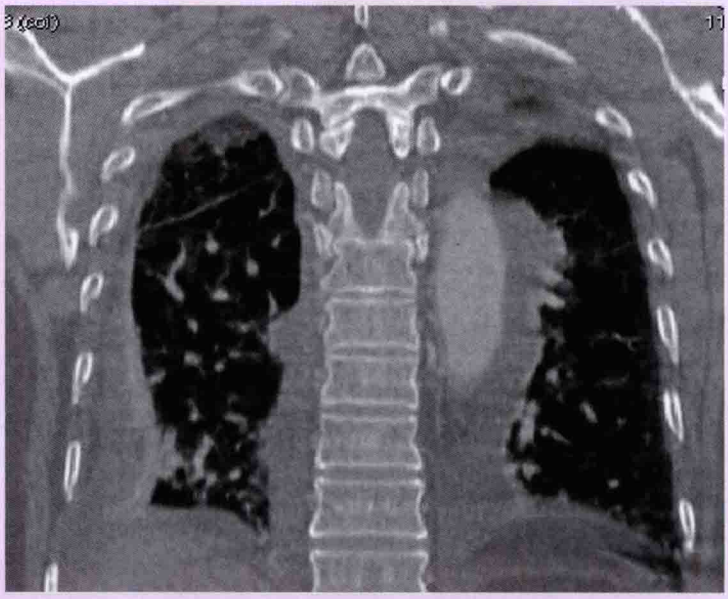


图 2-234 肺淤血

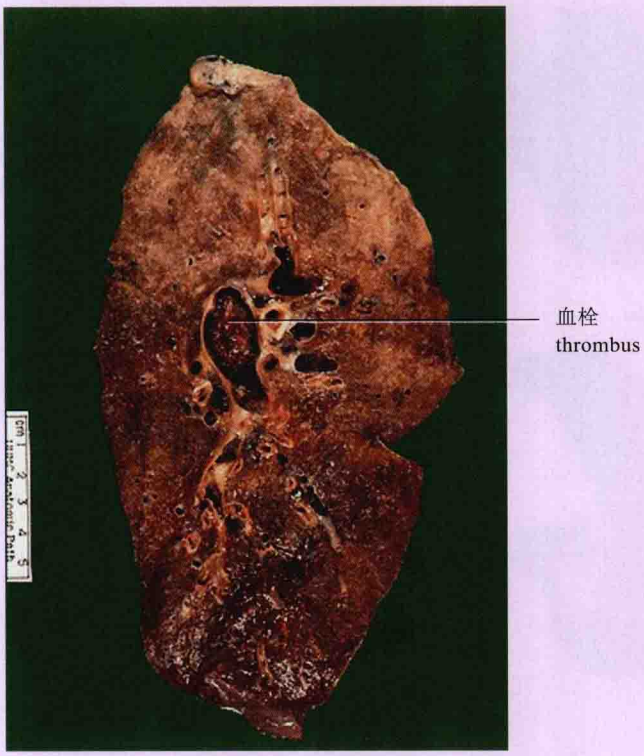


图 2-235　肺动脉血栓栓子（pulmonary thromboembolus）

肺动脉内可见一较大的血栓栓子，下肢静脉血栓脱落引起栓塞

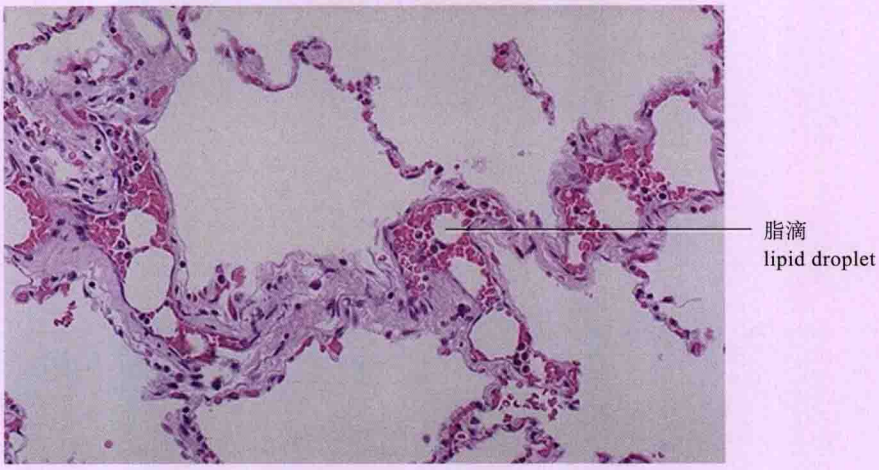


图 2-236　肺脂肪栓塞（pulmonary fat embolism）(HE × 100)

镜下肺组织血管内可见脂滴空泡

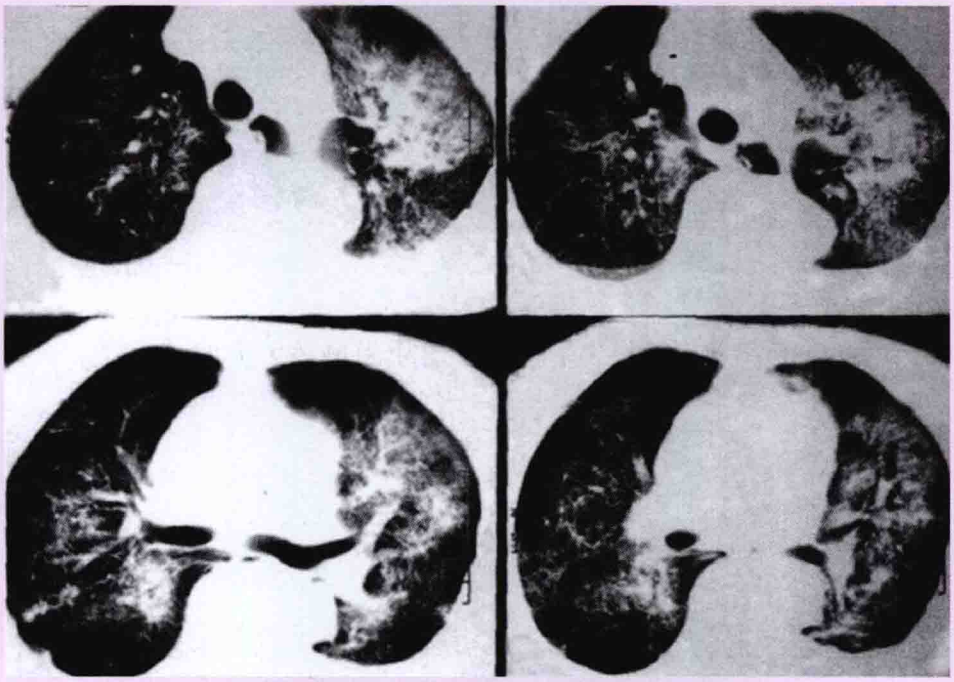


图 2-237 肺脂肪栓塞



图 2-238 肺出血性梗死（hemorrhagic pulmonary infarction）
肺下叶可见一红色楔形梗死灶，其表面有纤维素渗出

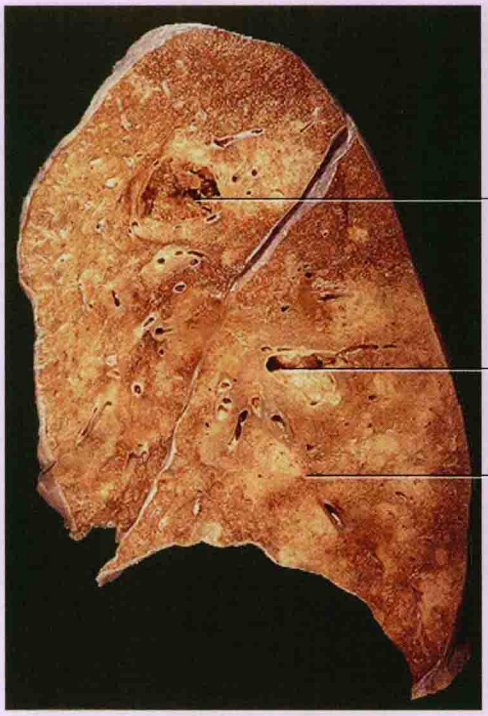


图 2-239　肺脓肿（lung abscess）

肺内可见两个脓肿，同时伴有肺炎

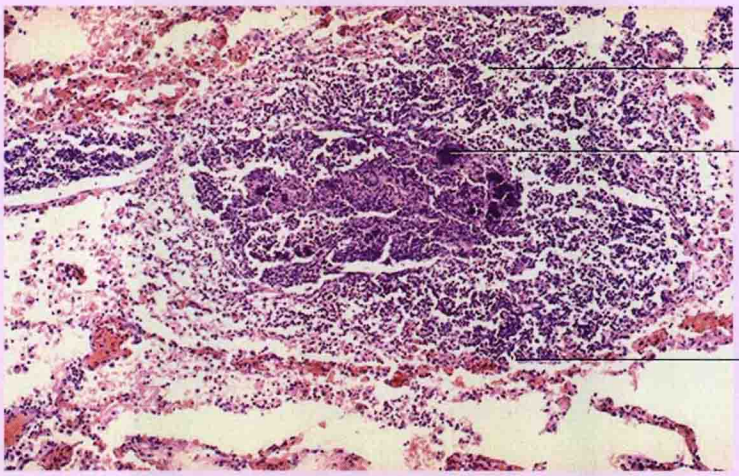


图 2-240　肺脓肿（lung abscess）

可见一脓肿，脓肿腔内充满含中性粒细胞、脓细胞和细菌等成分的脓液；毛细血管扩张充血

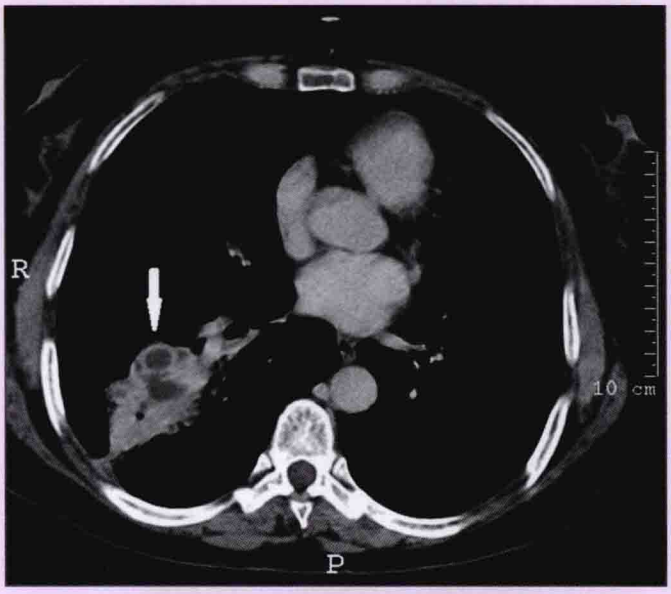


图 2-241 肺脓肿



图 2-242 大叶性肺炎（lobar pneumonia）

红色肝样变期，病变肺叶肿大，充血灰红色，质实如肝（下叶）



图 2–243　大叶性肺炎（lobar pneumonia）

灰色肝样变期，病变肺叶肿大，充血消退，灰白色，质实如肝（下叶）

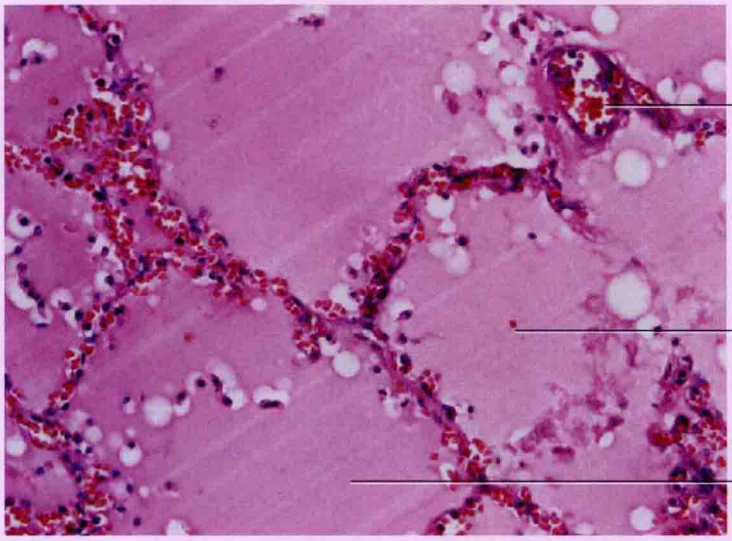


图 2–244　大叶性肺炎（lobar pneumonia）(HE × 100)

充血水肿期，肺泡间隔内毛细血管扩张充血，腔内大量浆液，少量红细胞、白细胞等

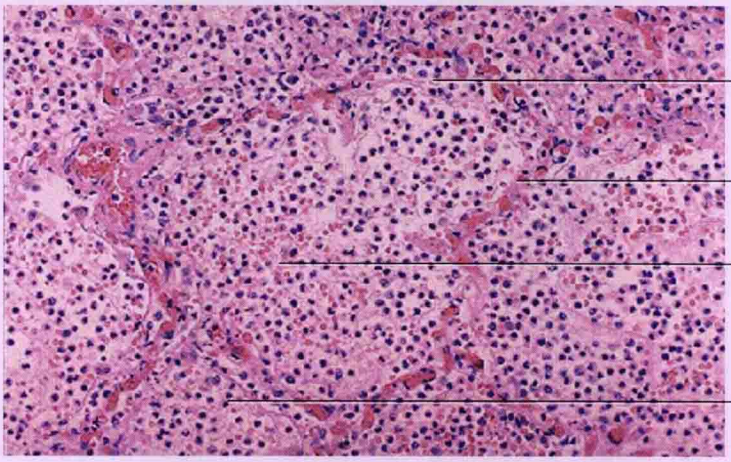


图 2-245 大叶性肺炎（lobar pneumonia）(HE × 100)

红色肝样变期，肺泡壁毛细血管扩张充血，肺泡腔内可见中性粒细胞、红细胞和纤维素等

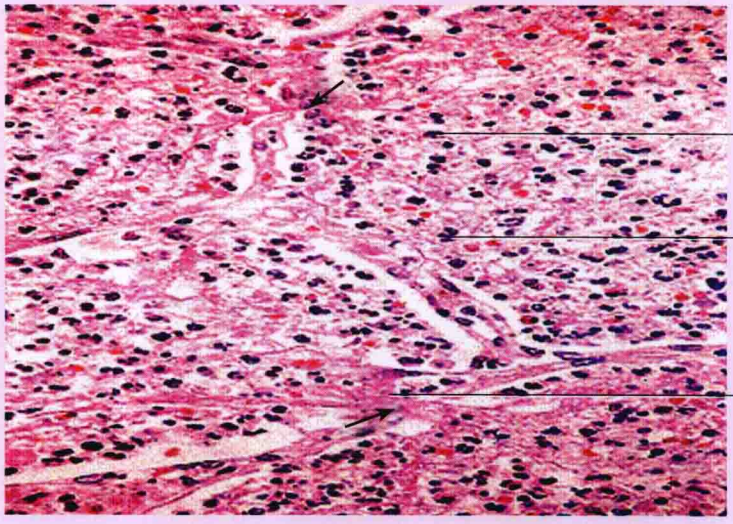


图 2-246 大叶性肺炎（lobar pneumonia）(HE × 100)

灰色肝样变期，肺泡壁变窄，肺泡腔内可见大量纤维素，纤维素通过肺泡间孔相连（箭示），中性粒细胞和巨噬细胞等

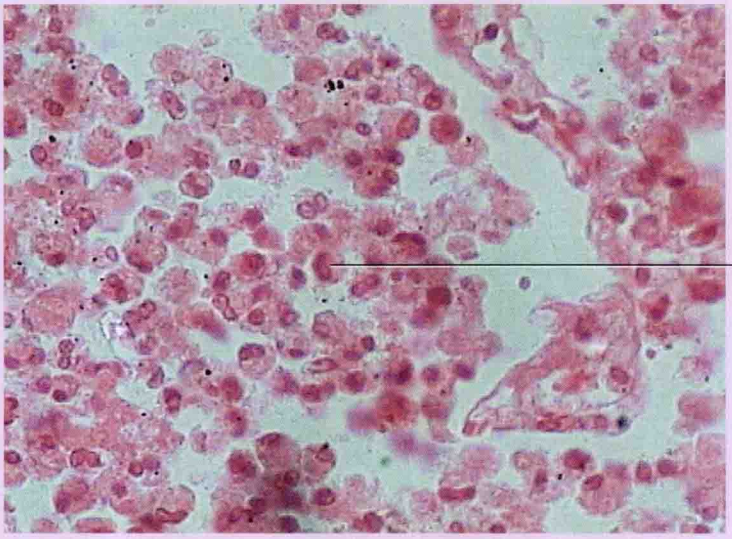


图 2-247　大叶性肺炎（lobar pneumonia）(HE × 200)
溶解消散期，肺泡腔内大量巨噬细胞渗出

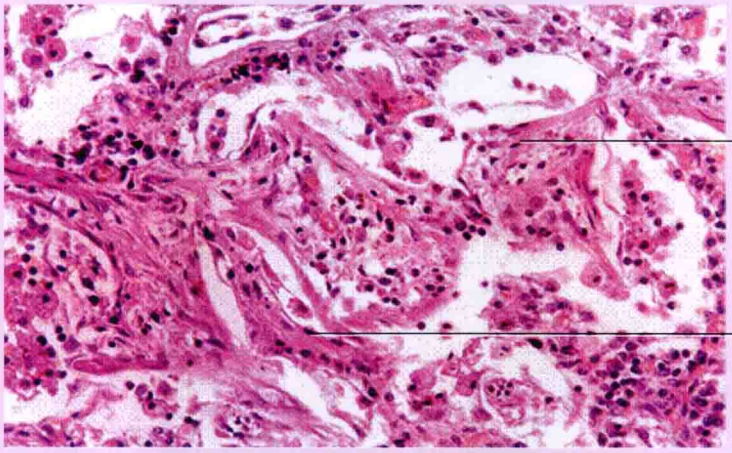


图 2-248　大叶性肺炎（lobar pneumonia）(HE × 100)
肺肉质变（pneumonary carification）为大叶性肺炎的合并症。大量未能被溶解吸收的纤维素被肉芽组织机化，呈褐色肉样纤维组织

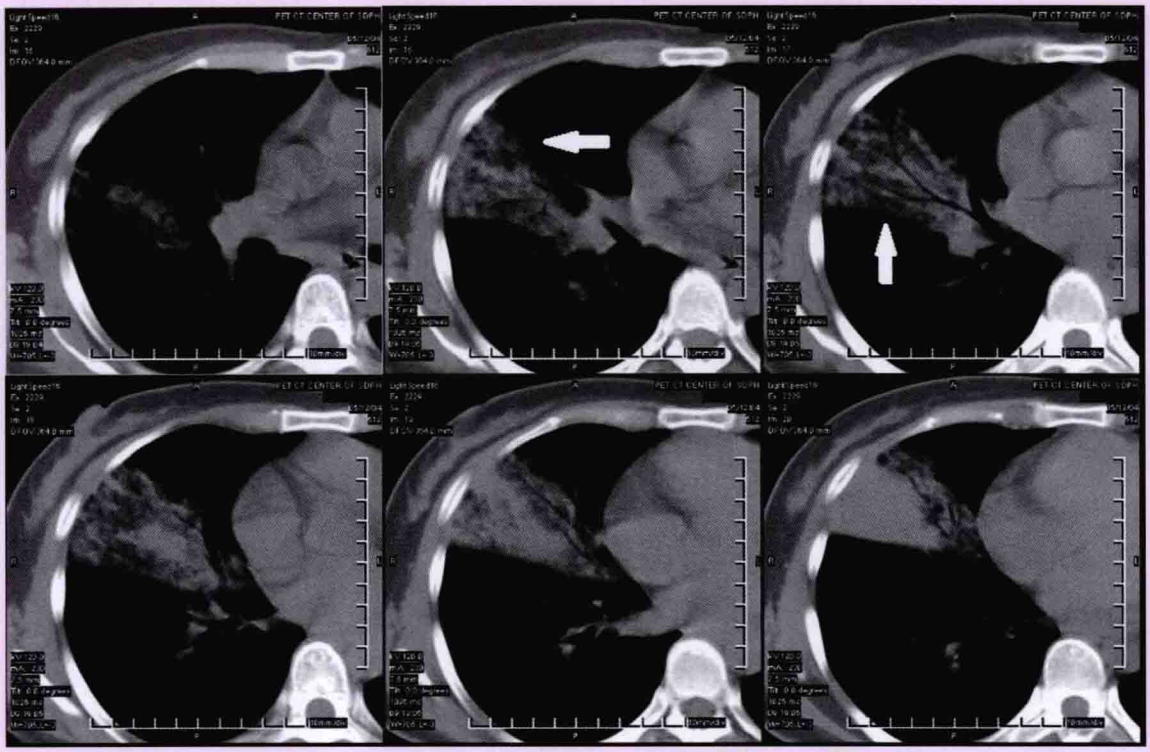


图 2-249 大叶性肺炎

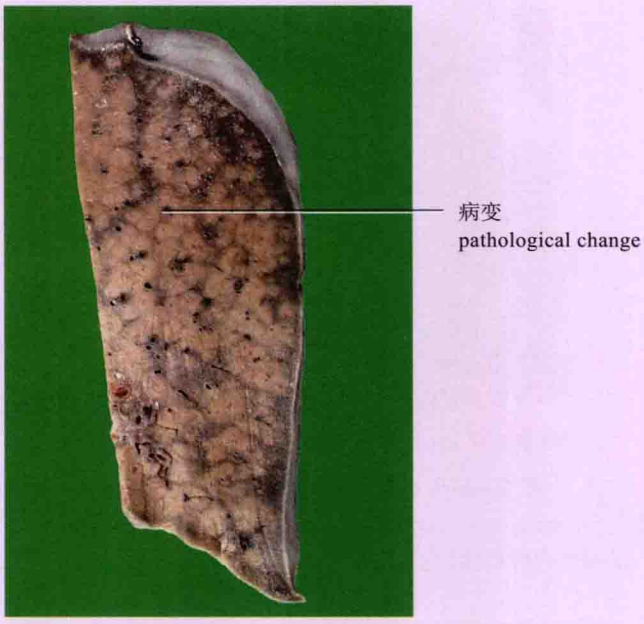


图 2-250 小叶性肺炎（lobular pneumonia）

肺内散在分布的多发性实变灶，大小不等，一般为 1cm 左右（相当肺小叶范围）



图 2-251　小叶性肺炎（lobular pneumonia）(HE × 100)

受累的支气管充血水肿，上皮细胞变性坏死，脱落，腔内充满中性粒细胞、脓细胞等渗出物



图 2-252　病毒性肺炎（viral pneumonia）

支气管周围肺组织充血、水肿



图 2–253 病毒性肺炎（viral pneumonia）(HE × 100)

肺泡间隔增宽，其内血管充血、间质水肿、淋巴细胞浸润，腔内少量渗出物

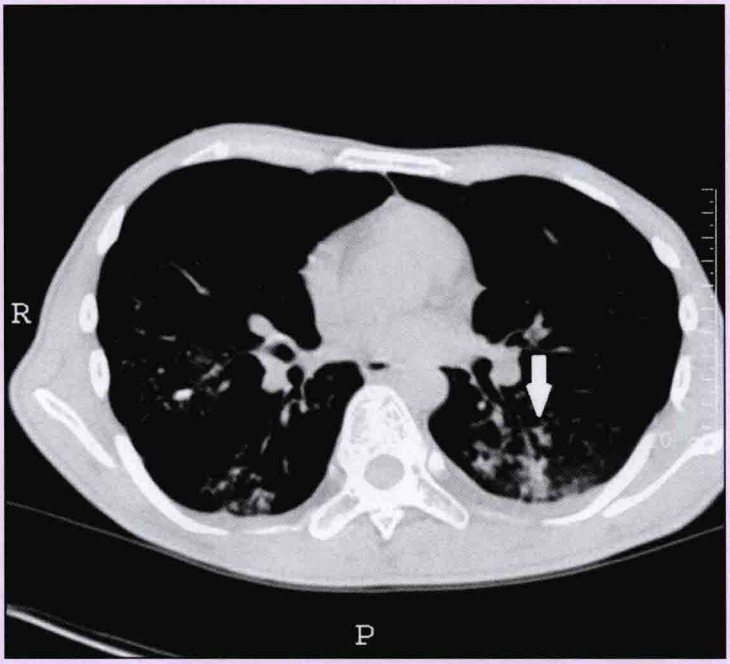


图 2–254 支气管肺炎



图 2-255 支气管肺炎

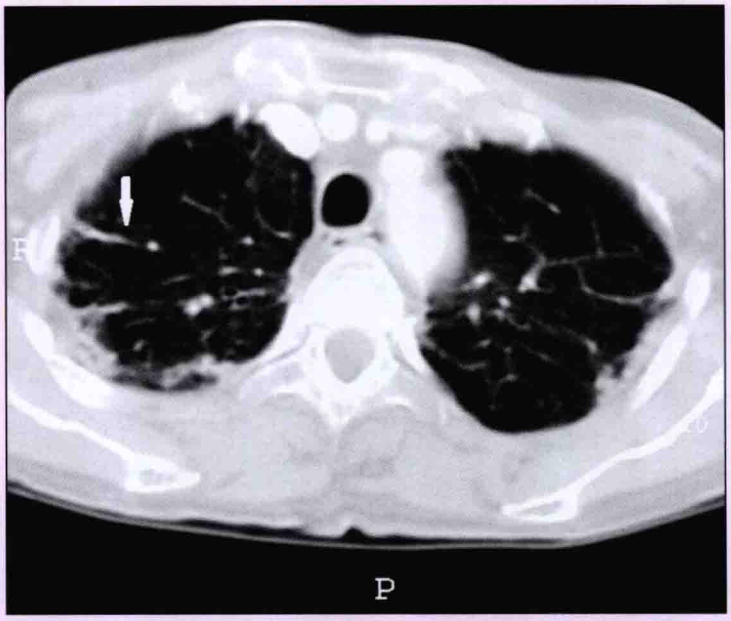


图 2-256 间质性肺炎

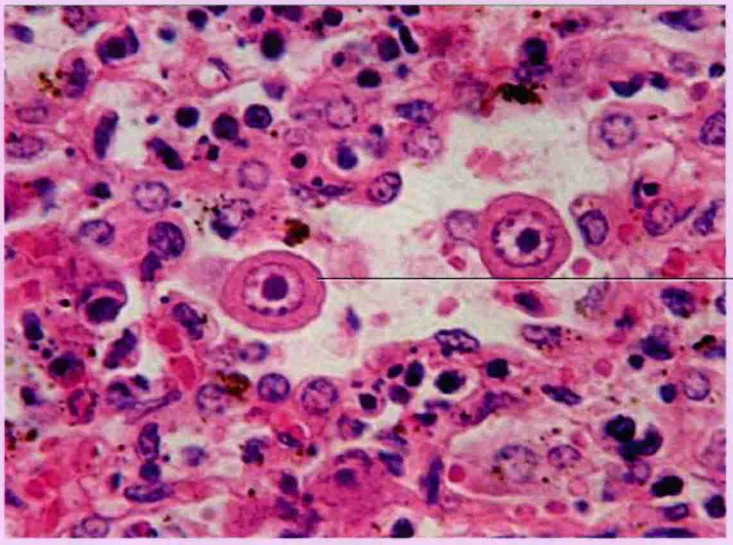


图 2-257 病毒包涵体（viral inclusive body）(HE×200)

病毒性肺炎病理诊断重要依据是找到病毒包涵体。其常呈圆形或椭圆形，红细胞大小，嗜酸性红染，周围有一清晰的透明晕

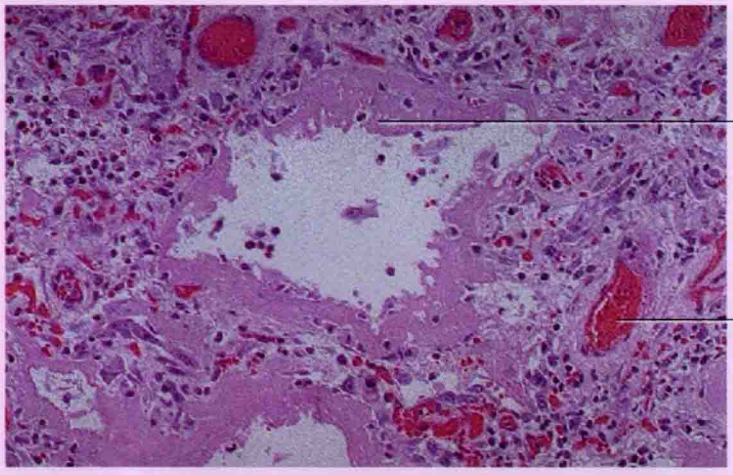


图 2-258 急性呼吸窘迫综合症（adult respiratory distress syndrome）(HE×100)

肺间质毛细血管扩张充血，肺泡间隔变宽；在呼吸性细支气管、肺泡管及肺泡的内表面可见薄层红染的膜状物被覆，即透明膜

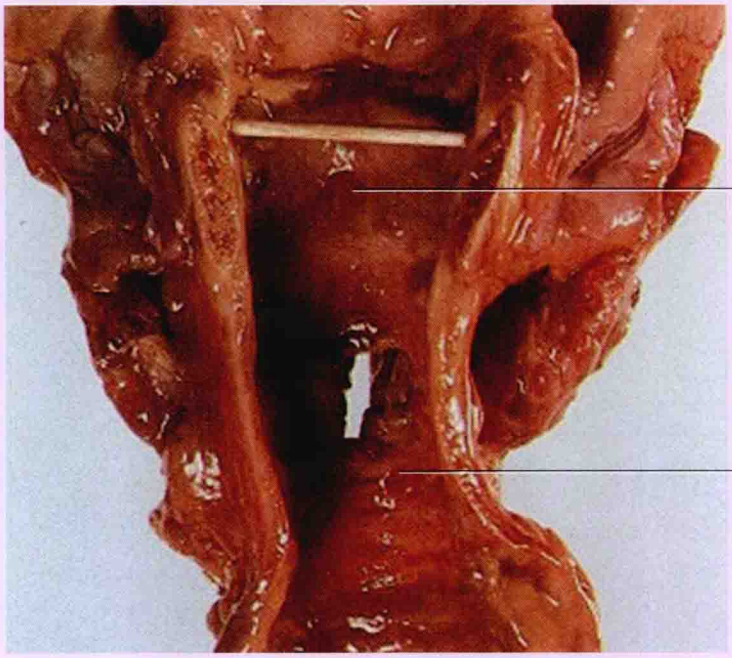


图 2-259　急性气管炎（acute rachitic）

气管黏膜充血变红，可见黏膜溃疡，气管壁水肿增厚

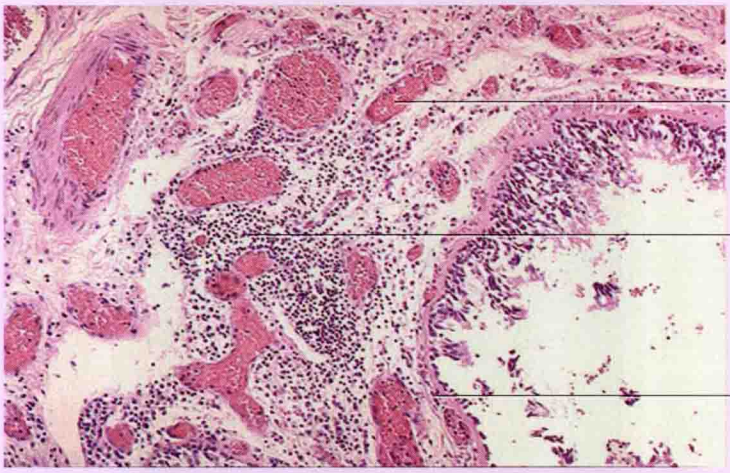


图 2-260　慢性支气管炎（chronic bronchitis）(HE × 40)

管壁增厚，可见充血、慢性炎细胞浸润，管腔内黏膜上皮变性坏死脱落

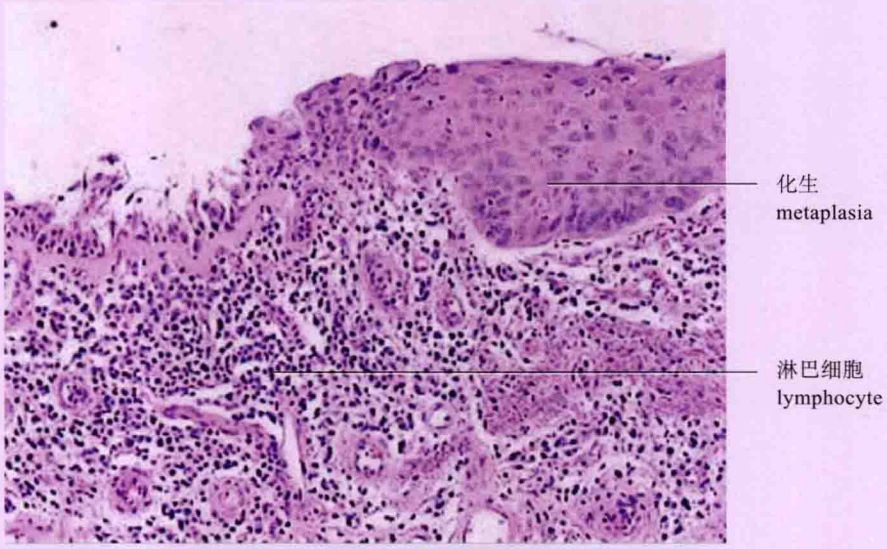


图 2-261 慢性支气管炎（chronic bronchitis）(HE × 100)
管壁内淋巴细胞浸润，鳞状上皮化生



图 2-262 肺气肿（emphysema）
病变肺明显肿胀，边缘变钝，色苍白，切面呈蜂窝状

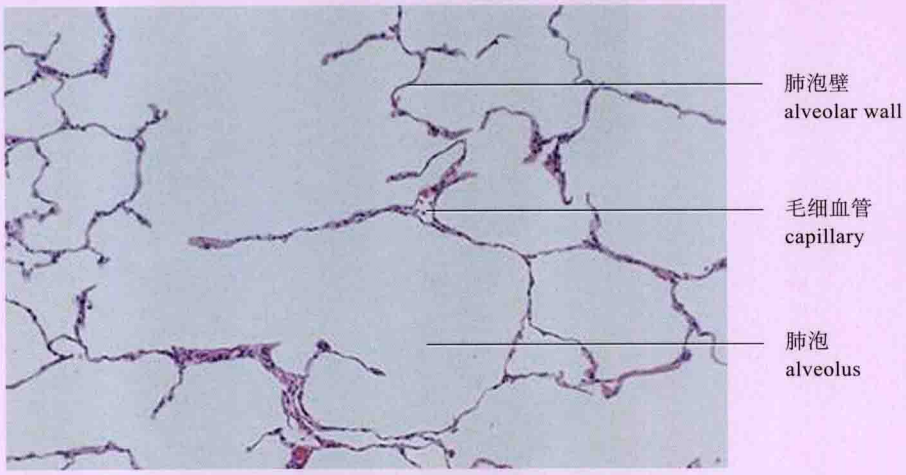


图 2-263　肺气肿（emphysema）

肺泡明显扩张变大，肺泡壁变窄，毛细血管受压减少

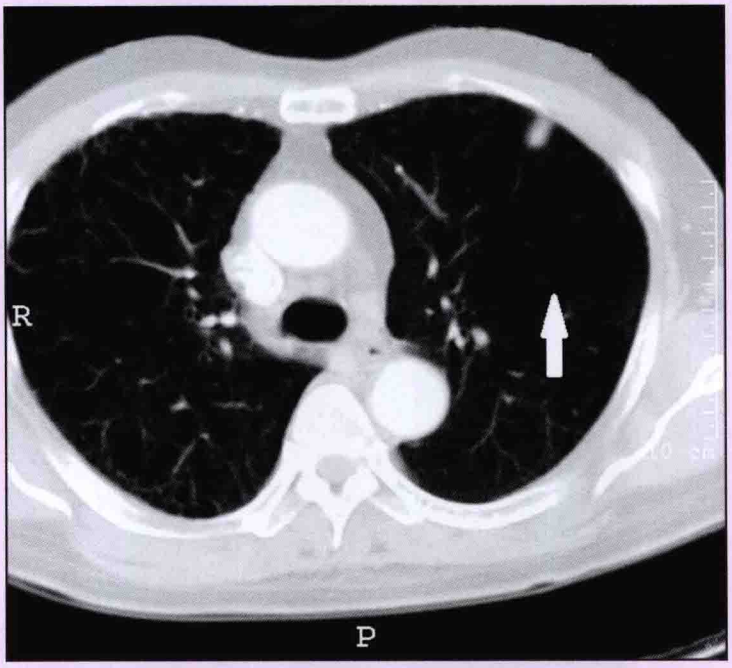


图 2-264　肺气肿

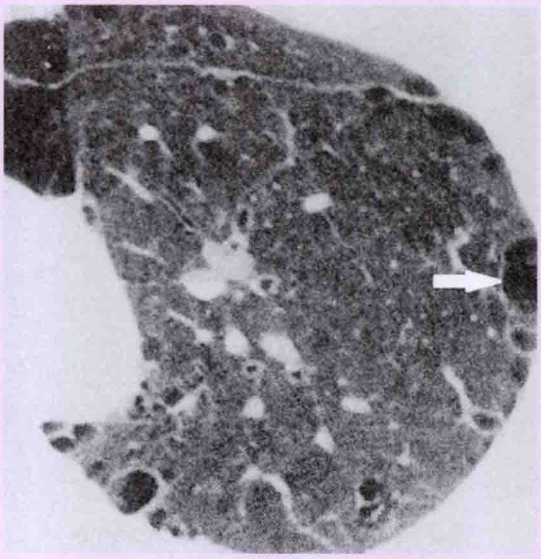


图 2-265 间隔旁肺气肿

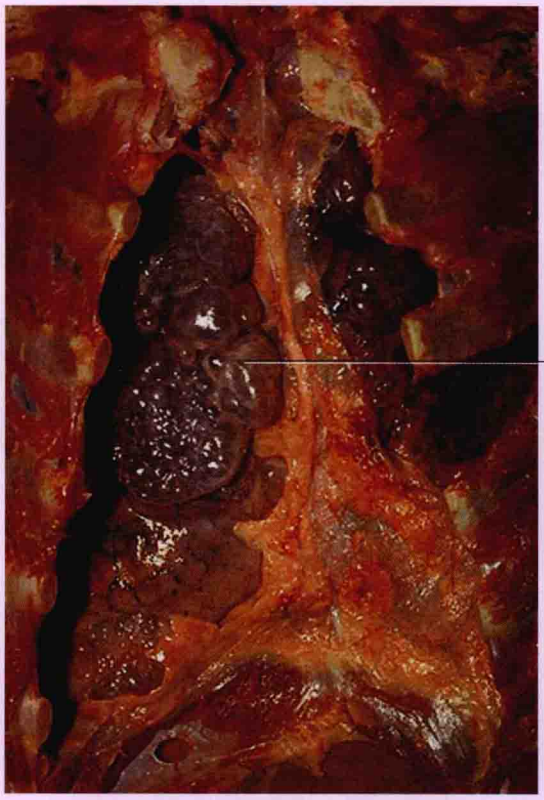


图 2-266 肺大泡（bullos emphy seme）

局部肺泡破坏严重，气肿囊泡直径超过 2cm 并破坏小叶间隔时形成肺大泡

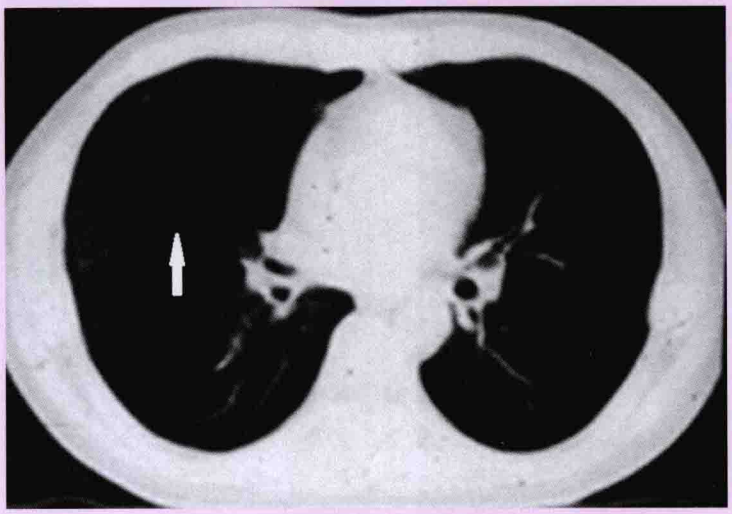


图 2-267　肺大泡

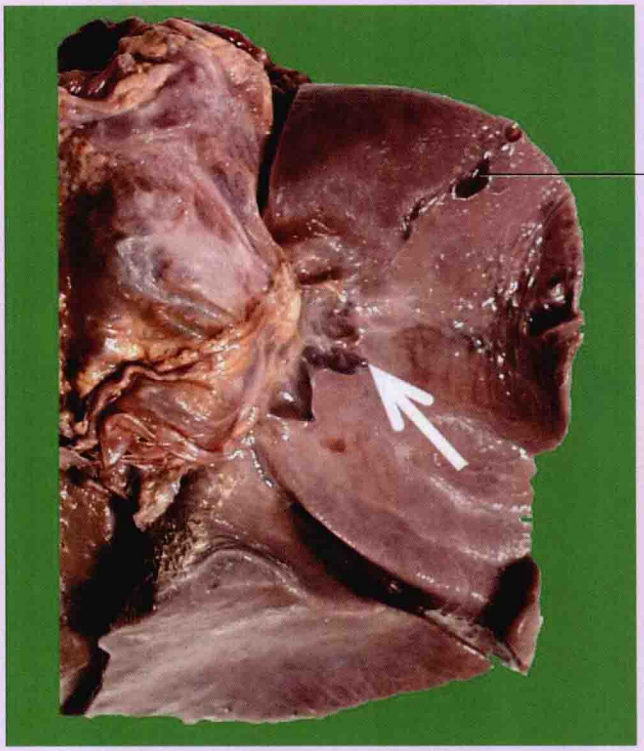


图 2-268　间质性肺气肿（interstitial emphysema）
气体进入肺间质，形成成串的小气泡呈网状分布于肺叶间隔、肺膜下（箭示）



图 2-269 支气管扩张症（bronchiectasis）

扩张支气管壁增厚，邻近肺组织肺气肿



图 2-270 支气管扩张症（bronchiectasis）

左下肺叶慢性支气管扩张。扩张支气管壁增厚，黏膜面可见纤维条索。邻近肺组织纤维化

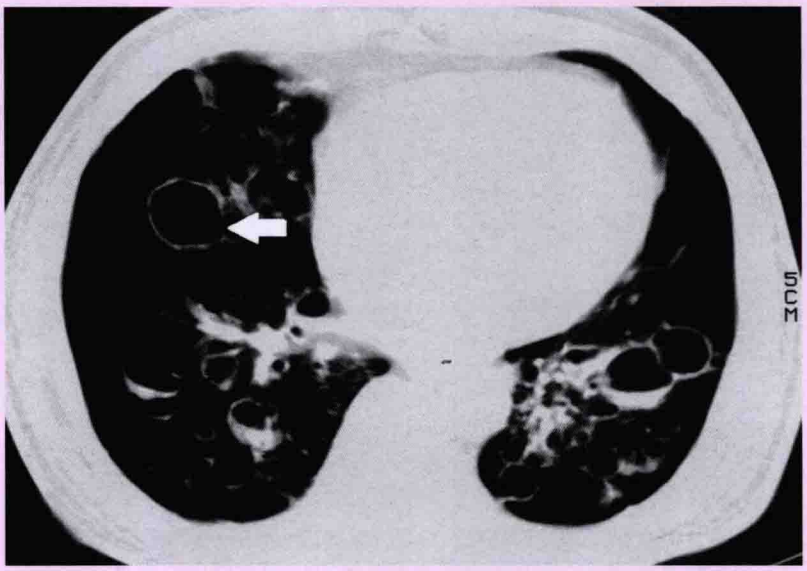


图 2-271　支气管扩张

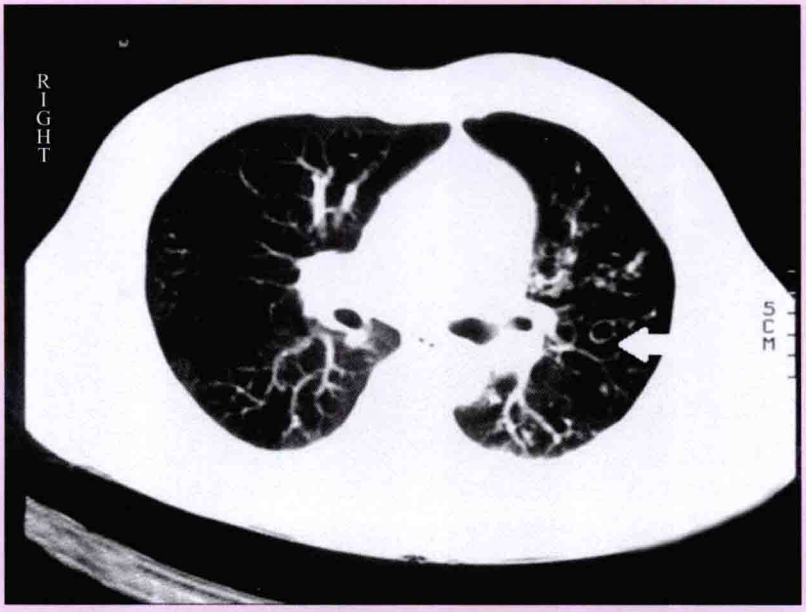


图 2-272　左侧支气管扩张

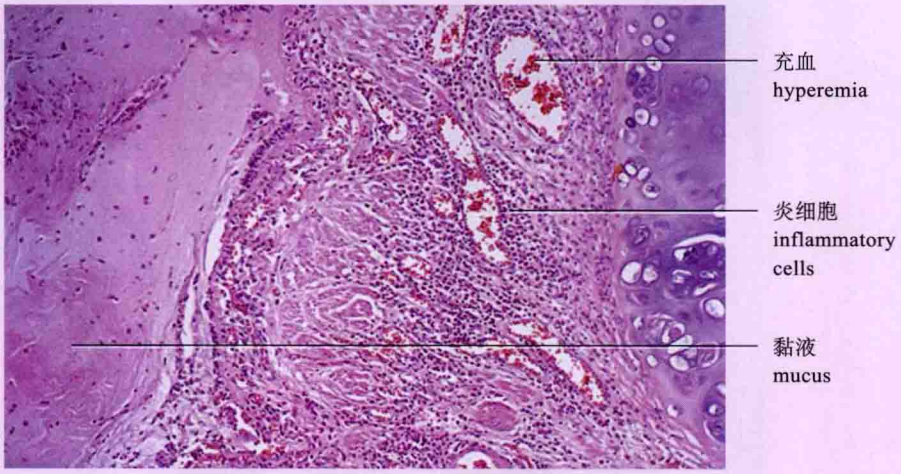


图 2-273 支气管哮喘（bronchial asthma）(HE × 40)
支气管壁血管扩张充血、炎细胞浸润，支气管腔内充满黏液（黏液栓）

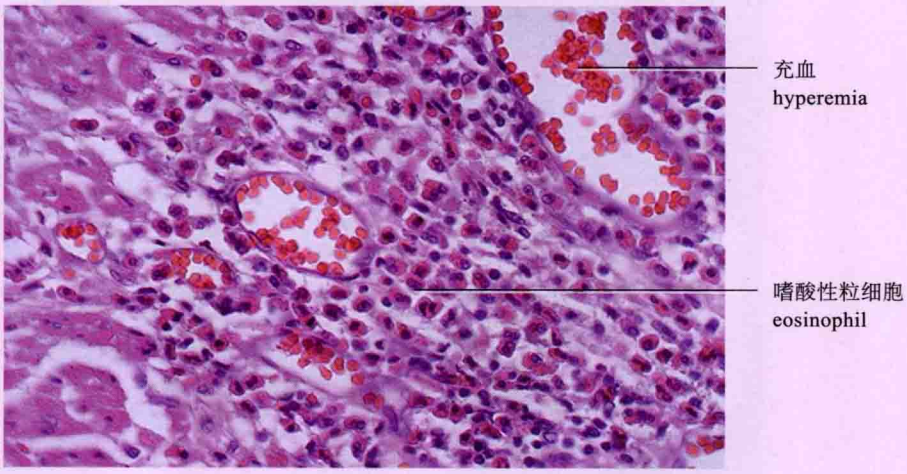


图 2-274 支气管哮喘（bronchial asthma）(HE × 200)
管壁内可见血管充血及嗜酸性粒细胞



图 2-275　化脓性胸膜炎（purulent pleuritis）
胸膜表面可见灰黄色脓性渗出物，严重者可形成脓胸

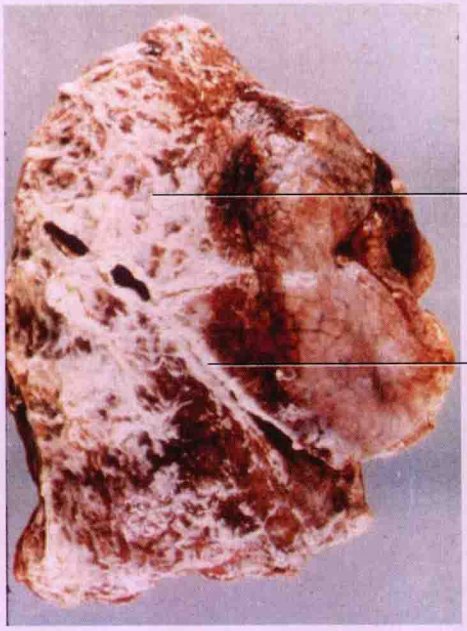


图 2-276　纤维素性胸膜炎（fibrinous pleuritis）
左肺表面黄白色膜状物（即纤维素）附着，并使两叶肺组织粘连

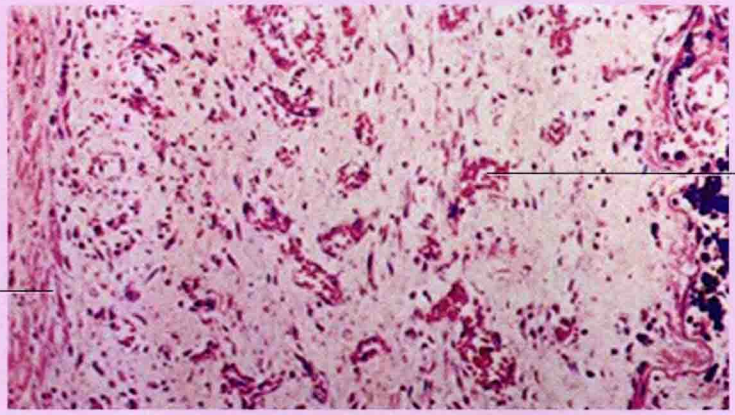


图 2–277　纤维性胸膜炎（Fibrinous pleuritis）(HE × 40)

胸膜纤维素渗出并被肉芽组织替代，肉芽组织内血管丰富

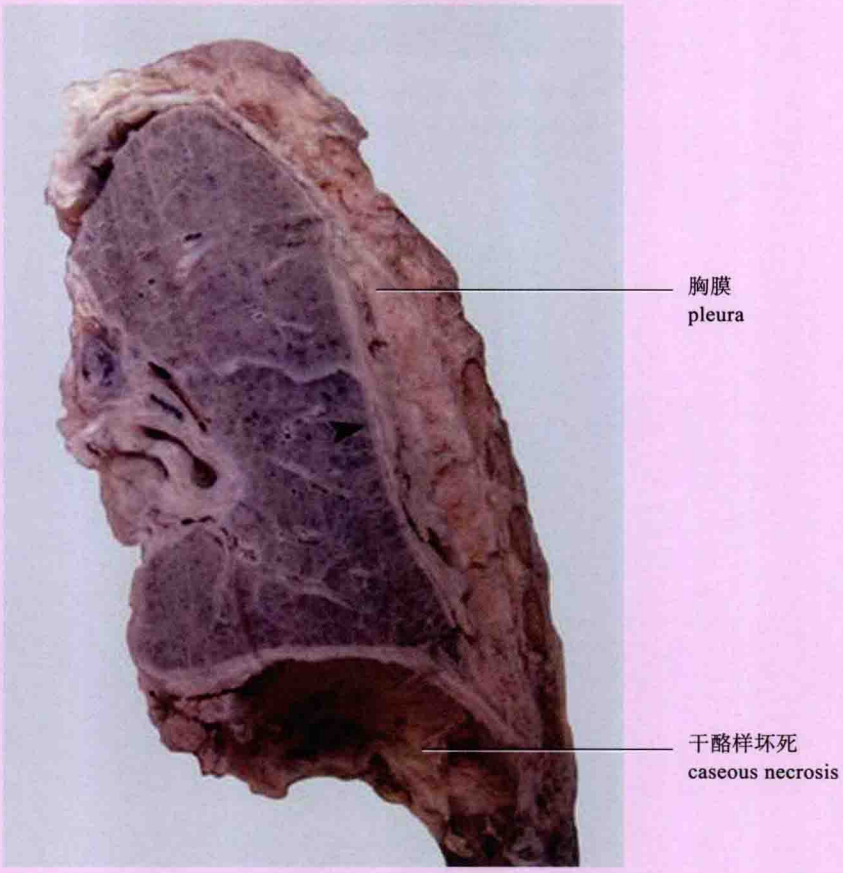


图 2–278　结核性胸膜炎（tuberculosis pleuritis）

胸膜粘连增厚，可见干酪样坏死

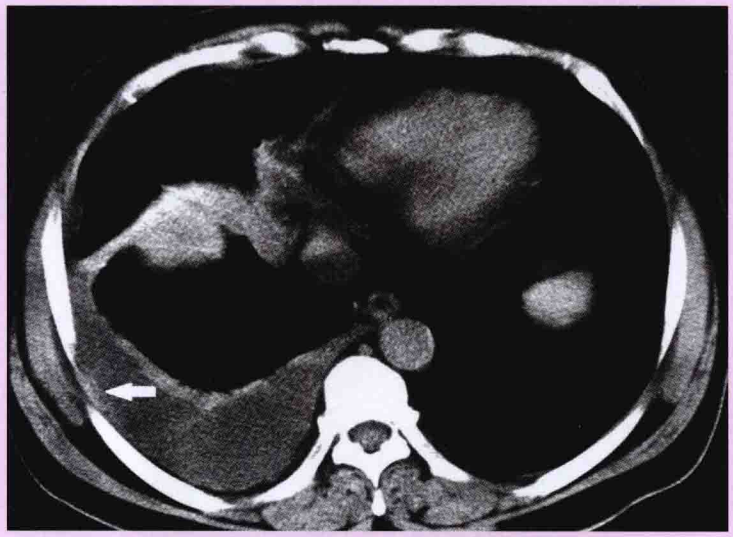


图 2-279　结核性胸膜炎

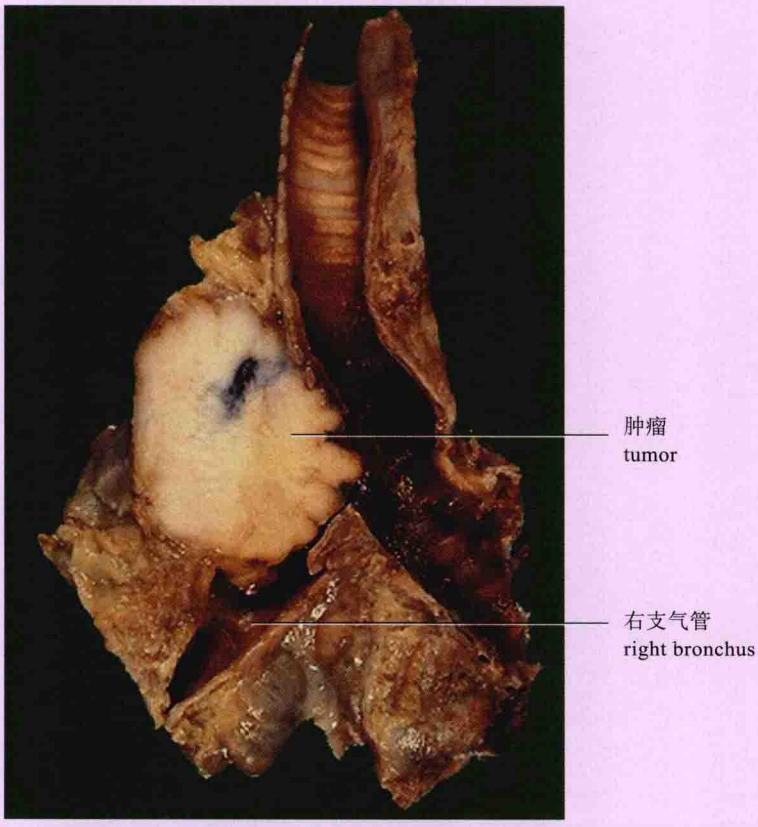


图 2-280　肺癌（carcinoma of the lung）
中央型，灰白色癌组织浸润气管及致右主支气管明显狭窄

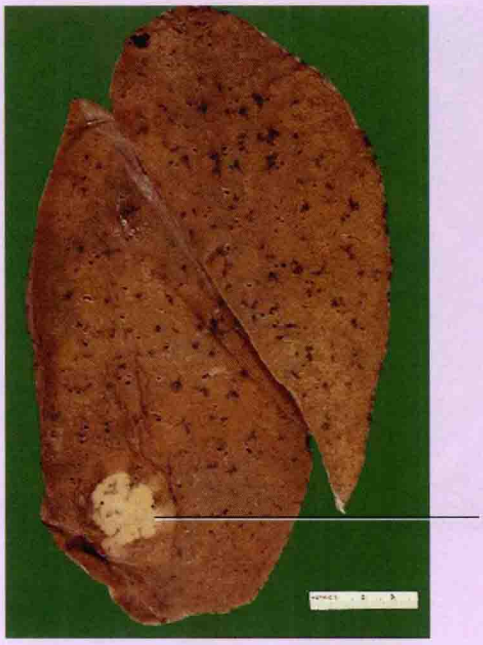


图 2-281 肺癌（carcinoma of the lung）
周围型，靠近胸膜的肺周边组织形成孤立的癌结节

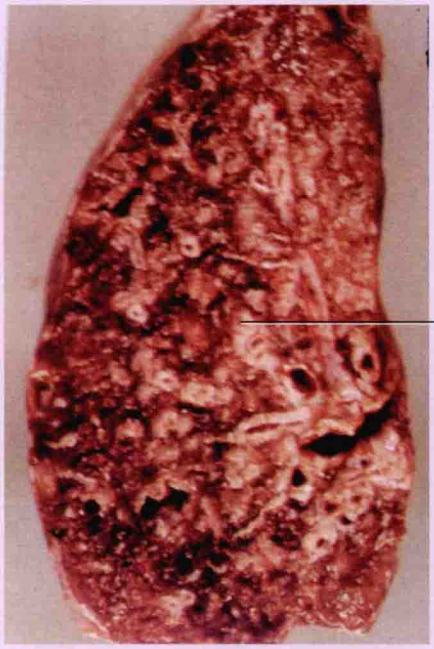


图 2-282 肺癌（carcinoma of the lung）
弥漫型，癌组织弥漫性浸润部分或全部肺叶，呈多数粟粒大小的灰白色结节

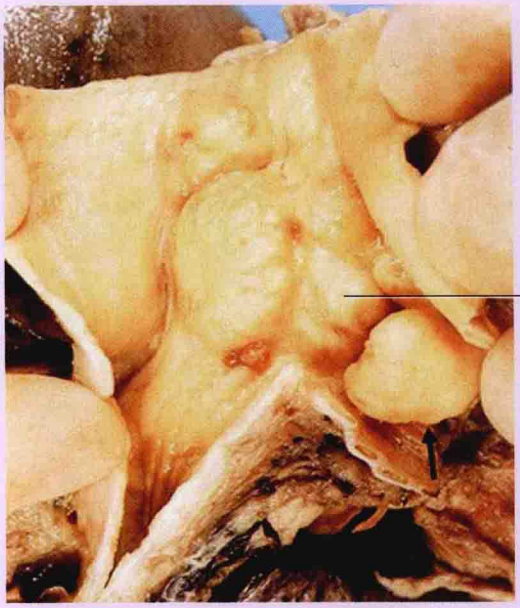


图 2-283　肺癌（carcinoma of the lung）
气管分叉处肿瘤向管腔内生长



图 2-284　燕麦细胞癌（an oat cell carcinoma）
癌组织沿着支气管浸润性生长

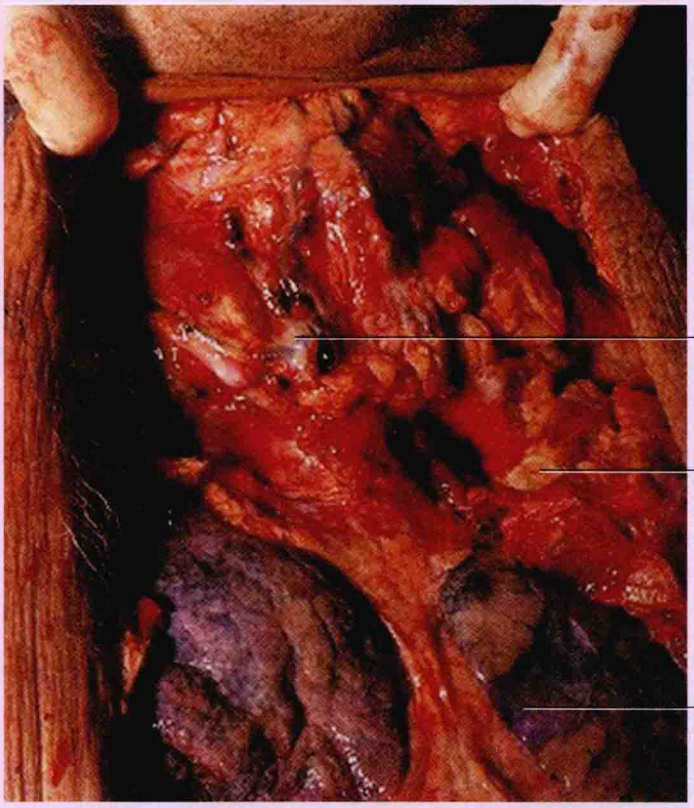


图 2–285 肺癌致上腔静脉阻塞（obstruction of the superior vena cava by a primary lung cancer）

灰白色癌组织围绕上腔静脉周围生长并致上腔静脉阻塞



图 2–286 肺癌（carcinoma of the lung）(HE × 40)

肺鳞状细胞癌，癌细胞形成大小不等，形状不规则的癌巢，癌中央可见角化珠（高分化）

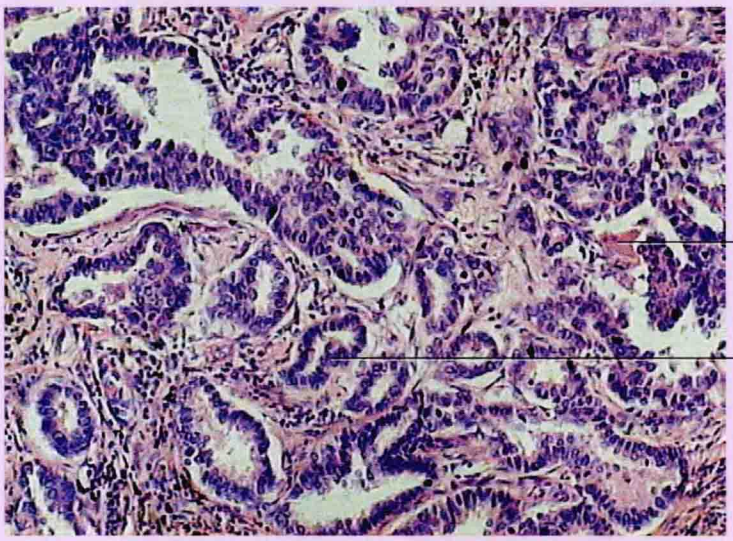


图 2-287　肺癌（carcinoma of the lung）(HE × 200)
肺腺癌，癌细胞构成大小不等的腺管状癌巢，腔内有分泌物

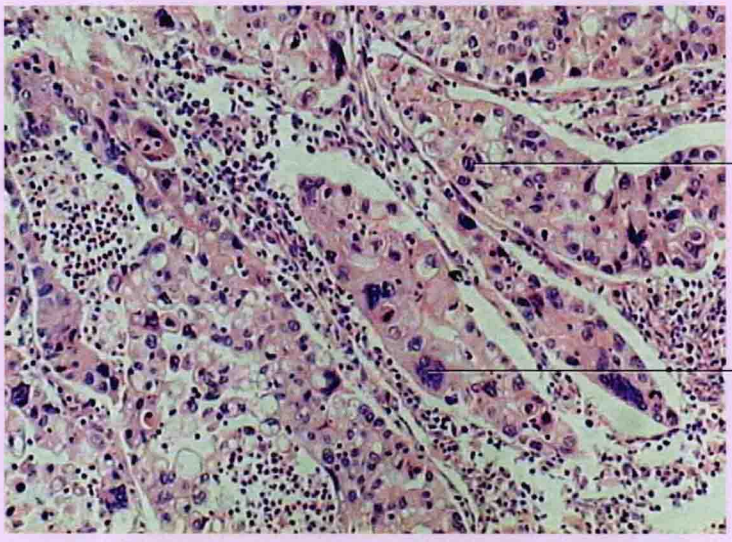


图 2-288　肺癌（carcinoma of the lung）(HE × 100)
肺大细胞癌，癌细胞大，胞浆丰富，细胞呈多角形，异型性明显，可见瘤巨细胞。排列成大小不等、形状不一的癌巢

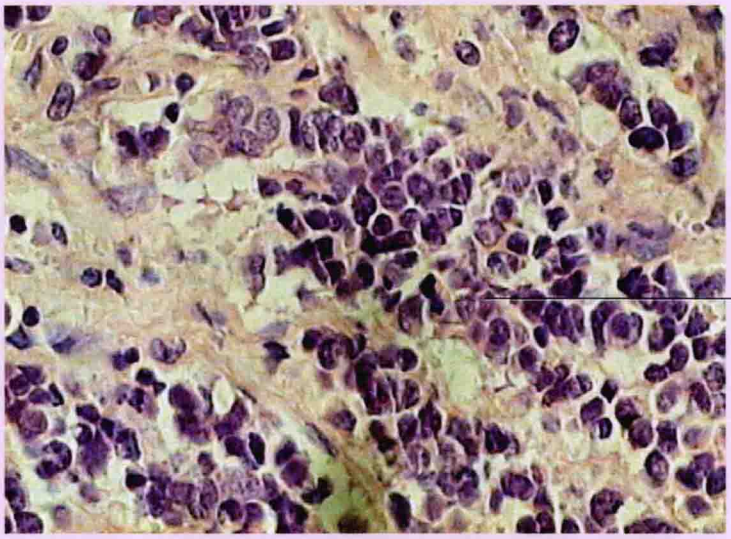


图 2-289 肺癌（carcinoma of the lung）(HE × 200)
肺小细胞癌，癌细胞小，圆形或椭圆形，核深染，胞浆少



图 2-290 肺癌（carcinoma of the lung）
细支气管肺泡癌（bronchioalveolar cell carcinoma）全肺散在粟粒性结核样癌巢

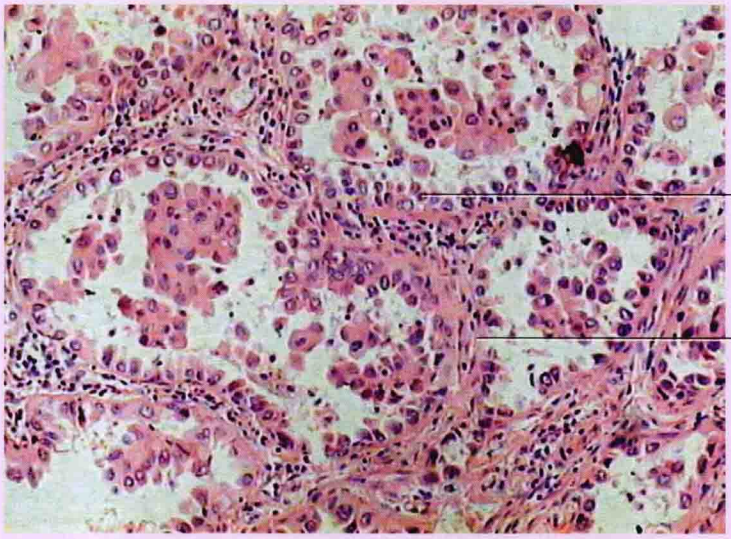


图 2-291　肺癌（carcinoma of the lung）(HE × 100)

细支气管肺泡癌，肺泡管、肺泡异常扩张，内衬单层立方癌细胞，如腺样结构，肺泡间隔完整，可稍增宽

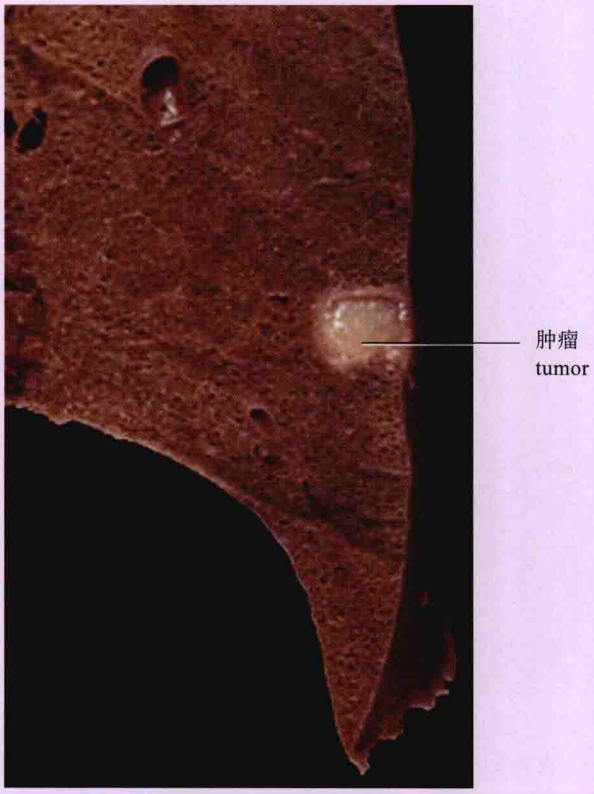


图 2-292　肺错构瘤（pulmonary hamartoma）

肺内可见一硬币大小的结节，边界清楚，常发生钙化，质地较硬，X 线检查易见

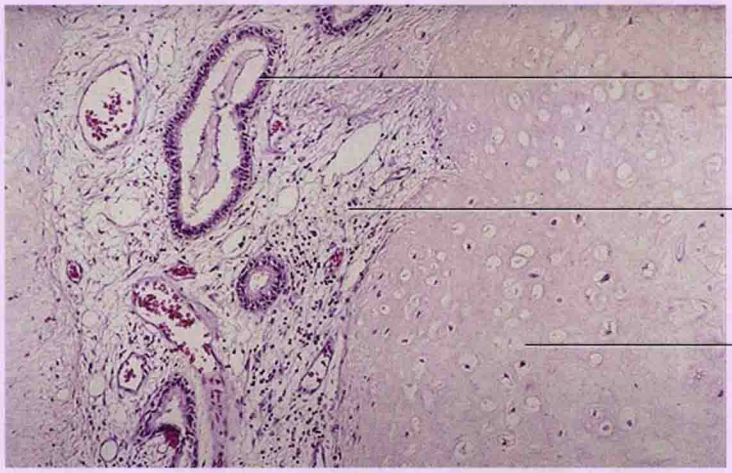


图 2–293　肺错构瘤（pulmonary hamartoma）(HE × 40)
可见软骨、支气管腺体和基质等成分

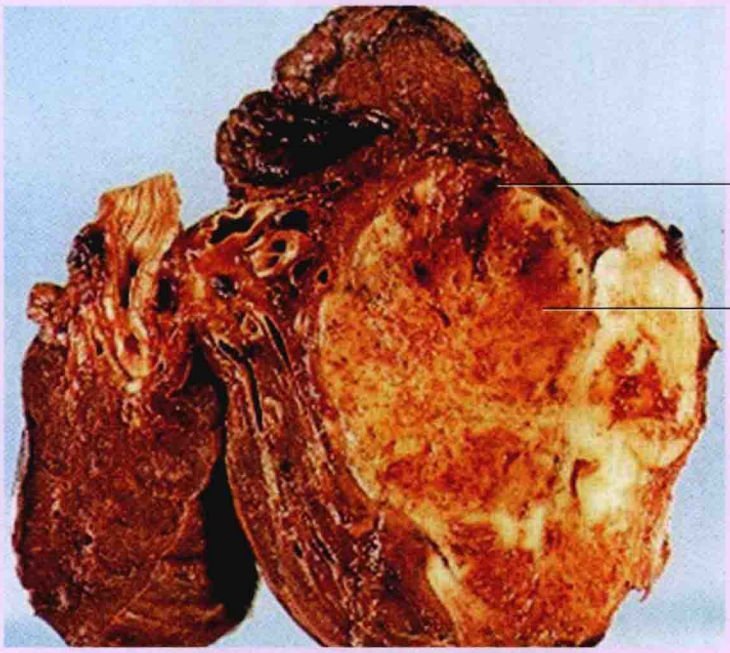


图 2–294　肺母细胞瘤（pulmonary blastoma）
肿瘤切面灰白色，可见出血及坏死，部分囊性变，境界清楚

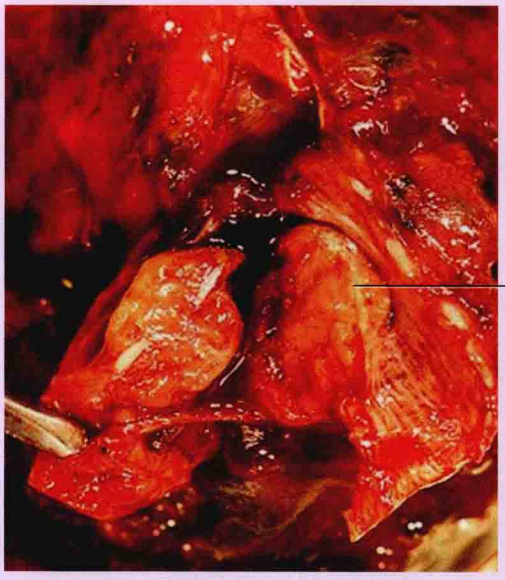


图 2-295 肺类癌（carcinoid of the lung）

支气管内可见突出于管腔的肿瘤，管腔高度狭窄，来源于支气管黏膜上皮内的 kulchitsky 细胞

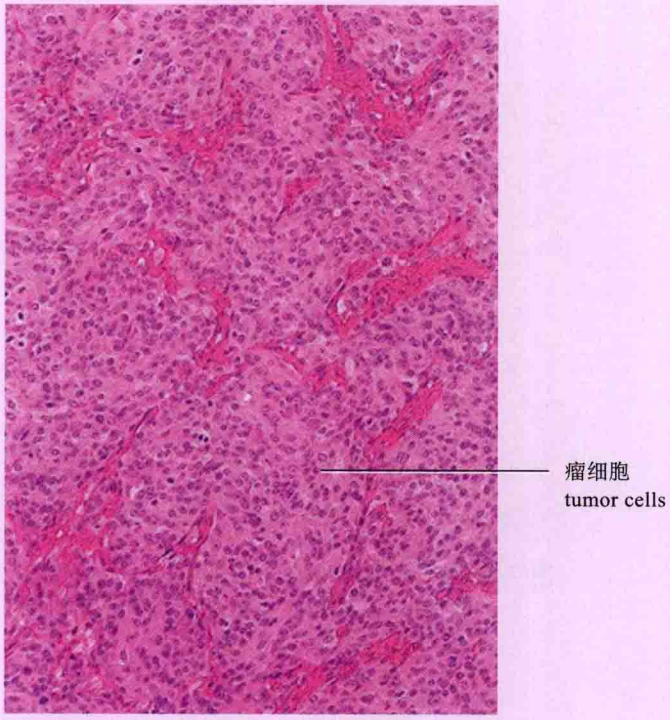


图 2-296 肺类癌（carcinoid of the lung）(HE × 100)

肿瘤由较为一致的圆形细胞、梭形细胞组成，细胞异形性小



图 2-297 肺癌肉瘤（carcinosarcoma of the lung）
左肺上叶支气管腔内可见境界清楚的灰白色肿瘤

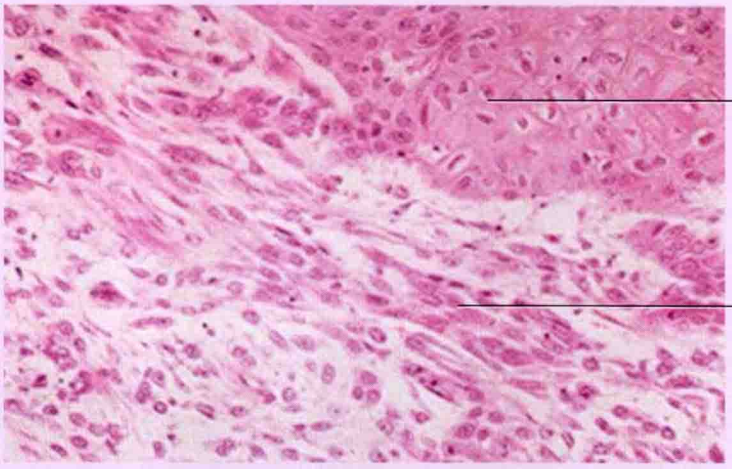


图 2-298 癌肉瘤（carcinosarcoma）(HE × 200)
肿瘤由鳞状细胞癌与纤维肉瘤两种成分构成



图 2-299 肺癌淋巴结转移（metastasis of lymph nodes of lung cancer）

肺门淋巴结体积增大，相互融合，灰白色

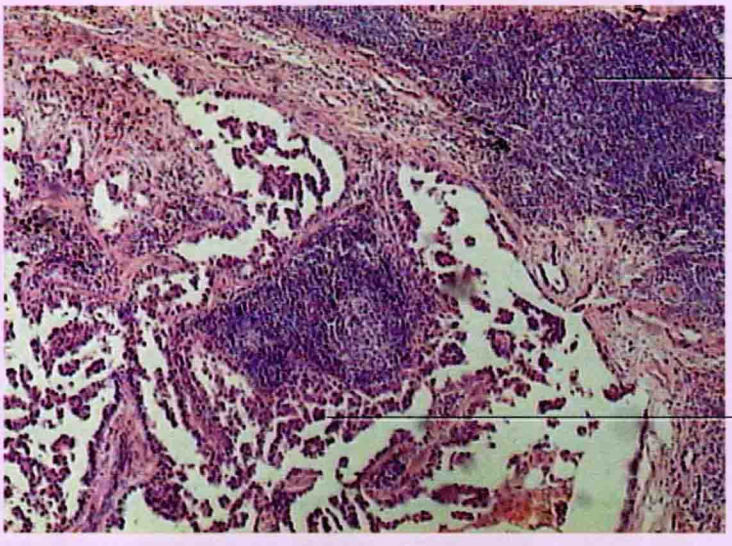


图 2-300 肺癌淋巴结转移（metastasis of lymph nodes of lung cancer）(HE × 40)

淋巴结内可见肺腺癌组织，淋巴结结构破坏



图 2-301 肺转移癌（metastatic pulmonary carcinomas）

肺内可见多个散在的灰白色结节，结节较小，边界清楚

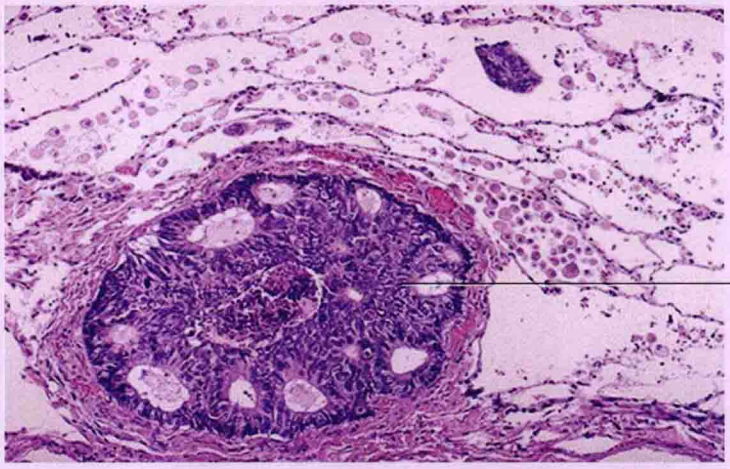


图 2-302 肺转移癌（metastatic pulmonary carcinomas）(HE × 40)

肺内的淋巴管充满转移的癌组织

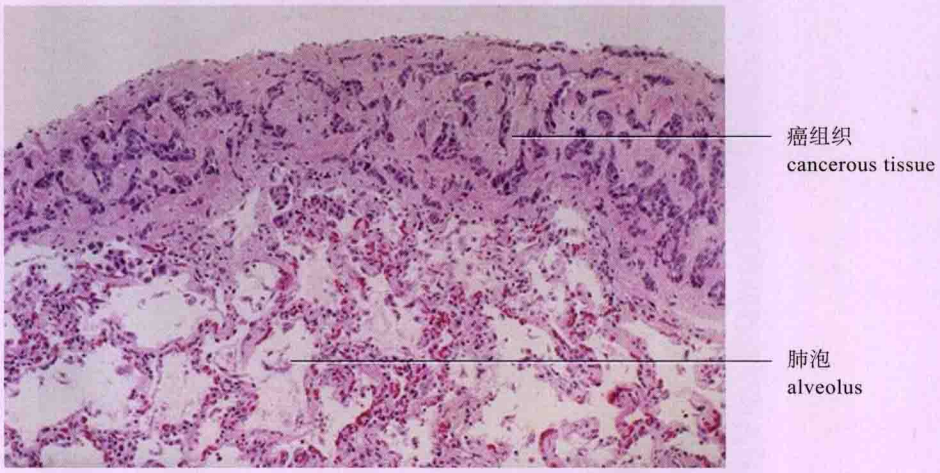


图 2-303　胸膜转移癌（metastatic pleural carcinoma s）(HE×40)
胸膜增厚，可见癌组织（乳腺癌的胸膜转移）

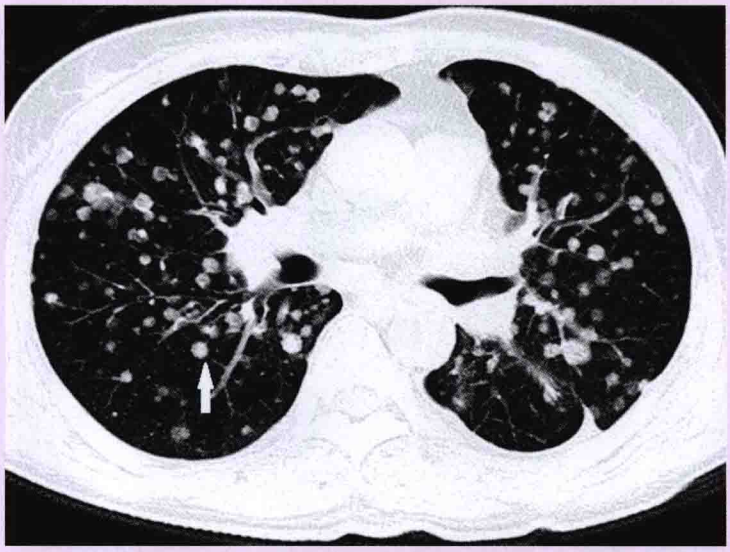


图 2-304　肺转移癌



图 2-305 弥漫性肺癌（1）

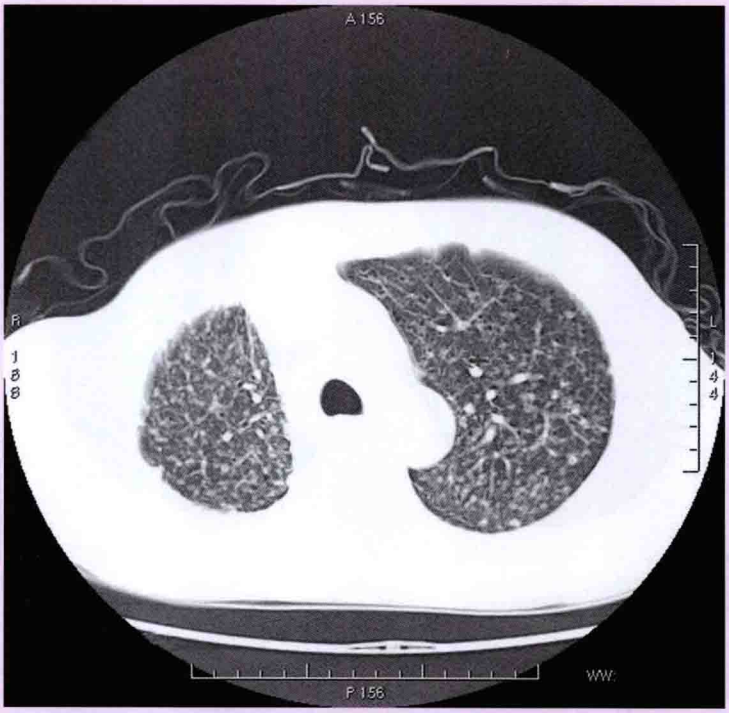


图 2-306 弥漫性肺癌（2）

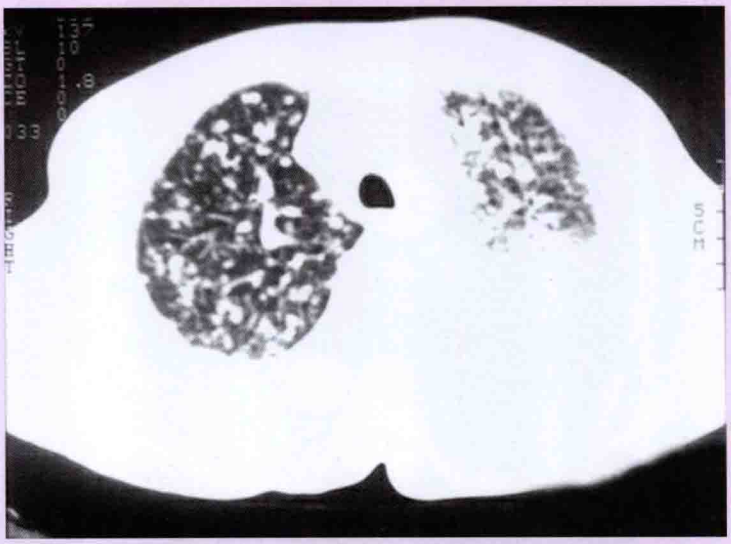


图 2-307　弥漫性肺癌（支气管肺泡癌）

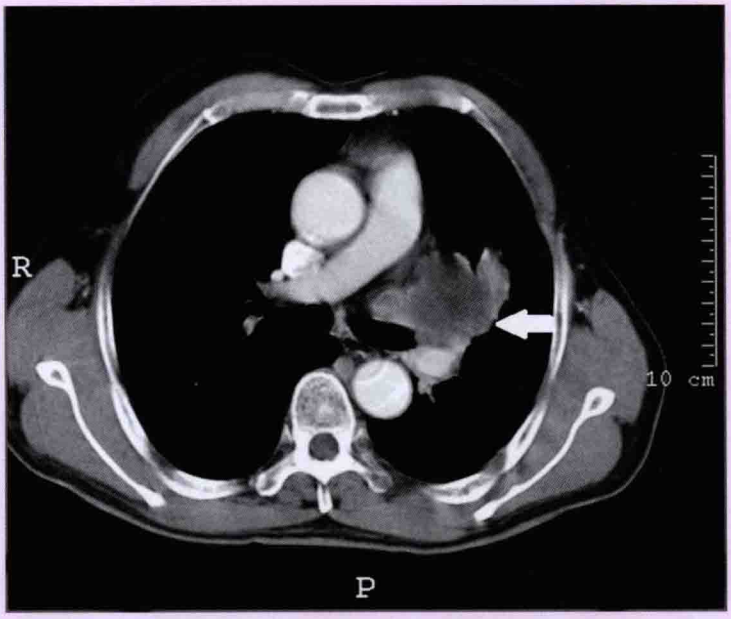


图 2-308　中心型肺癌

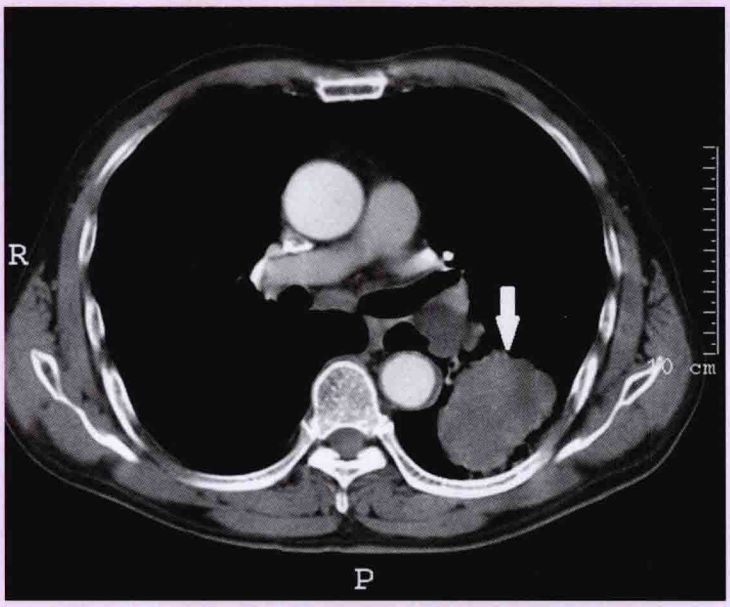


图 2-309 周围型肺癌

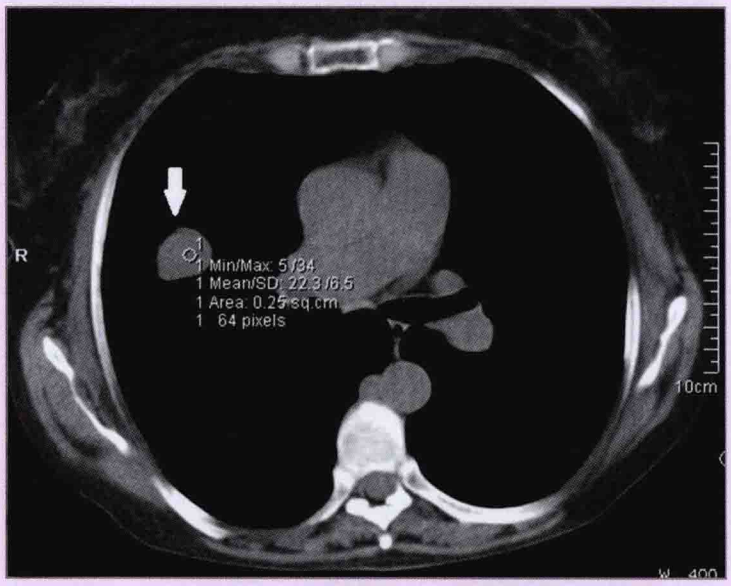


图 2-310 肺炎性假瘤



图 2-311　肺癌胸膜转移（pleural metastasis of carcinoma of the lung）

肺胸膜表面可见多个转移的瘤结节

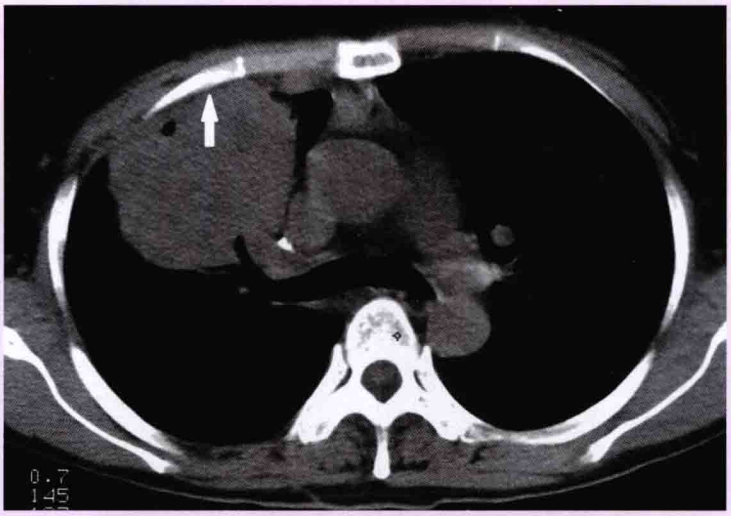


图 2-312　周围型肺癌胸膜侵犯

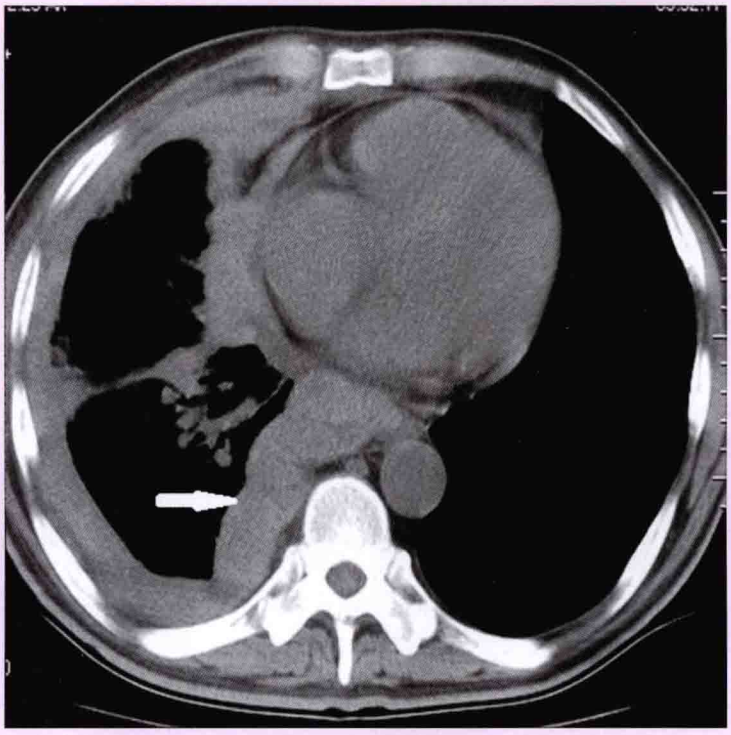


图 2-313 胸膜转移瘤

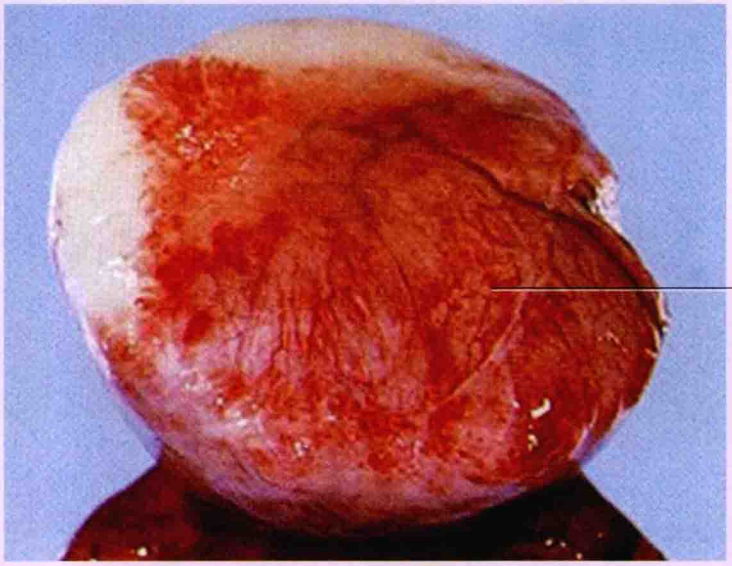


图 2-314 间皮瘤（mesothelioma）

右肺上叶良性局限性纤维化的间皮瘤，肿瘤结节状，境界清楚

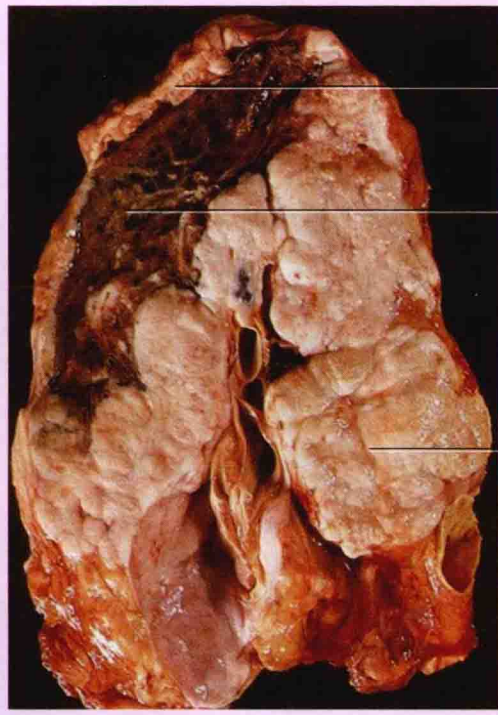


图 2-315　胸膜间皮瘤（pleural mesothelioma）
右肺胸膜间皮瘤引起胸膜增厚，包裹全肺和纵隔

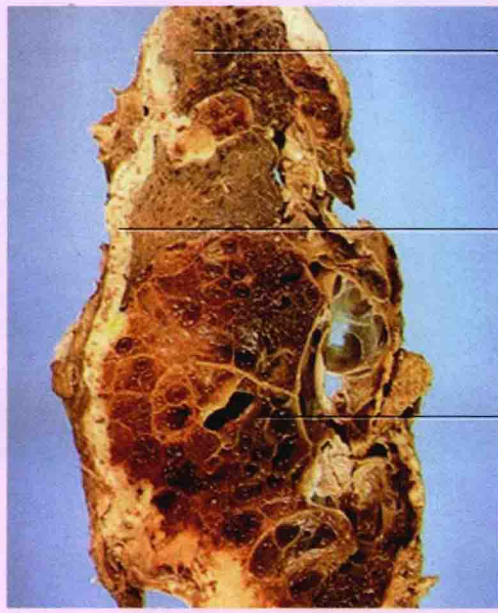


图 2-316　恶性间皮瘤（malignant mesothelioma）
胸膜带状肥厚，呈灰白色，肿瘤组织局部囊性变

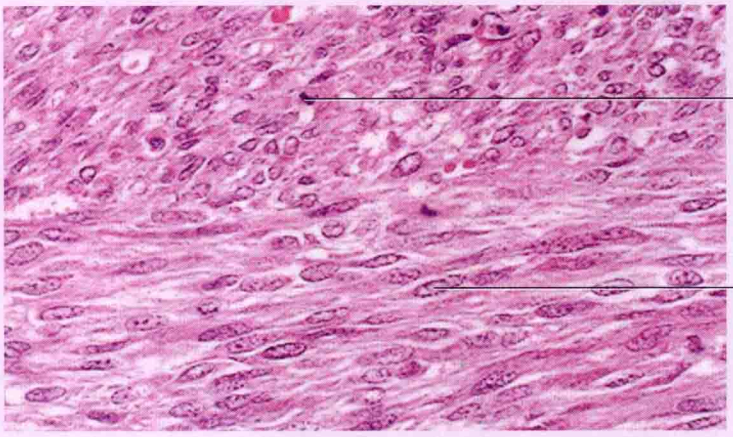


图 2-317 恶性间皮瘤（malignant mesothelioma）(HE × 200)

恶性间皮细胞胞浆丰富，粉红色，核卵圆，相对一致，排成裂隙状，背景为纤维结缔组织

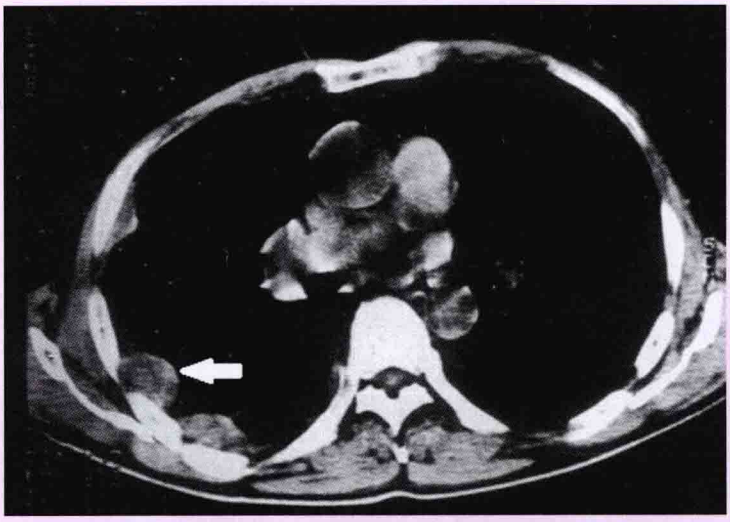


图 2-318 胸膜间皮瘤

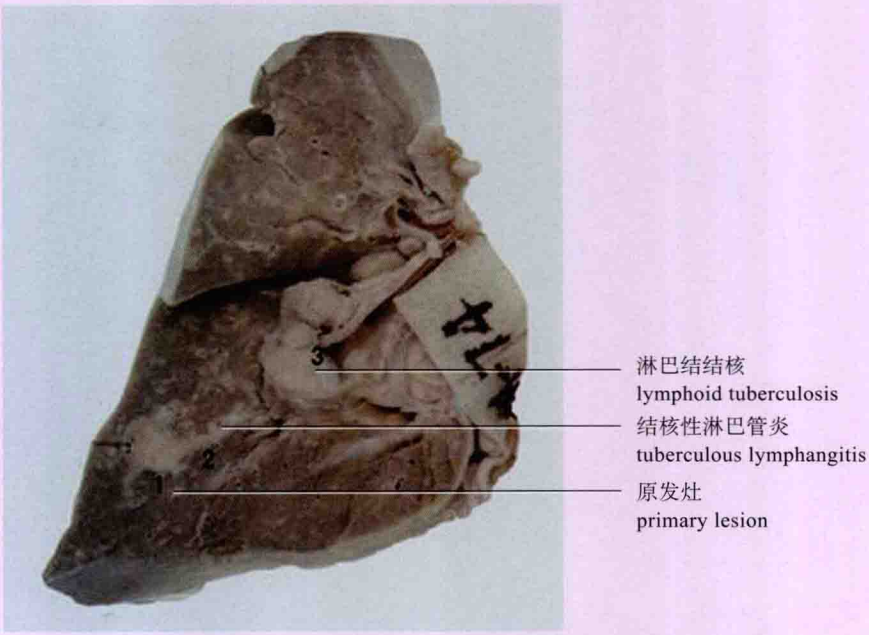


图 2-319 原发性肺结核（primary pulmonary tuberculosis）
原发综合征包括原发灶（1）、淋巴管炎（2）和肺门淋巴结结核（3）

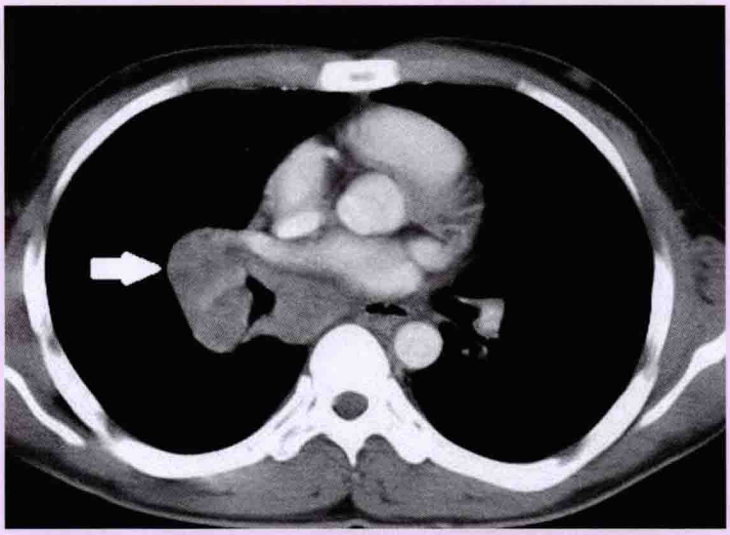


图 2-320 原发性肺结核

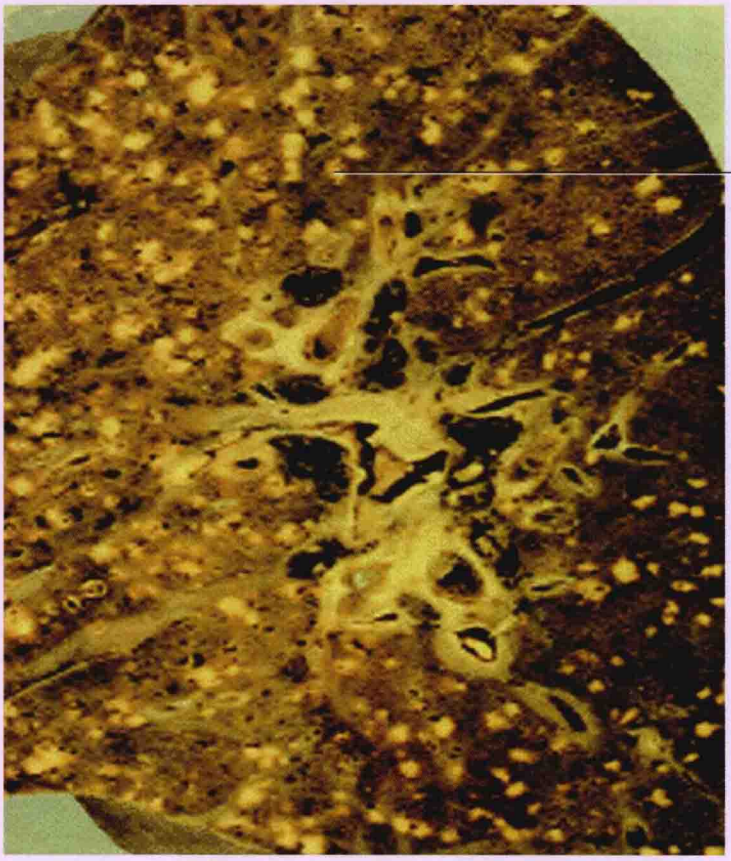


图 2-321 急性肺粟粒性结核病（acute pulmonary military tuberculosis）

肺内见均匀密布大小一致，灰白色，圆形，境界清楚粟粒大的小结节

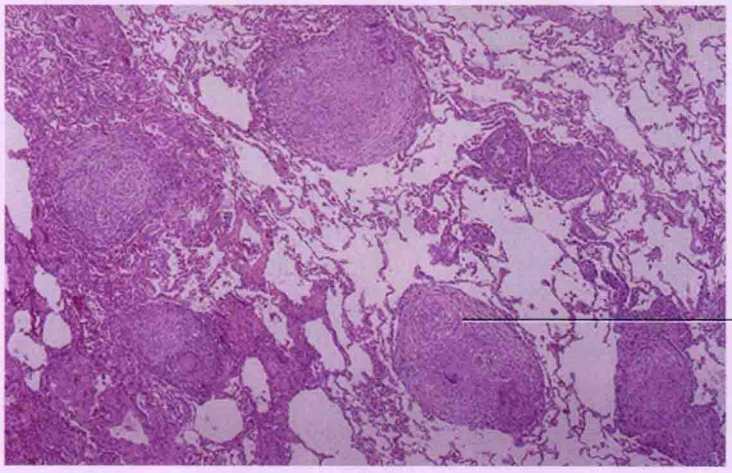


图 2-322 急性肺粟粒性结核病（acute pulmonary military tuberculosis）(HE × 40)

肺内见多个境界清楚的小结节

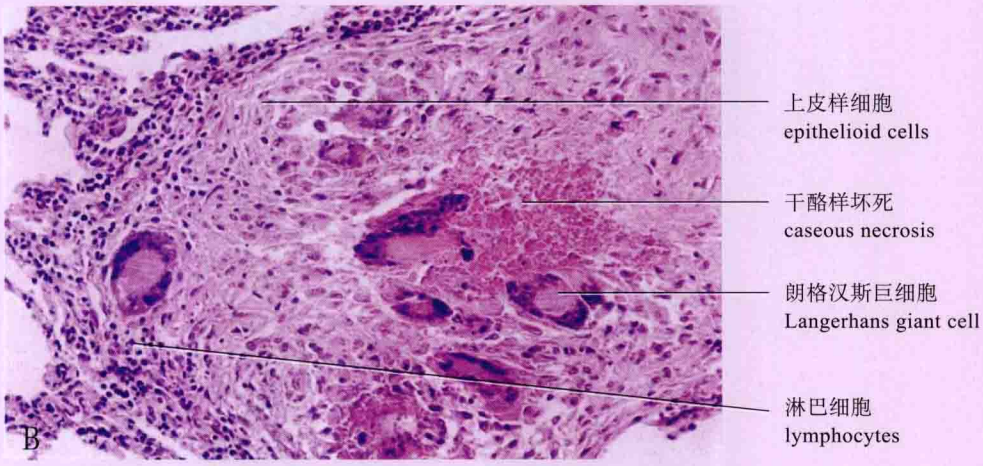


图 2-323　结核结节（tubercle）(HE × 100)

结核结节由干酪样坏死、类上皮细胞、朗格汉斯巨细胞及外周的炎细胞等构成



图 2-324　局灶型肺结核（local pulmonary tuberculosis）

肺尖可见单个或多个结节状病灶。0.5 ~ 1.0cm 大小，境界清楚，有纤维包裹

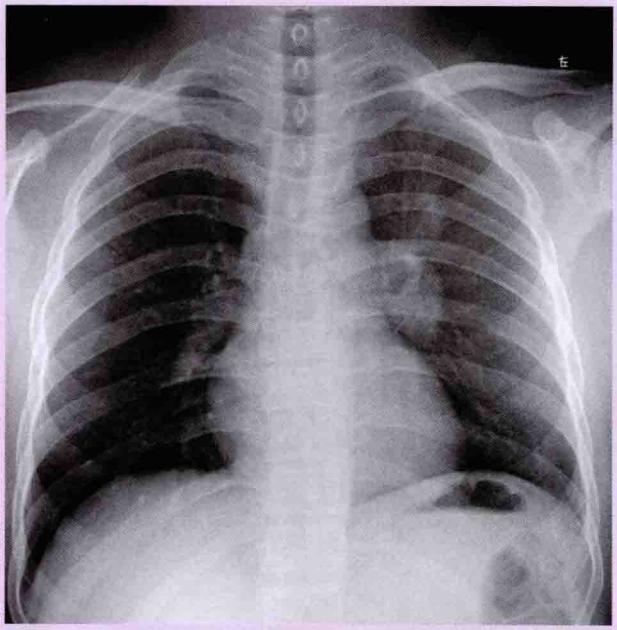


图 2-325 原发性肺结核 X 线



图 2-326 局灶性肺结核



图 2-327　浸润型肺结核（infiltrative pulmonary tuberculosis）
多由局灶型发展而来，肺上叶可见干酪样坏死病灶伴有急性空洞形成

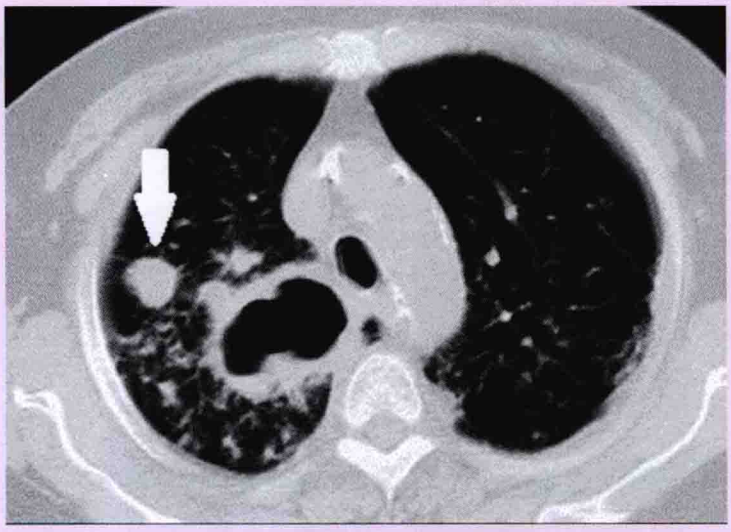


图 2-328　浸润性肺结核

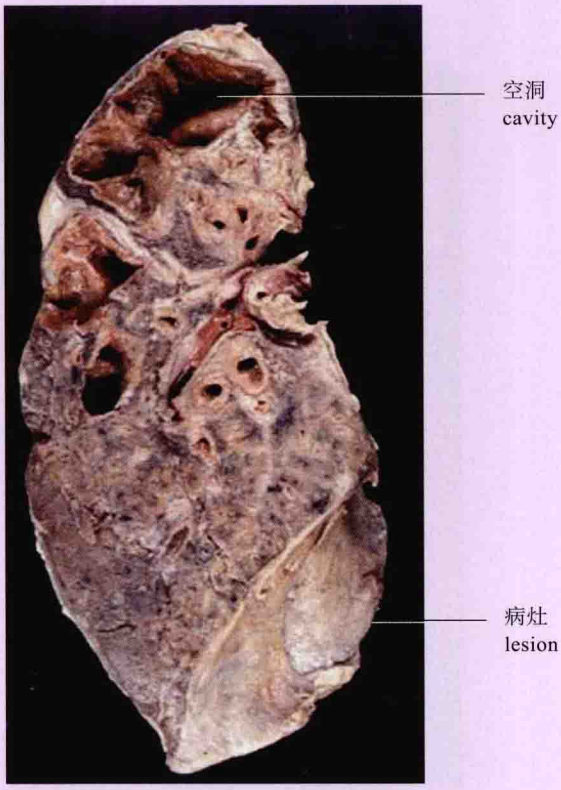


图 2-329 慢性纤维空洞型肺结核（chronic fibro-cavity pulmonary tuberculosis）
肺内可见一个或多个厚壁空洞。多位于肺上叶，大小不一，不规则。肺下叶可见播散病灶

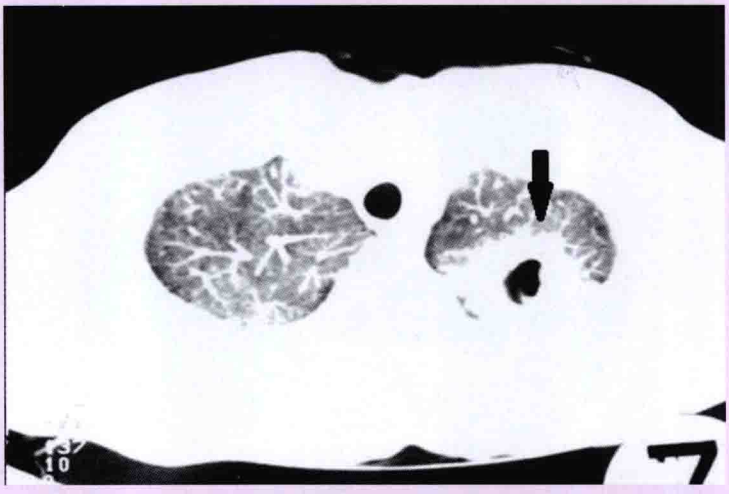


图 2-330 空洞型肺结核

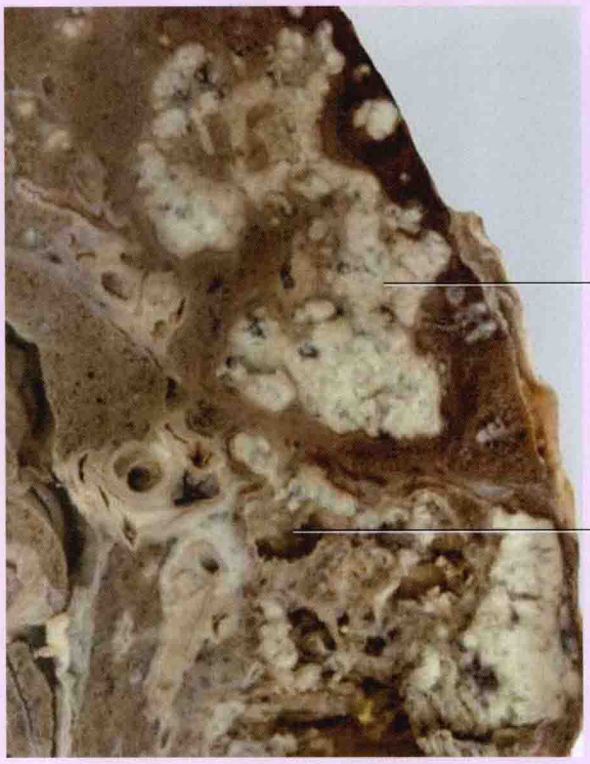


图 2-331　干酪样肺炎（gaseous pneumonia）
肺上下叶可见大量干酪样坏死病灶。坏死组织液化坏死形成空洞

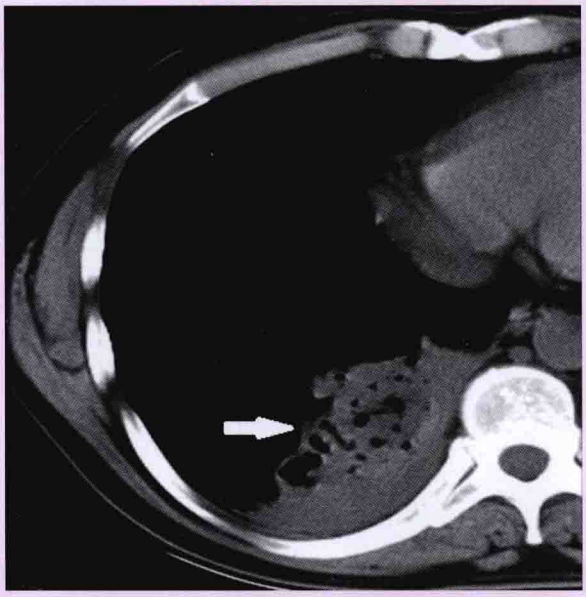


图 2-332　干酪性肺炎



图 2-333 结核球，又称结核瘤（tuberculoma）
肺内有纤维包裹的孤立的境界分明的干酪样坏死灶

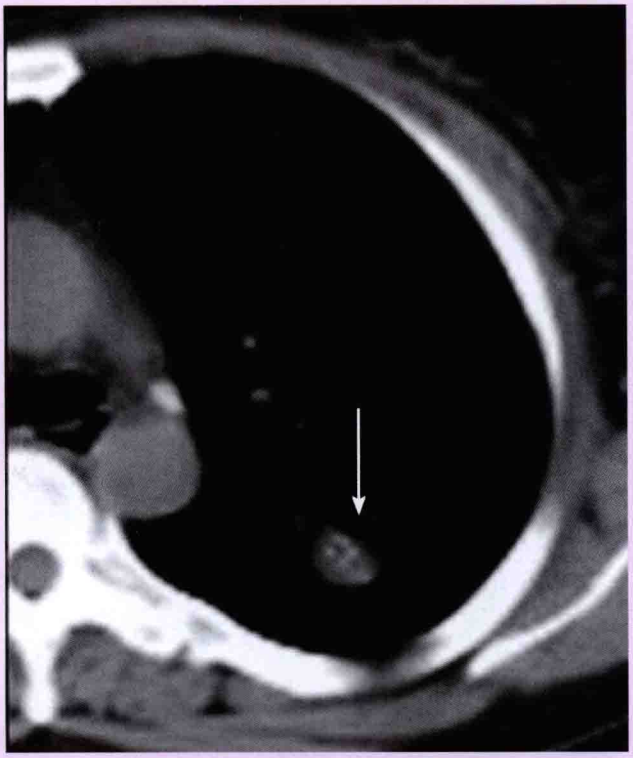


图 2-334 结核球

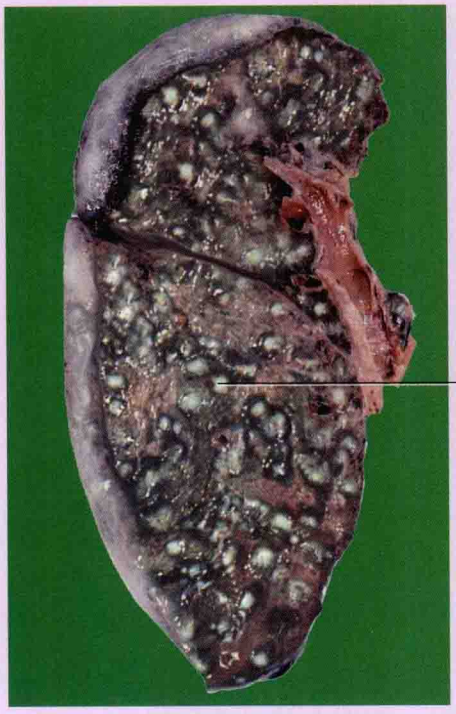


图 2-335　硅肺（silicosis）

肺内可见多个境界清楚的圆形或椭圆形矽结节，直径 3 ～ 5mm，色灰白，触之有沙砾感

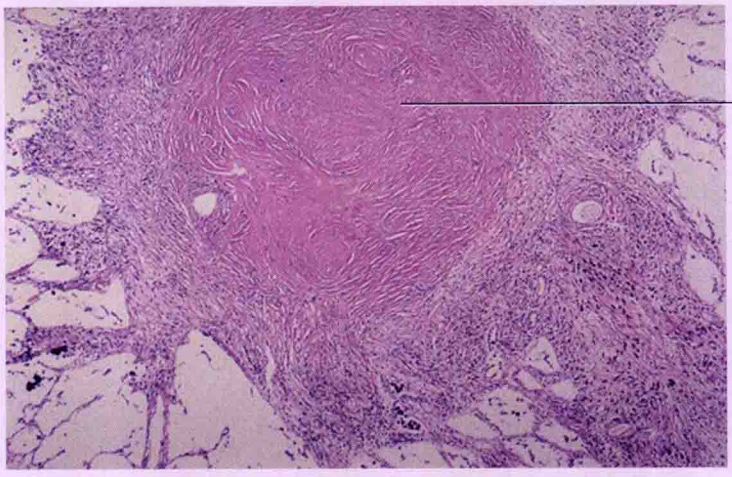


图 2-336　矽肺（silicosis）(HE × 40)

肺内可见一纤维化的矽结节，由玻变的胶原纤维呈旋涡状排列构成

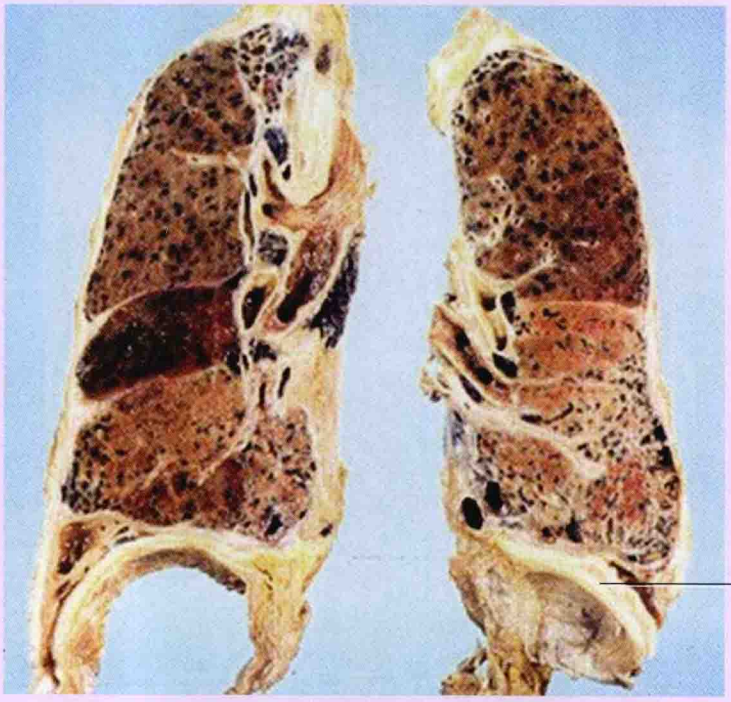


图 2-337 石棉肺（asbestosis）

双肺胸膜高度纤维性肥厚，上、下叶肺组织纤维化

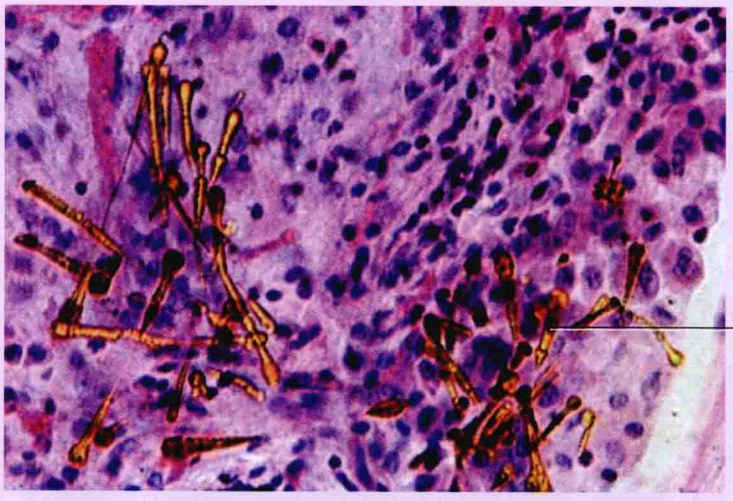


图 2-338 石棉肺（asbestosis）(HE × 100)

石棉小体，铁蛋白包裹的石棉纤维（铁反应阳性），黄褐色，大小不等，分节状，两端膨大，中央为棒状，呈哑铃形

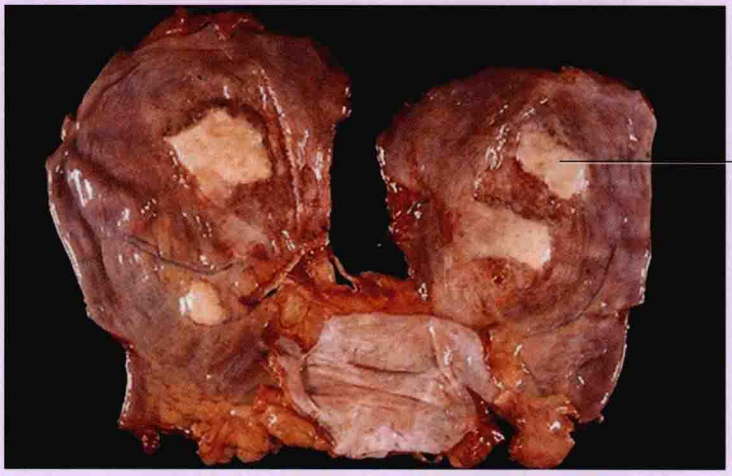


图 2-339　石棉肺（asbestosis）

胸膜局限性纤维斑块称为胸膜斑，灰白，质硬，半透明，状似软骨

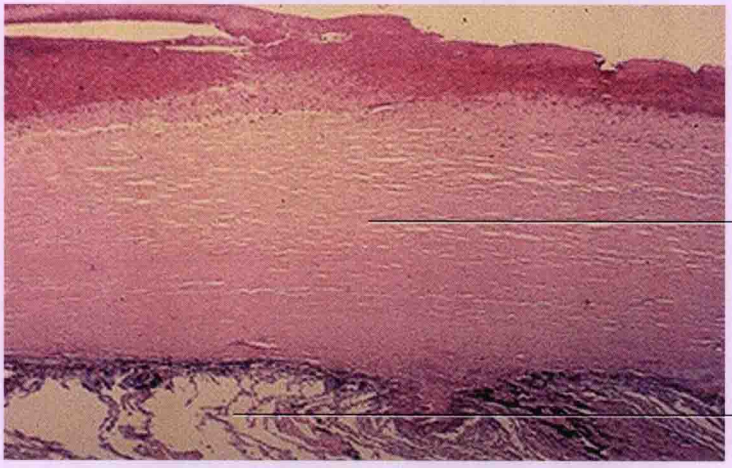


图 2-340　石棉肺（asbestosis）(HE × 40)

肺胸膜斑镜下可见大量胶原

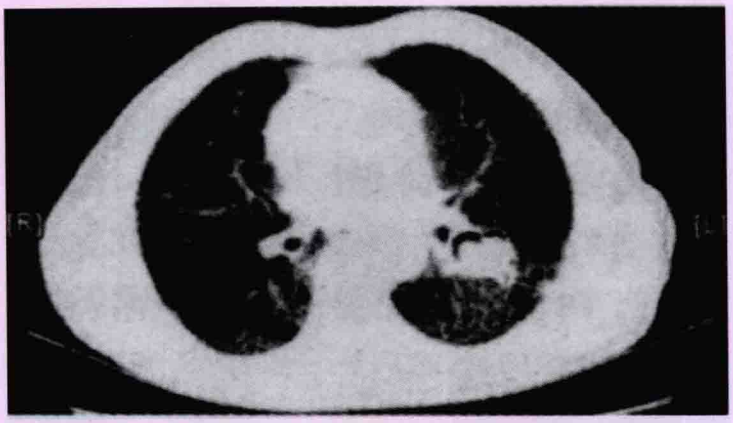


图 2-341 石棉肺



图 2-342 曲菌病（aspergillosis）
肺曲菌病，肺内可见一曲菌所引起的小脓肿

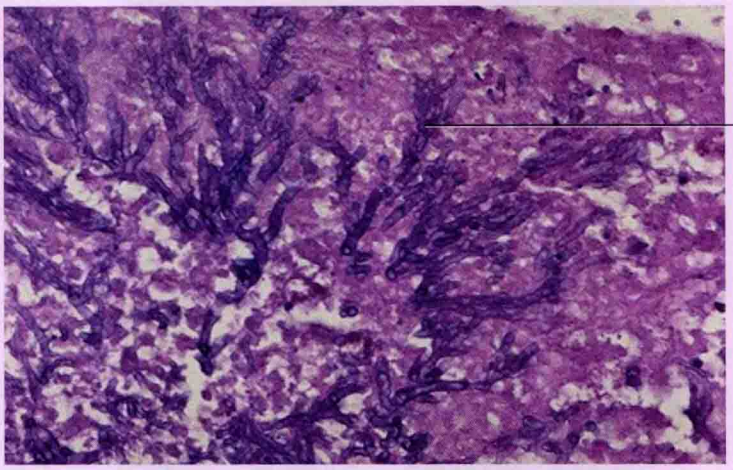


图 2–343　曲菌病（aspergillosis）(HE × 100)
曲菌菌丝粗细均匀，分支状，常呈 45° 的锐角分支



图 2–344　毛霉病（mucormycosis）
毛霉菌丝粗细不均，分支较少，常呈钝角或直角分枝（箭示）

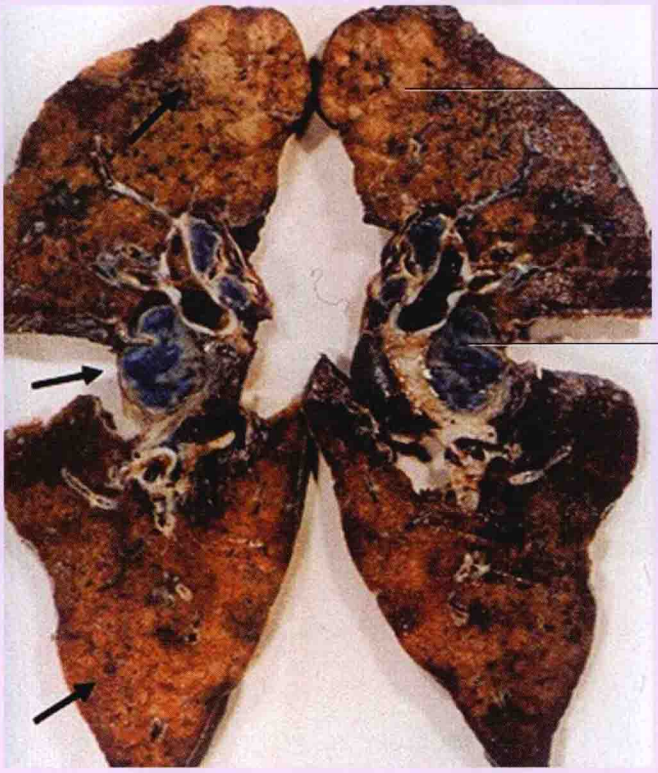


图 2-345 肺结节病（pulmonary acidosis）

两肺门淋巴结呈结节性肿大，肺组织内散在小结节性病灶（箭示）

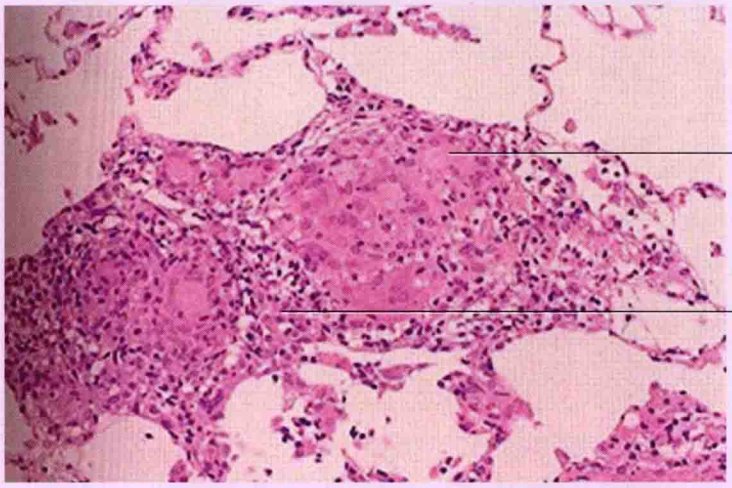


图 2-346 肺结节病（pulmonary acidosis）(HE × 100)

全身性病变。累及肺部主要表现为局灶性肺组织坏死伴类上皮样细胞肉芽肿形成。肉芽肿周边部较多淋巴细胞浸润

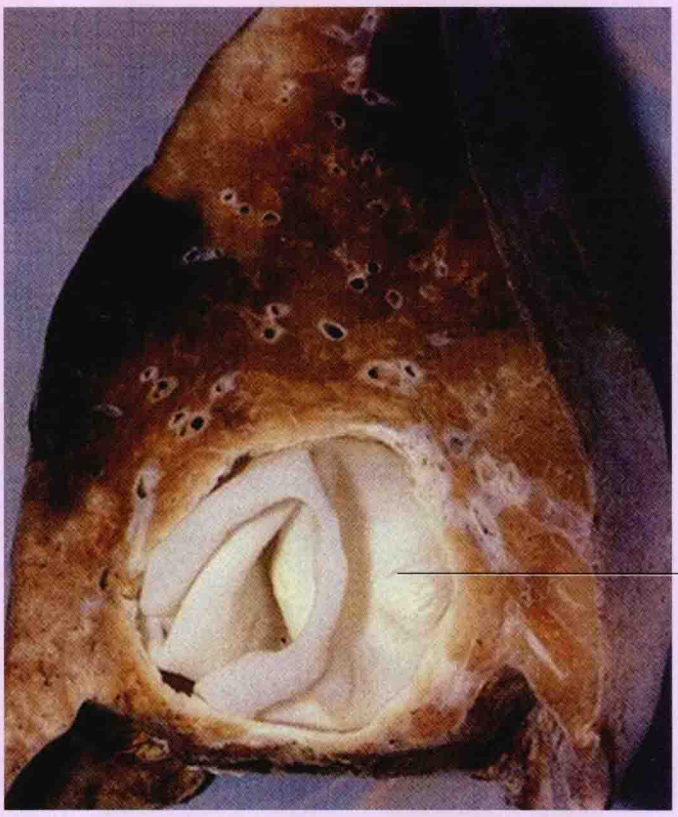


图 2-347　右肺包虫囊肿（ hydrated cyst of the right lung ）
包虫寄生引起异物反应，形成的白色薄膜包裹颗粒状组织

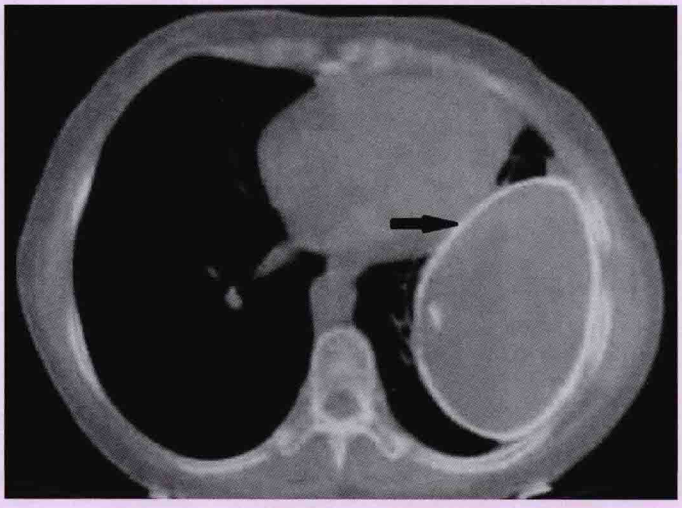


图 2-348　肺包虫囊肿



图 2-349 肺纤维化（pulmonary fibrosis）
肺泡壁纤维化，全肺实变，呈灰白色，硬度增加

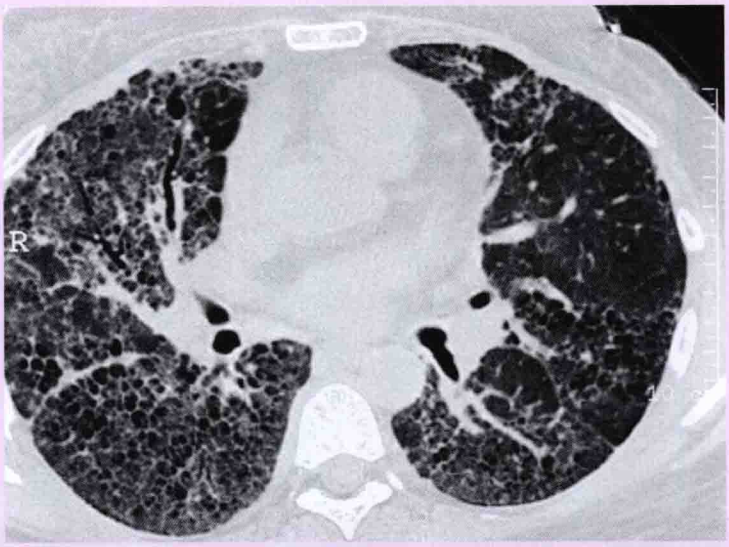


图 2-350 肺间质纤维化

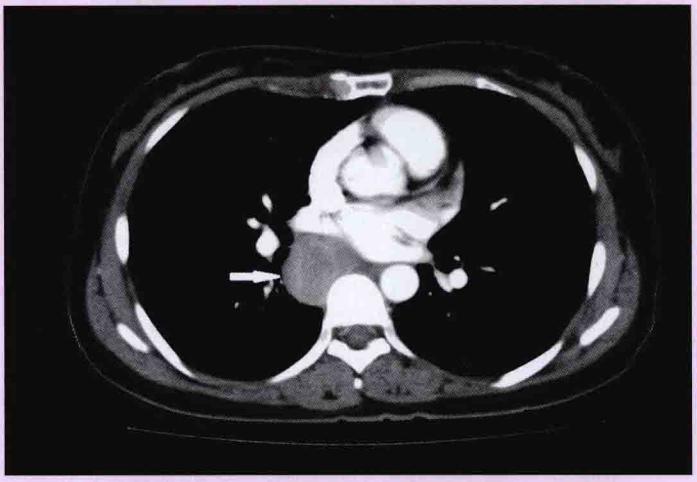


图 2-351　支气管囊肿

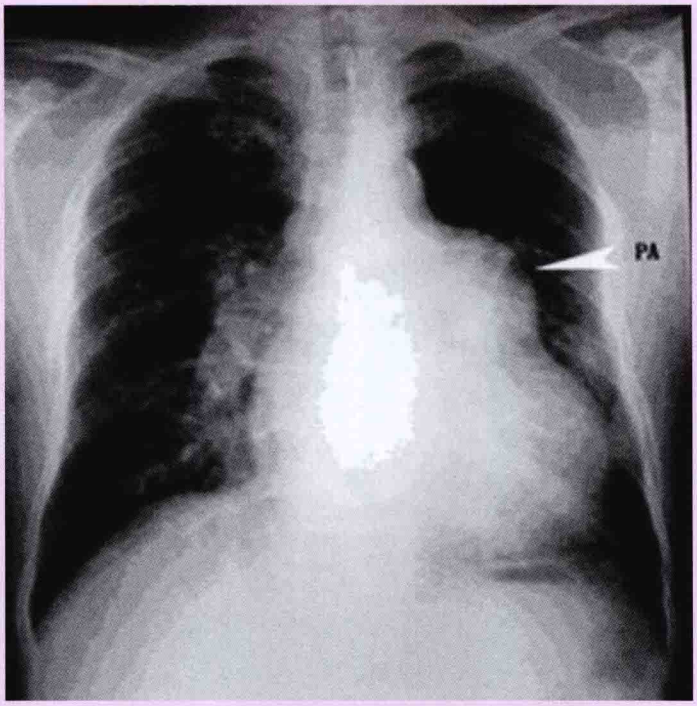


图 2-352　肺源性心脏病

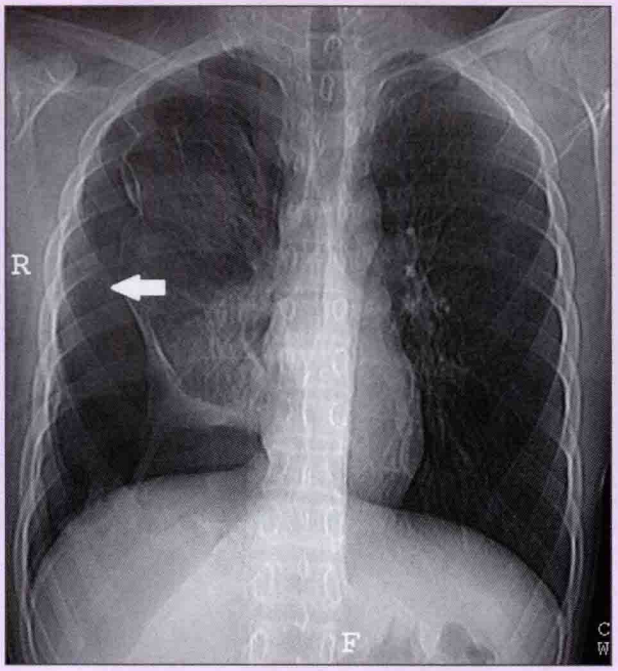


图 2-353 气胸

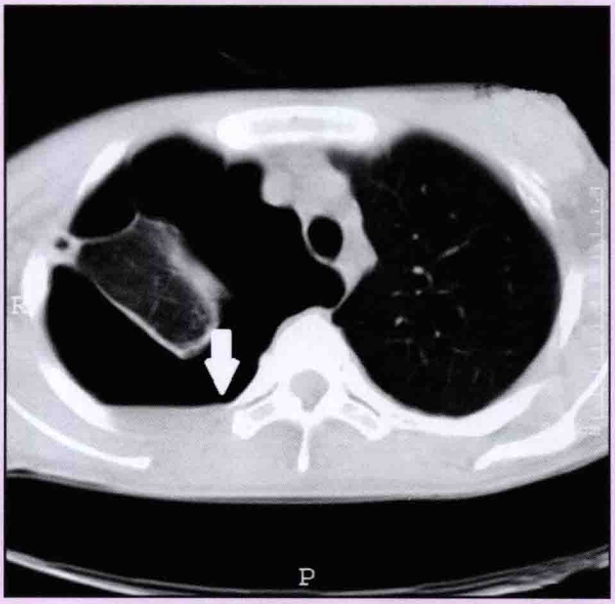


图 2-354 液气胸



图 2-355　气管隆突下纵隔淋巴结肿大

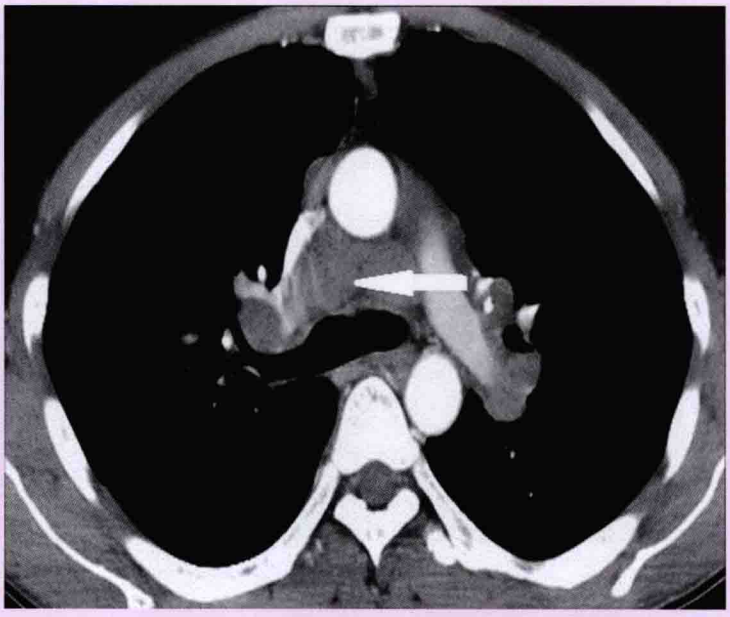


图 2-356　气管前腔静脉后纵隔淋巴结肿大

（四）乳房

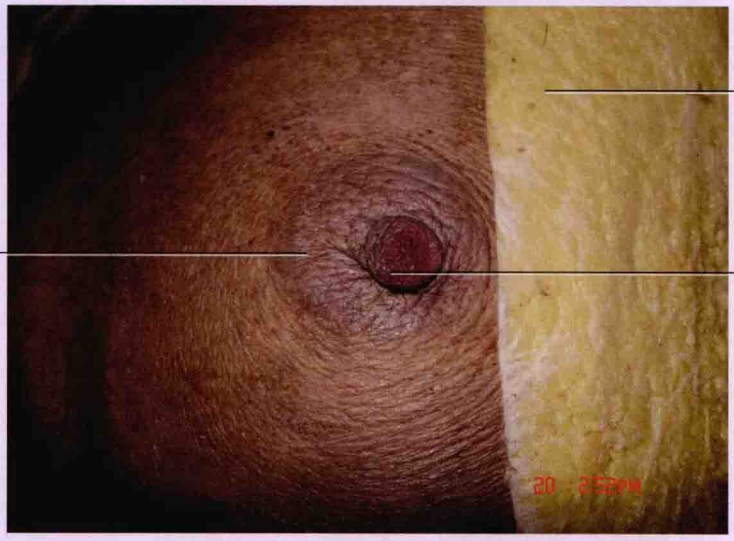


图 2-357　女性乳房的解剖（1）

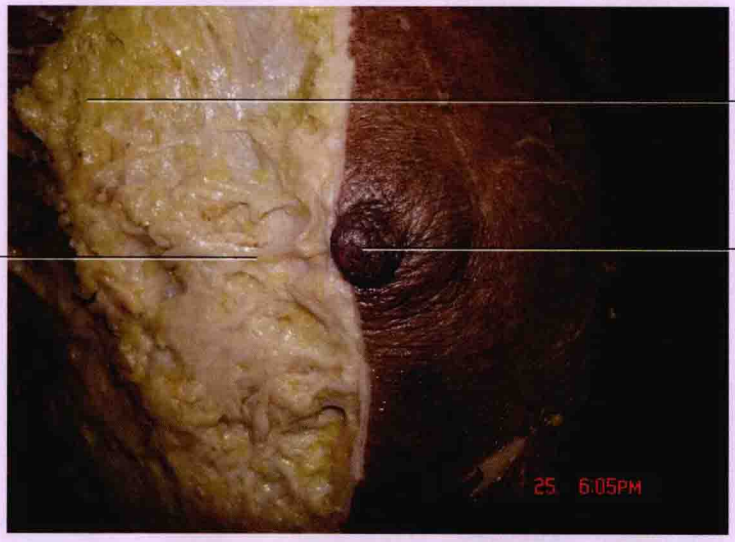


图 2-358　女性乳房的解剖（2）

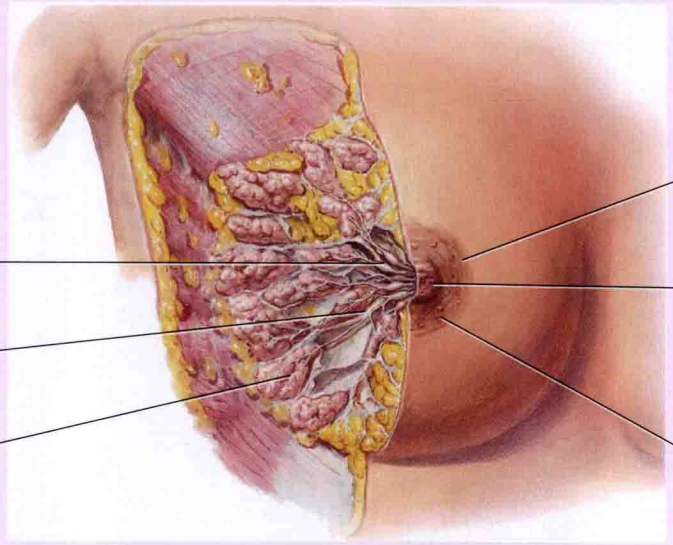


图 2-359 女性乳房（前面观）

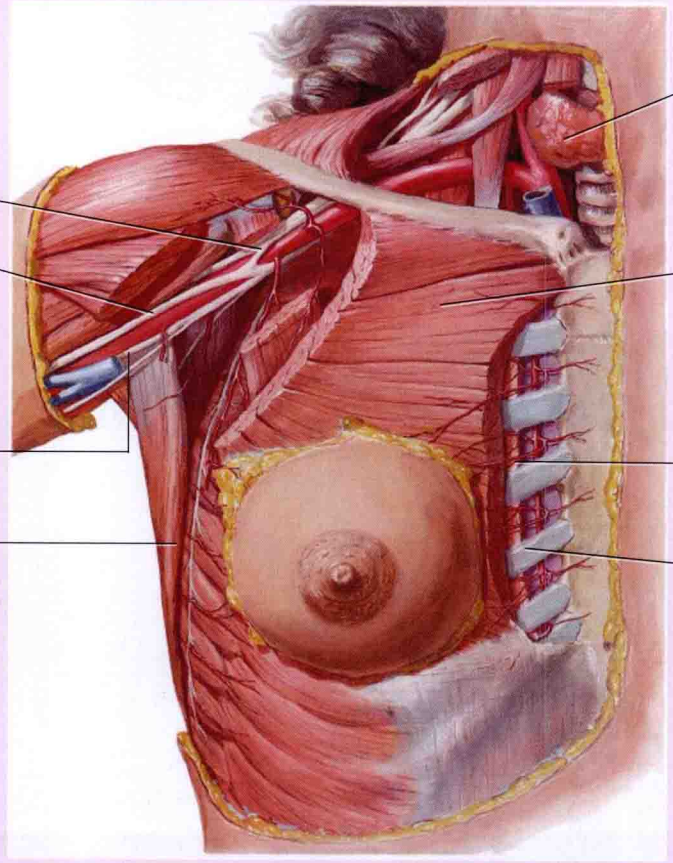


图 2-360 腋腔

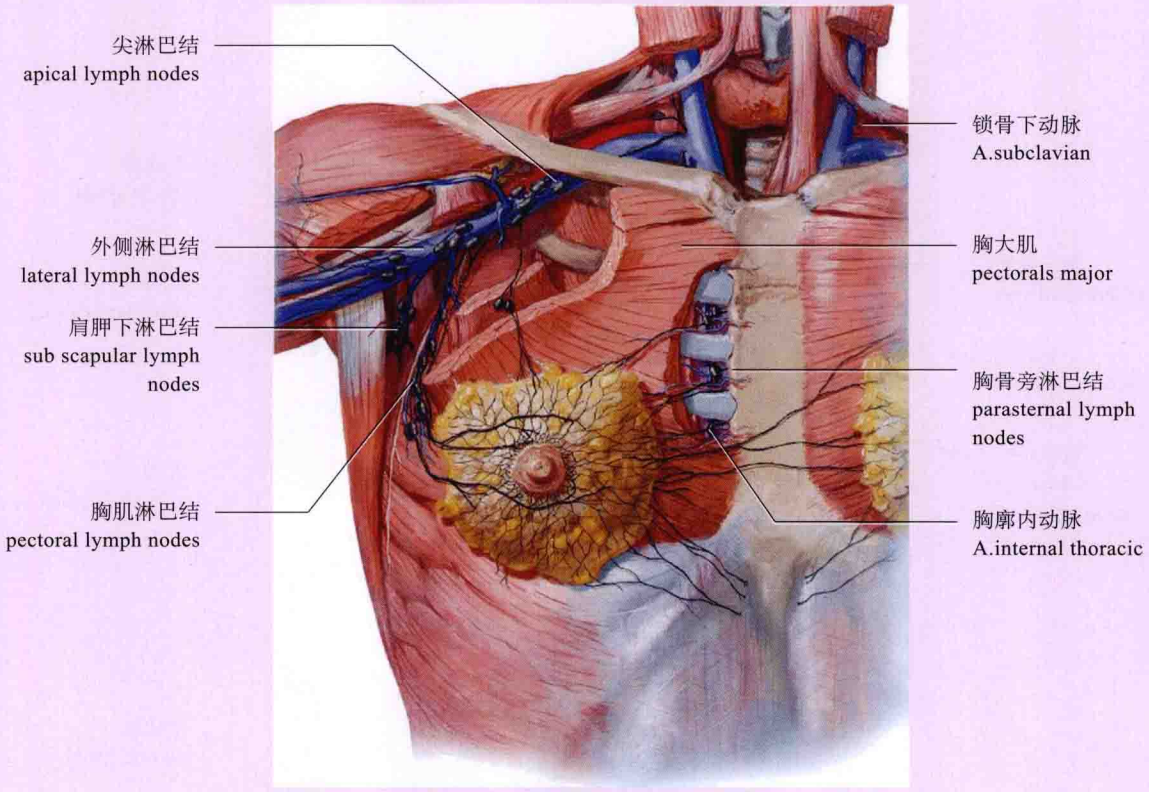


图 2-361 乳房的淋巴回流

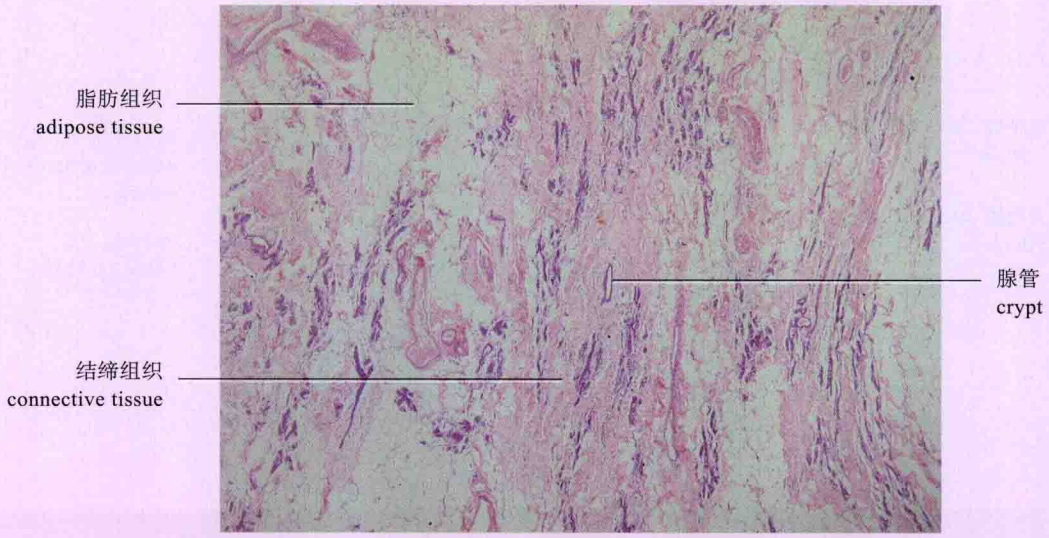


图 2-362 静止期乳腺镜下（HE×40）

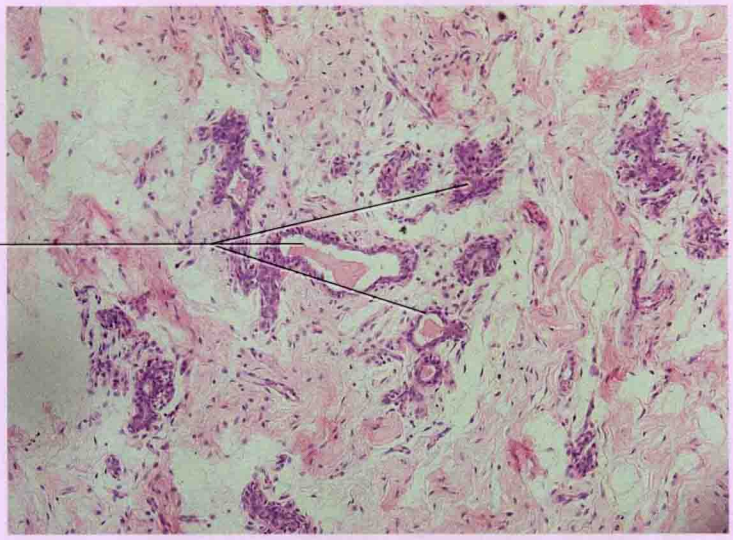


图 2-363　静止期乳腺镜下（HE×40）

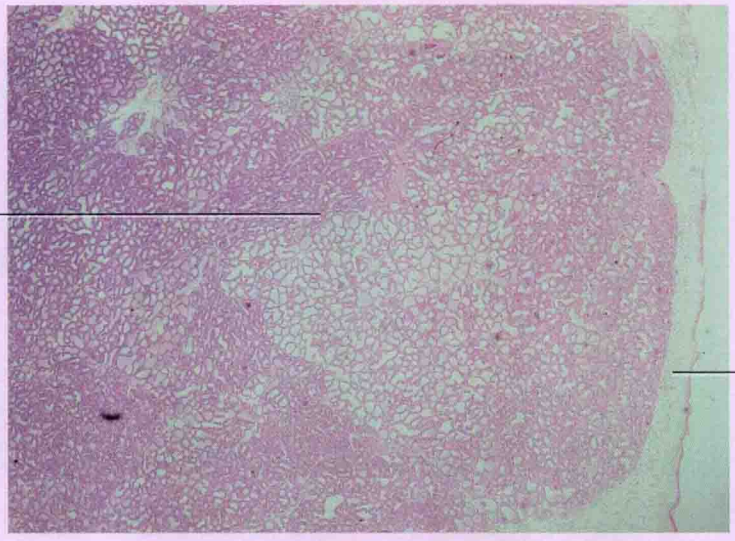


图 2-364　授乳期乳腺镜下（HE×40）

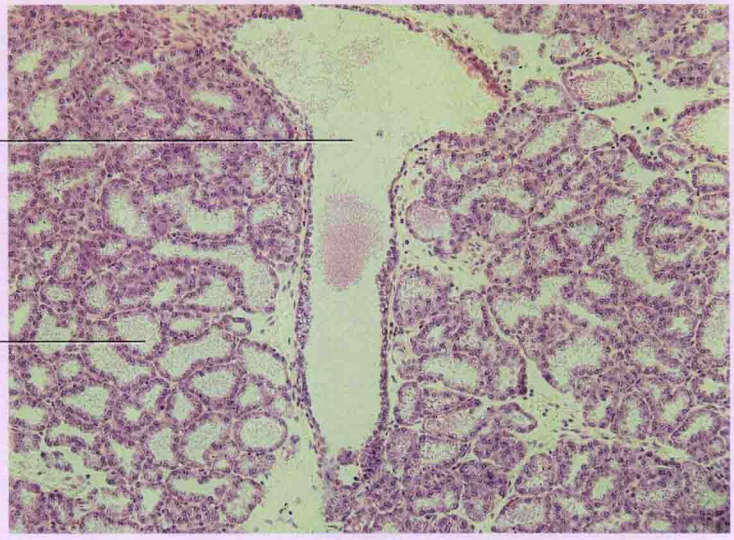


图 2-365 授乳期乳腺镜下（HE×100）

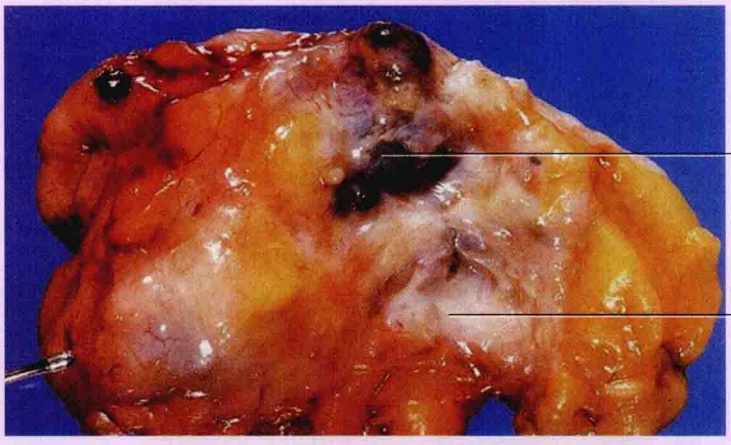


图 2-366 乳腺纤维囊性变（fibrocystic change of the breast）
可见多发性紫蓝色小囊肿，大小不等，内含液体，邻近乳腺组织纤维化

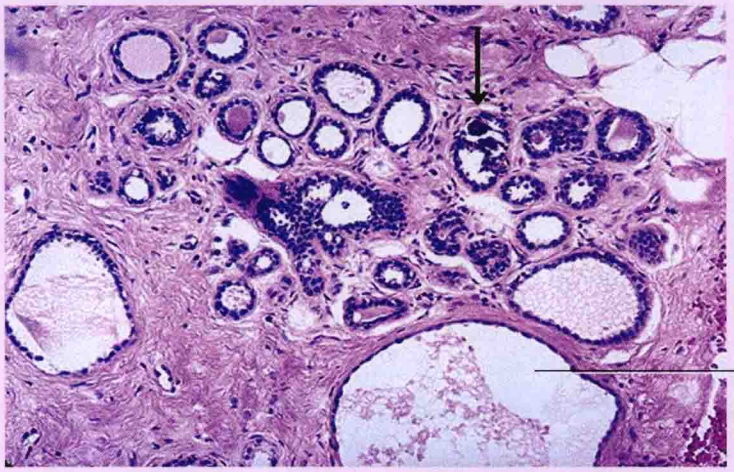


图 2-367　乳腺纤维囊性变（fibrocystic change of the breast）（HE × 100）

非增生型纤维囊性变，小管囊性扩张，间质纤维组织增生，有钙化（箭示）

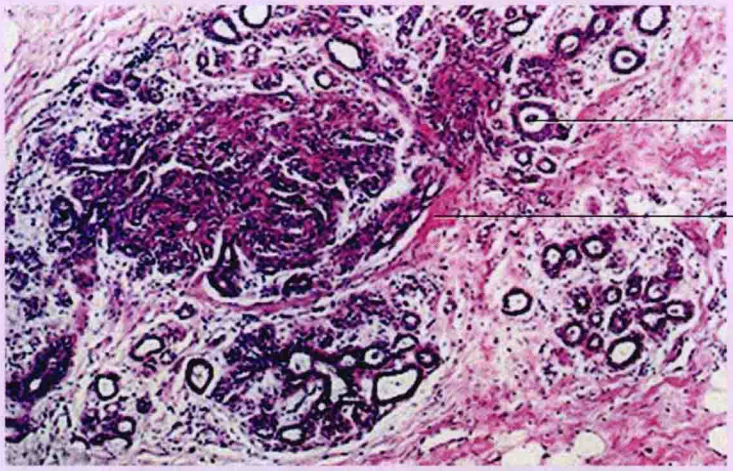


图 2-368　乳腺纤维囊性变（fibrocystic change of the breast）（HE × 100）

增生型纤维囊性变，小管囊性扩张、间质纤维组织增生，同时末梢导管和腺泡上皮的增生

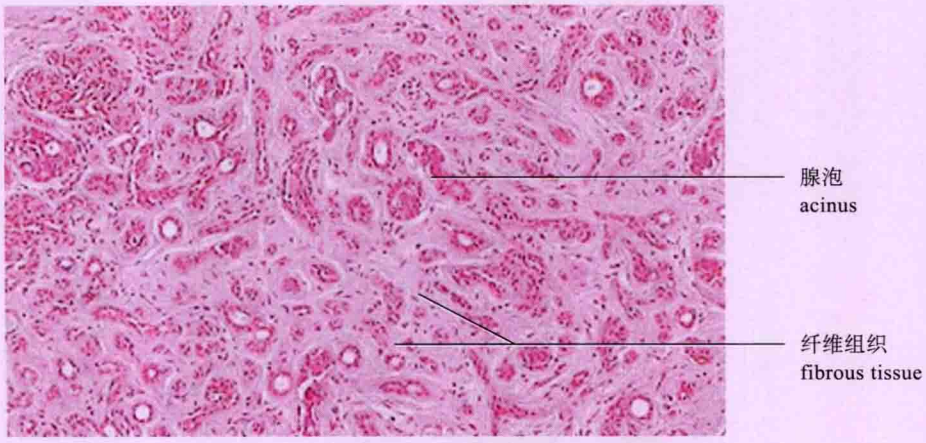


图 2–369　乳腺硬化性腺病（scalloping ad enosis of the breast）（HE × 100）

乳腺小叶末梢导管上皮、肌上皮、间质纤维组织增生，无囊肿形成，腺泡受压而扭曲变形

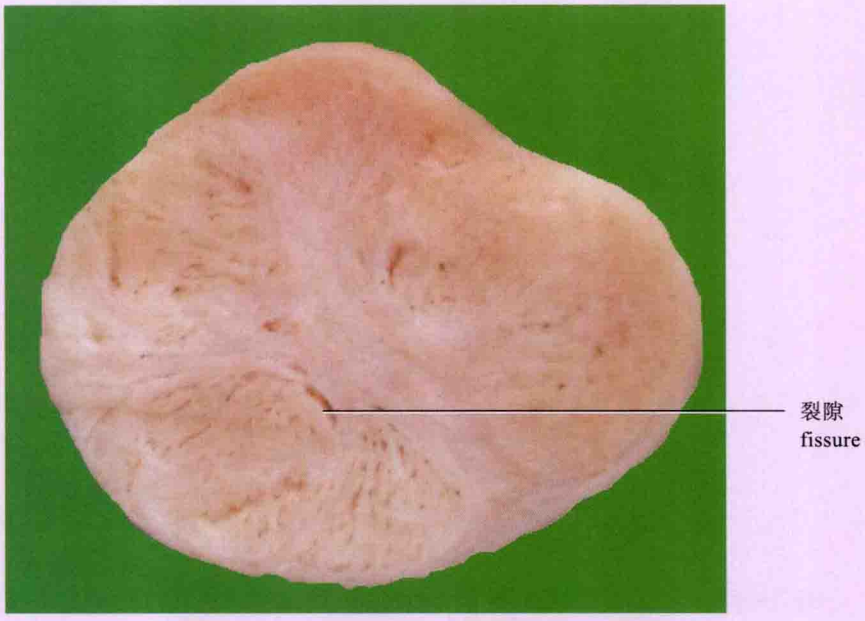


图 2–370　乳腺纤维腺瘤（fibro adenoma of the breast）

圆形或卵圆形结节状，界限清，切面灰白色、质韧，可见裂隙状区域

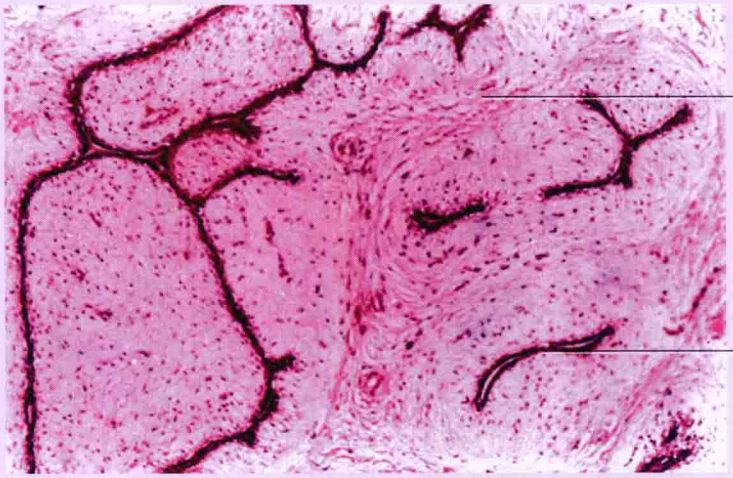


图 2-371　乳腺纤维腺瘤（fibro adenoma of the breast）（HE × 100）
肿瘤由增生的纤维间质和腺体组成，腺体被纤维组织挤压呈裂隙状

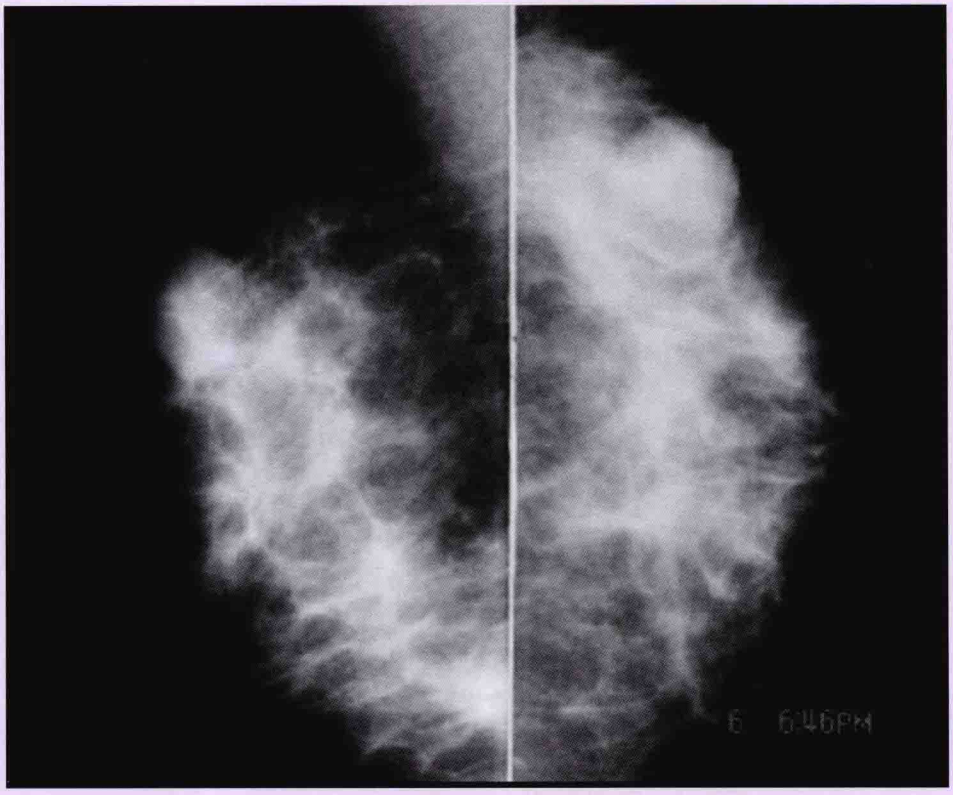


图 2-372　乳腺纤维腺瘤



图 2-373 乳腺癌（carcinoma of the breast）（HE×100）

导管内原位癌（intraductal carcinoma in situ）粉刺癌，癌细胞体积较大，分化不等，大小不一。呈实性排列，中央坏死，常查见钙化。基底膜完整



图 2-374 乳腺癌（carcinoma of the breast）（HE×40）

导管内原位癌（intraductal carcinoma in situ）非粉刺型导管内原位癌；筛状型，癌细胞在导管内排列成筛状，基底膜完整

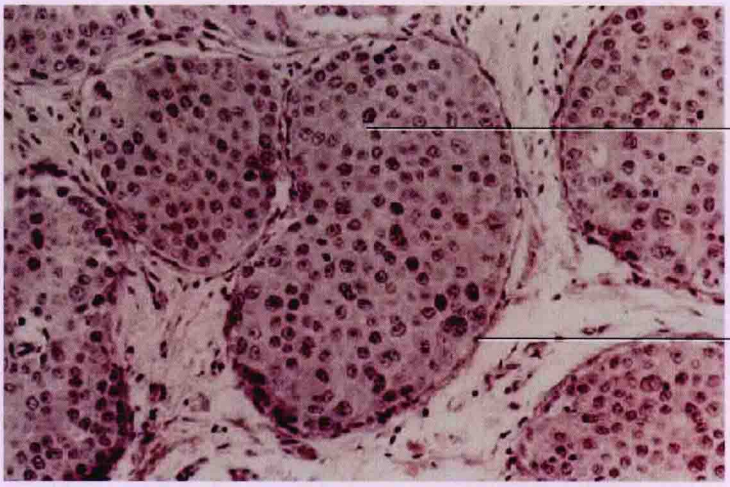


图 2-375　乳腺癌（carcinoma of the breast）（HE × 100）

导管内原位癌（intraductal carcinoma in situ）非粉刺型导管内原位癌；实性型，癌细胞在导管内排列成实体性，基底膜完整

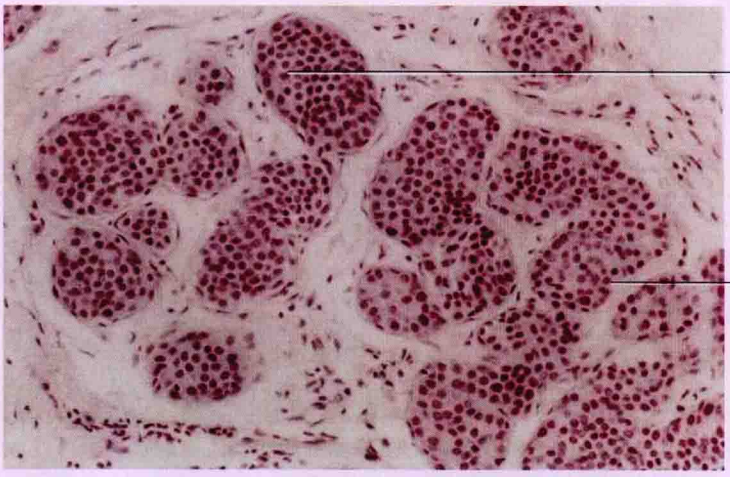


图 2-376　乳腺癌（carcinoma of the breast）（HE × 100）

小叶原位癌（lobular carcinoma in situ）扩张的乳腺小叶末梢导管和腺泡内充满呈实体排列的癌细胞，细胞较小，但大小形状较为一致，核圆形或卵圆形。增生的癌细胞未突破基底膜

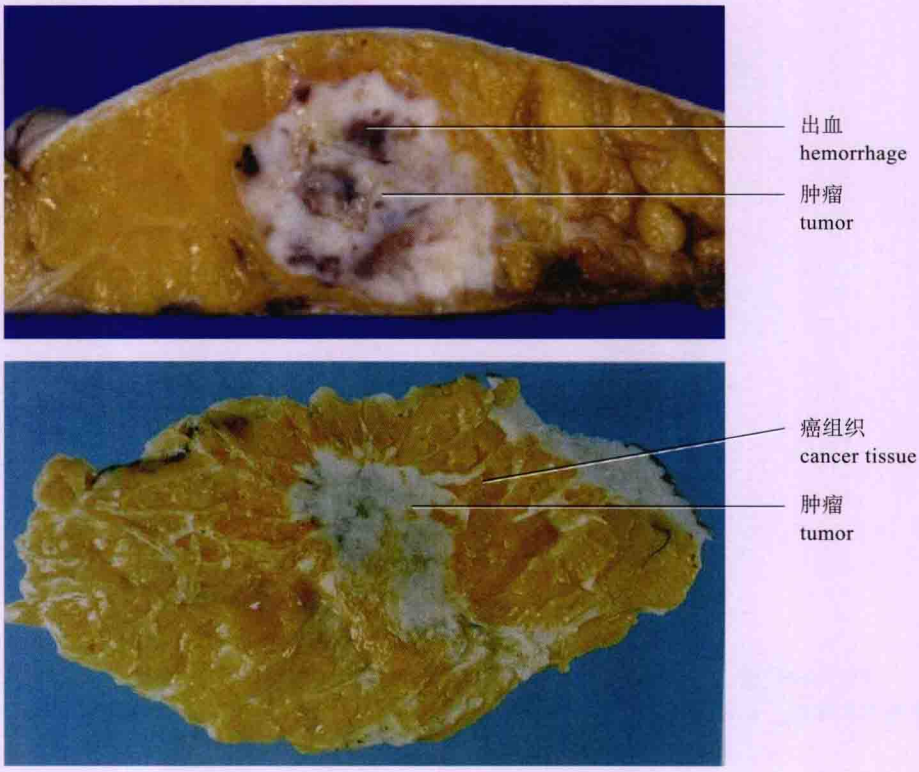


图 2-377 乳腺癌（carcinoma of the breast）

浸润性导管癌（invasive ducal carcinoma）肿瘤灰白色，质硬，无包膜，活动差。常见癌组织呈树根状侵入邻近组织内。有时可伴有出血等

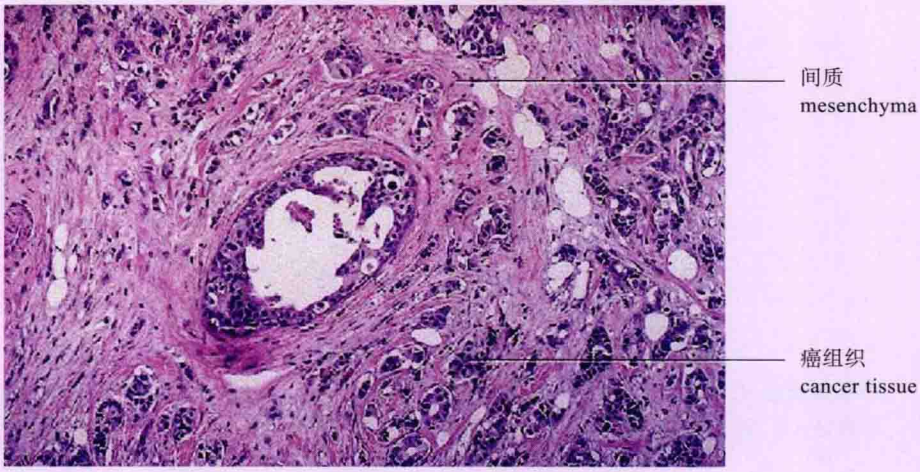


图 2-378 乳腺癌（carcinoma of the breast）（HE × 100）

浸润性导管癌（invasive ducal carcinoma）癌组织呈条索或岛屿状分布，在间质内浸润性生长

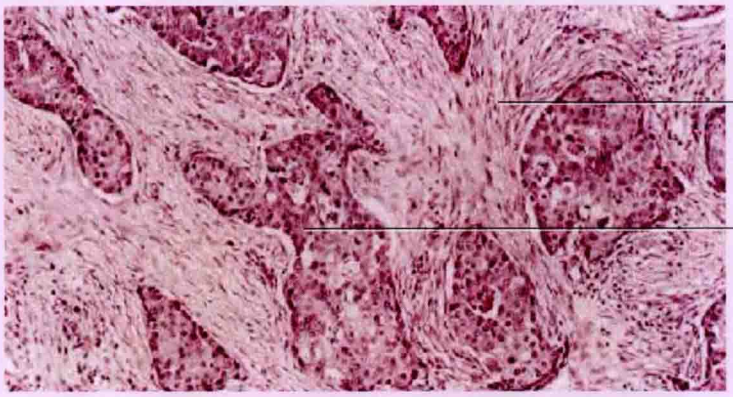


图 2-379　乳腺癌（carcinoma of the breast）（HE × 100）

浸润性导管癌（invasive ducal carcinoma）单纯癌，癌实质与间质的比例大致相等

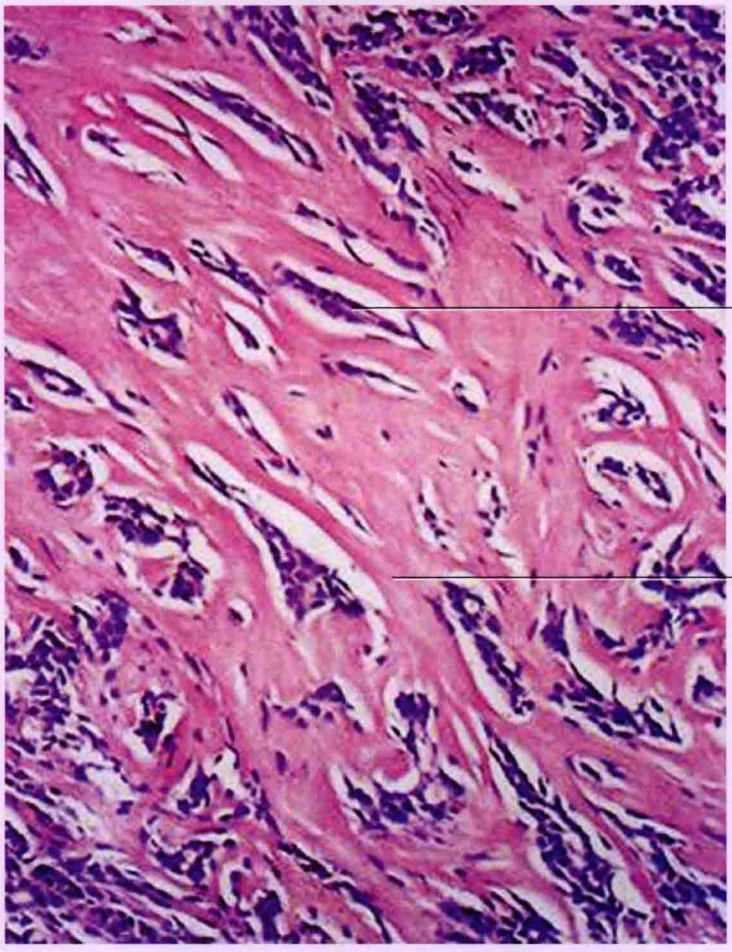


图 2-380　乳腺癌（carcinoma of the breast）（HE × 100）

浸润性导管癌（invasive ducal carcinoma）硬癌，癌的间质成分居多



图 2-381 乳腺癌（carcinoma of the breast）

浸润性小叶癌（invasive lobular carcinoma）瘤体颜色灰白，质韧，切面呈橡皮样，与周围组织无明显界限

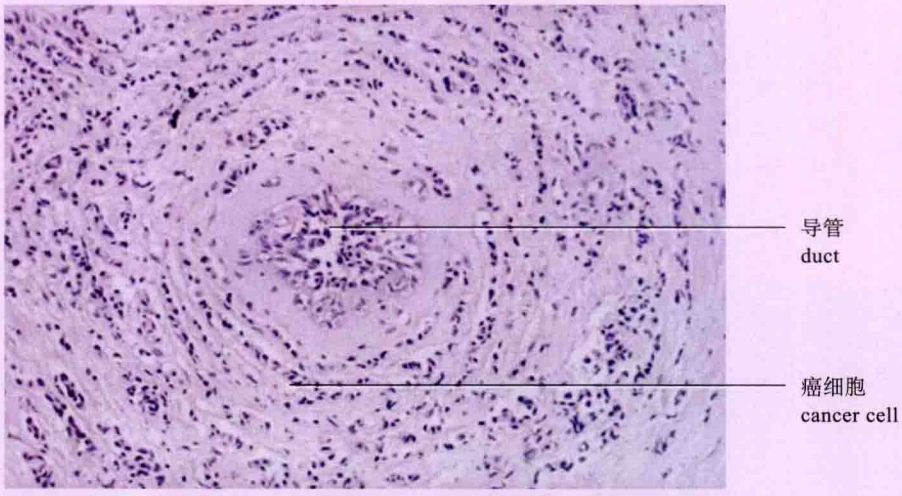


图 2-382 乳腺癌（carcinoma of the breast）（HE × 100）

浸润性小叶癌（invasive lobular carcinoma）癌细胞呈单行串珠状或细条索状环形排列在正常导管周围

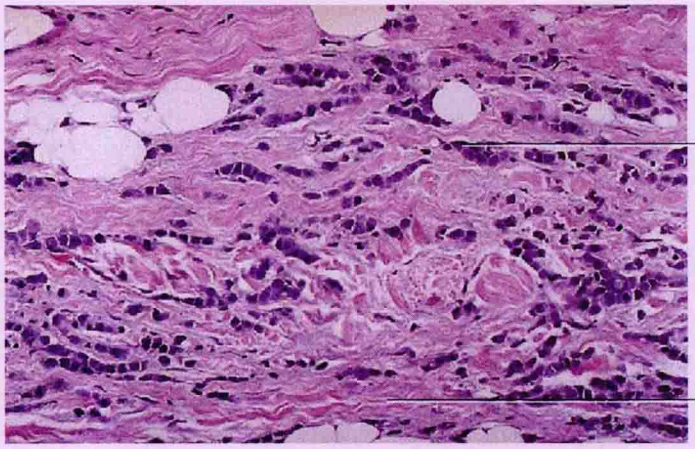


图 2-383　乳腺癌（carcinoma of the breast）（HE × 100）

浸润性小叶癌（invasive lobular carcinoma）癌细胞呈单行串珠状或细条索状浸润于纤维间质之间



图 2-384　乳腺癌（carcinoma of the breast）

癌组织侵及乳头又伴有大量纤维组织增生，可导致乳头下陷；癌组织阻塞真皮内淋巴管，可致皮肤水肿，呈橘皮样外观



图 2-385 乳腺炎症性癌（Inflammatory carcinoma of the breast）（HE×40）

临床乳腺症状类似急性炎症，镜下见血管有癌栓

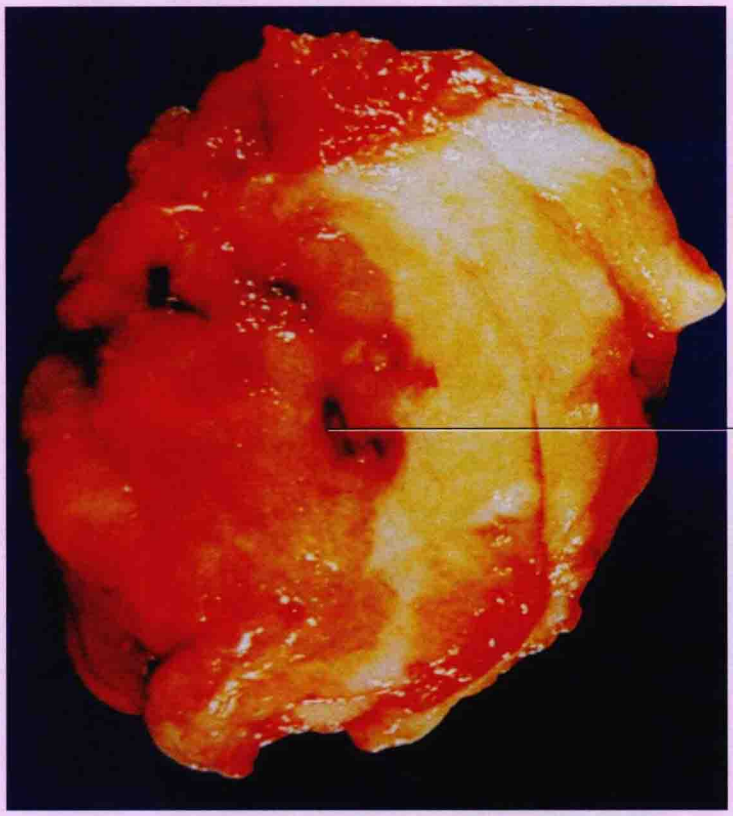


图 2-386 乳腺髓样癌（medulla carcinoma of the breast）

瘤体为圆形、界限清楚，质地较软的肿块。外观褐色或灰色，常有灶状坏死和出血

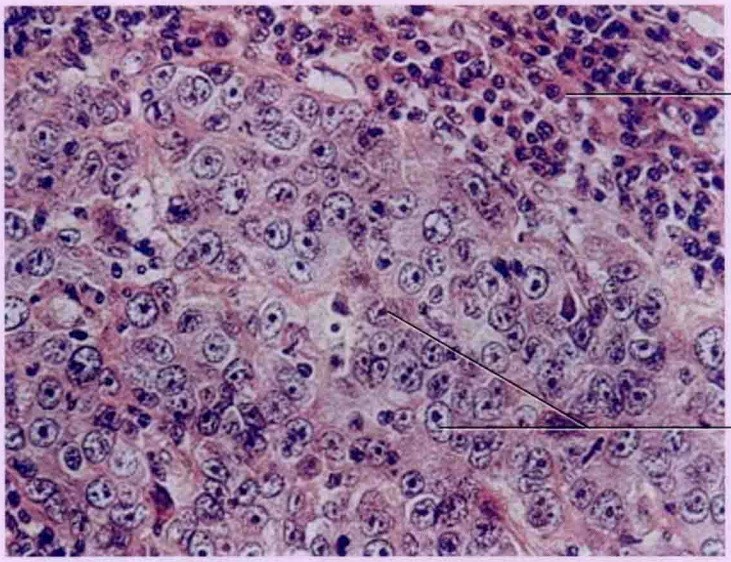


图 2-387 乳腺髓样癌（medulla carcinoma of the breast）（HE×200）

一种由低分化瘤细胞组成的边界清楚的乳腺癌。瘤细胞呈大片状分布，无腺管结构形成，间质少，内大量淋巴细胞浸润

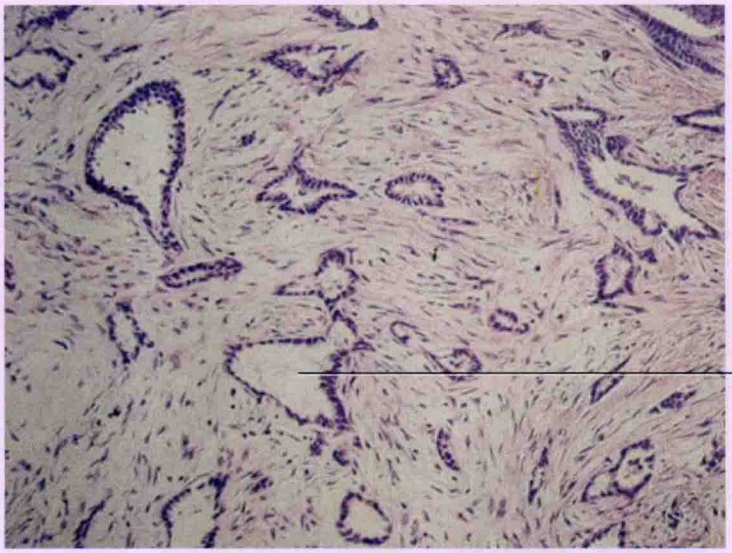


图 2-388 乳腺癌（carcinoma of the breast）（HE×40）

小管癌（tubular carcinoma）由高分化小管结构所组成的特殊类型乳腺癌，预后极好。肿瘤的小管结构具有开放性管腔，内衬单层上皮细胞

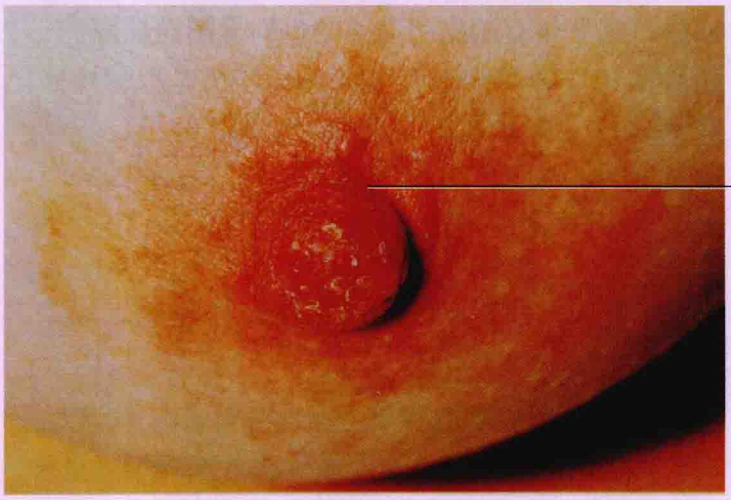


图 2-389 Paget 病（Paget disease）
乳晕及乳头充血和糜烂，呈湿疹样变化



图 2-390 Paget 病（Paget disease）（HE × 100）
表皮内可见大而异型的肿瘤细胞，这些细胞可孤立散在或成簇分布



图 2-391　乳腺胶样癌（colloid carcinoma of the breast）

肿瘤体积大，切面呈黏液样外观



图 2-392　乳腺胶样癌（colloid carcinoma of the breast）（HE × 100）

细胞呈簇状漂浮在黏液湖内。细胞簇通常由形态一致的圆形细胞组成。黏液湖间有纤细的细胞间隔

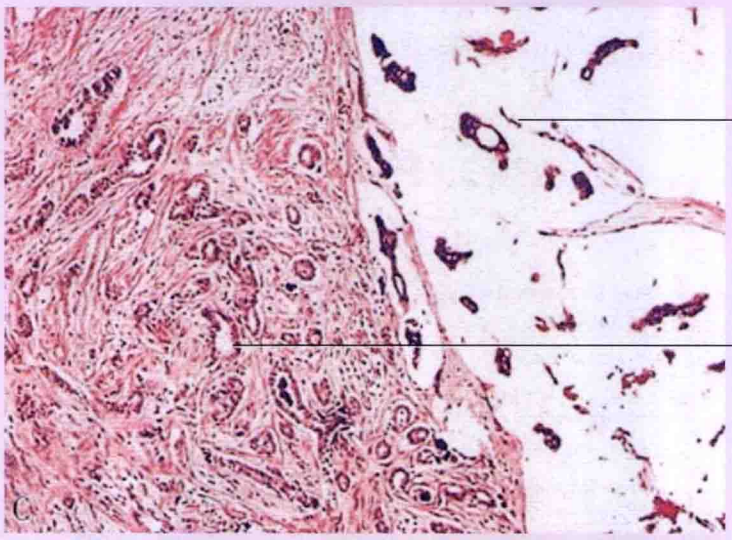


图 2-393 乳腺癌（carcinoma of the breast）（HE×100）

浸润性导管癌（左）和黏液癌（右）混合型

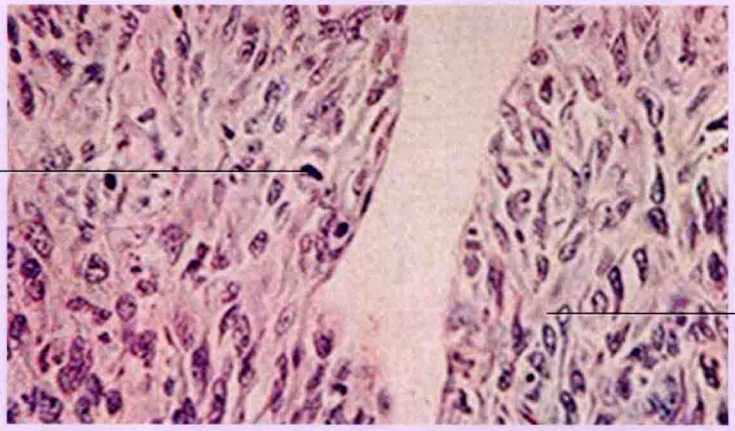


图 2-394 乳腺原发性肉瘤（primary sarcoma of the breast）（HE×200）

梭形瘤细胞侵犯血管壁，瘤细胞异型明显，可见较多核分裂像

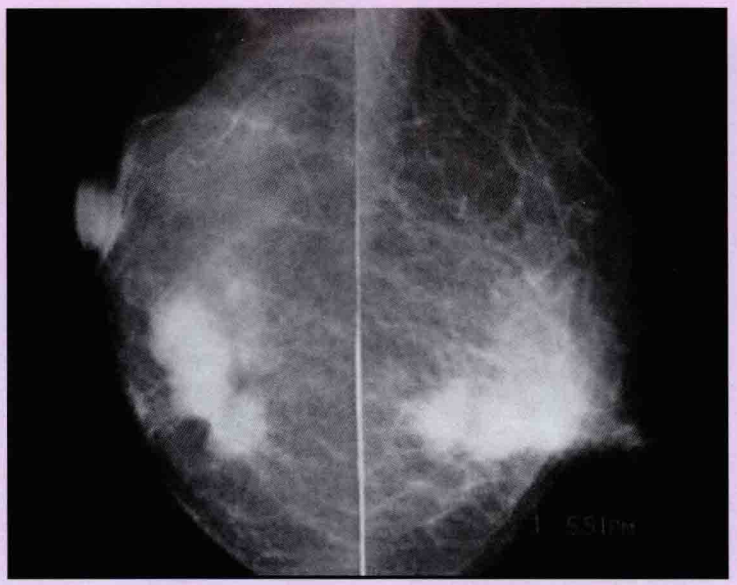


图 2-395 乳腺癌 – 浸润性导管癌

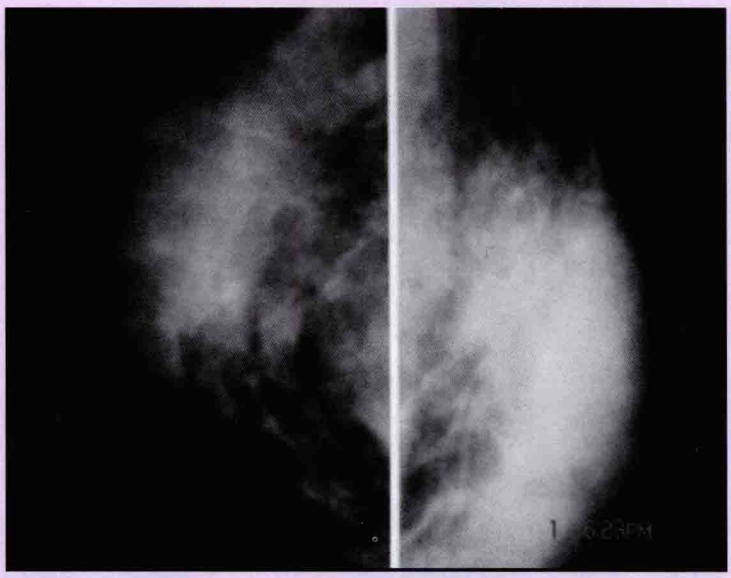


图 2-396 乳腺癌 – 浸润性小叶癌

（五）胸腺

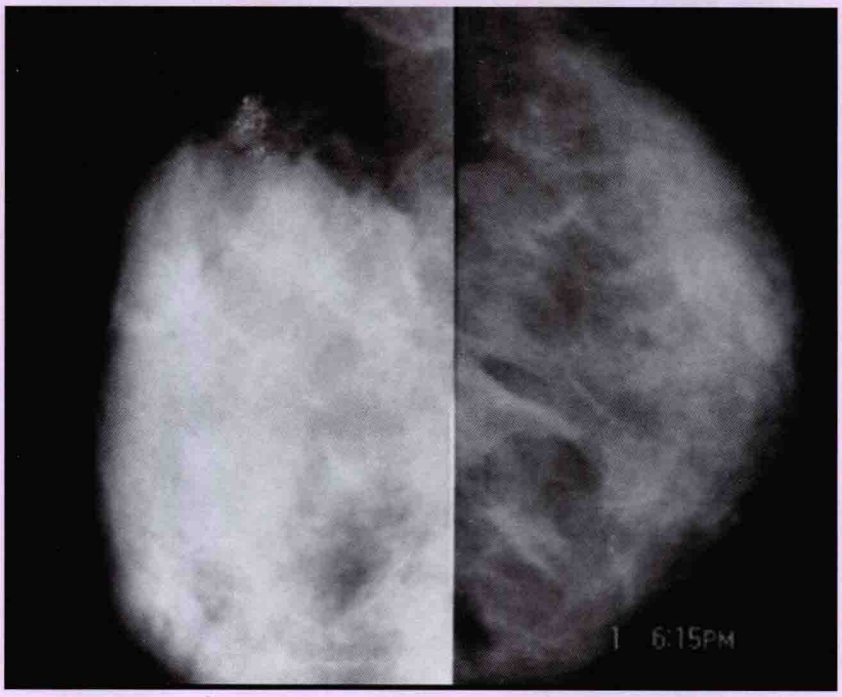


图 2–397　乳腺癌 – 导管内原位癌



图 2–398　正常的胸腺

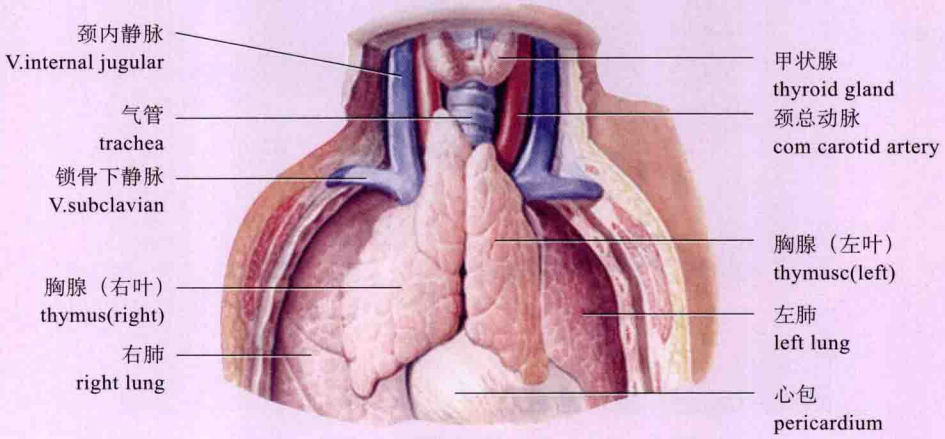


图 2–399　胸腺



图 2–400　成人胸腺镜下（HE×40）

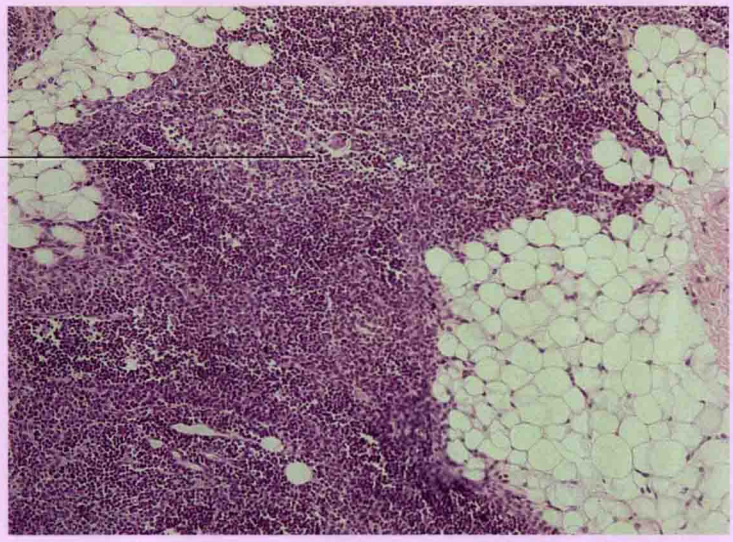


图 2-401 成人胸腺镜下（HE×100）

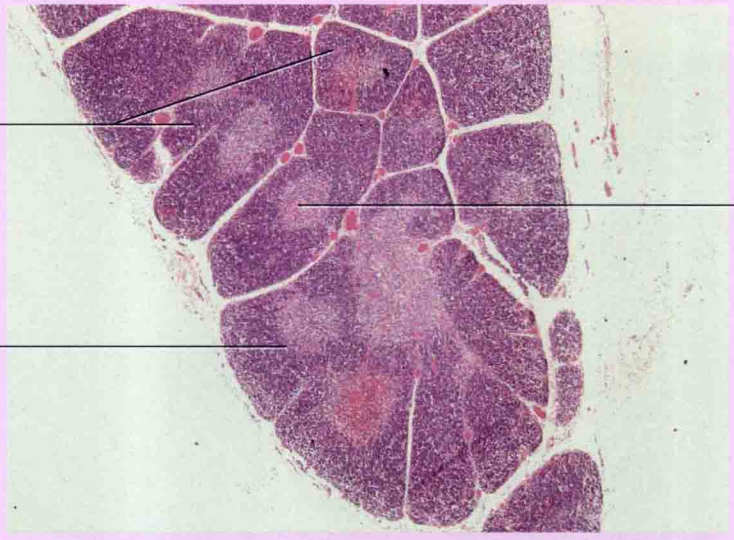


图 2-402 幼儿胸腺镜下（HE×40）

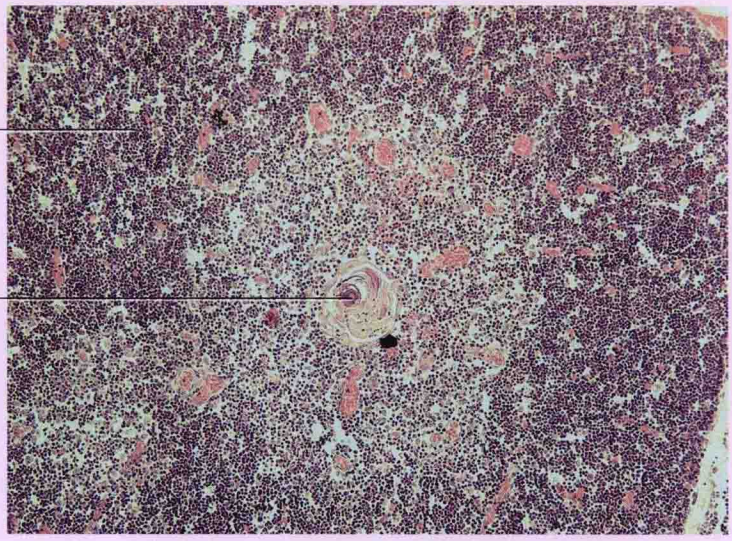


图 2-403　幼儿胸腺镜下（HE×100）



图 2-404　胸腺发育不良（hyperplasia of the thymus）

左为正常 3 个月女婴胸腺，右为发育不良的胸腺，胸腺明显小于同龄正常者



图 2-405　胸腺退行性变（thymes involution）（HE × 100）

青春期后胸腺开始退化，有脂肪组织长入

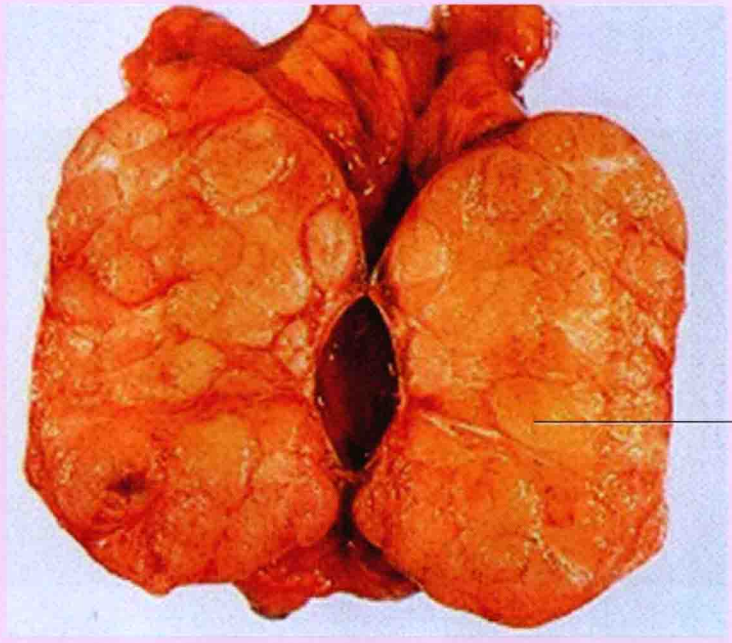


图 2-406　胸腺瘤（thyme）

胸腺局部明显增生形成肿瘤。肿瘤切面呈灰黄色，呈分叶结节状

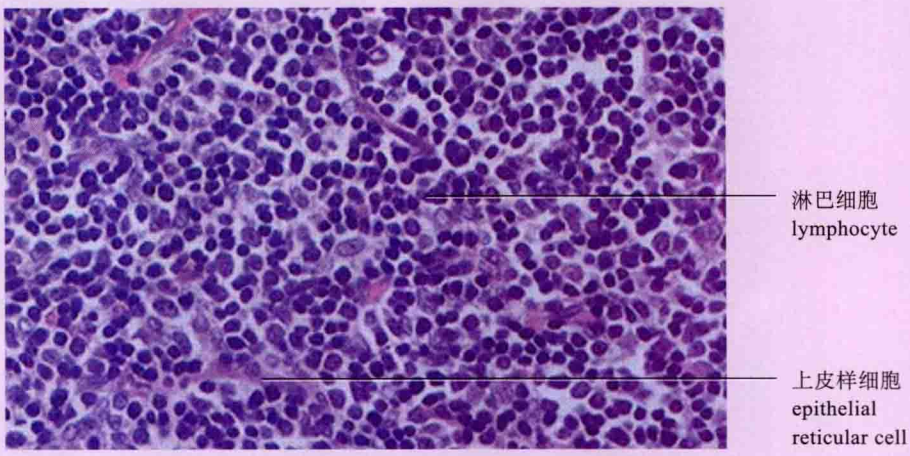


图 2-407　胸腺瘤（thymoma）（HE×200）
淋巴细胞为主型。瘤组织主要以淋巴细胞为主，杂以上皮样细胞

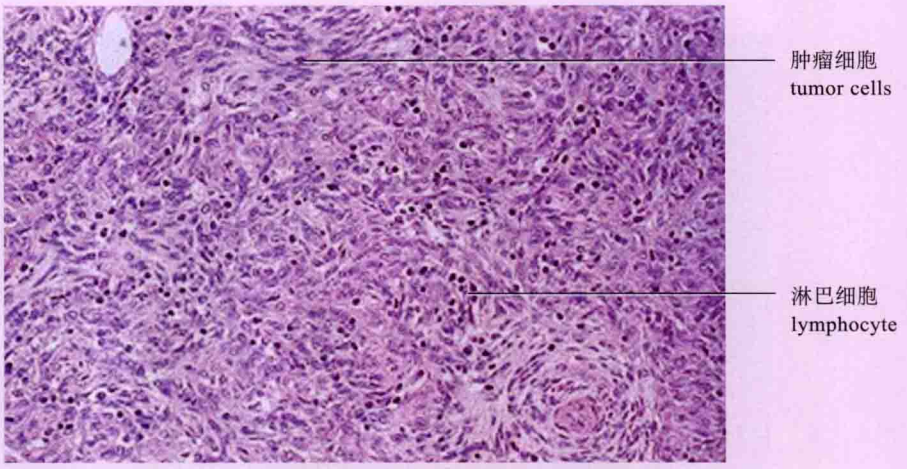


图 2-408　胸腺瘤（thyme）（HE×100）
梭形上皮细胞为主型。肿瘤主要由梭形细胞组成，其间杂以少量淋巴细胞

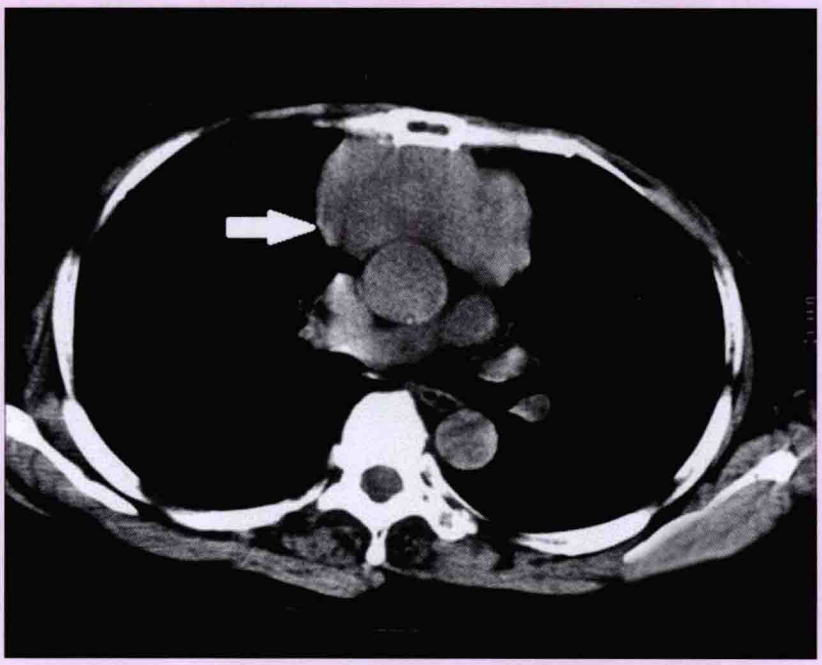


图 2-409　胸腺瘤（1）

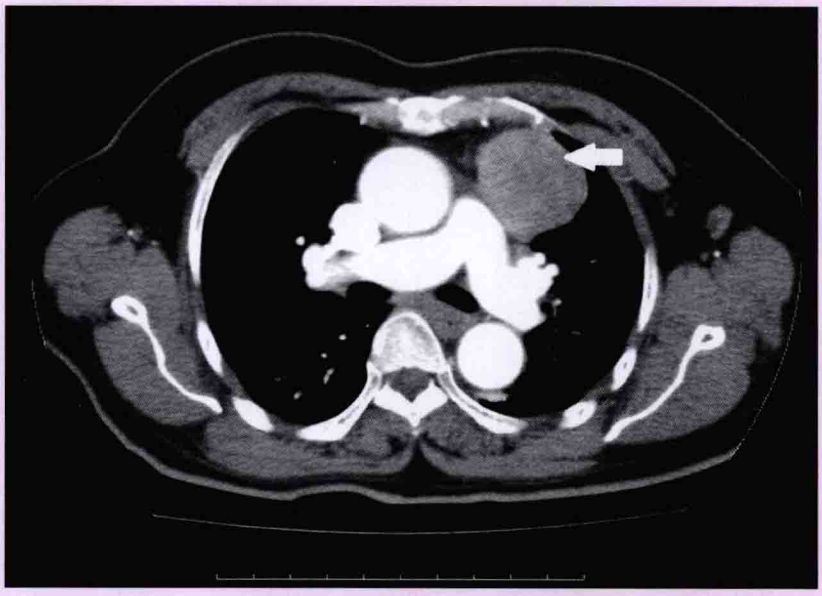


图 2-410　胸腺瘤（2）

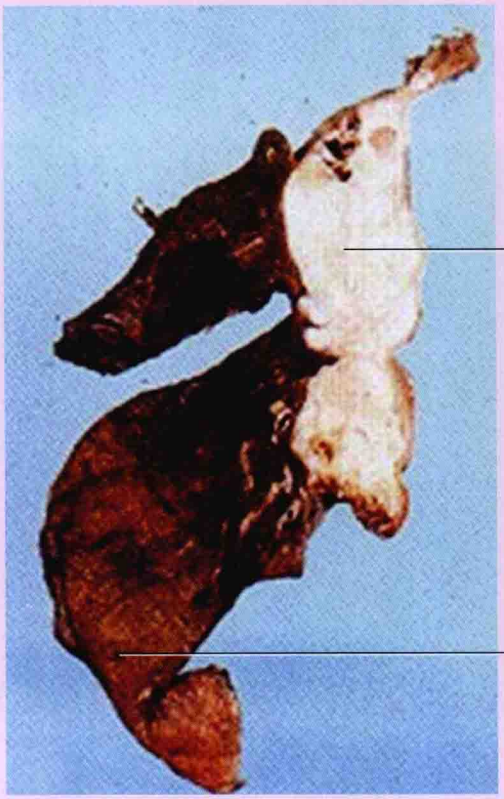


图 2-411　恶性胸腺瘤（ malignant thymoma ）
肿瘤灰白，部分囊性变，蔓延至右肺

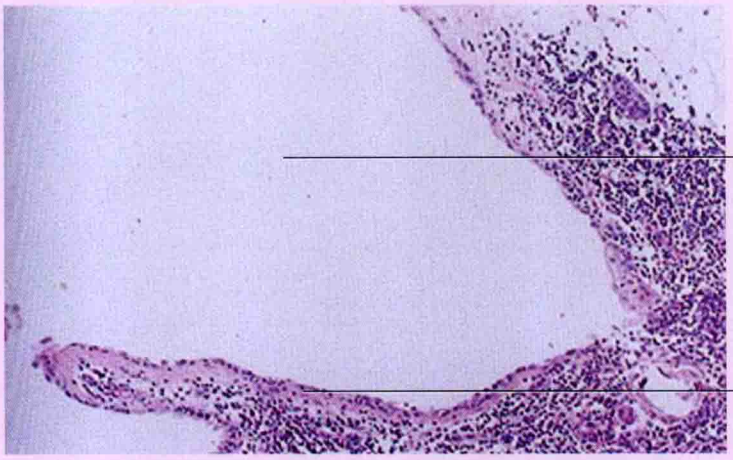


图 2-412　胸腺囊肿（ thymes cyst ）(HE × 100)
先天异常，囊壁为立方上皮、扁平上皮或纤毛上皮

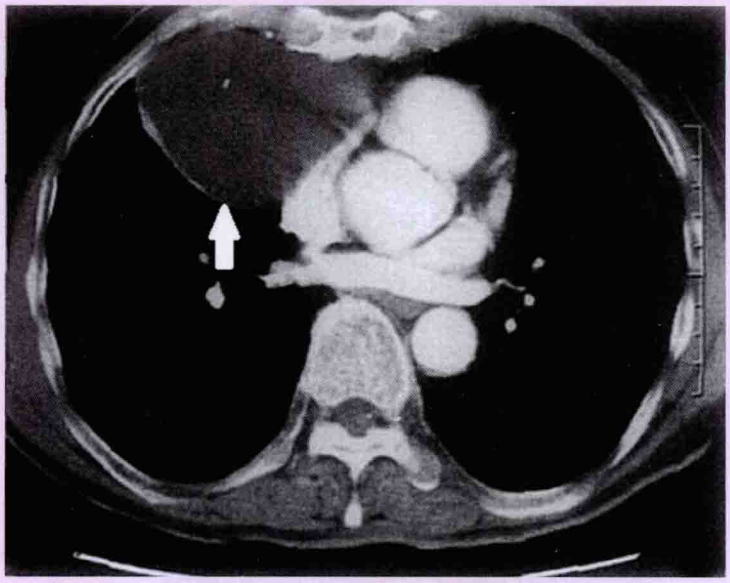


图 2-413　胸腺囊肿

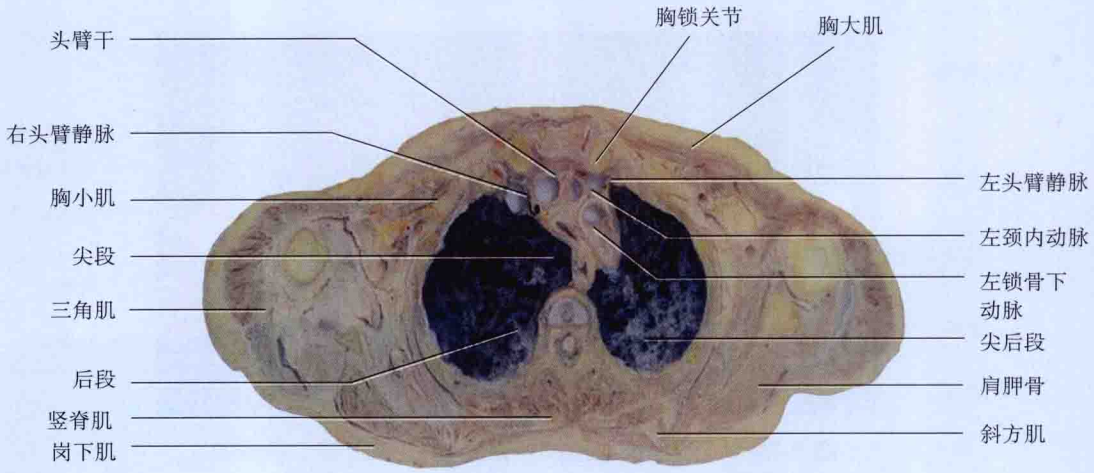


图 3–1　胸部第一断层面：颈静脉切迹层面

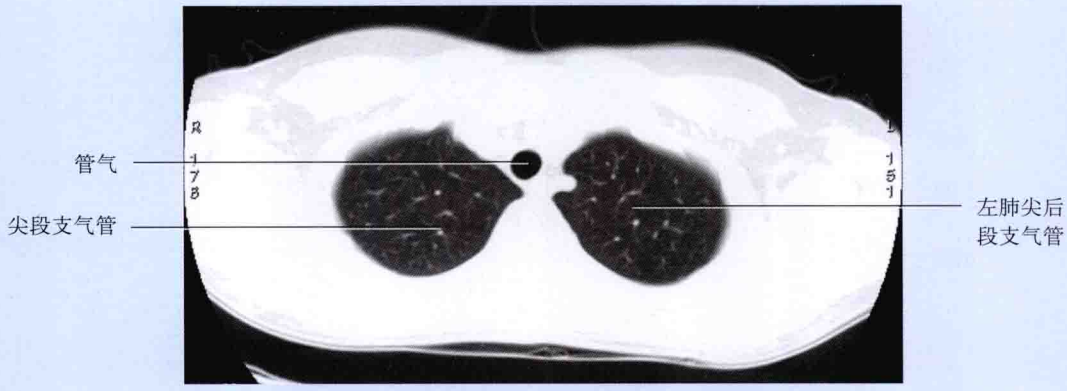


图 3–2　胸部第一断层面：颈静脉切迹层面（肺窗）

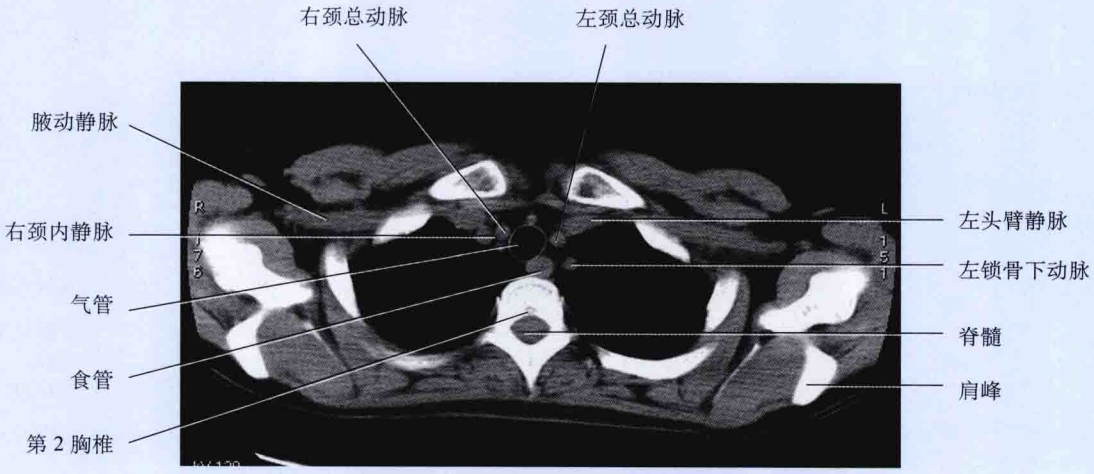


图 3-3 胸部第一断层面：颈静脉切迹层面（纵隔窗）

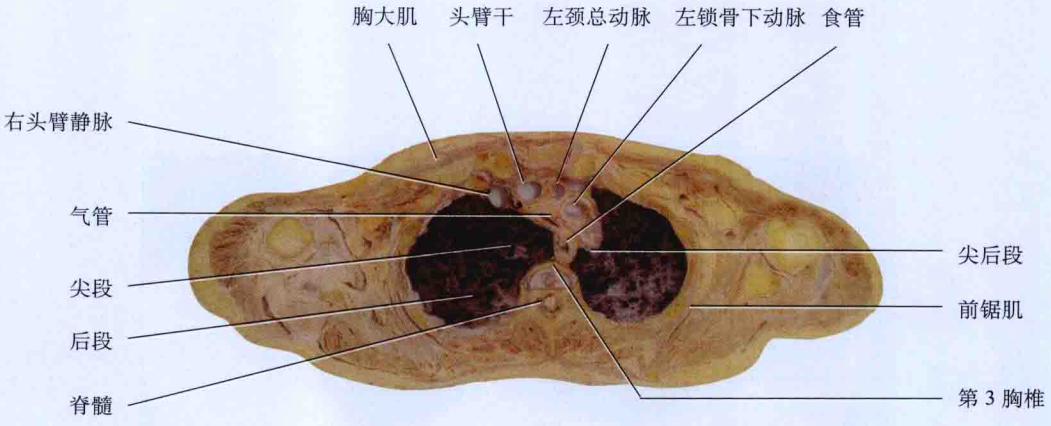


图 3-4 胸部第二断层面：第 3 胸椎椎体层面

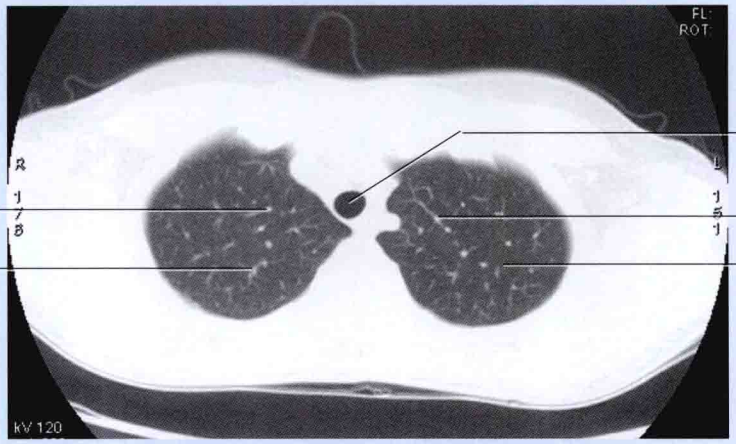


图 3-5 胸部第二断层面：第 3 胸椎椎体层面（肺窗）

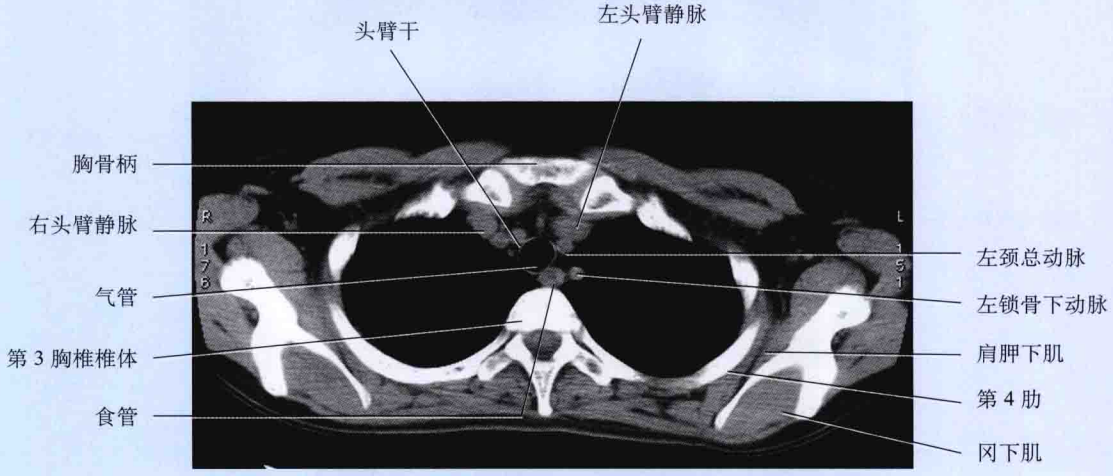


图 3-6 胸部第二层面：第 3 胸椎椎体层面（纵隔窗）

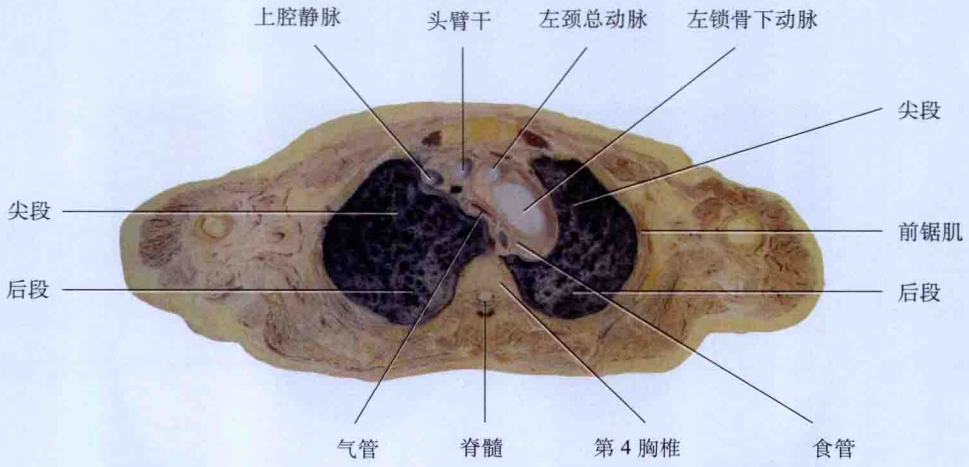


图 3-7 胸部第三断层面：第 4 胸椎椎体层面

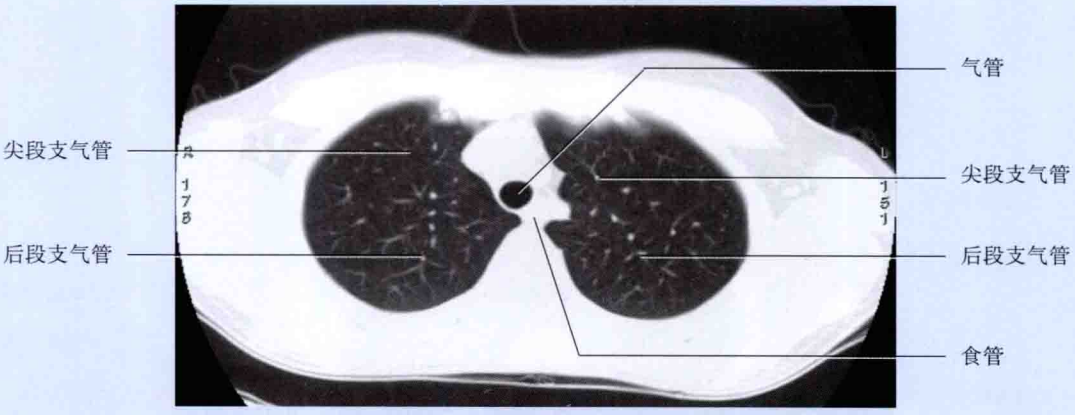


图 3-8 胸部第三断层面：第 4 胸椎椎体层面（肺窗）

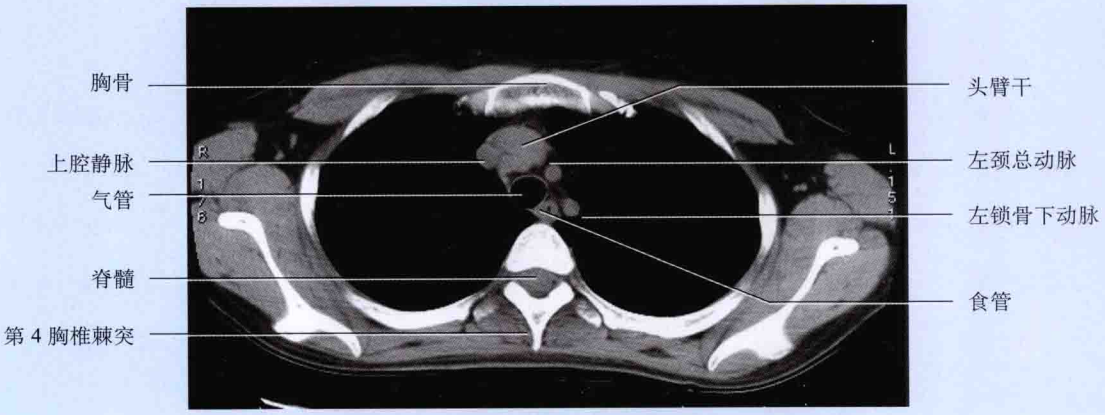


图 3-9 胸部第三断层面：第 4 胸椎椎体层面（纵隔窗）

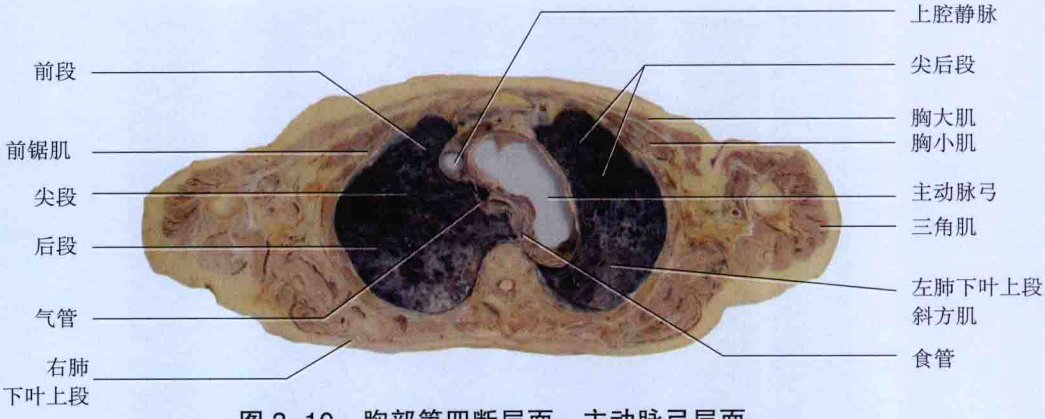


图 3-10 胸部第四断层面：主动脉弓层面

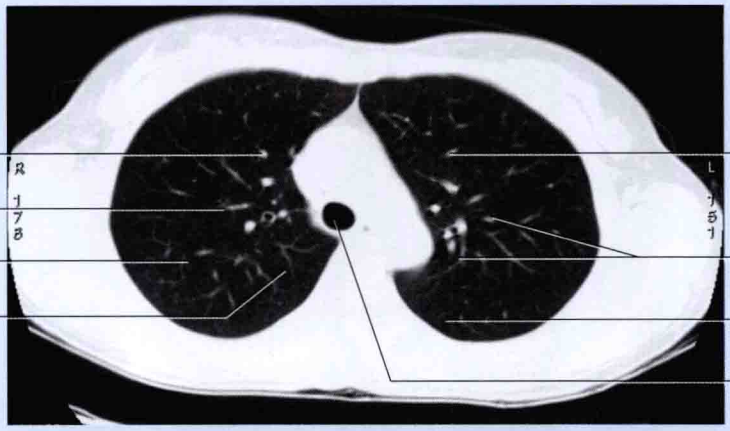


图 3-11 胸部第四断层面：主动脉弓层面（肺窗）

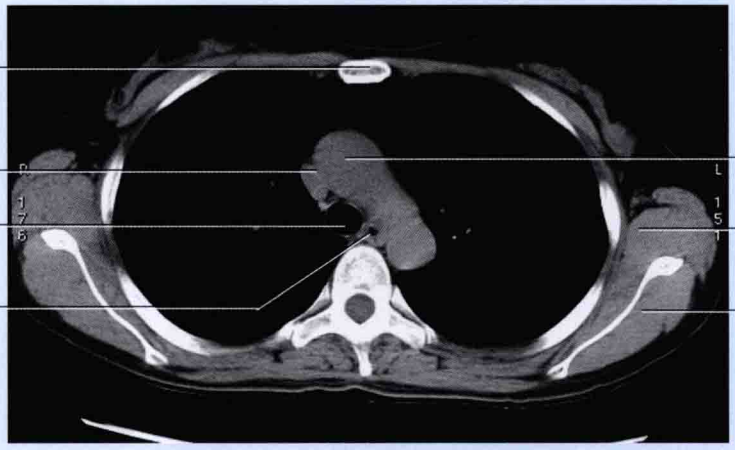


图 3-12 胸部第四断层面：主动脉弓层面（纵隔窗）

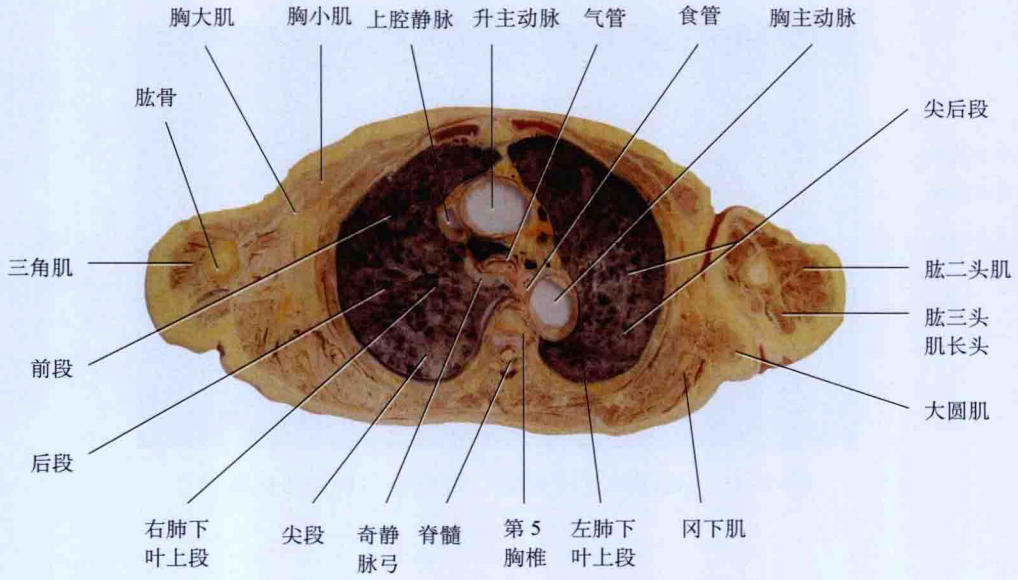


图 3–13 胸部第五断层面：奇静脉弓层面

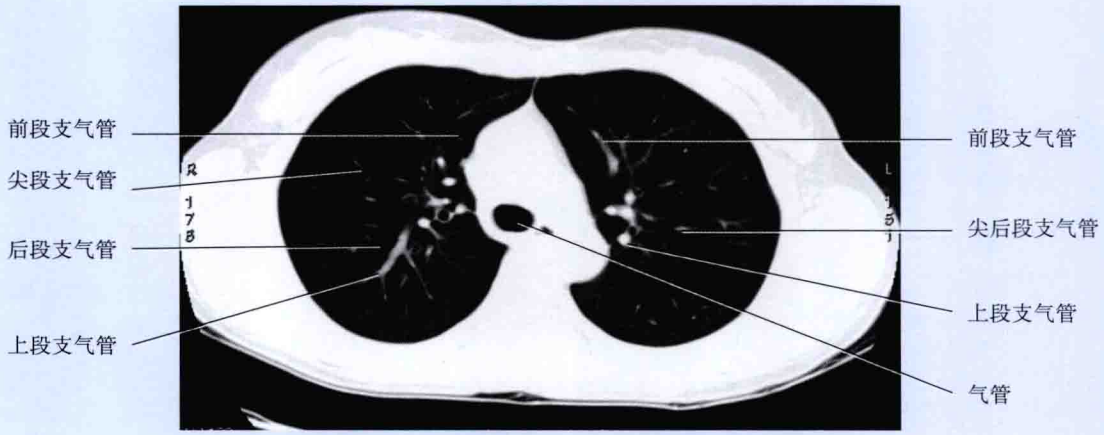


图 3–14 胸部第五断层面：奇静脉弓层面（肺窗）

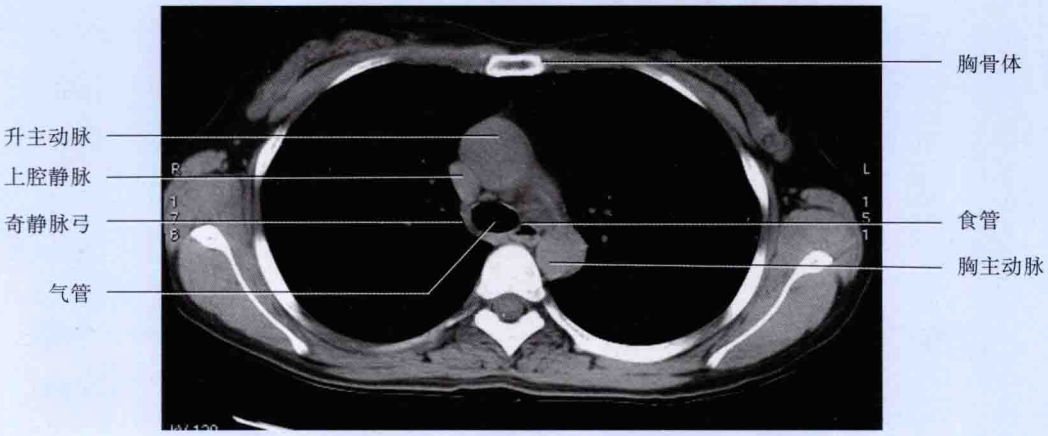


图 3-15 胸部第五断层面：奇静脉弓层面（纵隔窗）

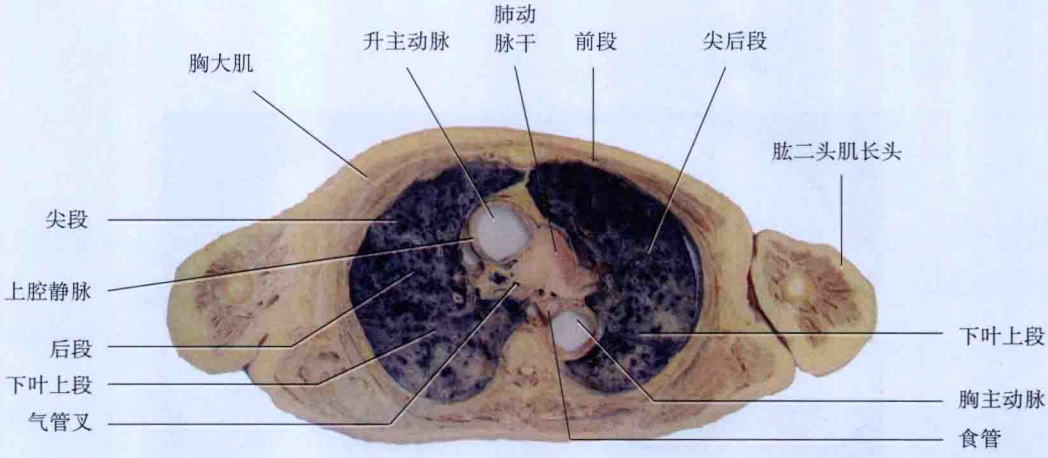


图 3-16 胸部第六断层面：气管叉层面

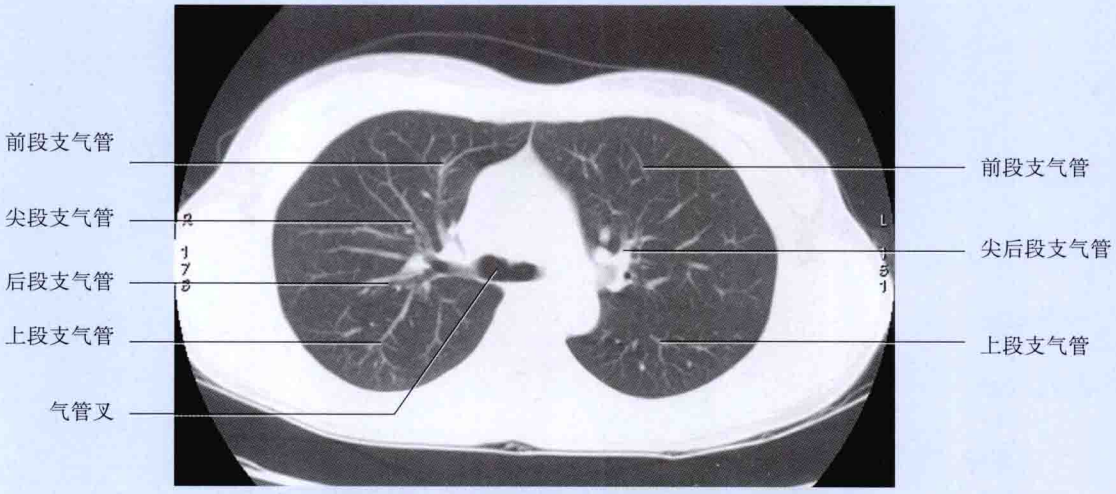


图 3-17 胸部第六断层面：气管叉层面（肺窗）

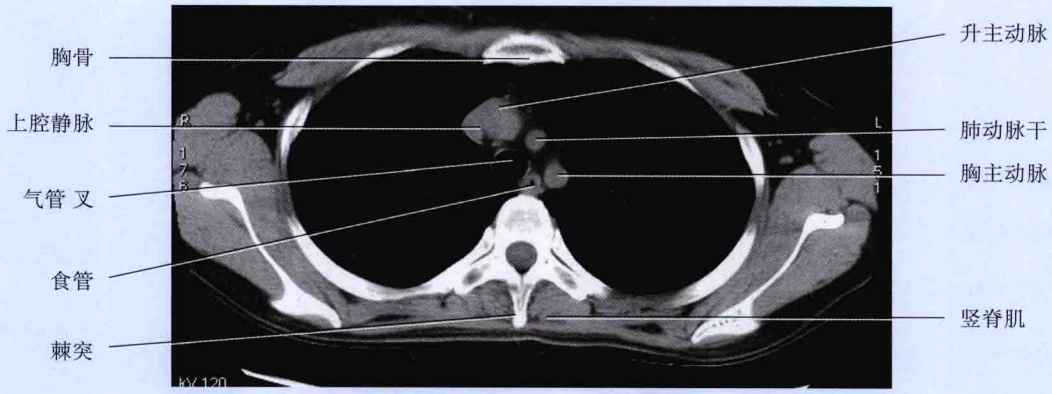


图 3-18 胸部第六断层面：气管叉层面（纵隔窗）

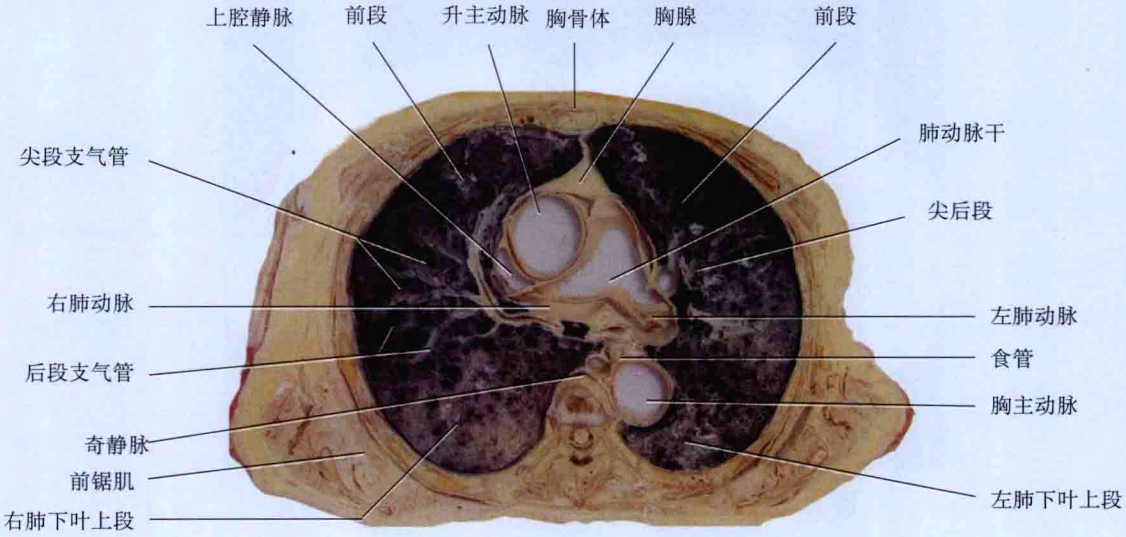


图 3–19 胸部第七断层面：肺动脉叉层面

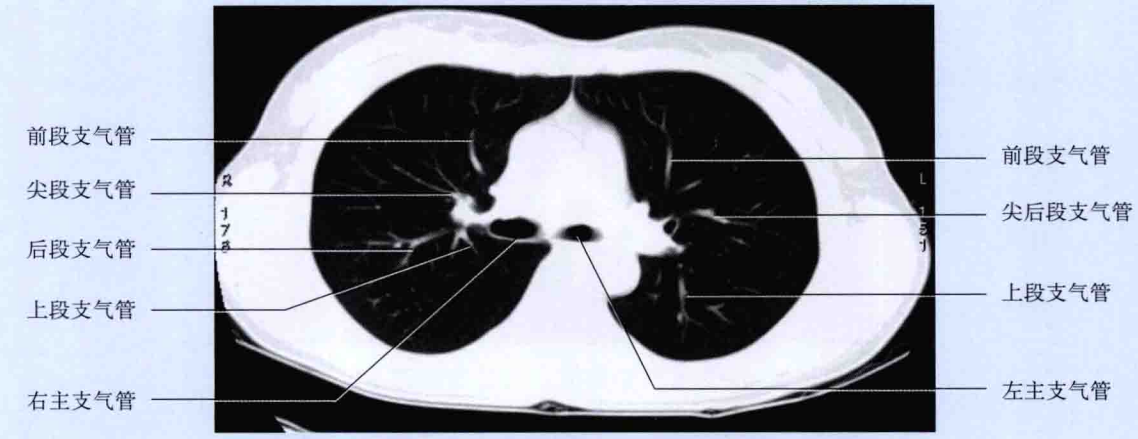


图 3–20 胸部第七断层面：肺动脉叉层面（肺窗）

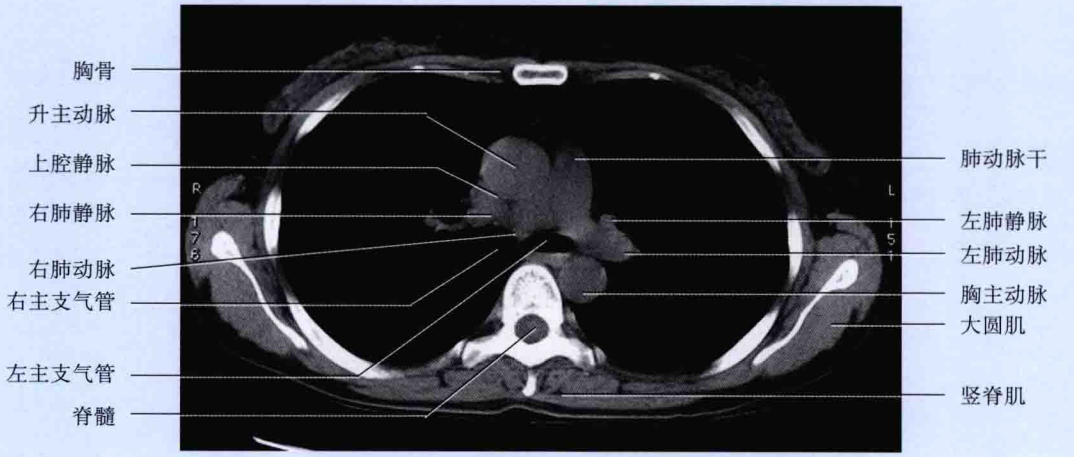


图 3-21 胸部第七断层面：肺动脉叉层面（纵隔窗）

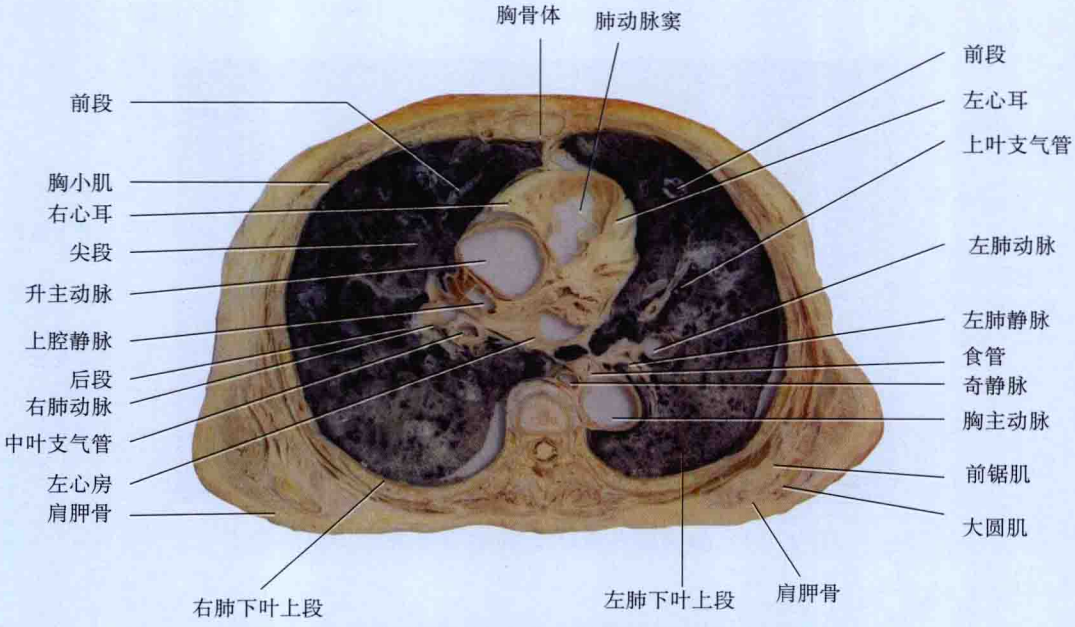


图 3-22 胸部第八层面：肺动脉窦层面（标本）

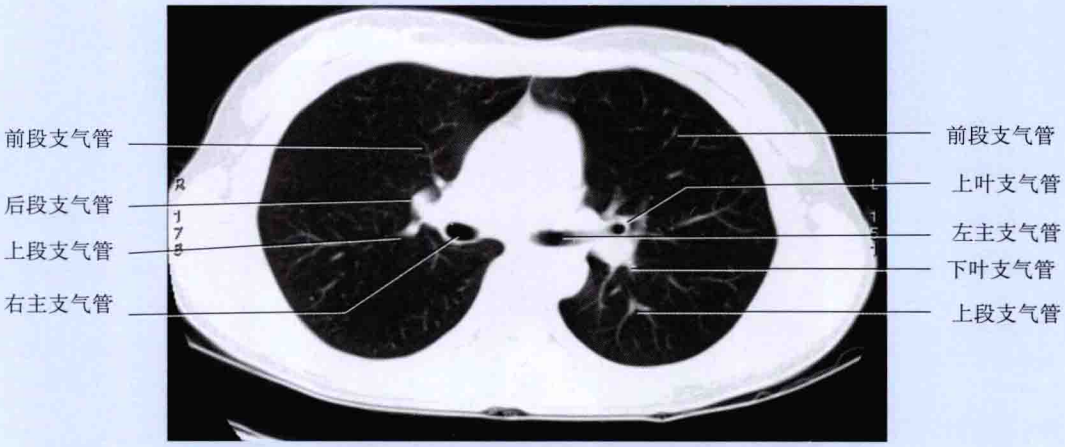


图 3-23 胸部第八层面：肺动脉窦层面（肺窗）

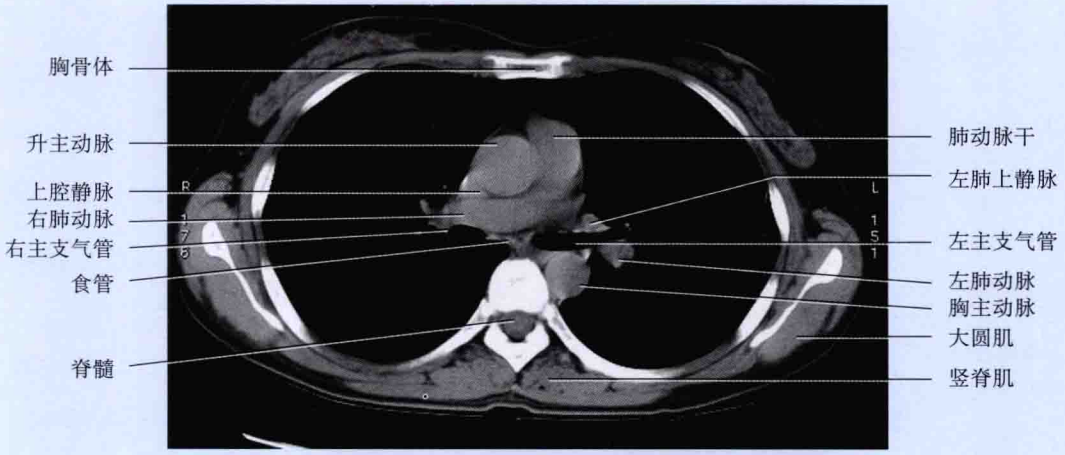


图 3-24 胸部第八层面：肺动脉窦层面（纵隔窗）

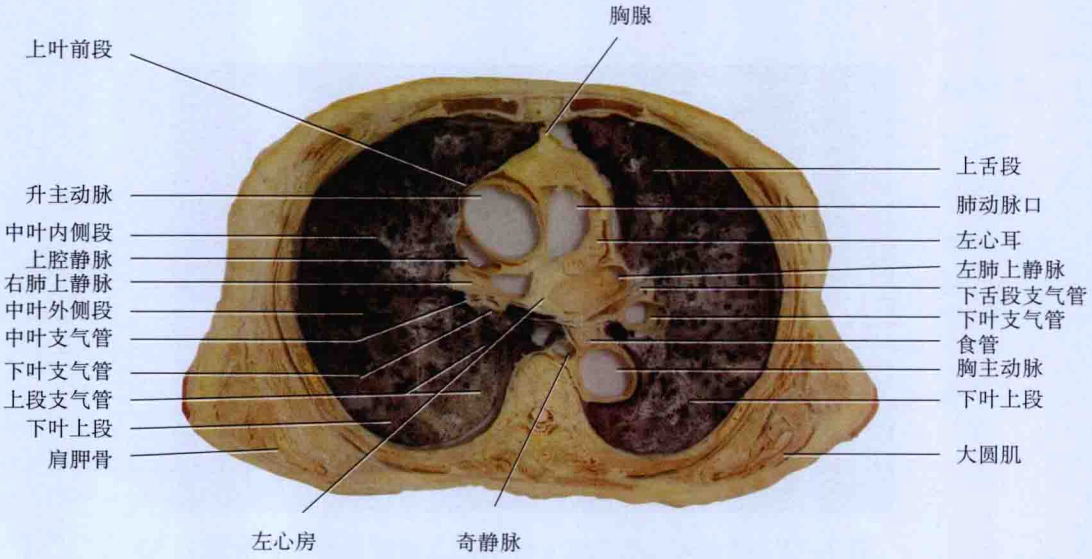


图 3-25 胸部第九断层面：左右肺上静脉层面

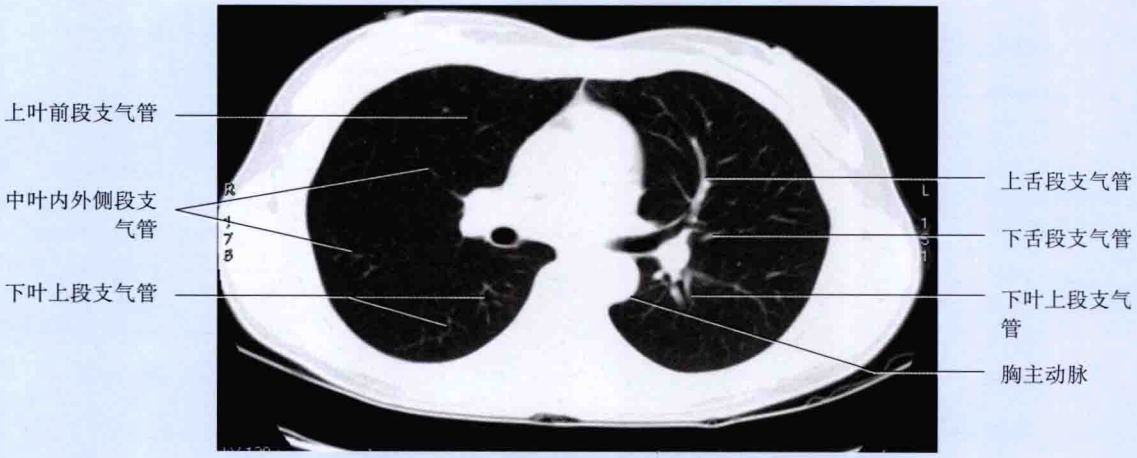


图 3-26 胸部第九断层面：左右肺上静脉层面（肺窗）

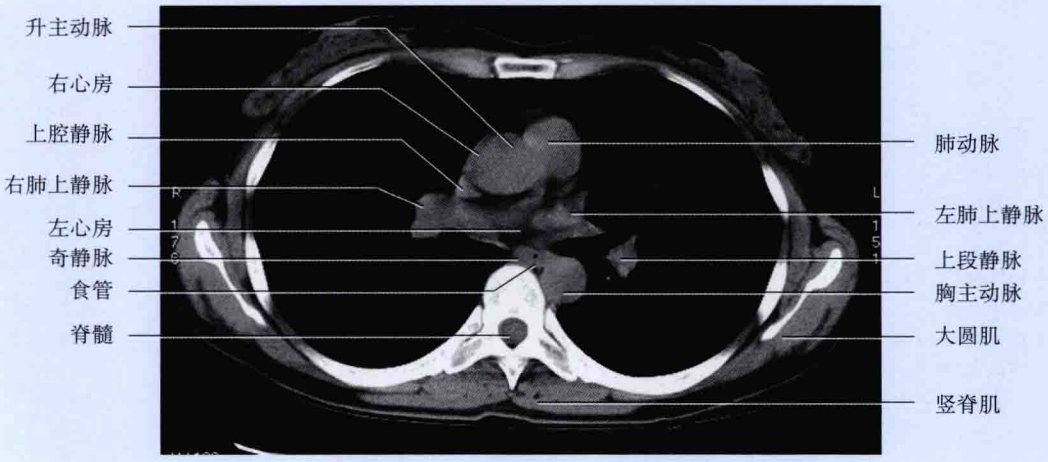


图 3-27 胸部第九断层面：左右肺上静脉层面（纵隔窗）

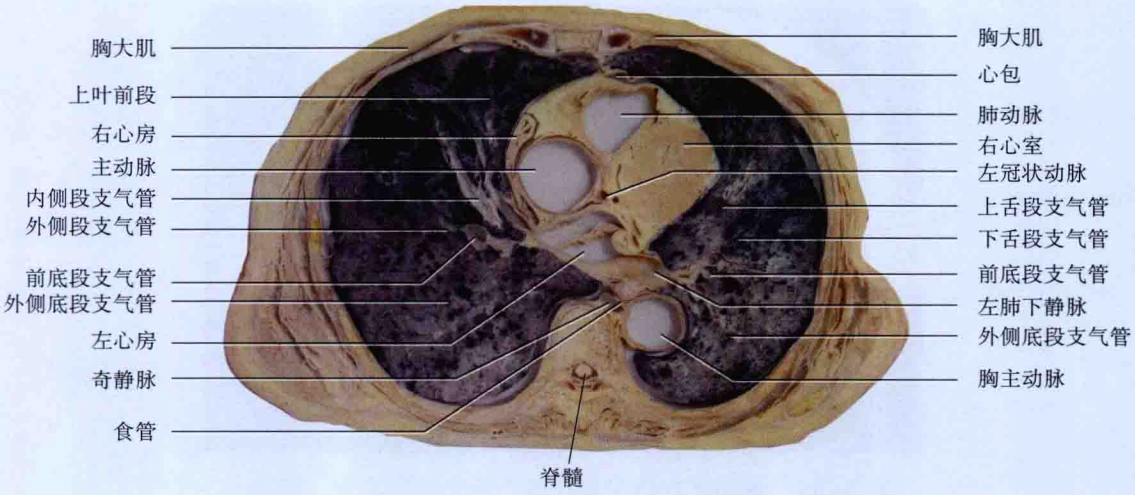


图 3-28 胸部第十断层面：肺下静脉层面

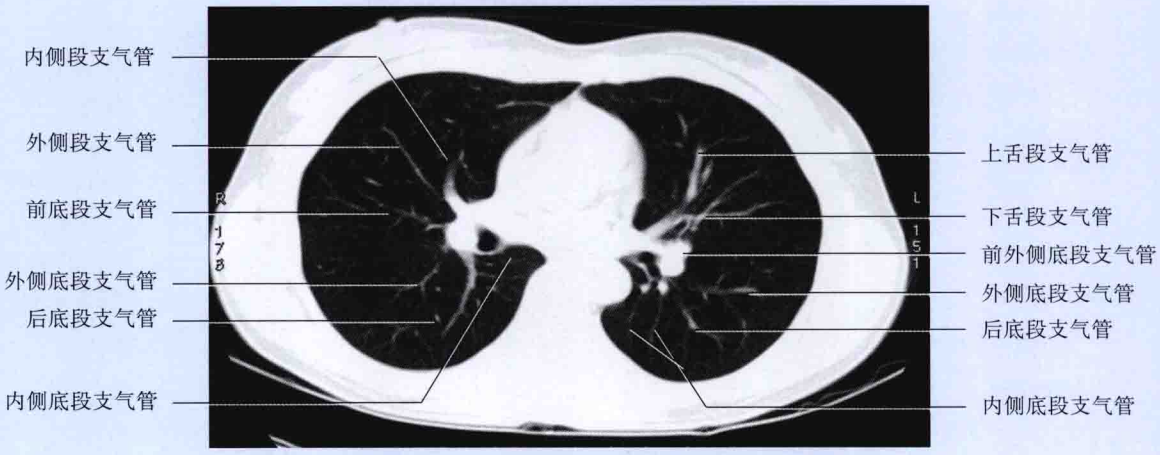


图 3-29 胸部第十断层面：肺下静脉层面（肺窗）

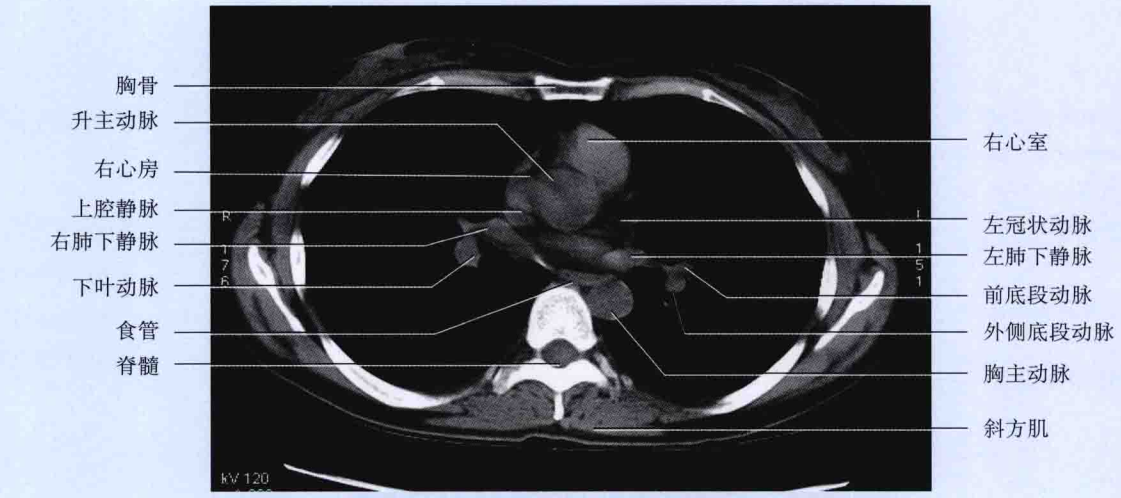


图 3-30 胸部第十断层面：肺下静脉层面（纵隔窗）

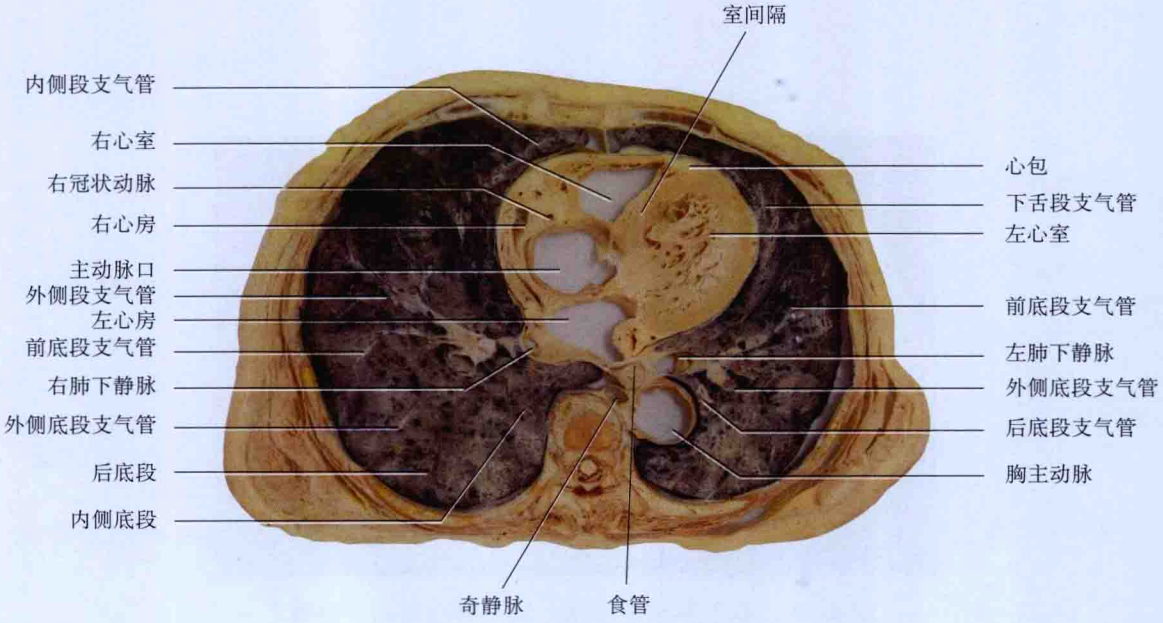


图 3-31 胸部第十一断层面：主动脉口层面

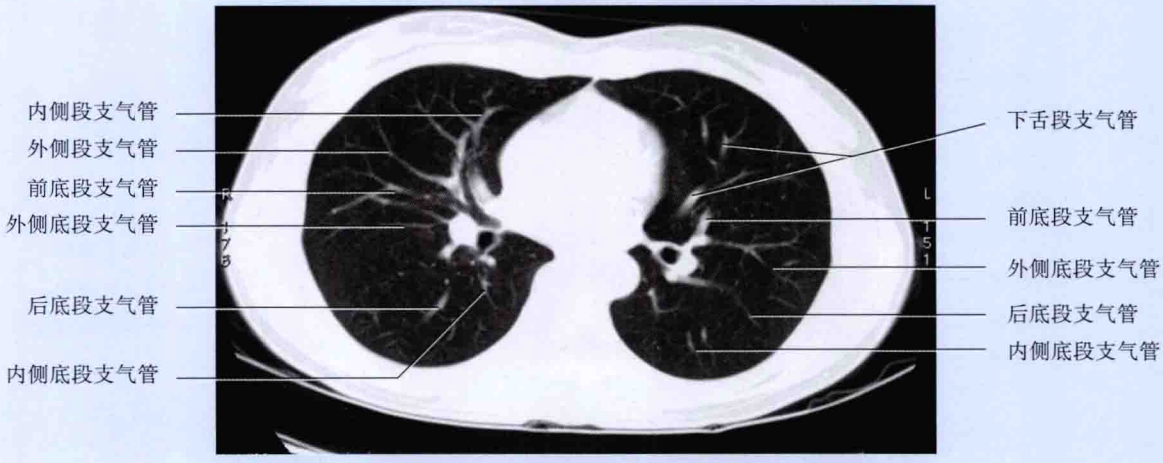


图 3-32 胸部第十一断层面：主动脉口层面（肺窗）

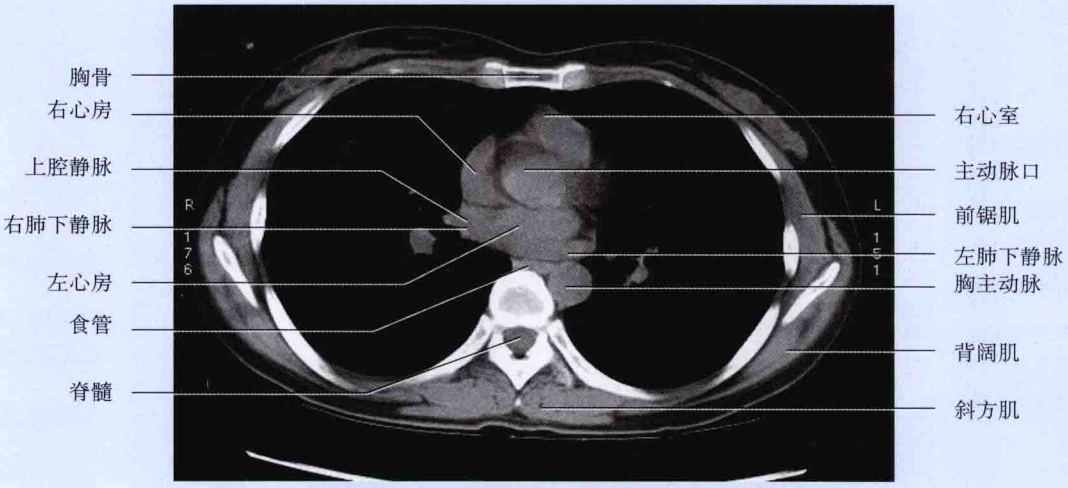


图 3-33 胸部第十一断层面：主动脉口层面（纵隔窗）

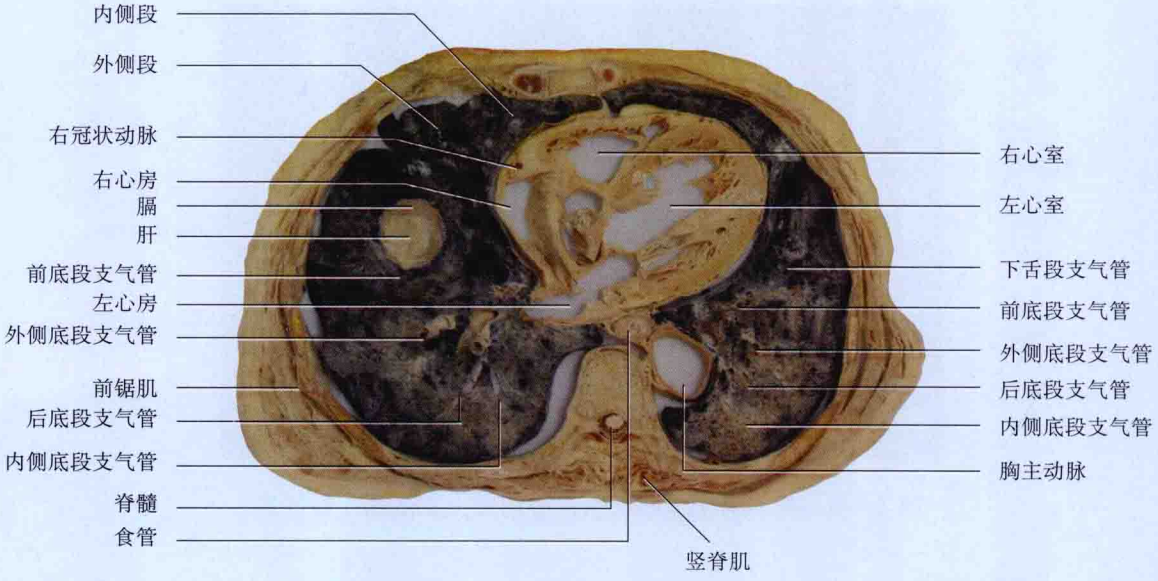


图 3-34 胸部第十二断层面：心四腔上部层面

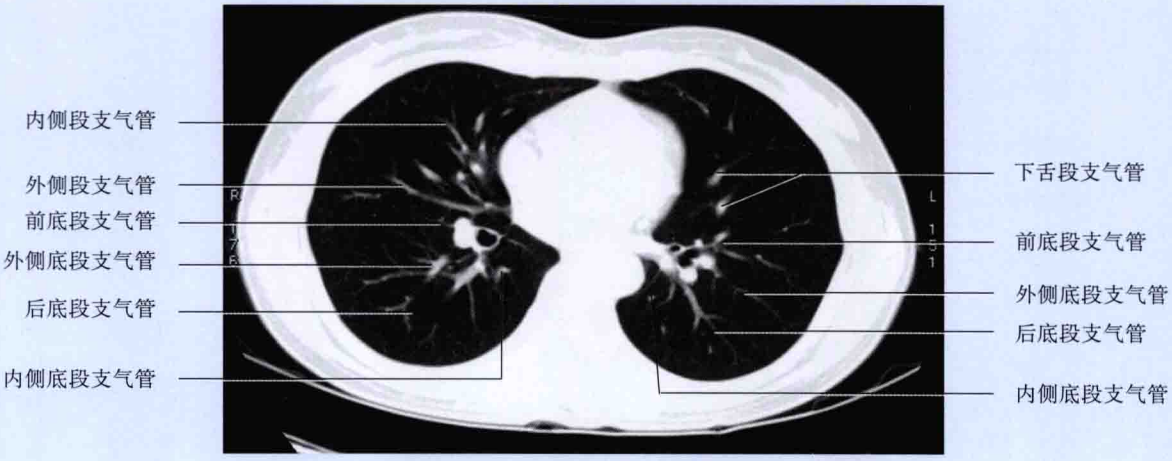


图 3-35 胸部第十二断层面：心四腔上部层面（肺窗）

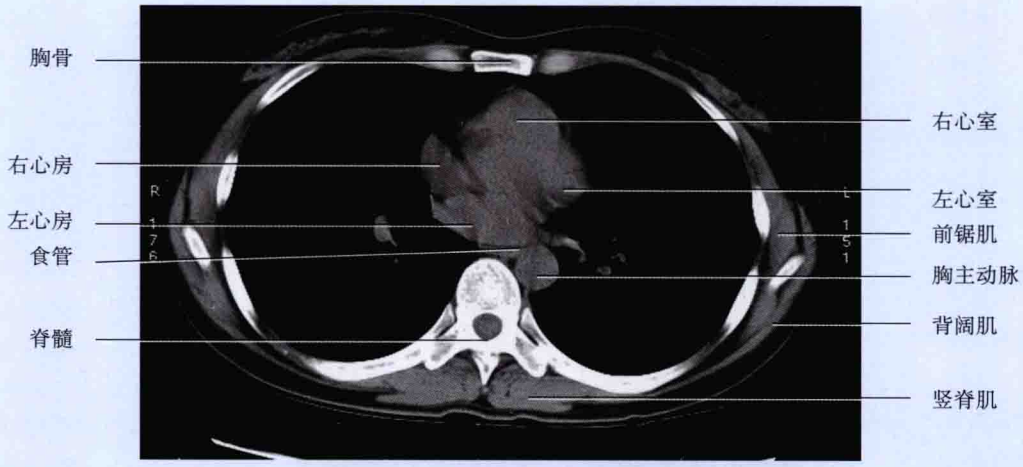


图 3-36 胸部第十二断层面：心四腔上部层面（纵隔窗）

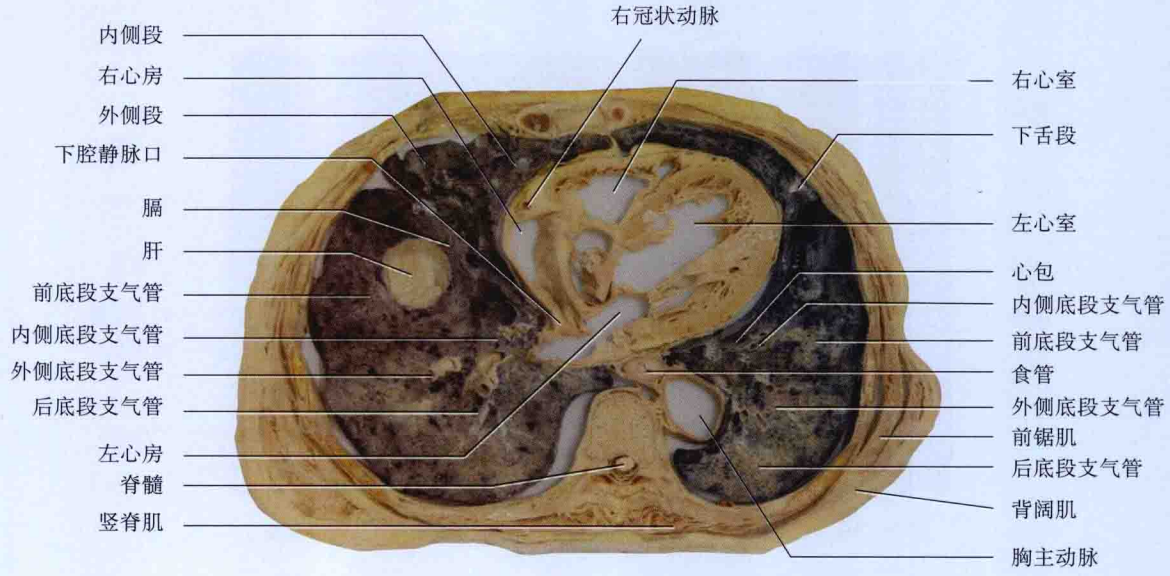


图 3-37 胸部第十三断层面：心四腔下部层面

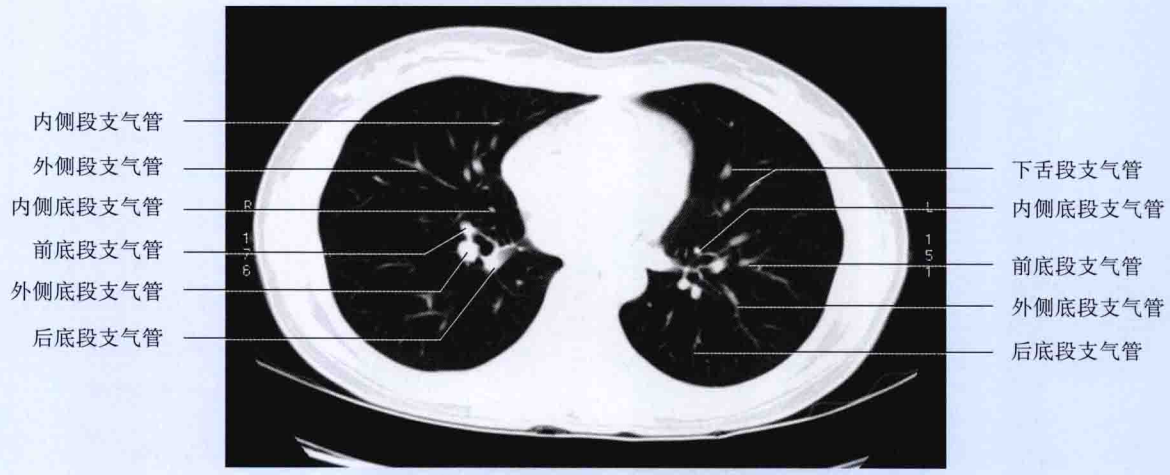


图 3-38 胸部第十三断层面：心四腔下部层面（肺窗）

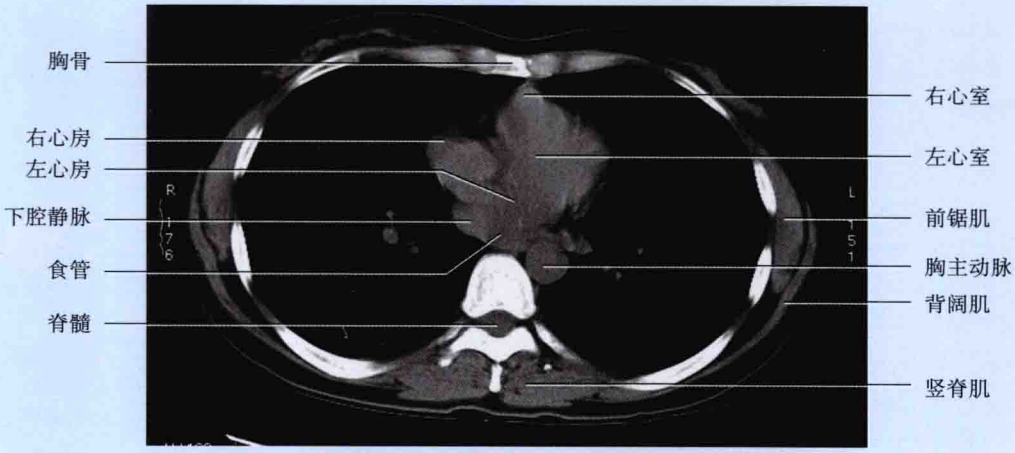


图 3-39 胸部第十三断层面：心四腔下部层面（纵隔窗）

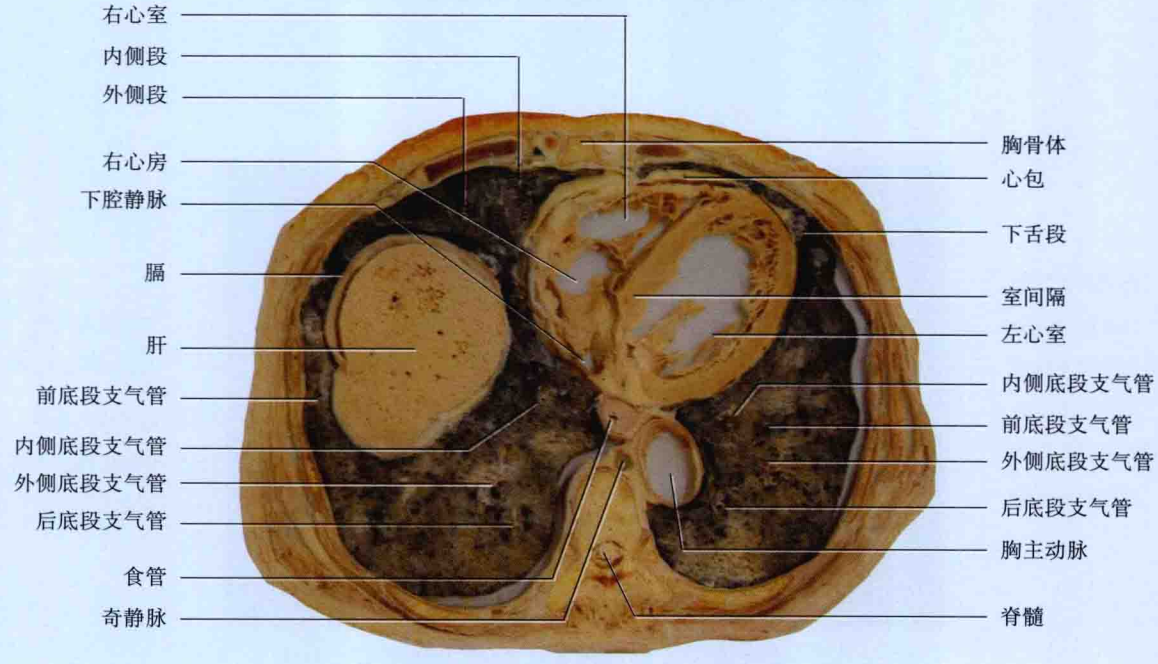


图 3-40 胸部第十四断层面：心三腔层面

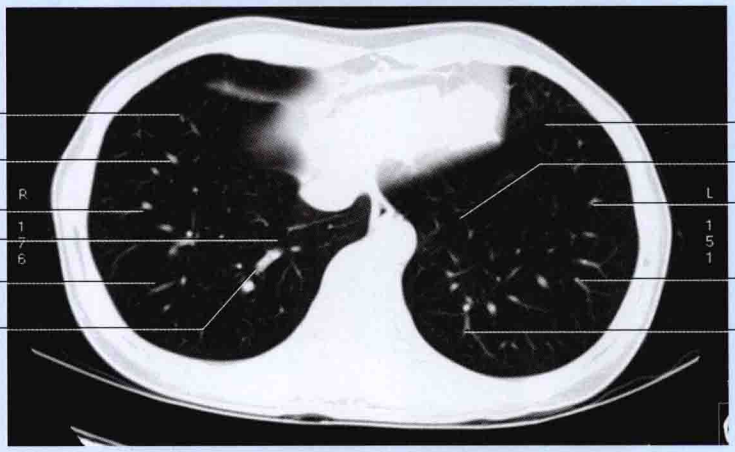


图 3–41 胸部第十四断层面：心三腔层面（肺窗）

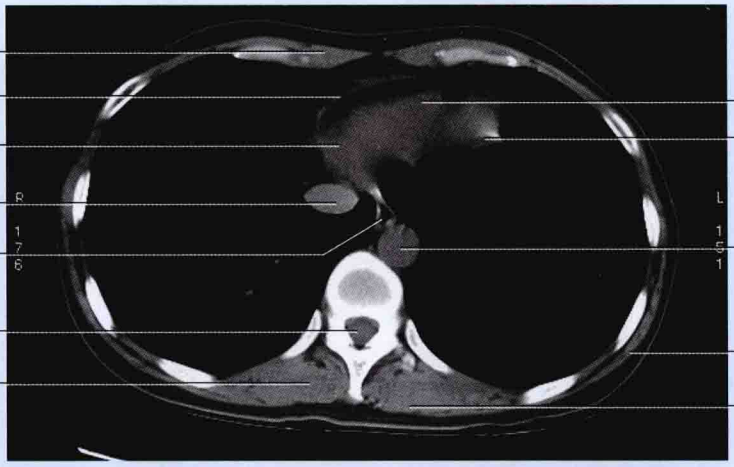


图 3–42 胸部第十四断层面：心三腔层面（纵隔窗）

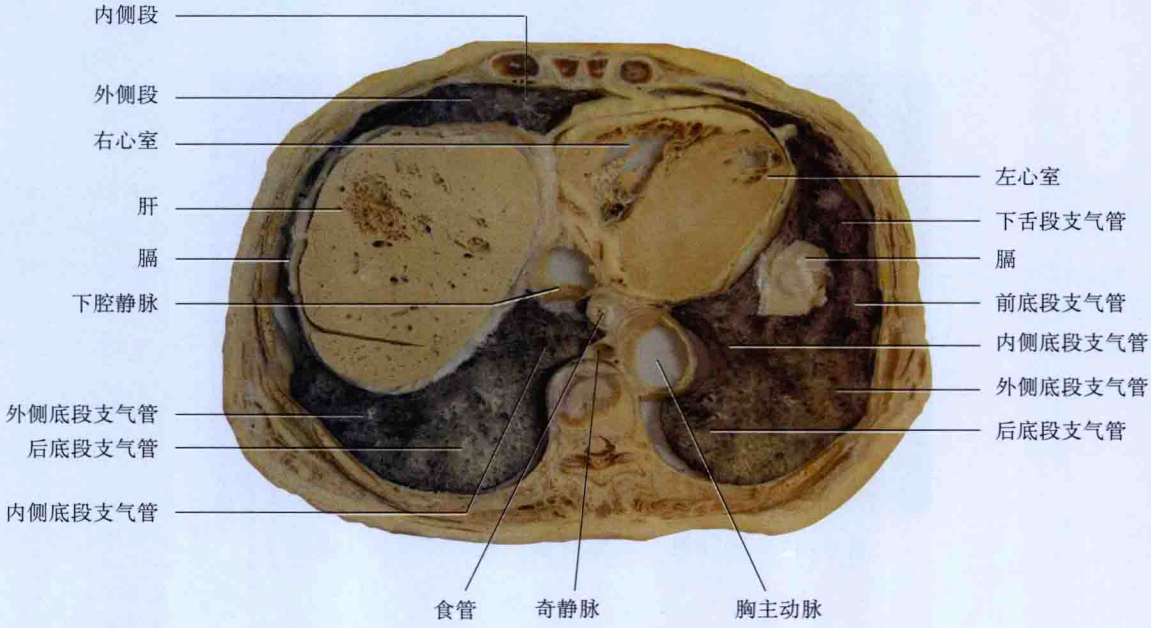


图 3-43 胸部第十五断层面：心两腔层面

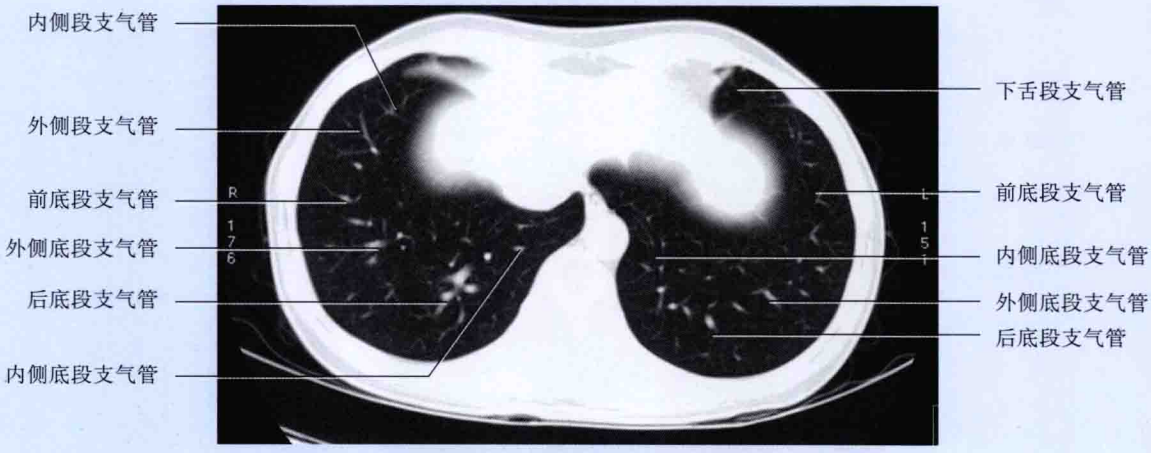


图 3-44 胸部第十五断层面：心两腔层面（肺窗）

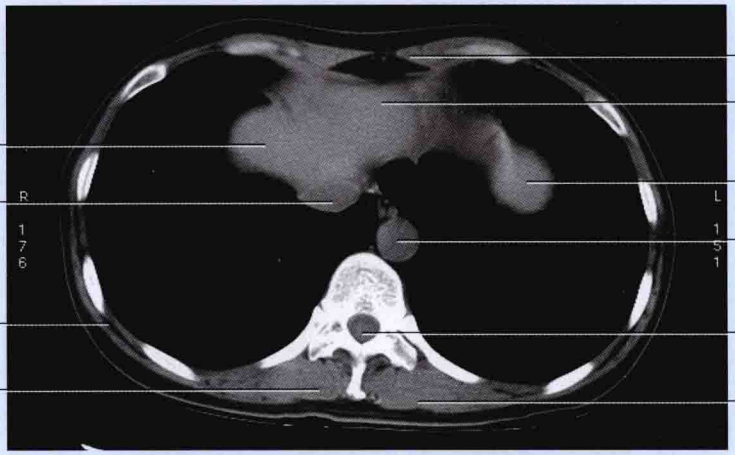


图 3-45 胸部第十五断层面：心两腔层面（纵隔窗）

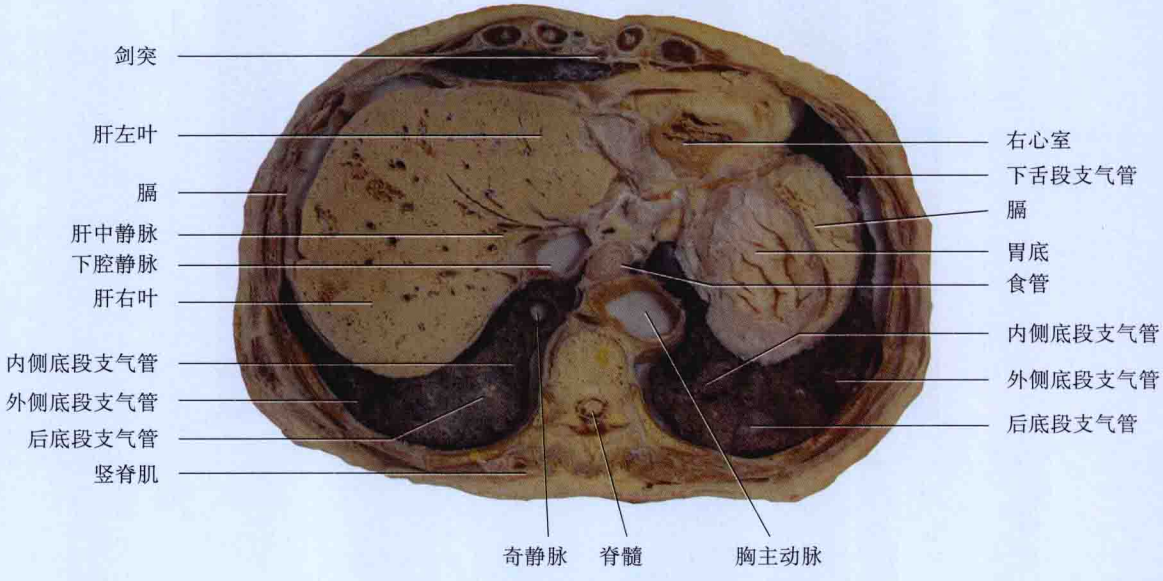


图 3-46 胸部第十六断层面：心尖层面

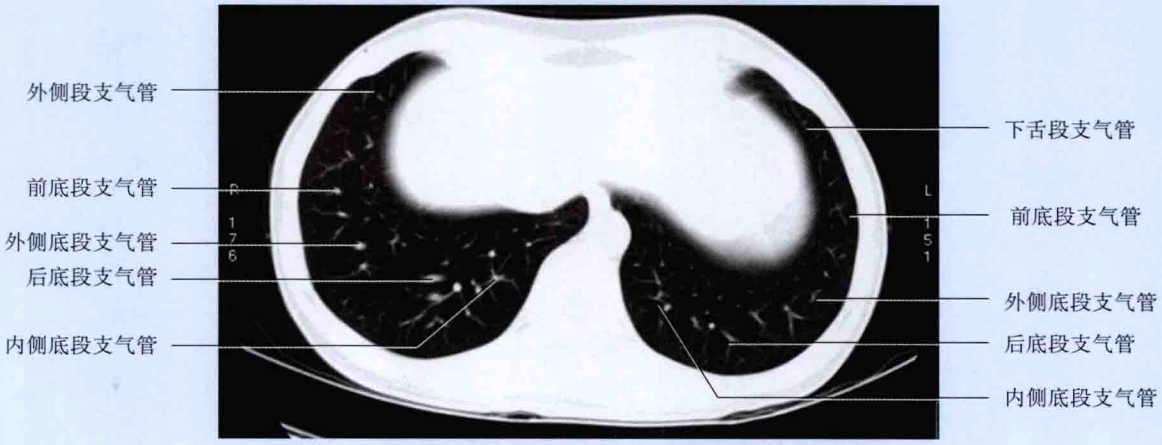


图 3-47 胸部第十六断层面：心尖层面（肺窗）



图 3-48 胸部第十六断层面：心尖层面（纵隔窗）

一、二尖瓣置换术

（一）示意图

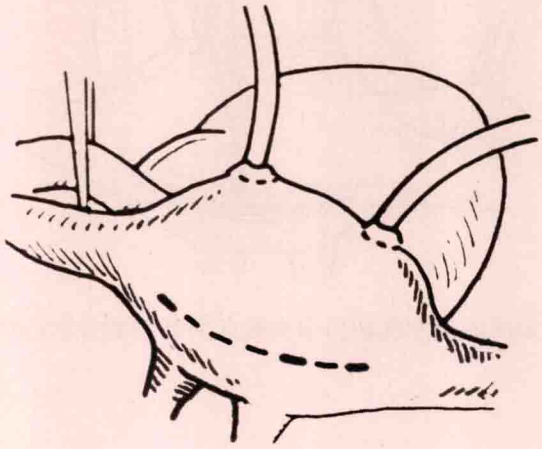


图 4-1 胸部切口、显露心脏、建立体外循环系统、心肺转流、心肌保护、切开左房及显露二尖瓣等，同冠脉搭桥术或直视二尖瓣交界分离术。二尖瓣替换术进路有数种，一般多采用房间沟左心房长切口

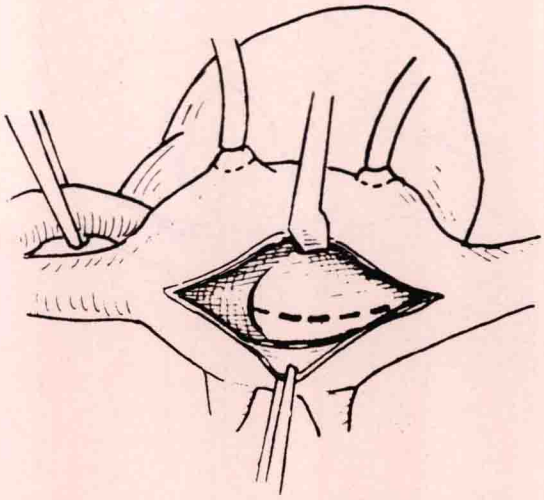


图 4-2 如左心房较小，估计显露二尖瓣较困难者，或再次换瓣手术为避开房间沟处紧密粘连者，以及同期行三尖瓣修复或瓣膜替换术者，可采用经右房切口纵向切开房间隔进入左房的进路

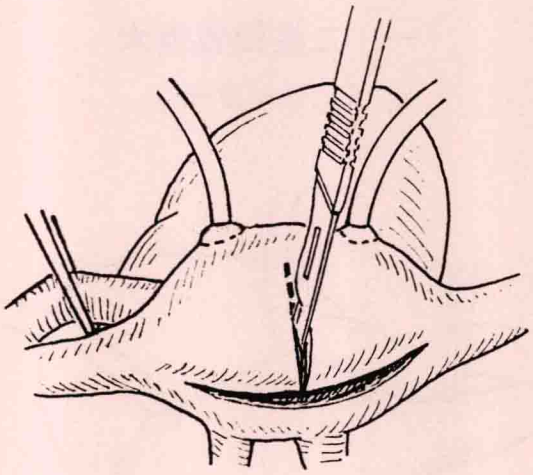


图 4-3 其他进路，如房间沟左房切口中央处向前切开部分右心房及房间隔以增加显露

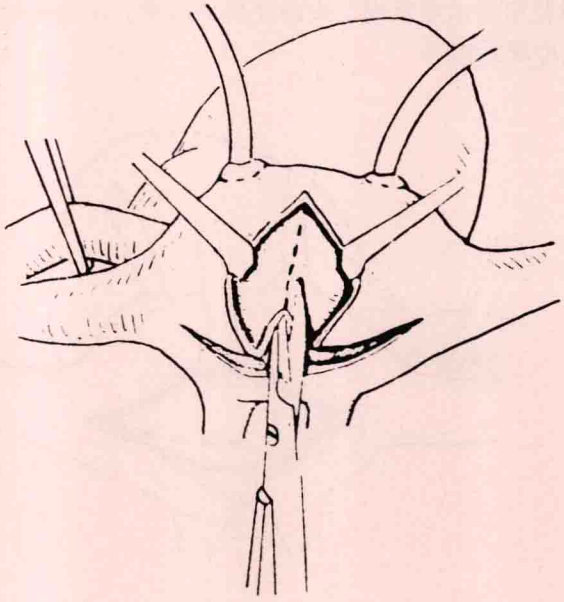


图 4-4 经主动脉根部右旁的左房顶部切口等，或因损伤较大，或因切口缝合后止血较困难等原因而较少使用

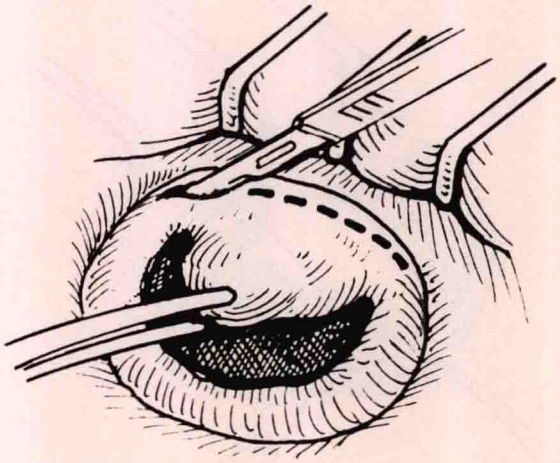


图 4-5　切开左心房后，显露、检查二尖瓣并确认需行瓣膜替换术后，以长有齿直血管钳或以长有齿镊夹在前瓣叶中央处将其牵向后瓣侧，展开前瓣叶，先以小号刀片距离其基部约 2 ~ 3mm 处切开

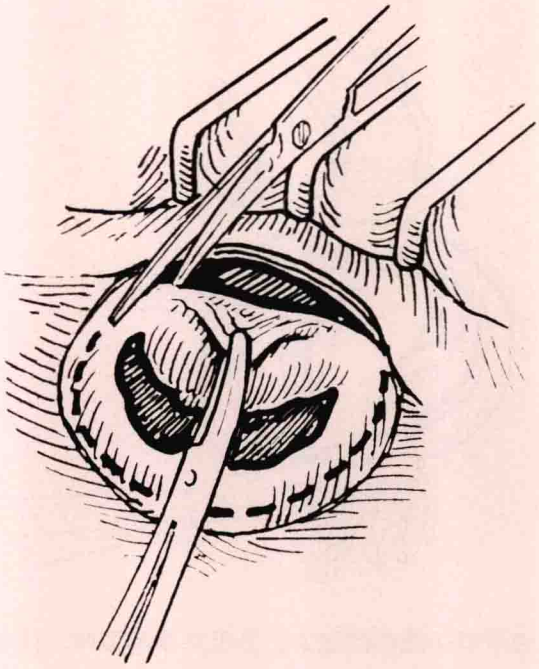


图 4-6　再以剪刀或刀剪兼用沿瓣环剪除瓣膜

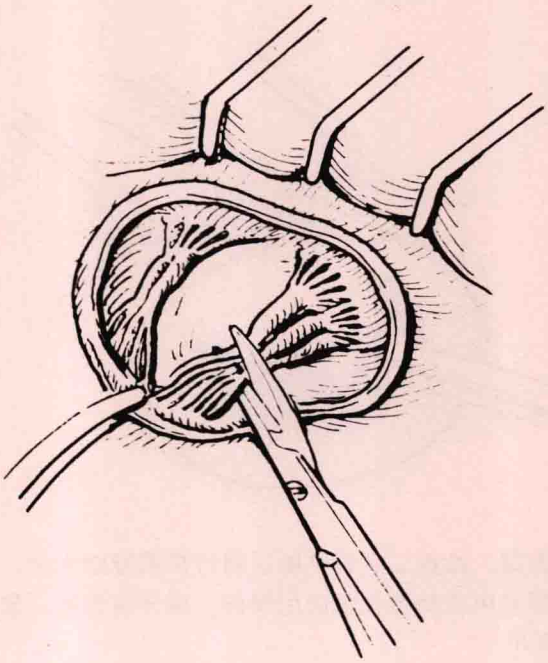


图 4–7　切断各腱索

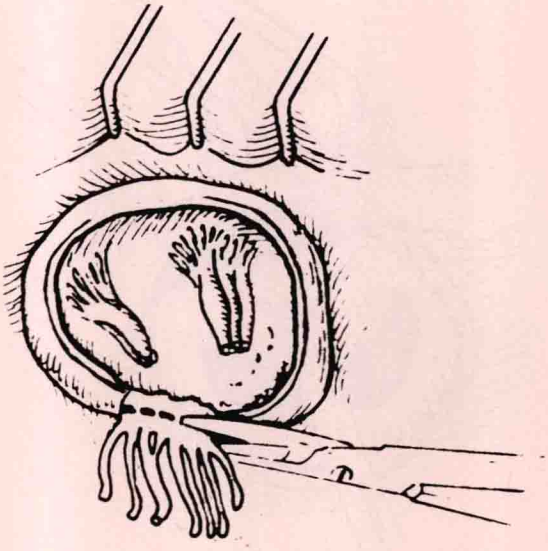


图 4–8　切断附着于乳头肌端的腱索，直至把瓣膜取除。注意勿损伤瓣环结构

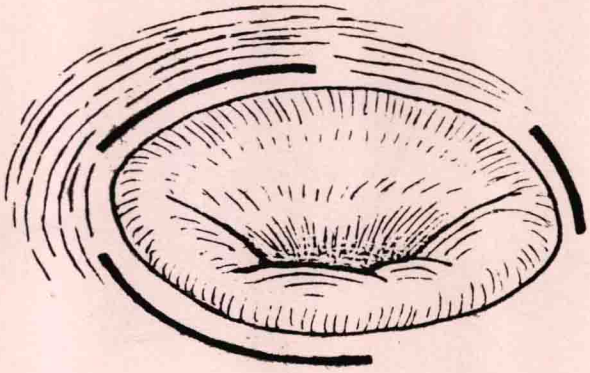


图 4-9 在环瓣相当于时钟 3、6、9、12 点处先各置一褥式缝线，以瓣环测量器测定瓣环大小，并参照病人年龄、体重和经济等情况，择取合适类型的人工瓣膜尺码

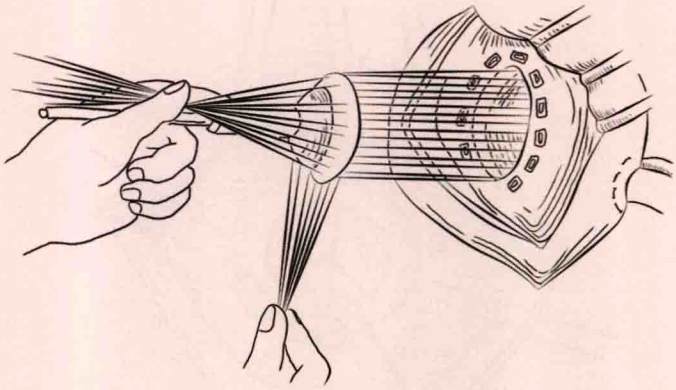


图 4-10 置人工瓣膜缝合环上缝线（上瓣）的方式方法大致有三种：第一种是一次（直接）上瓣法，即依次放置瓣环缝线并立即缝过人工瓣缝合环。完成全周缝合后，人工瓣膜就位、打结

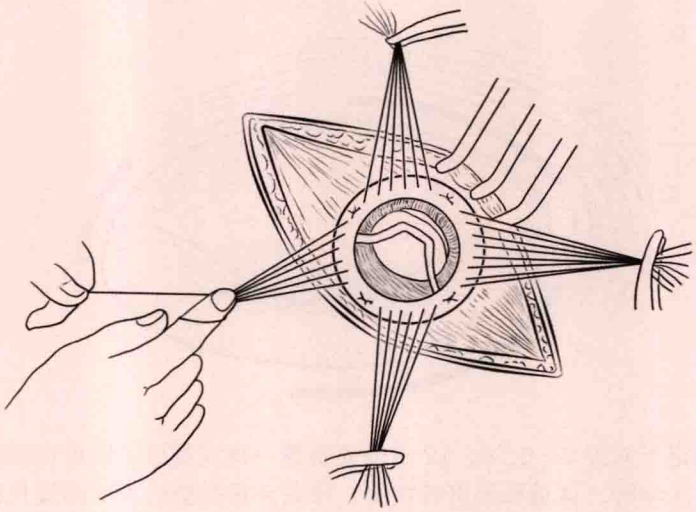


图 4-11 第二种是分次（间接）上瓣法，先依次放置瓣环缝线，并呈放射状分别夹在手术巾上，缝毕全周后再依次逐一对应缝在人工瓣的缝合环上，并就位、打结

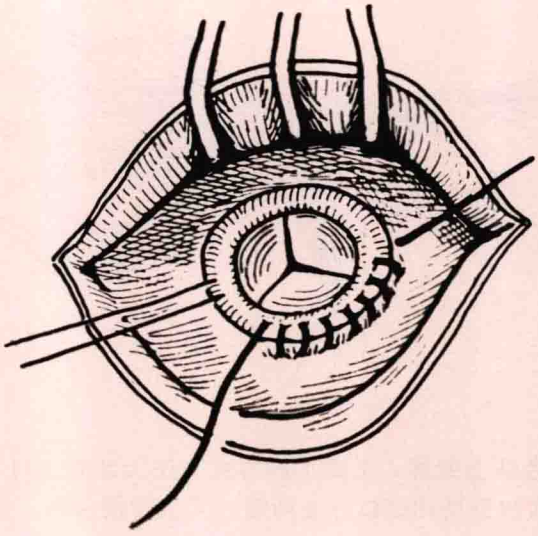


图 4-12 第三种是连续缝合上瓣法，先于瓣环上分四等距放置定点缝线，然后用双头针线自后瓣侧起针，向两侧边缝瓣环边上人工瓣缝合环，至每定点线处打结，继续缝完全周

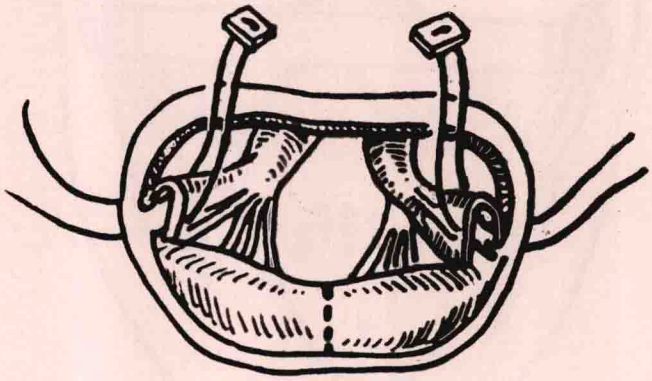


图 4–13 为最大限度地保全左心室射血功能，最近有采用保留瓣下结构的二尖瓣瓣膜替换术，限用于瓣膜无明显钙化，腱索无明显增粗、融合、短缩，以及乳头肌无明显病变者

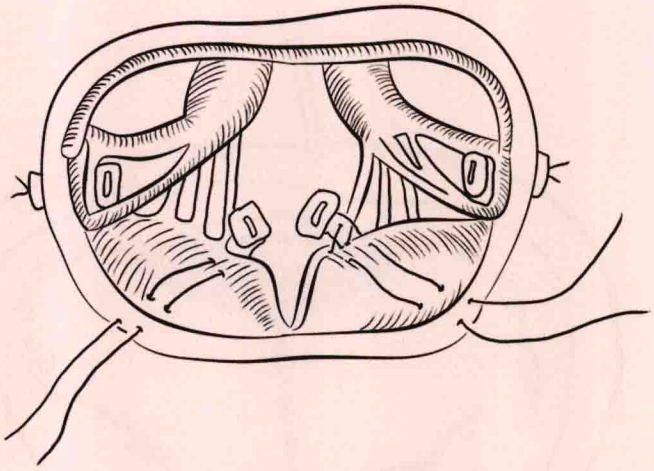


图 4–14 如采用双叶型人工瓣膜，将剩下的瓣叶分别翻转缝向前外交界和后内交界处瓣环

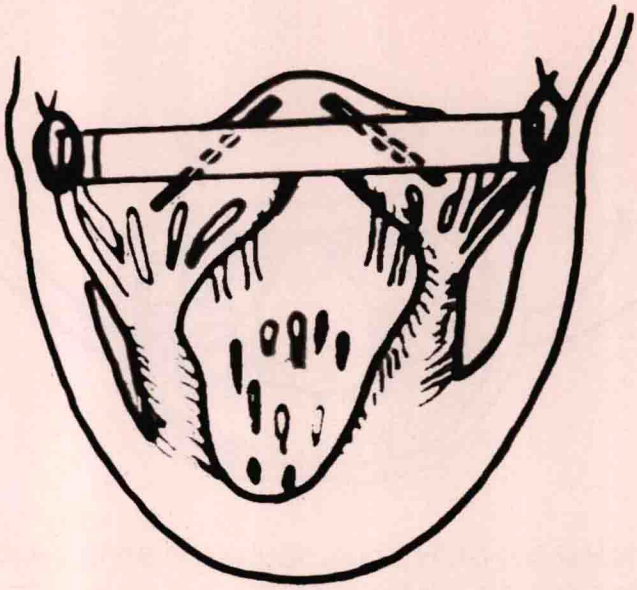


图 4–15 从中线切开后瓣叶并向两侧拉开；置瓣环缝线时分别连同前瓣叶剩余部分以及后瓣叶一起缝过，双叶人工瓣就位后，两瓣叶长轴呈前后方位，瓣叶启闭活动限于前、后乳头肌上方及两组腱索之间

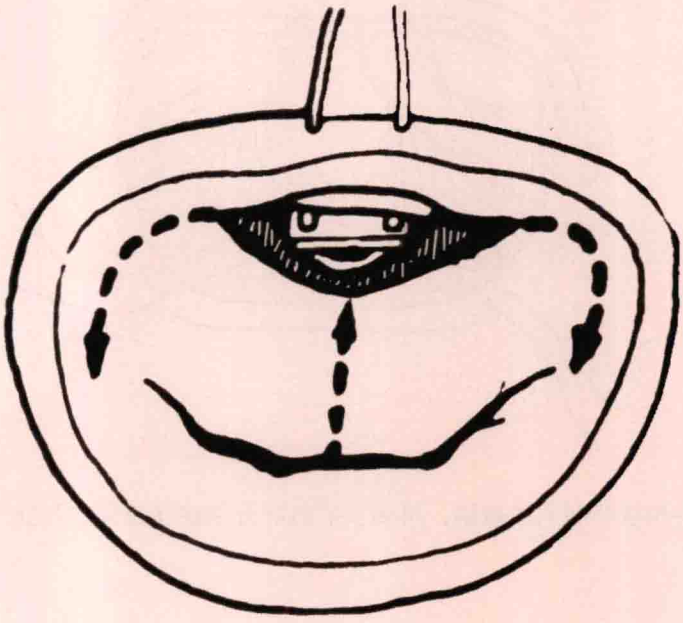


图 4–16 如系采用倾斜碟瓣，则可将上述保留腱索的前瓣叶残部连同后瓣瓣叶一起缝过后瓣环

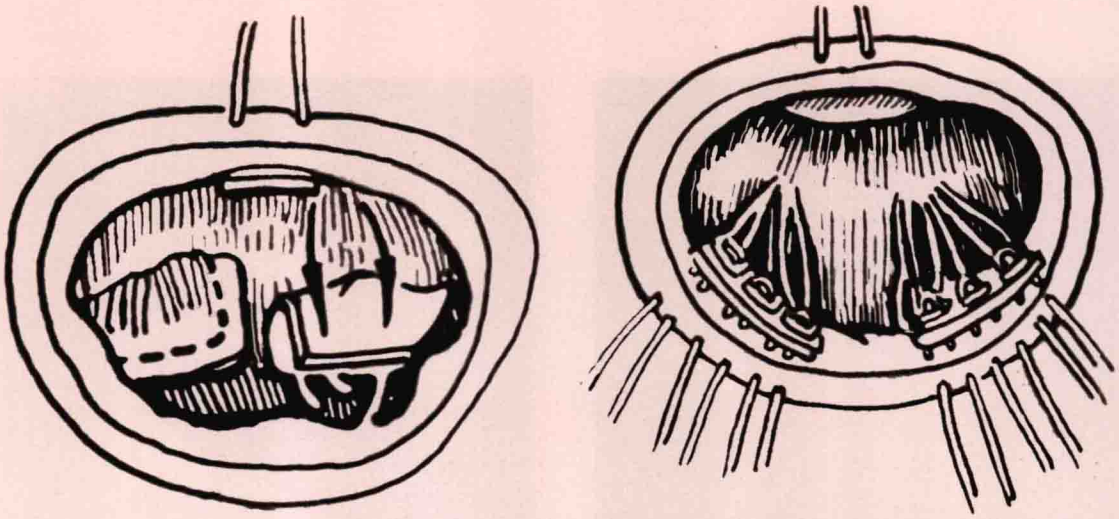


图 4-17　人工瓣膜就位后碟形瓣的大开口朝向前瓣侧

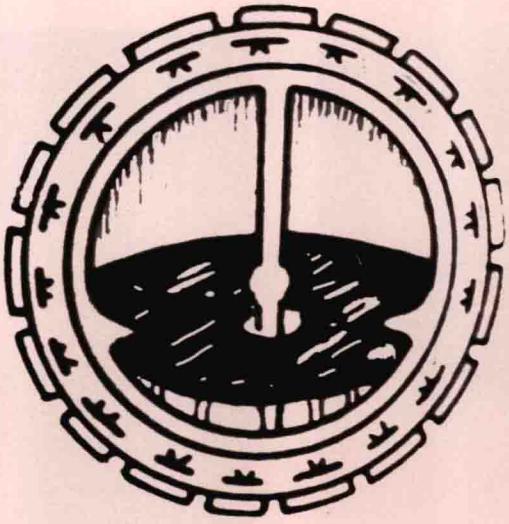


图 4-18　其启闭活动远离保留的乳头肌及各组腱索。缝合左房切口，主动脉根部排气，解除主动脉阻断钳及心脏复苏等，同其他经心脏直视手术

（二）手术步骤

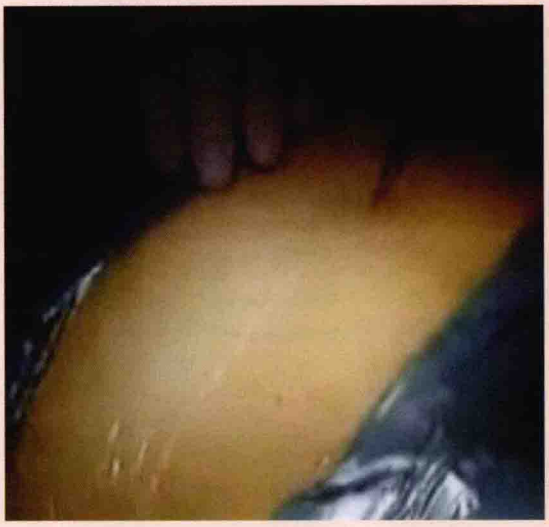


图 4-19　胸前壁皮肤正中切口

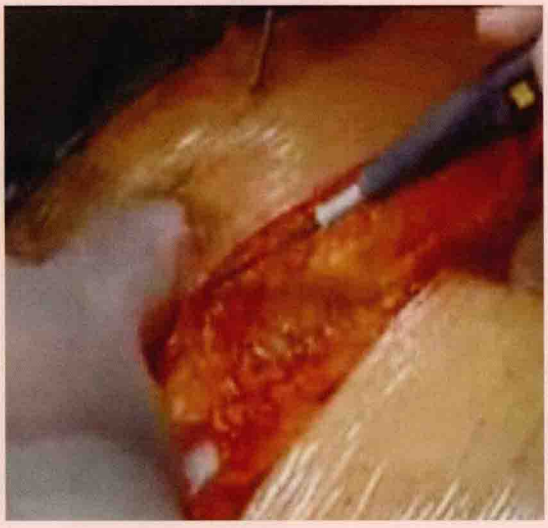


图 4-20　沿胸骨正中切开皮肤及皮下组织

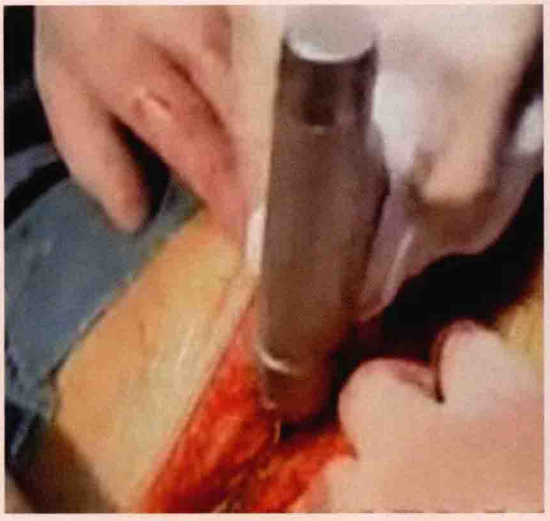


图 4-21　胸骨锯锯开胸骨

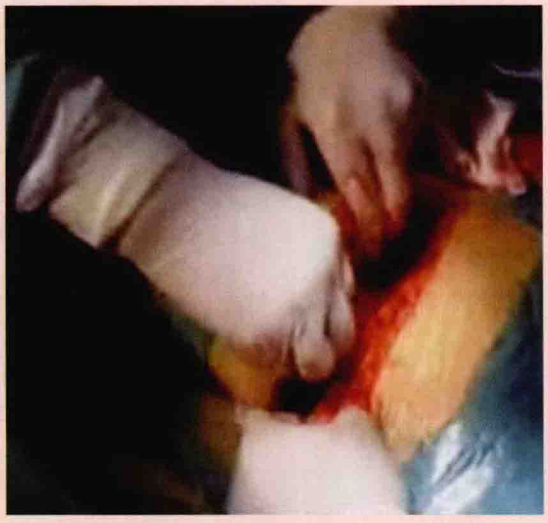


图 4-22　骨膜电凝法止血，骨髓腔骨腊止血



图 4-23　用开胸器牵开两侧胸骨

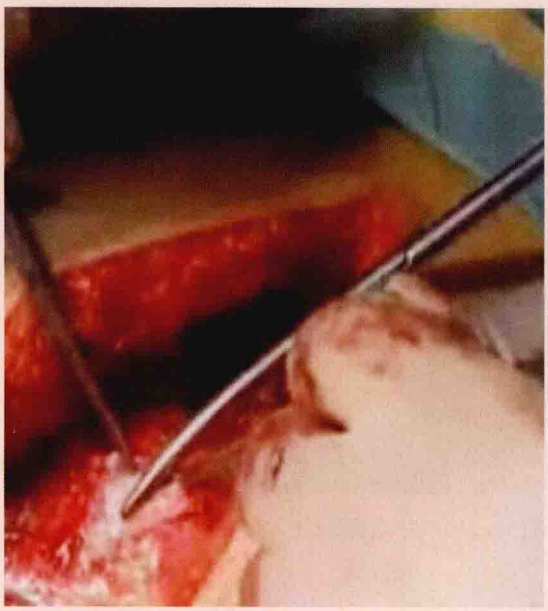


图 4-24　剪开心包前壁

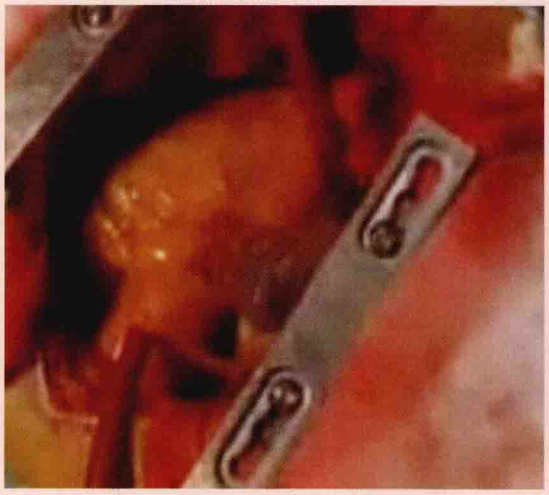


图 4-25　游离上腔静脉并置入阻断带

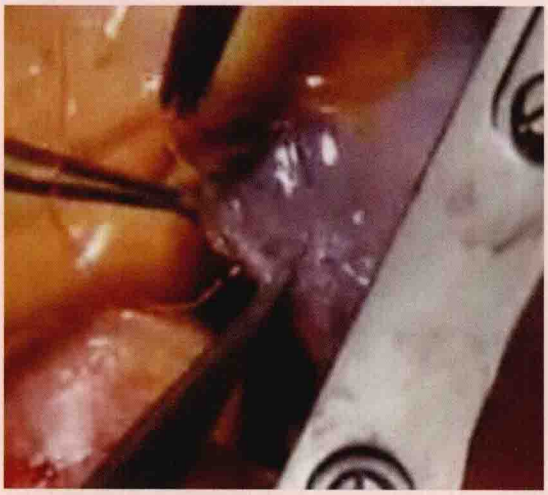


图 4-26　右心耳及右心房前壁分别做荷包缝合线

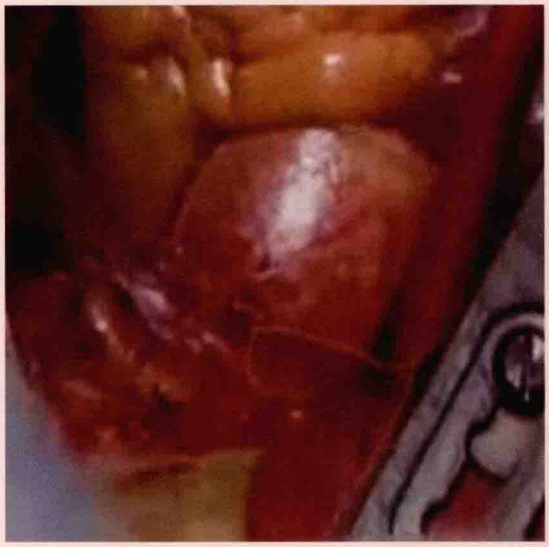


图 4-27 升主动脉近心包返折处做双层荷包缝合线

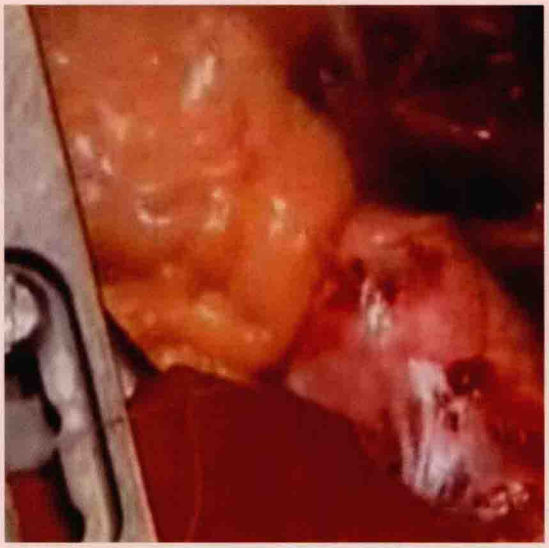


图 4-28 主动脉根部上方做单层荷包缝合线



图 4-29 右肺上静脉近左心房入口处做荷包缝合线

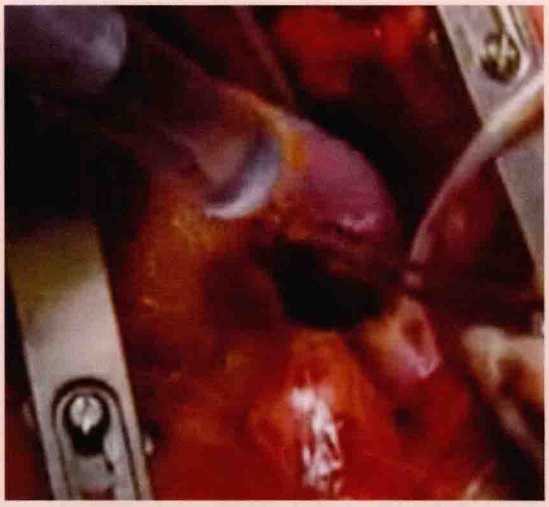


图 4-30 经右心耳注入肝素



图 4-31 升主动脉上端荷包线内插入主动脉灌注管

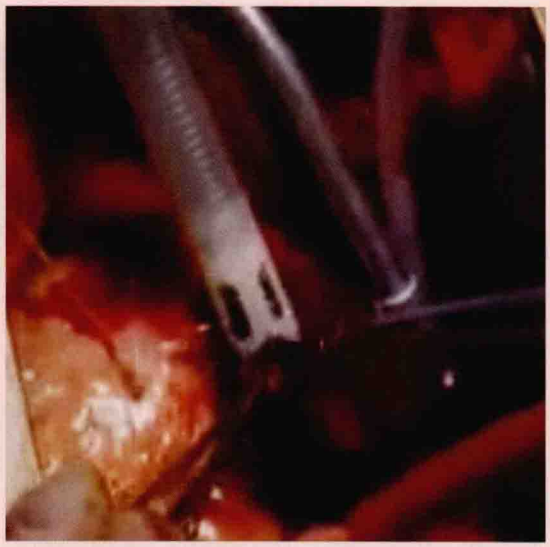


图 4-32 右心耳插入上腔静脉引流管

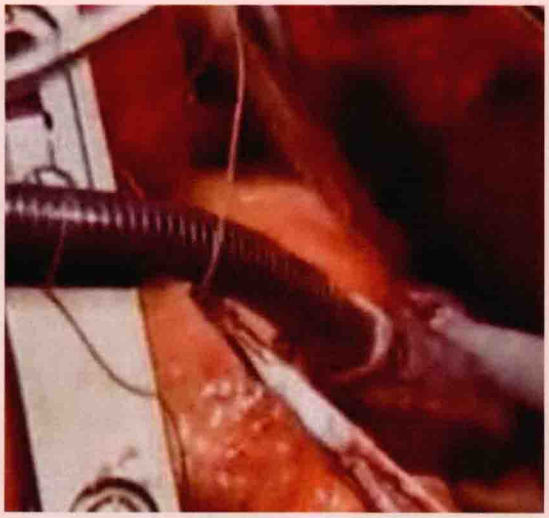


图 4-33 右心房前壁插入下腔静脉引流管

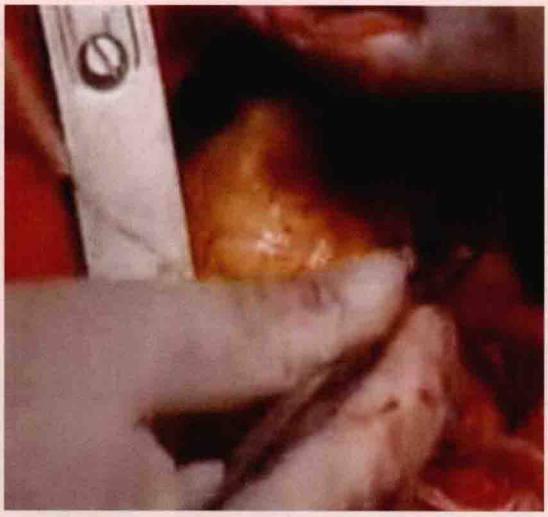


图 4-34 主动脉根部插入心脏停跳液灌注针头

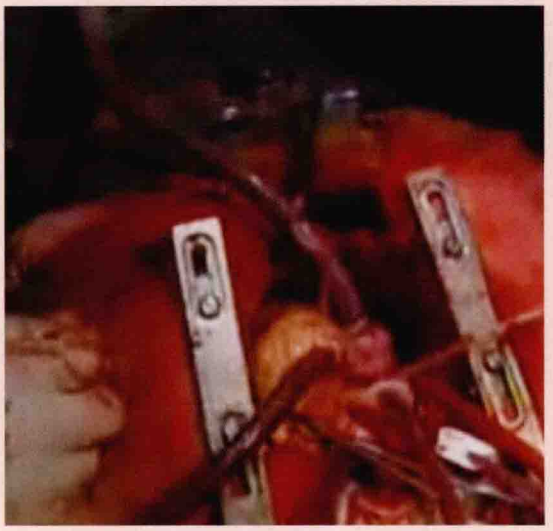


图 4-35 行体外循环降低全身温度

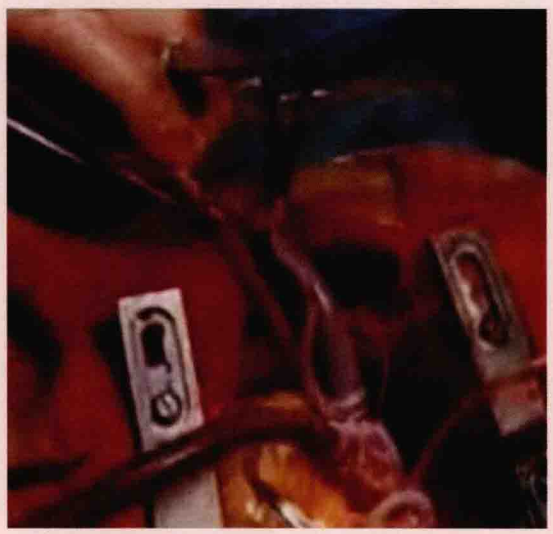


图 4-36 收紧上下腔静脉阻断带

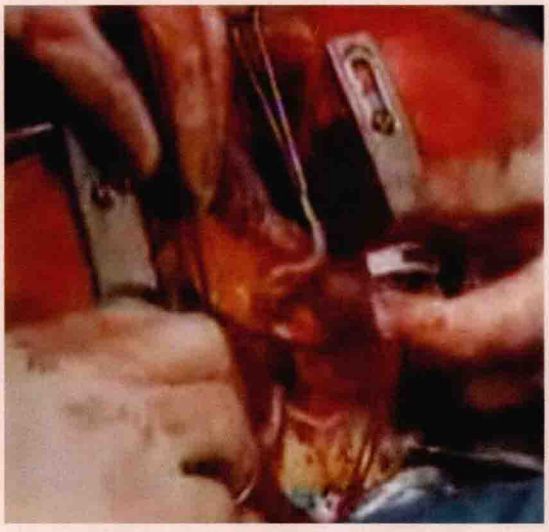


图 4-37 主动脉阻断钳阻断升主动脉

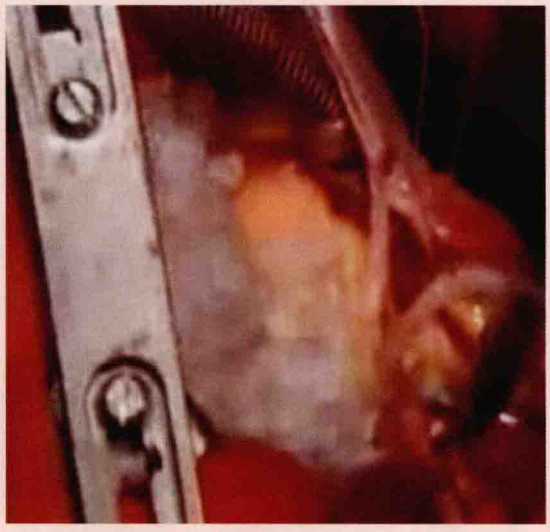


图 4-38 心脏表面放冰块降低表面温度

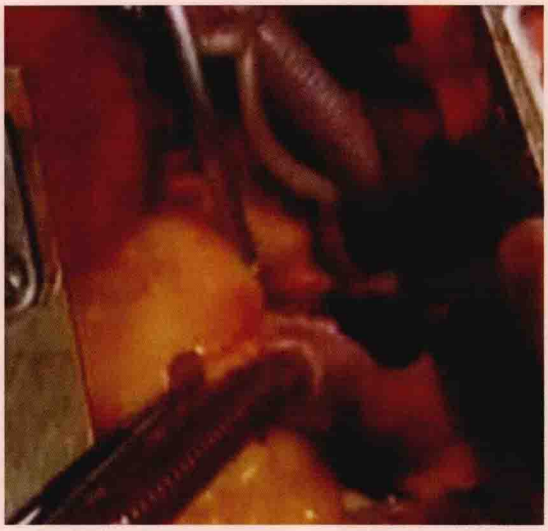


图 4-39 切开右心房（上腔静脉口下方 2cm 至下腔静脉口上方 1cm）

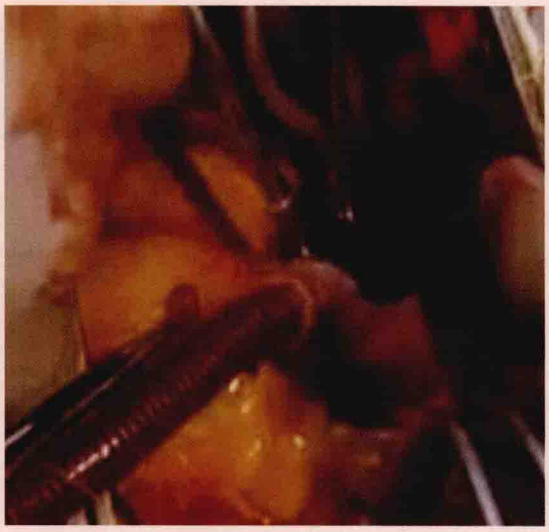


图 4-40 切开卵圆窝并观察三尖瓣

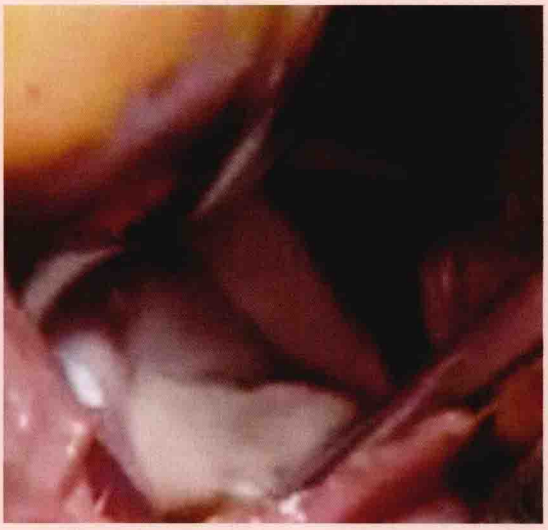


图 4-41 探查二尖瓣的病变



图 4-42 KOCKS 钳钳夹二尖瓣前叶，显露大瓣环

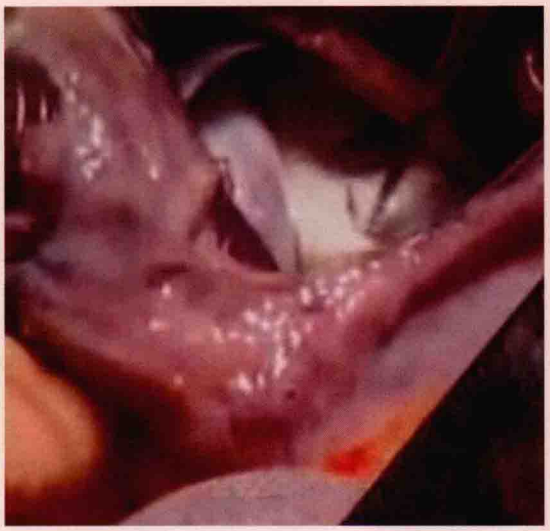


图 4-43 于瓣环 12 点 4mm 处，用尖刀定点切开



图 4-44 用瓣膜剪剪断瓣膜

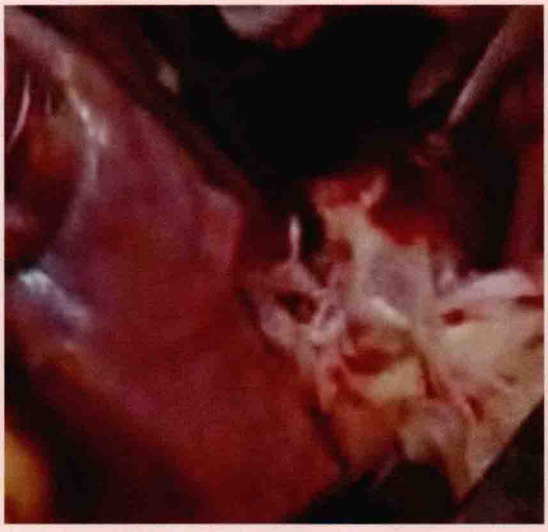


图 4-45 切断乳头肌



图 4-46 切除整个二尖瓣复合体



图 4-47 测环器测量瓣环大小



图 4-48 人工瓣膜

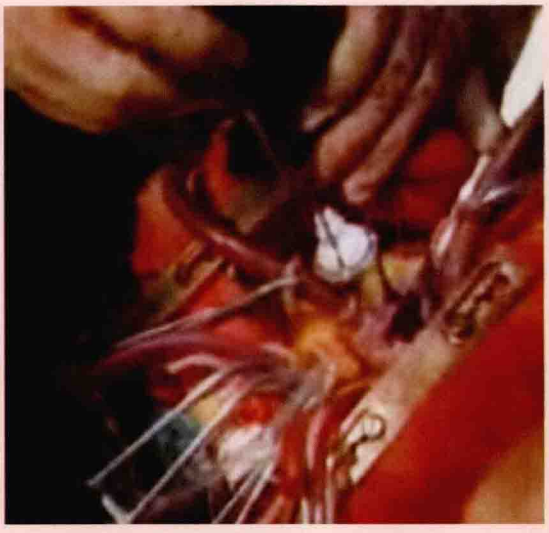


图 4-49 放置人工瓣膜

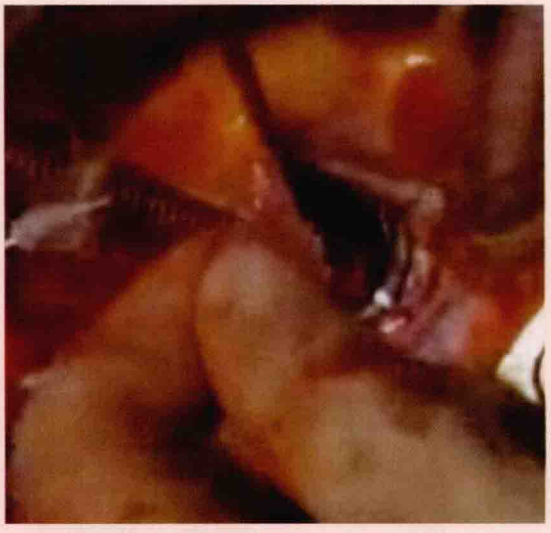


图 4-50 人工瓣膜与腱环行褥式缝合（1）

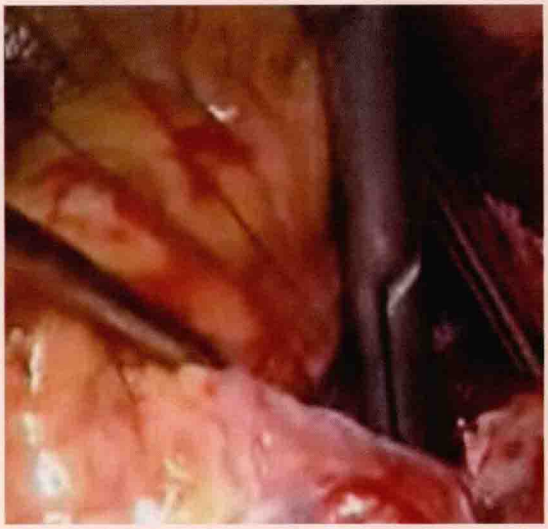


图 4-51 人工瓣膜与腱环行褥式缝合（2）



图 4-52 缝合房间隔缺损

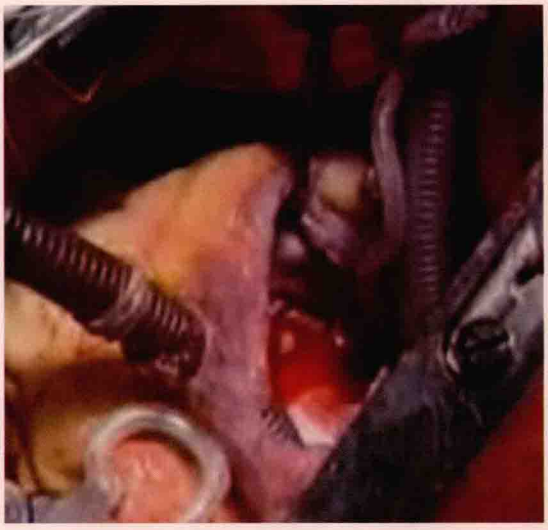


图 4-53 探查三尖瓣关闭情况



图 4-54 双层缝合法关闭右心房

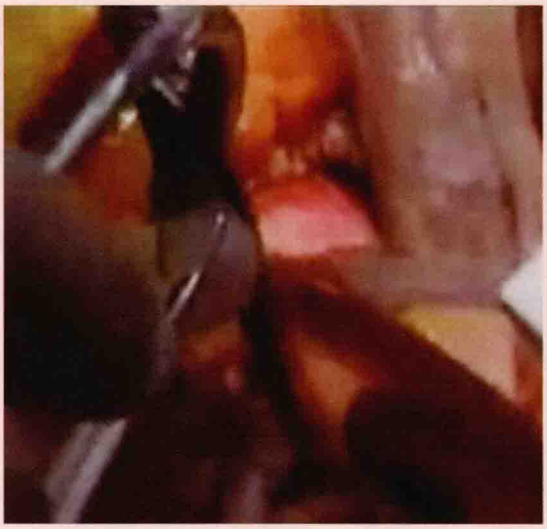


图 4–55 开放升主动脉，恢复心脏血液循环

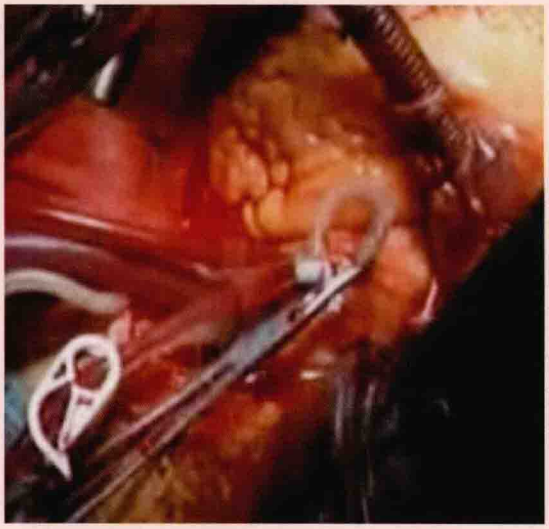


图 4–56 开放上腔静脉



图 4–57 将上腔静脉插管退入右心房，开放下腔静脉

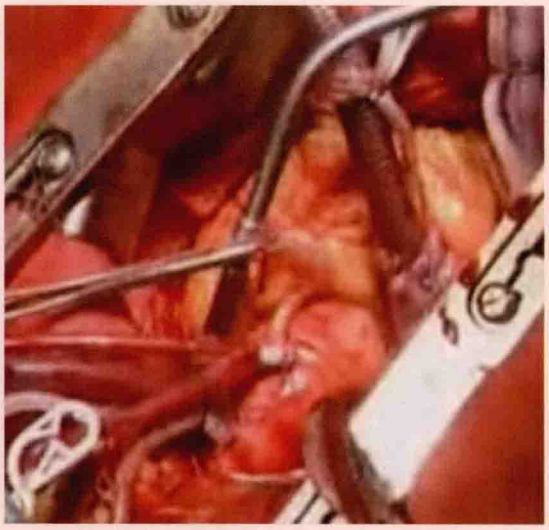


图 4–58 心跳恢复后拔掉心脏各插管 (1)



图 4-59 心跳恢复后拔掉心脏各插管 (2)

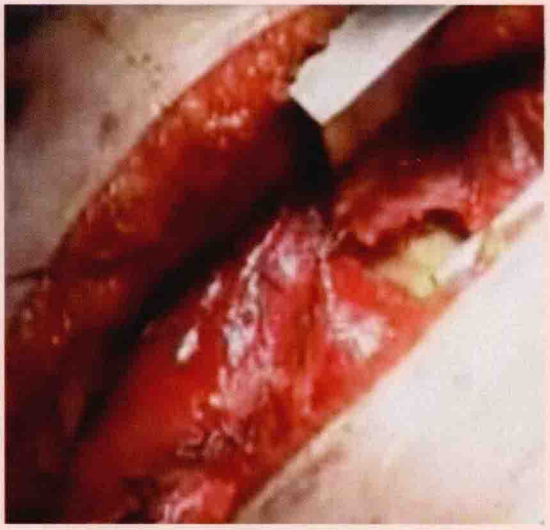


图 4-60 缝合心包切口

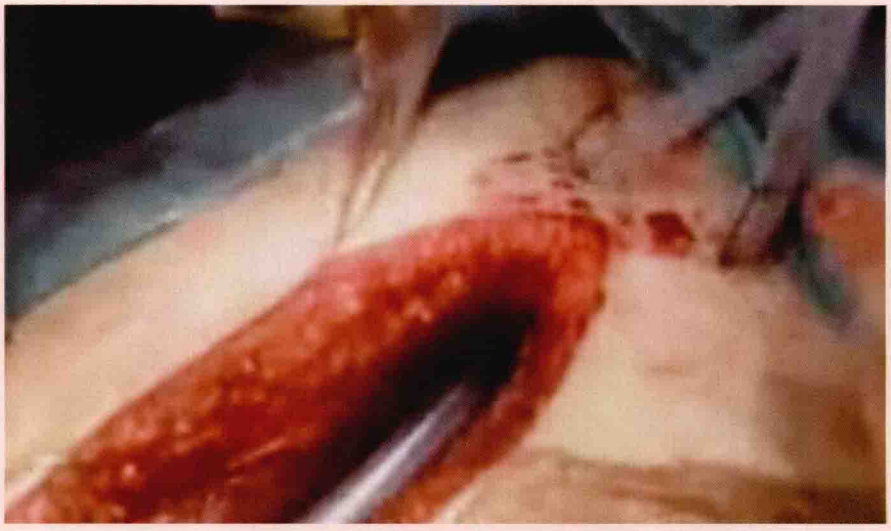


图 4-61 置入心包及纵隔引流管

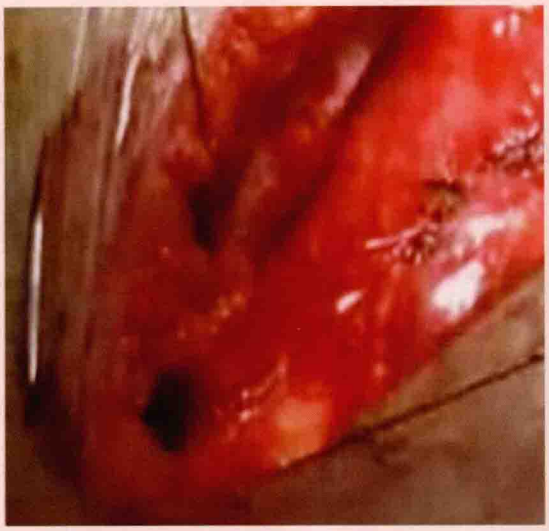


图 4-62 7 号丝线缝合胸骨上切迹

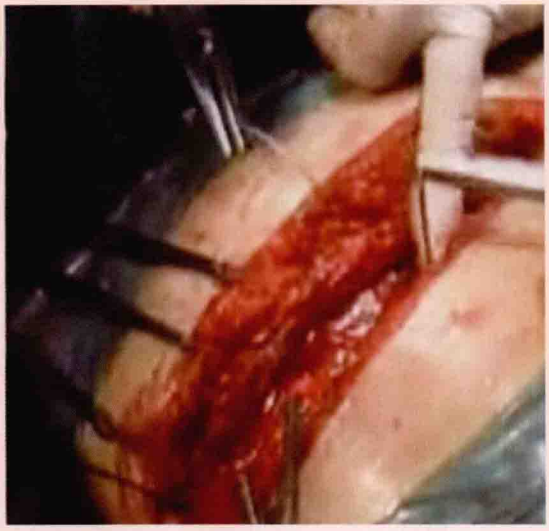


图 4-63 用胸骨缝合钢丝缝合胸骨



图 4-64 用 4 号丝线缝合皮下组织



图 4-65 缝合皮肤

二、主动脉瓣置换术

（一）示意图

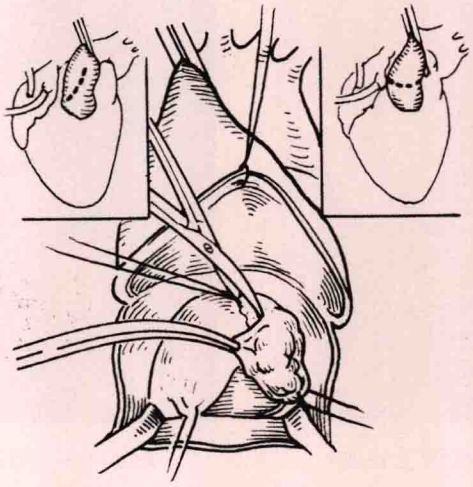


图 4-66 手术切口及建立体外循环与二尖瓣置换术相同。注射肝素 3mg/kg 后，经右心房于升主动脉前壁右冠状动脉入口的上方先做小切口，按主动脉瓣显露的情况可扩大为横切口或斜切口，但一般是向左侧扩大至主动脉与肺动脉干间沟处，右侧向下至无冠窦的中点

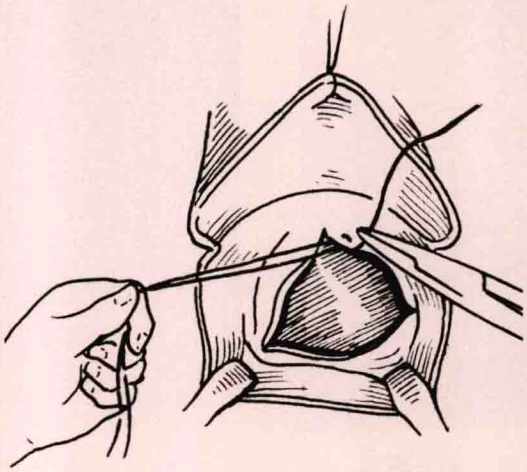


图 4-67 显露主动脉瓣后，检查瓣膜病变情况。如病变以纤维化或硬化为主要病变，以中弯钳夹住瓣叶的中点做牵引，依次切除左冠瓣、无冠瓣与右冠瓣，保留瓣叶基部 2 ~ 3mm。以 2-0 双头针涤纶线做带垫片褥式缝合

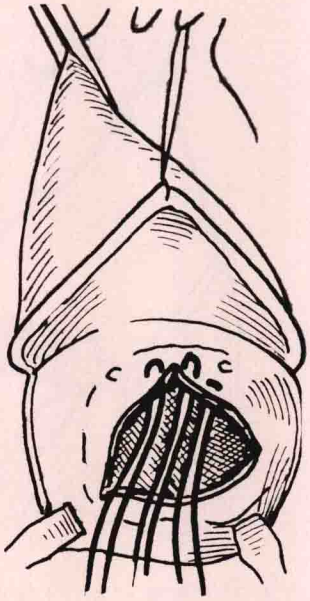


图 4-68 缝合方式不做跨越瓣膜交界的褥式缝合，以避免缩小瓣环

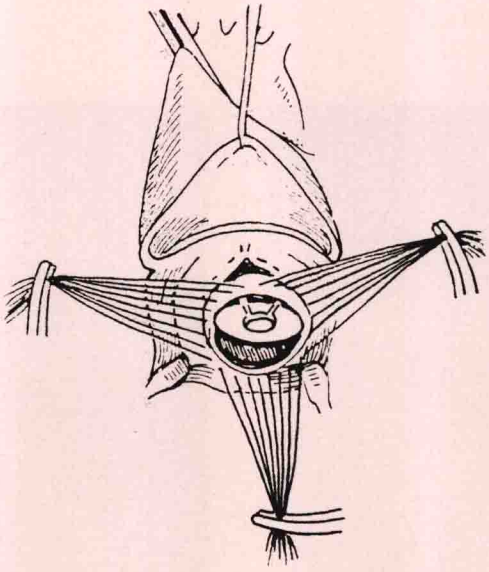


图 4-69 按瓣环的三个弧形，逐针排列缝合，一般针距为 0.5 ~ 1mm。全圈缝合为 15 ~ 18 针。全部缝妥后，测量瓣环选择适当型号的人造瓣膜，将缝线穿过人造瓣膜的缝环，把缝线分为三组分别抽紧缝线，用持瓣器推送瓣膜座环，并打结剪除多余的缝线

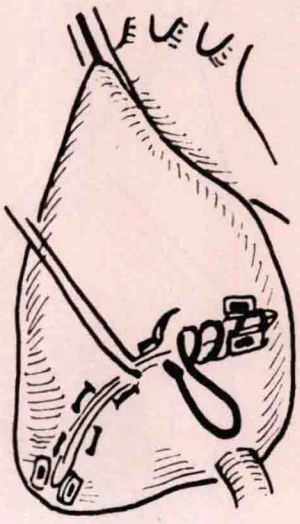


图 4-70　将主动脉切口采用 3-0 聚丙烯缝线，先于切口两端各做一个带垫片褥式缝合，然后做外翻连续缝合，两端缝线在切口中部汇合打结，再分别向两侧加固缝合，最后与两端的另一根线打结

（二）手术步骤



图 4-71　胸骨正中皮肤切口

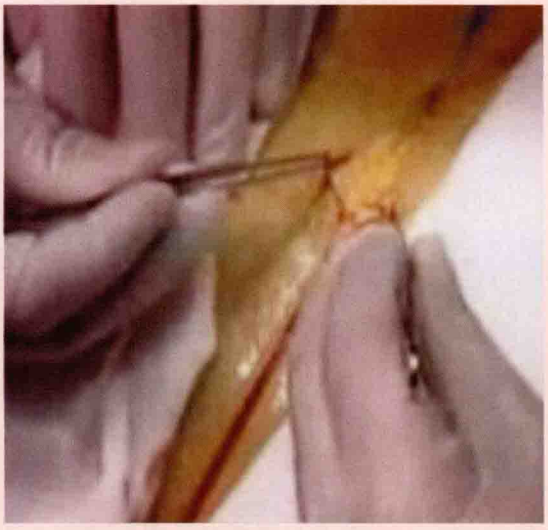


图 4-72　切开皮下组织

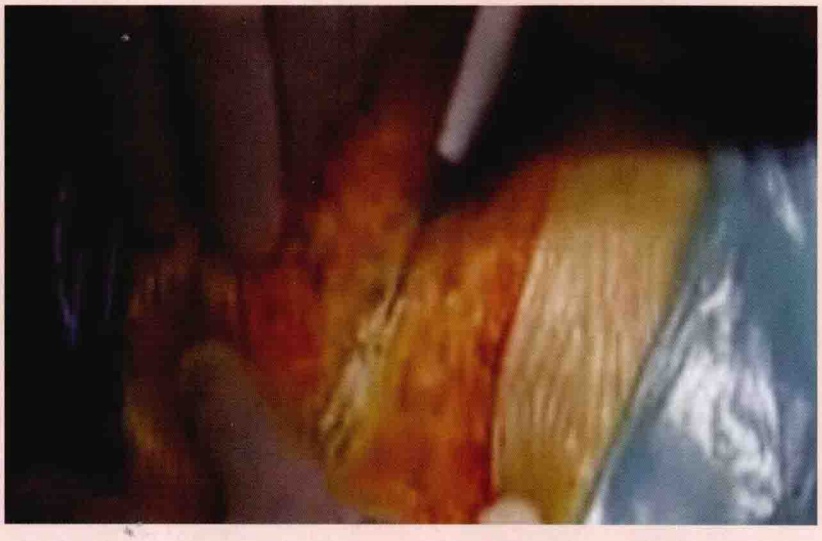


图 4-73 切开胸骨骨膜



图 4-74 锯开胸骨

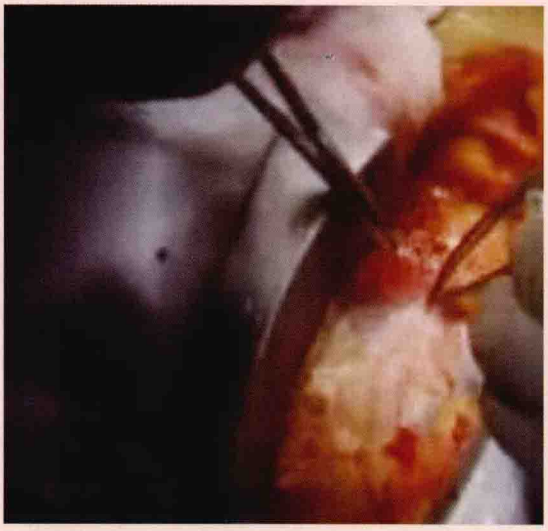


图 4-75 暴露心包



图 4-76 切开心包

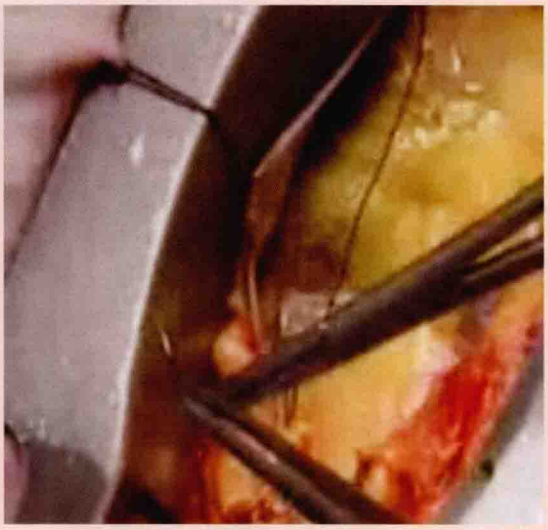


图 4-77 将心包缝于浅筋膜

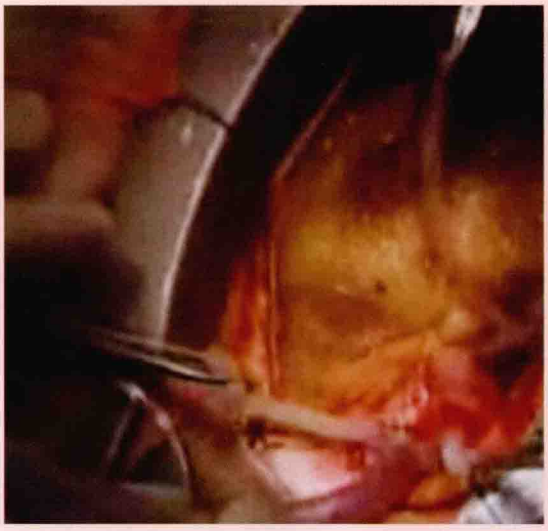


图 4-78 建立体外循环，主动脉插管

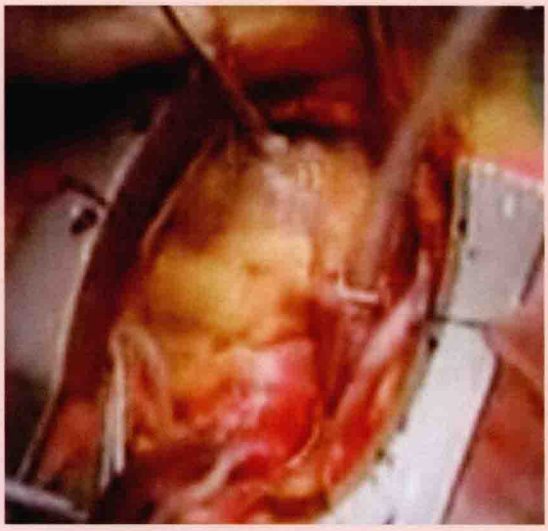


图 4-79 建立体外循环，上腔静脉插管

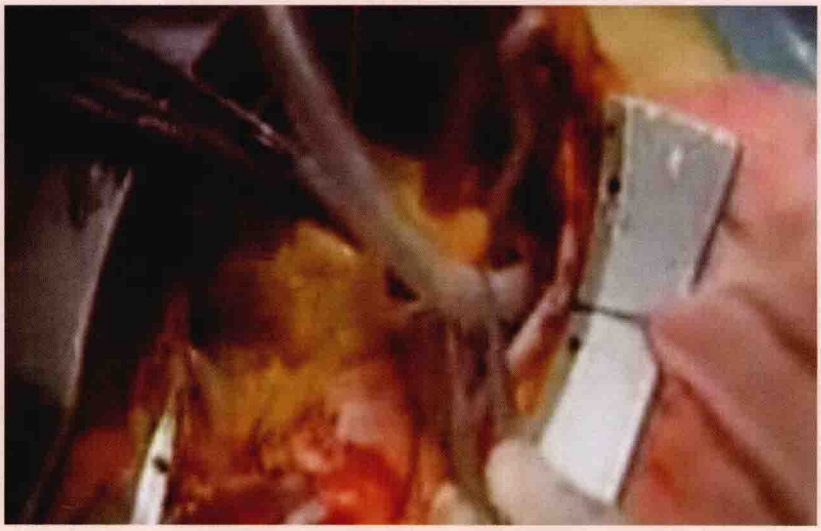


图 4-80 建立体外循环，下腔静脉插管

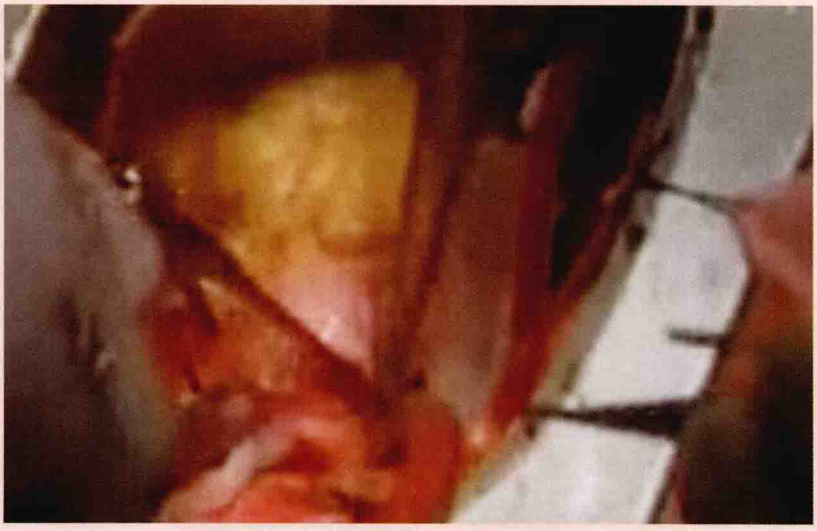


图 4-81 建立体外循环，插入左心引流管

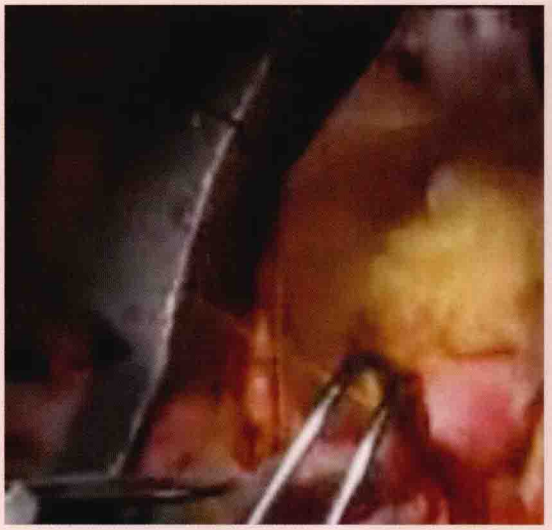


图 4-82　建立体外循环，阻断升主动脉血流

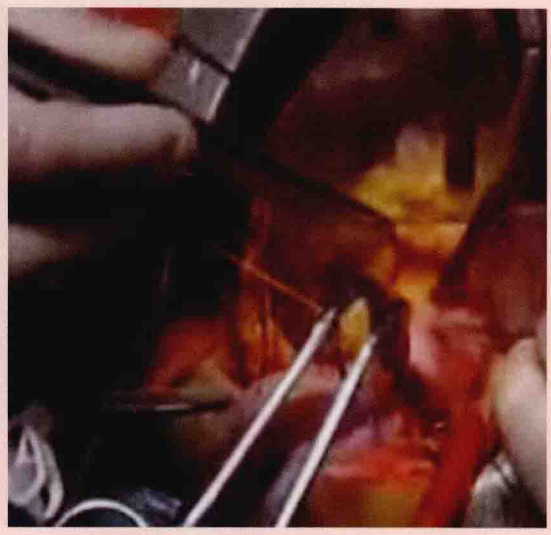


图 4-83　冠状窦口上 1.5cm 处切开升主动脉前壁

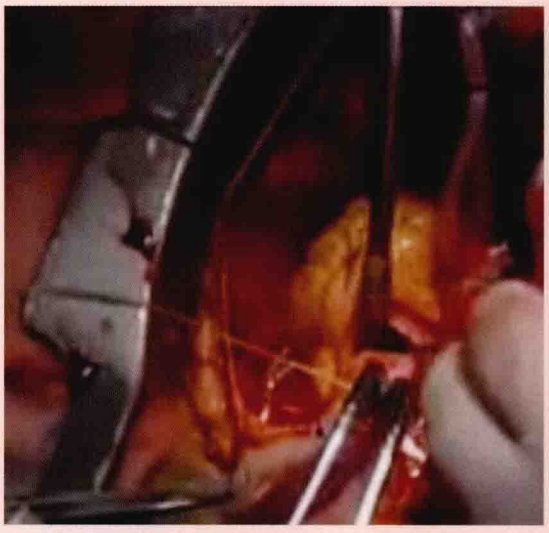


图 4-84　扩大主动脉切口（1）

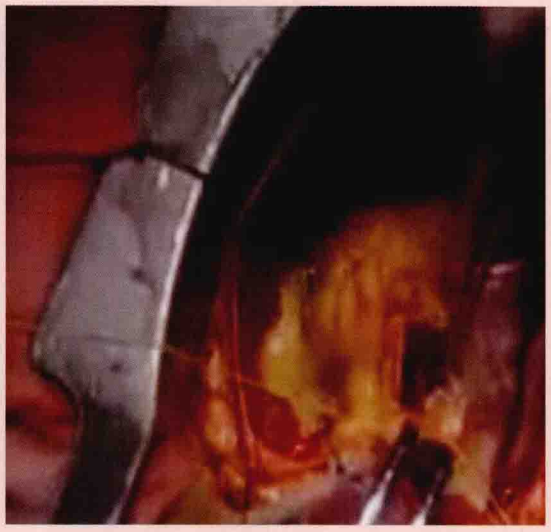


图 4-85　扩大主动脉切口（2）

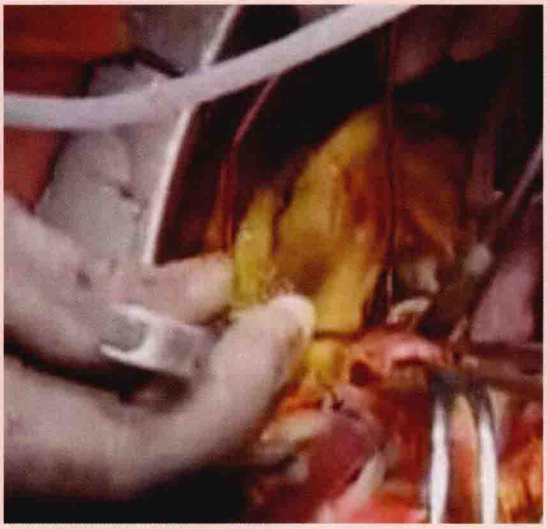


图 4-86 经左、右冠状动脉口注入心脏停跳液

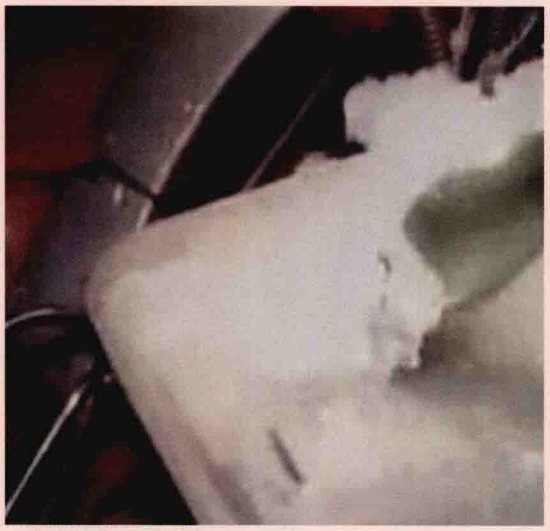


图 4-87 心包内放入冰屑

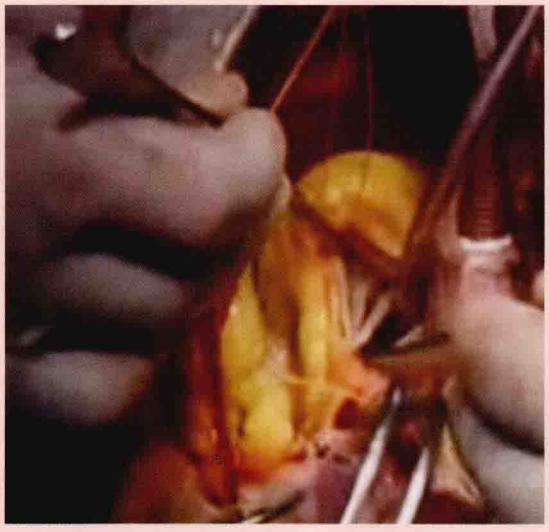


图 4-88 显露主动脉瓣

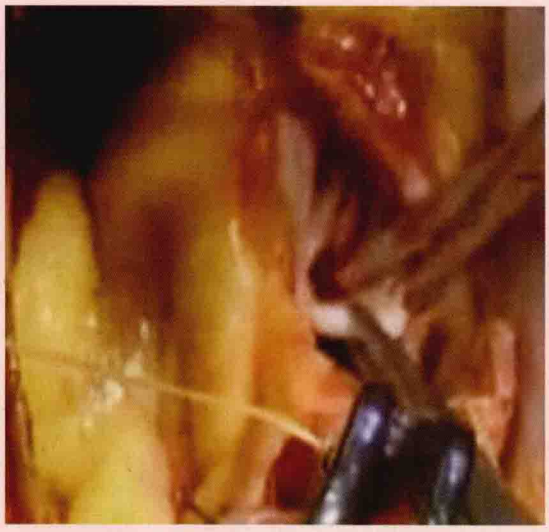


图 4-89 切除主动脉病变瓣膜（1）

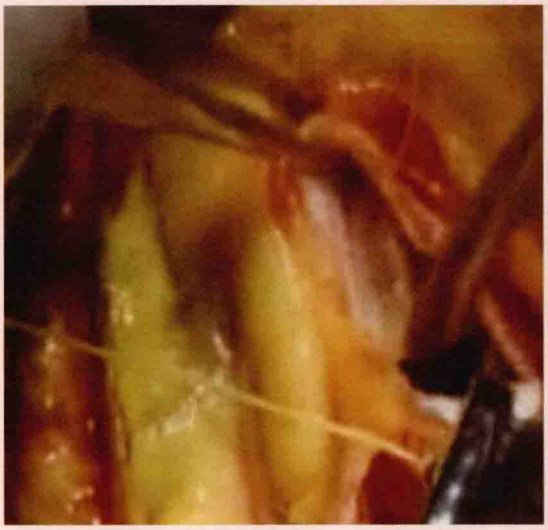


图 4-90　切除主动脉病变瓣膜（2）

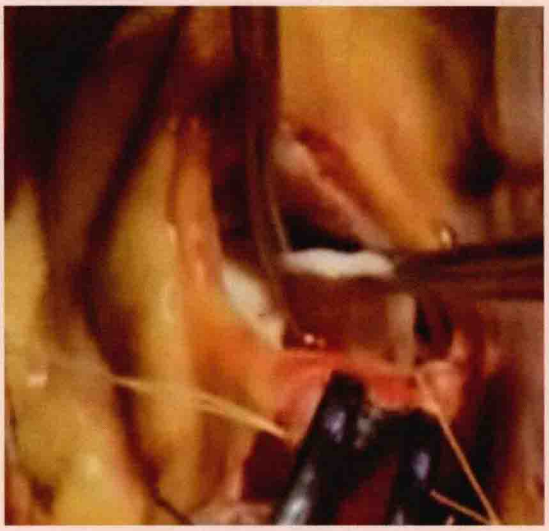


图 4-91　切除主动脉第 2 病变瓣膜



图 4-92　切除主动脉第 3 病变瓣膜

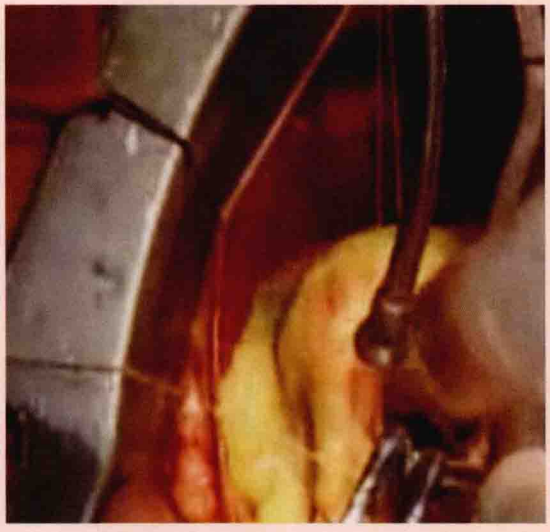


图 4-93　冲洗左心室

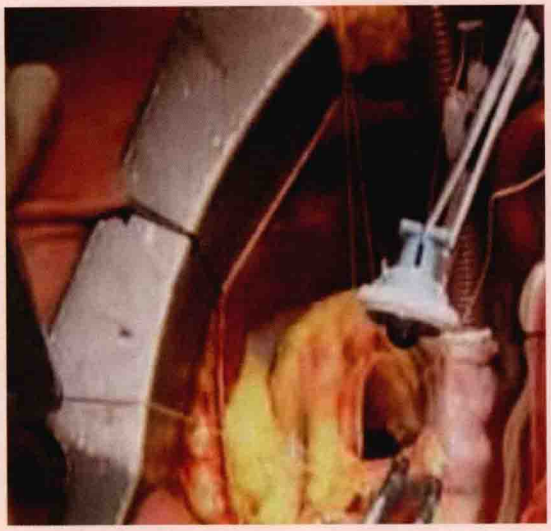


图 4-94 选瓣并置入人工瓣膜

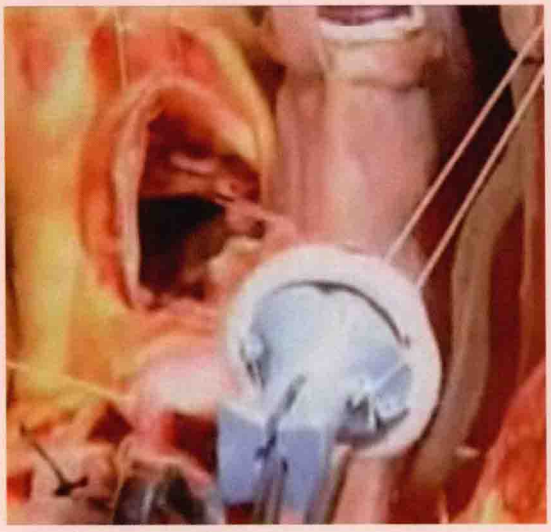


图 4-95 间断褥式缝合瓣膜及纤维环



图 4-96 放入人工瓣膜（1）

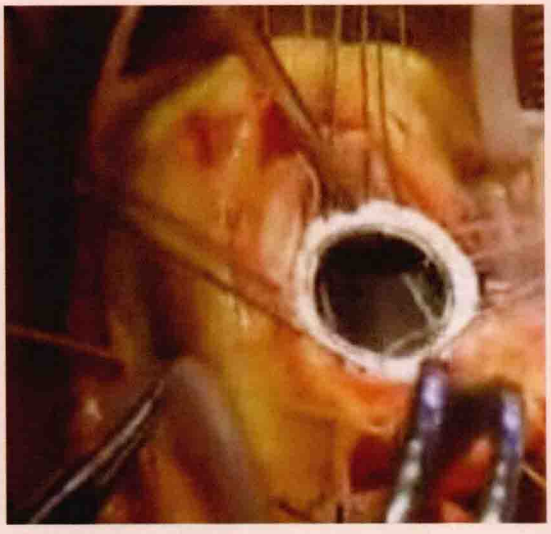


图 4-97 放入人工瓣膜（2）

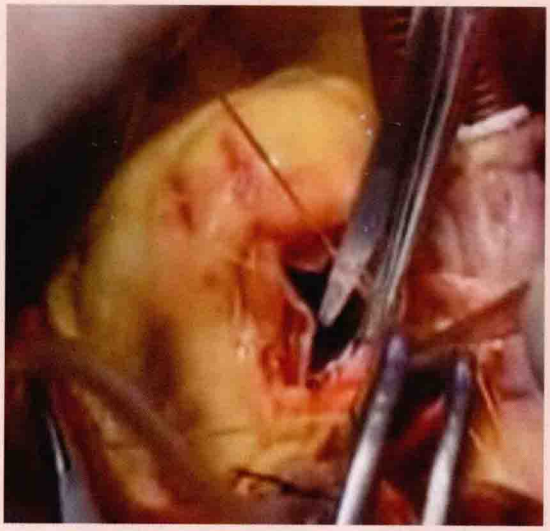


图 4-98 剪断缝合线

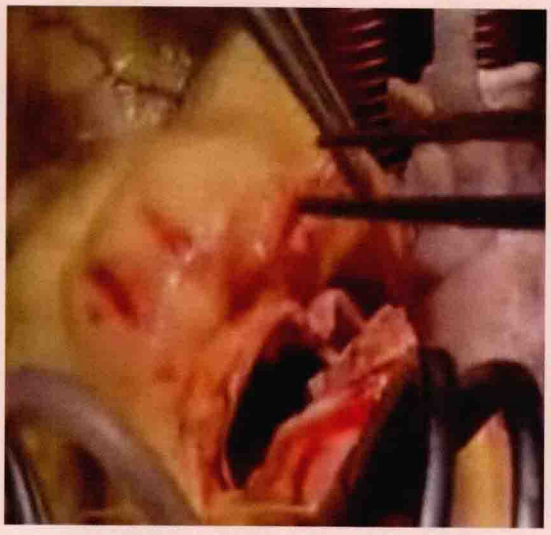


图 4-99 缝合主动脉切口

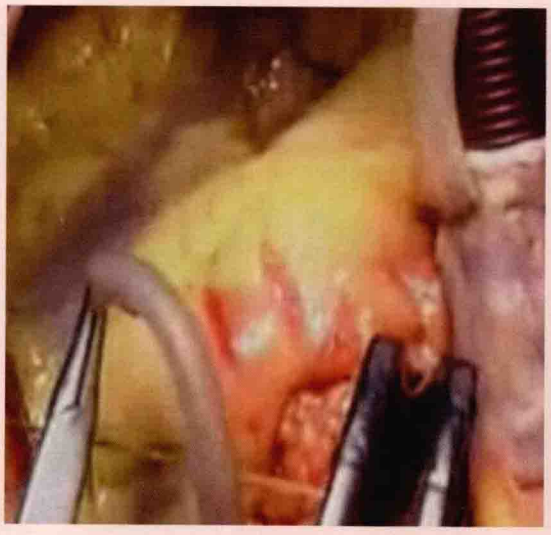


图 4-100 主动脉切口缝合完毕

三、房间隔缺损直接缝合术

（一）示意图

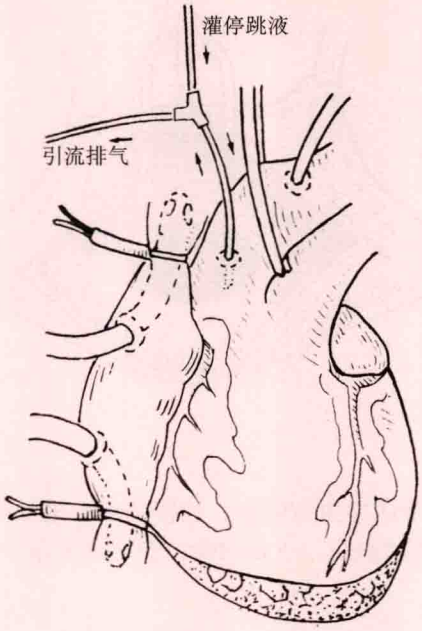


图 4-101 肝素化（按 3mg/kg 体重计算）后，插升主动脉供血管，经右心耳切口插上腔静脉引流管，右心房下部插下腔静脉引流管。绕套上、下腔静脉束带

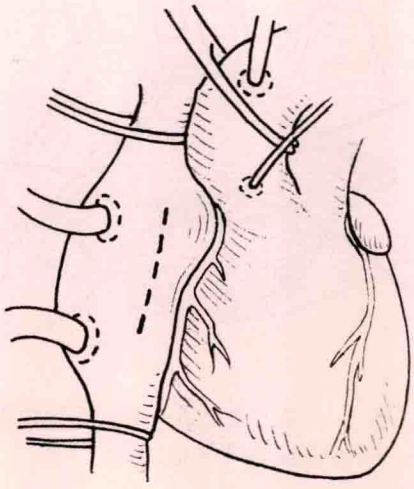


图 4-102 建立体外循环和注入心脏停搏液，同时行心包腔冰生理盐水浴。心脏完全停搏后，阻断上、下腔静脉。与房室沟平行或斜形切开右心房，长 4 ~ 5cm。牵开切口，吸出积血，即可清晰显露心房间隔缺损

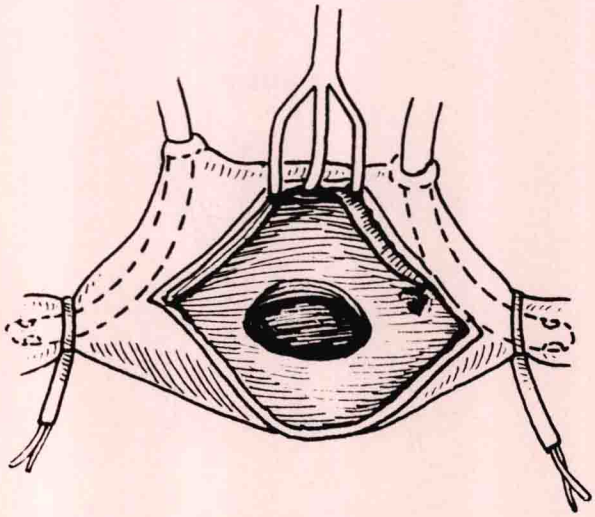


图 4-103 如果缺口＜ 3cm 以下的中央型缺损，边缘组织有足够厚度可对边缝合者。如缺损中央，有筛孔样或条索状组织，予以切除，使之成为单个缺损孔

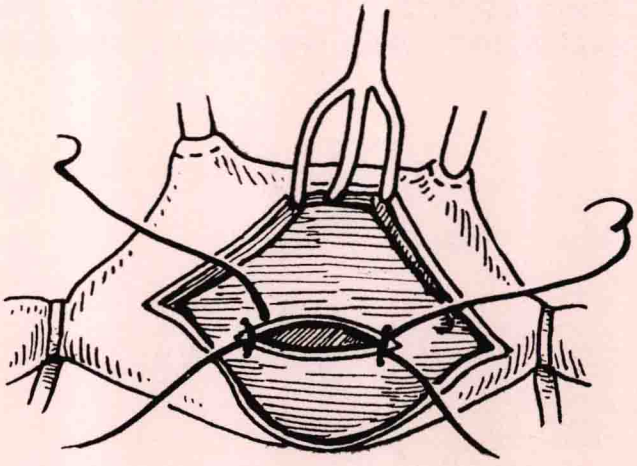


图 4-104 用 3-0 聚丙烯或涤纶线，于缺损上角缝合一针，结扎并做牵引，下角也做一牵引缝合，上、下两线轻轻上提，缺损边缘则可靠拢

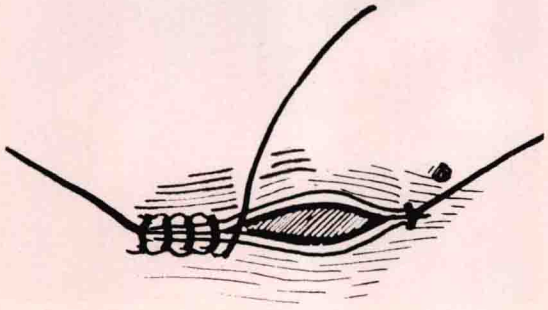


图 4-105 由上向下或由下向上做连续缝合

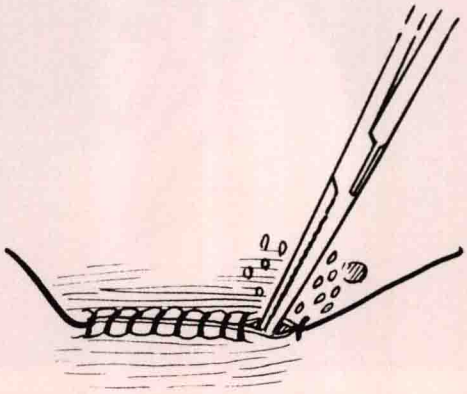


图 4-106 最后一针结扎前，用血管钳撑开缺损，请麻醉师做肺充气，排出左心房内气体，然后结扎闭合房间隔

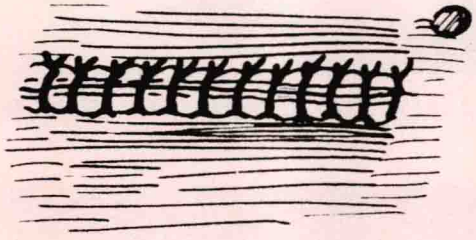


图 4-107 亦可采用丝线，做间断缝合

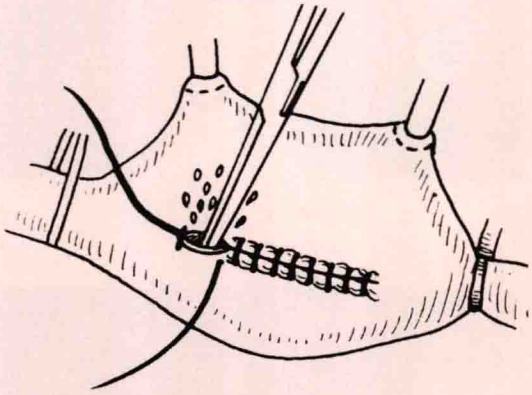


图 4-108 右心房切口用 3-0 聚丙烯或涤纶线连续缝合，开放上腔静脉，让回血充盈右心房，驱出残留气体后闭合切口

（二）手术步骤

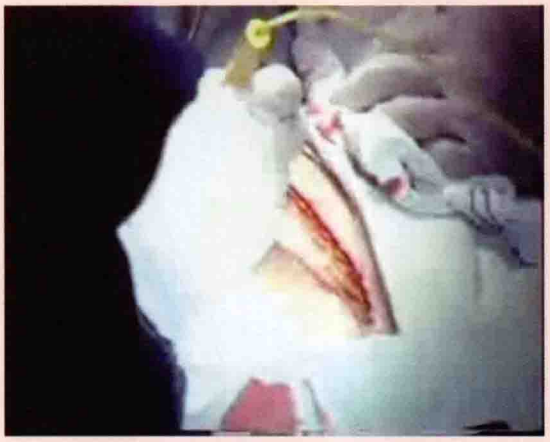


图 4-109　胸骨正中切开皮肤及皮下组织

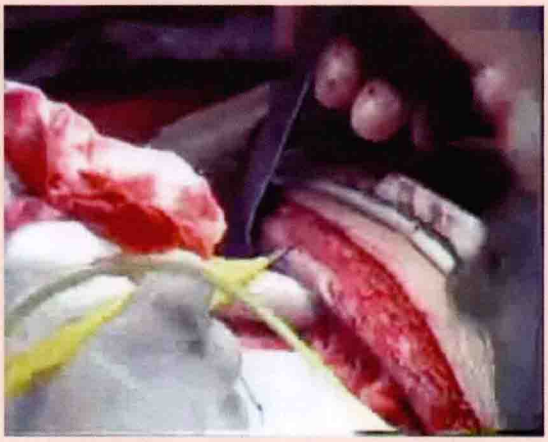


图 4-110　锯开胸骨，进入胸腔

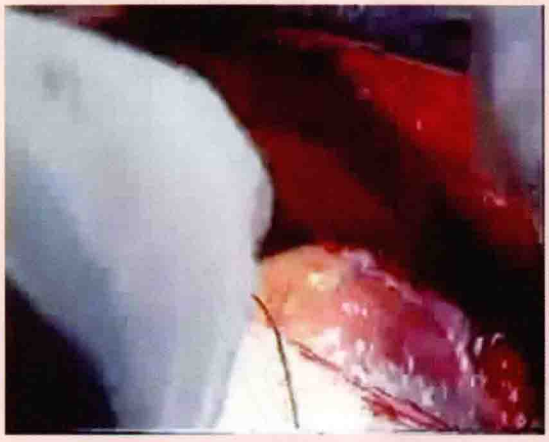


图 4-111　暴露心脏

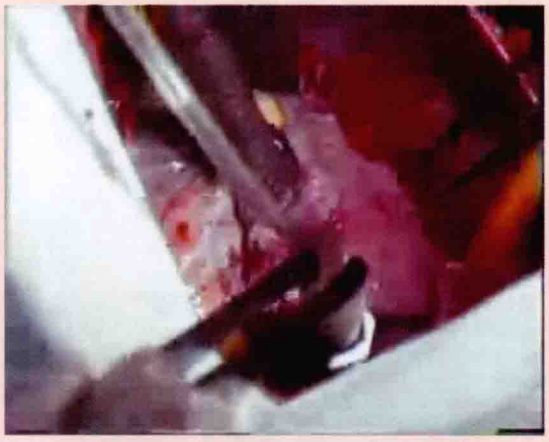


图 4-112　建立体外循环，上、下腔静脉插入导管

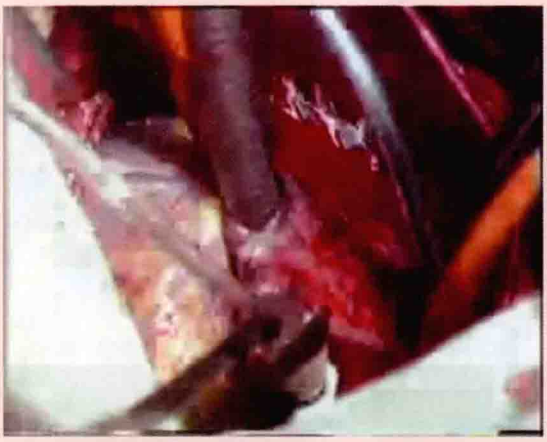


图 4-113　升主动脉置入导管



图 4-114　右心房切开减压

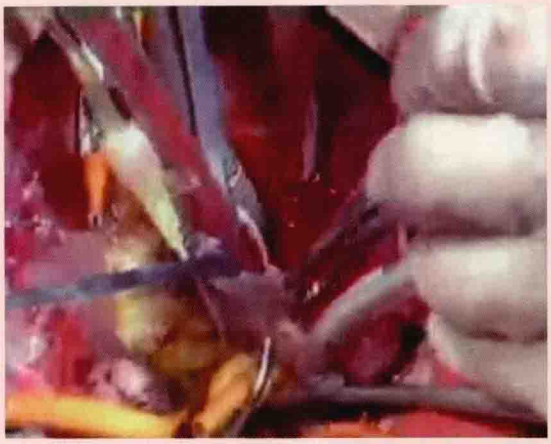


图 4-115 吸尽心包内积血



图 4-116 右心房纵切口，吸尽心房血液



图 4-117 暴露房间隔缺损部位

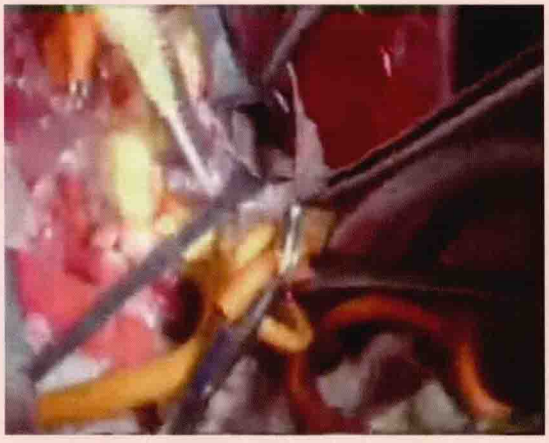


图 4-118 直接缝合房间隔缺损部位（1）

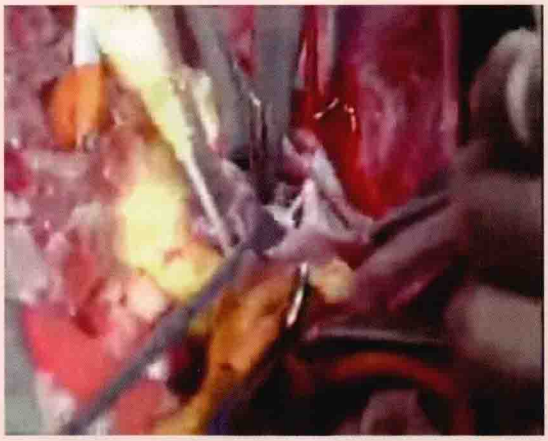


图 4-119 直接缝合房间隔缺损部位（2）

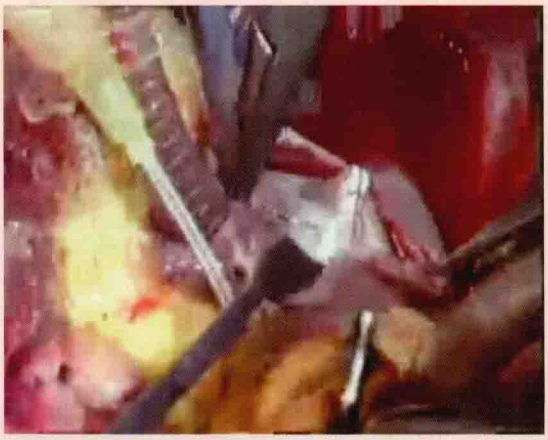


图 4-120 直接缝合房间隔缺损部位（3）

四、房间隔缺损补片缝合术

（一）示意图

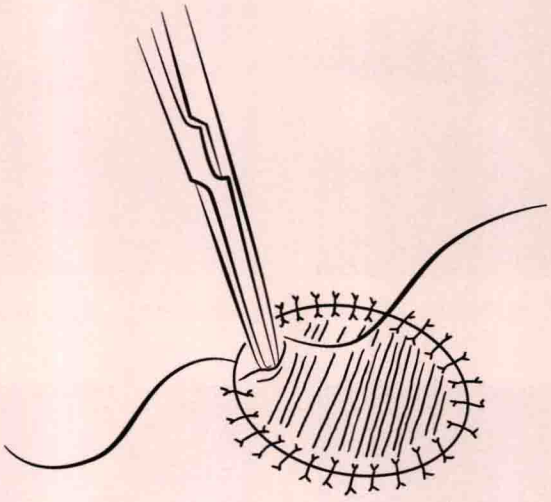


图 4-121　本法适用于 >3cm 以上的中央型缺损以及上腔型、下腔型和混合型缺损。补片材料选用涤纶织片或自体心包片

第一种，下腔型缺损。这种缺损的特点是下缘常无房间隔组织而由心房壁组成。将缺损下缘作半荷包缝合，然后双头针穿过补片、打结。两根缝线先后按逆时针与顺时针方向向上连续缝合

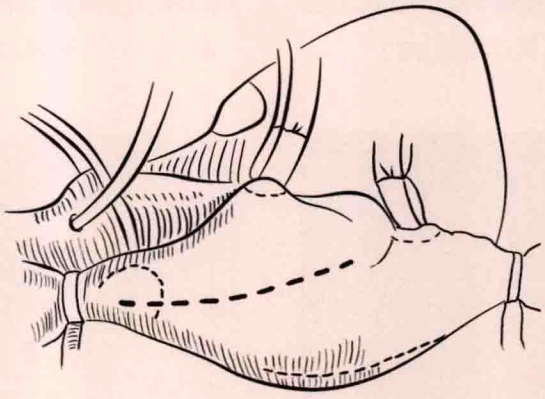


图 4-122　上腔型缺损。这种缺损常合并右肺静脉异位连接

第二种，上腔型缺损的上缘，可高达上腔静脉与右心房汇合口的上方，右心房的切口应向上延长，切断终嵴，以充分显露缺损上缘

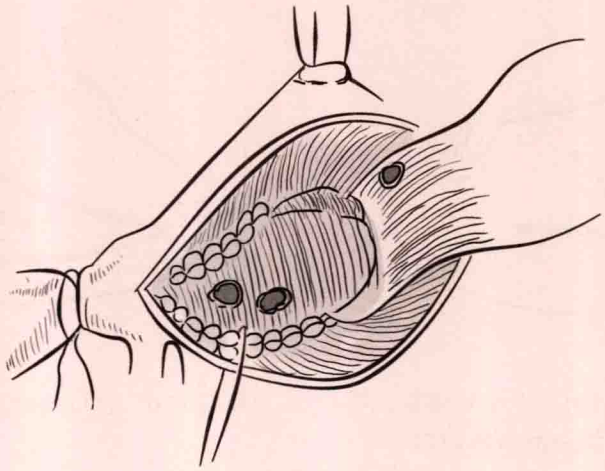


图 4-123 补片先从缺损右缘开始缝合，确保右肺静脉纳入左心房，然后连续缝合其余缺损边缘，排气后结扎缝线，闭合房间隔

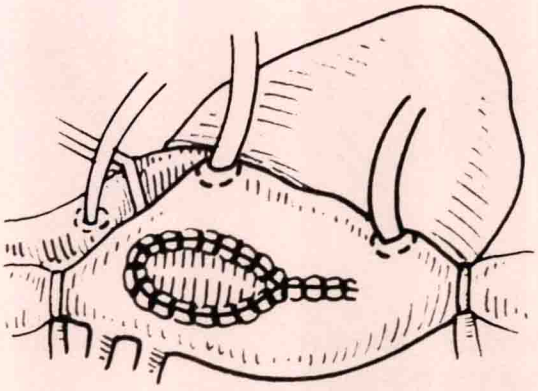


图 4-124 为预防右心房高位切口缝合后上腔静脉入口狭窄，可采用以下三种方法：一是右心房切口补片扩大成形，用涤纶织片或自体心包缝补扩大右心房

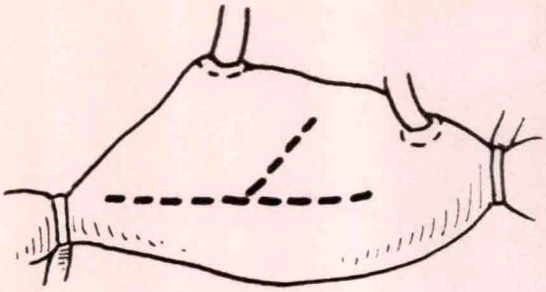


图 4-125 二是右心房切口 Y 或 V 成形，在长的纵切口加一成角斜切口

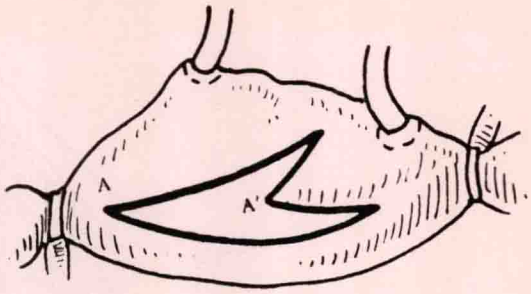


图 4-126 将成角心房壁与切口顶端缝合

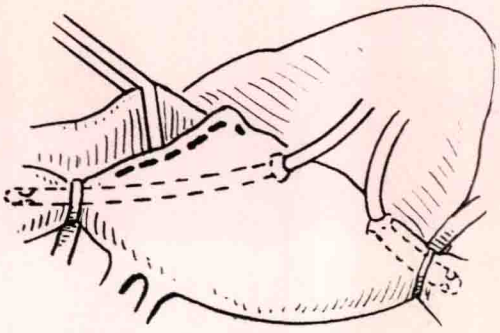


图 4-127 三是右心房纵行切开、横行缝合成形，上腔静脉引流管不经右心耳而经右房壁插入，切口自右心耳尖端开始，向上延至右心房顶与上腔静脉交界处

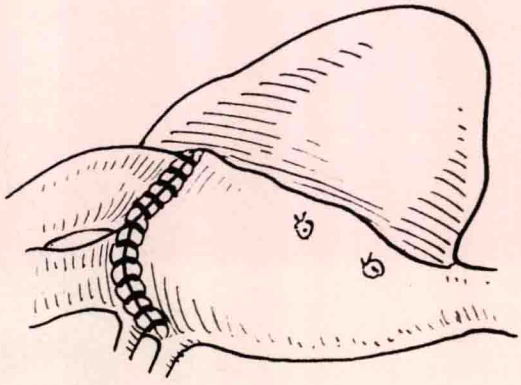


图 4-128 然后做横向缝合

（二）手术步骤

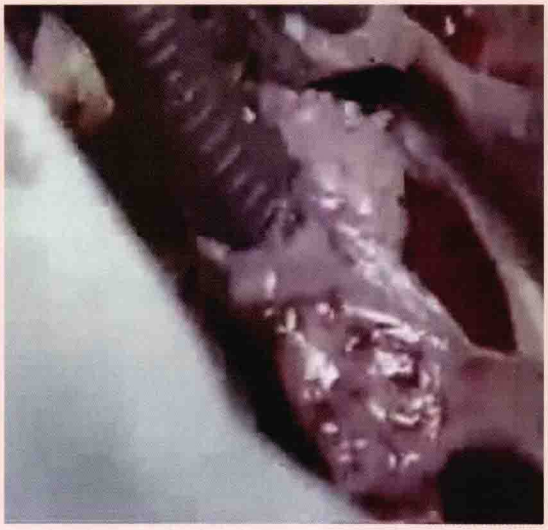


图 4–129　房间隔缺损部位



图 4–130　剪掉缺损周围纤维组织以便修补（1）

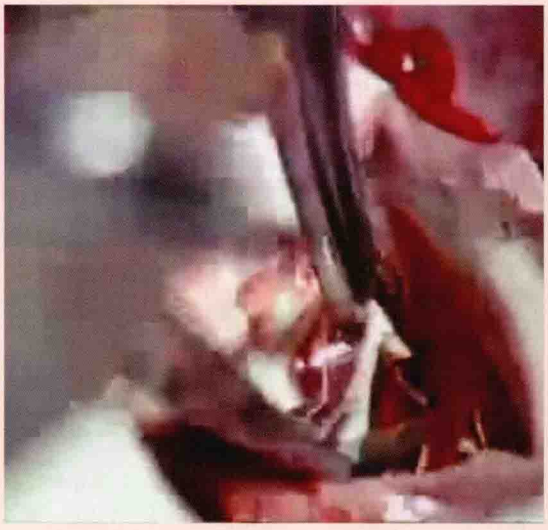


图 4–131　剪掉缺损周围纤维组织以便修补（2）

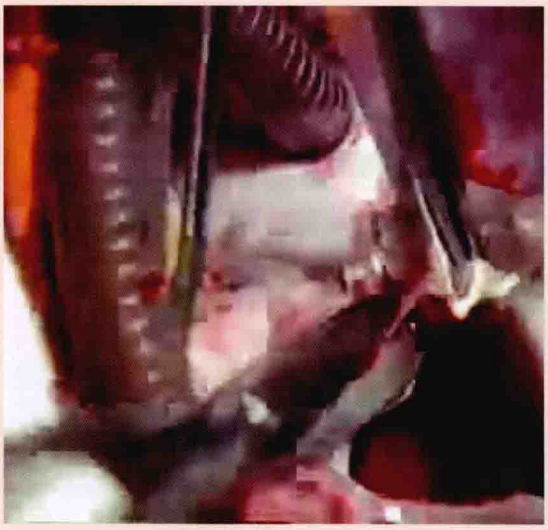


图 4–132　剪掉缺损周围纤维组织以便修补（3）

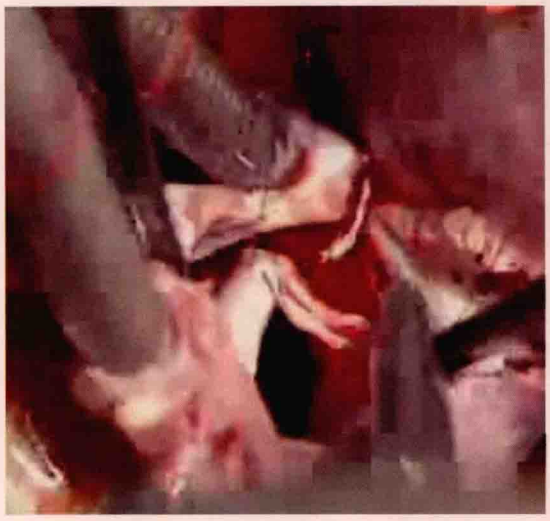


图 4–133　将补片缝合于缺口边缘（1）

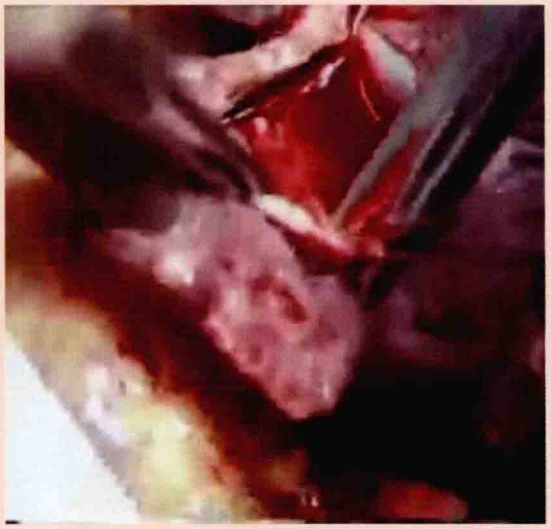


图 4–134　将补片缝合于缺口边缘（2）



图 4–135　拔掉主动脉及上、下腔静脉导管并扎紧导管切口



图 4–136　扎紧导管切口（1）

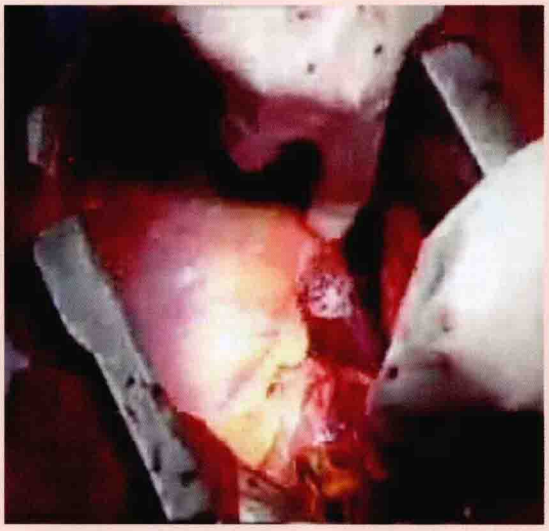


图 4-137　扎紧导管切口（2）

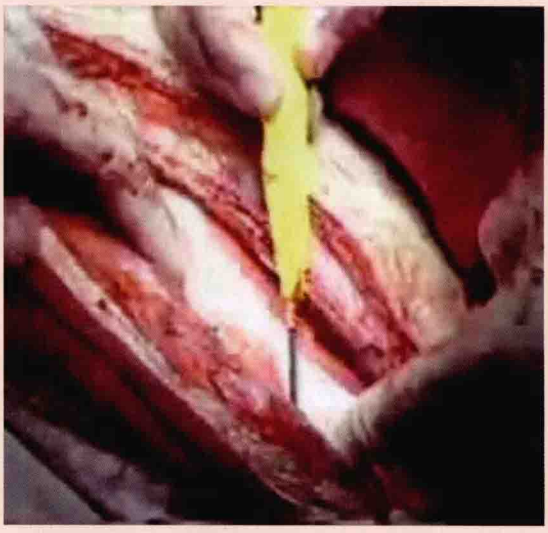


图 4-138　严密止血

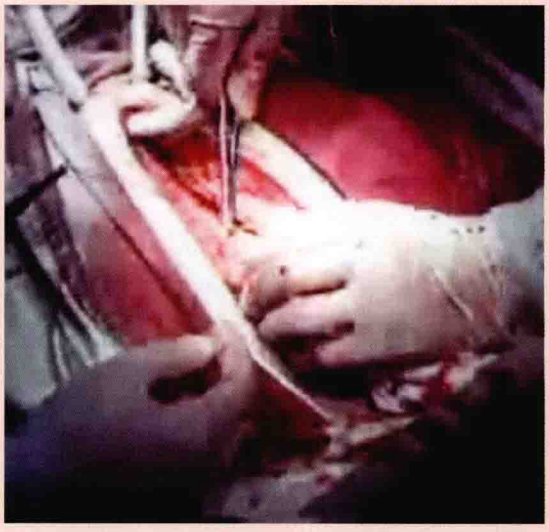


图 4-139　置入心包及纵隔引流管

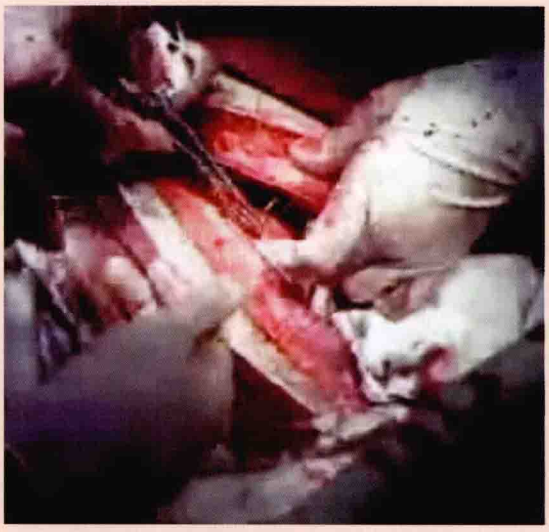


图 4-140　逐层关胸

五、室间隔缺损修补术

（一）示意图

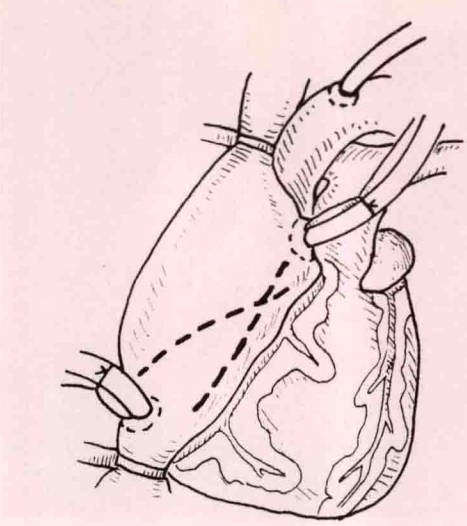


图 4-141 右心房切口采用与房室沟平行的横行或右心耳基部至右房外侧方的斜切口

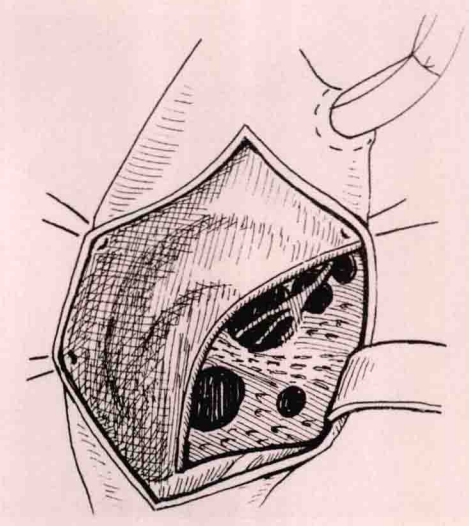


图 4-142 此径路适于修补膜部、房室通道型或部分肌部室间隔缺损。膜部小缺损经此途径也能获得最佳的显露

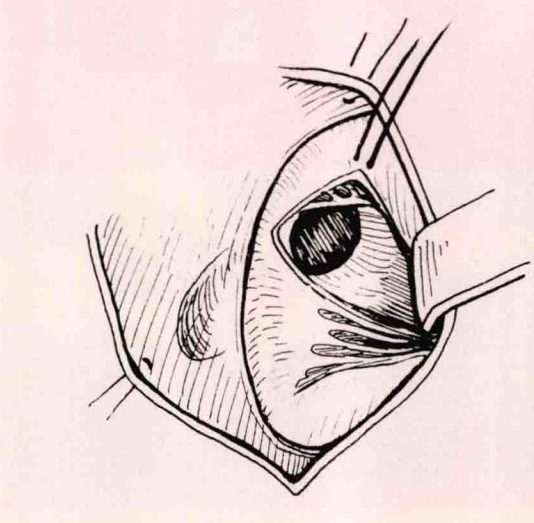


图 4-143 经右心房切口与三尖瓣口，用小拉钩向前牵拉三尖瓣前瓣叶，即可显露室间隔缺损

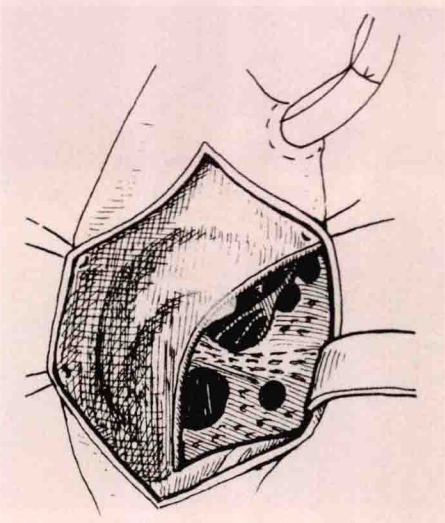


图 4-144 修补前需明确冠状静脉窦、Todaro's 腱与三尖瓣环构成的 Koch's 三角的位置，房室结、房室束在三角内走行。房室传导组织位于膜部缺损的后下方，房室通道型缺损的前上方

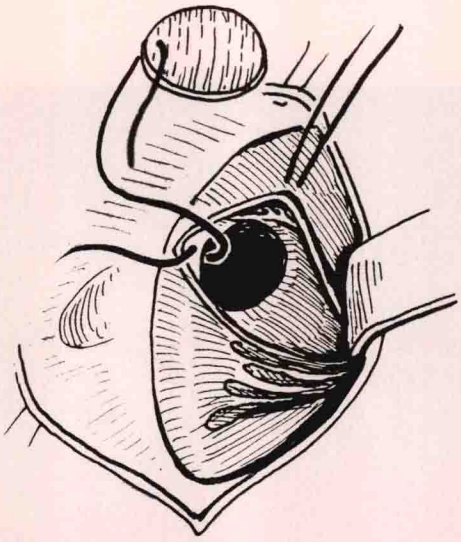


图 4-145 补片修补中、大口径室间隔缺损时，亦可采用间断褥式带垫片缝合或连续缝合

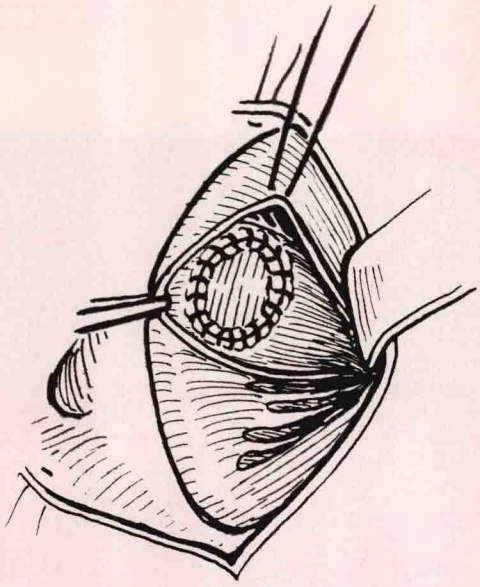


图 4-146 靠近房室传导组织的部位注意利用三尖瓣隔瓣基底部分瓣叶，避免损伤房室传导组织

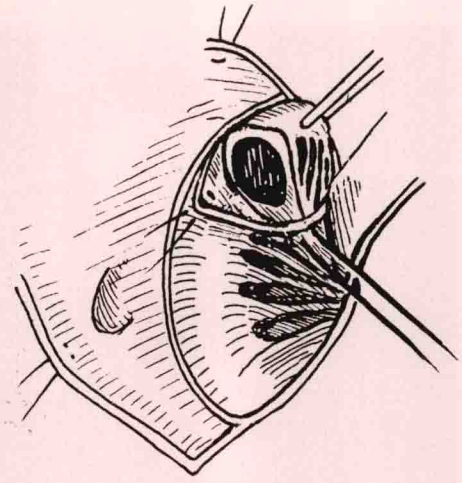


图 4-147 显露困难，尤其是三尖瓣叶遮蔽室缺，可以在三尖瓣叶平行瓣环 2mm 处做切口，改善显露

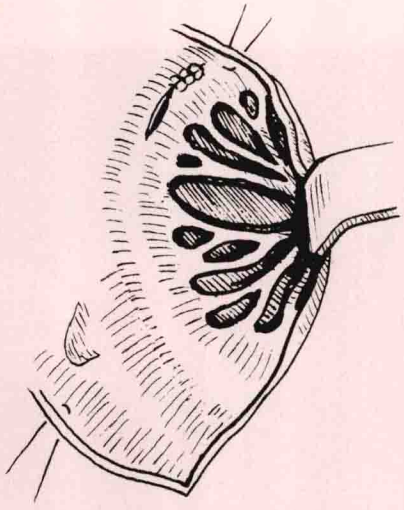


图 4-148 完成缝补后连续缝合三尖瓣叶基底部的切口

（二）手术步骤



图 4–149　胸部正中切口

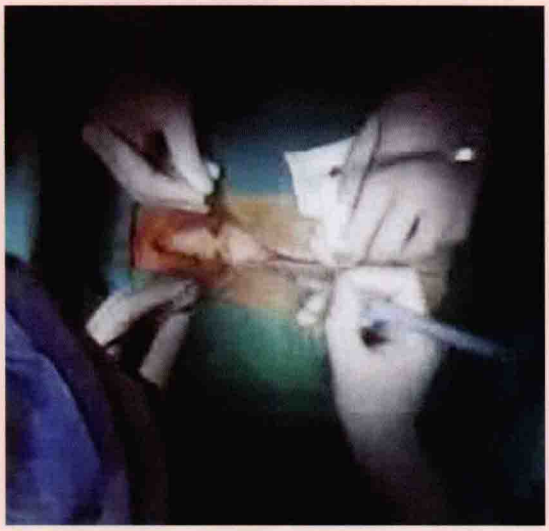


图 4–150　切开皮肤及皮下组织

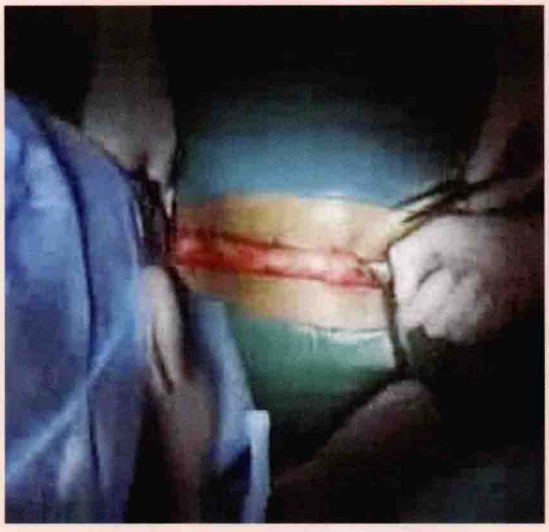


图 4–151　分离胸骨后

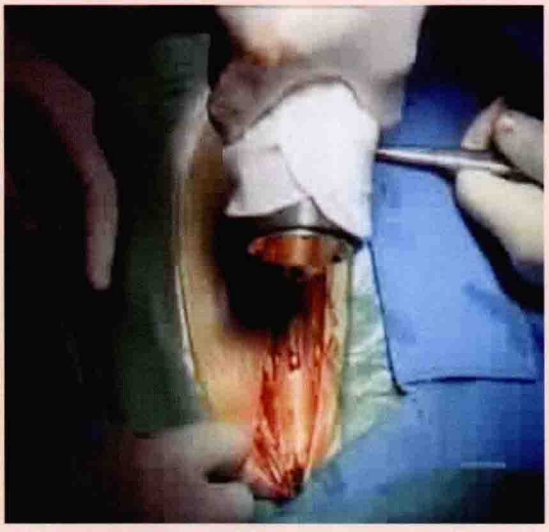


图 4–152　用胸骨剪沿胸骨中线锯开胸骨



图 4-153 胸骨前后骨膜电凝法止血，骨髓腔骨腊止血

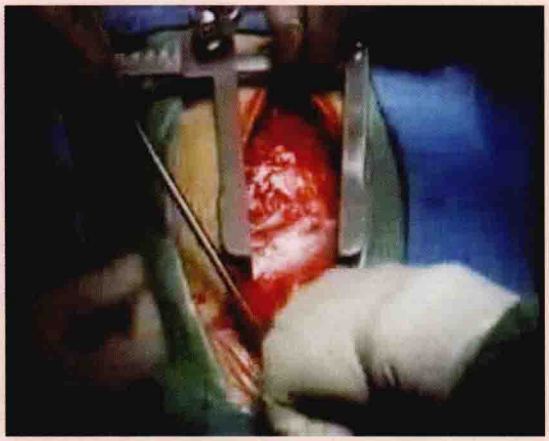


图 4-154 胸骨牵开器分离胸骨暴露心包

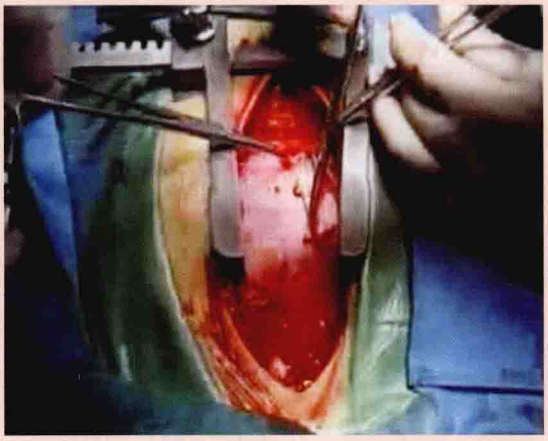


图 4-155 切开心包前壁

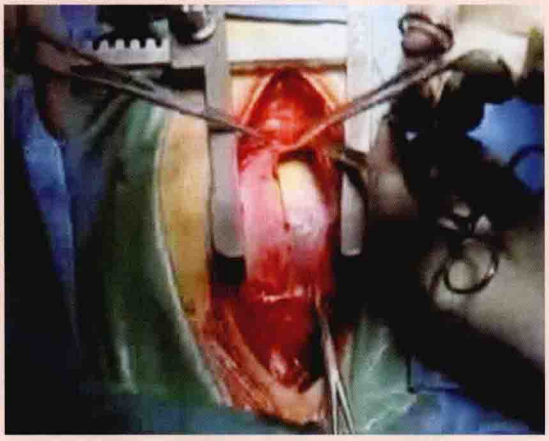


图 4-156 切开心包暴露心脏

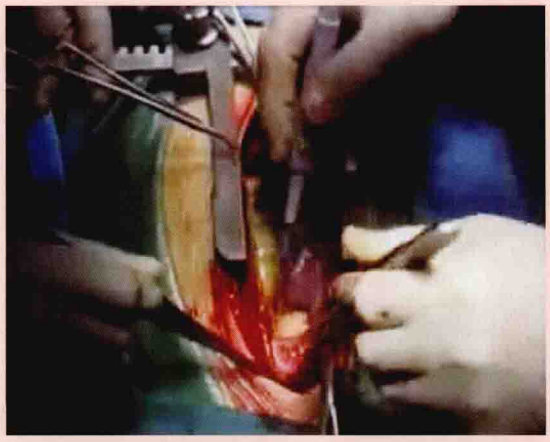


图 4-157 游离胸腺（防止损伤无名静脉）



图 4-158 保护切口，重新置入胸骨牵开器



图 4-159　套主动脉阻断带



图 4-160　套上腔静脉阻断带

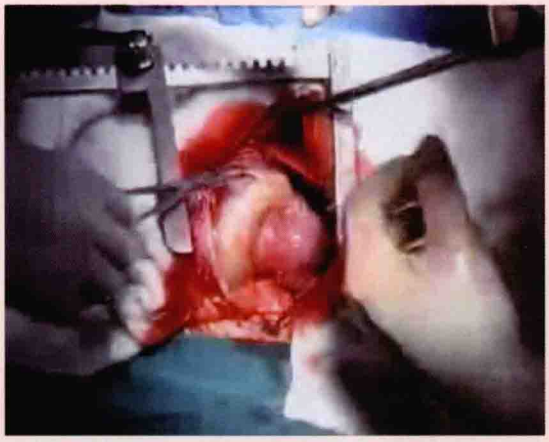


图 4-161　套下腔静脉阻断带

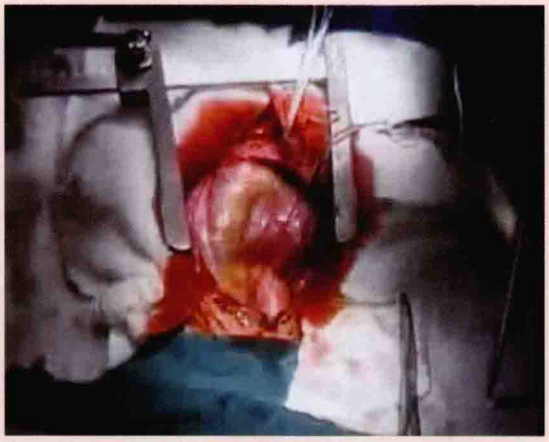


图 4-162　主动脉插管口荷包缝合（1）

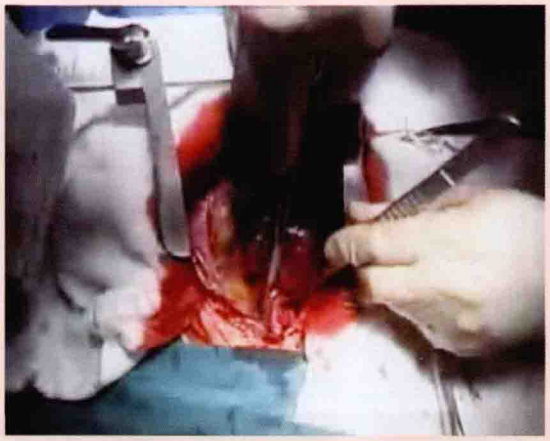


图 4-163　主动脉插管口荷包缝合（2）

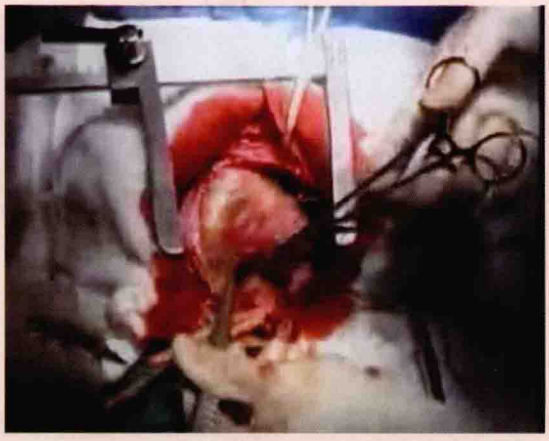


图 4-164　上腔静脉插管口荷包缝合

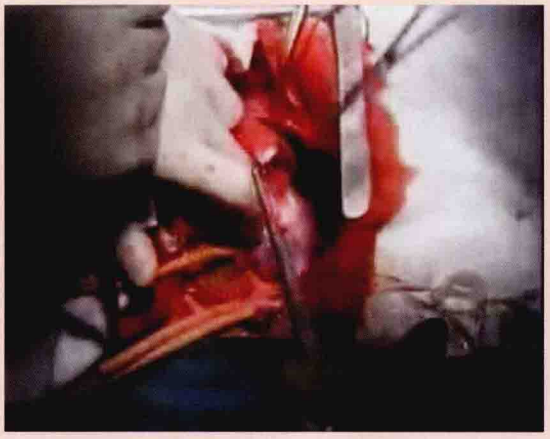


图 4-165 下腔静脉插管口荷包缝合

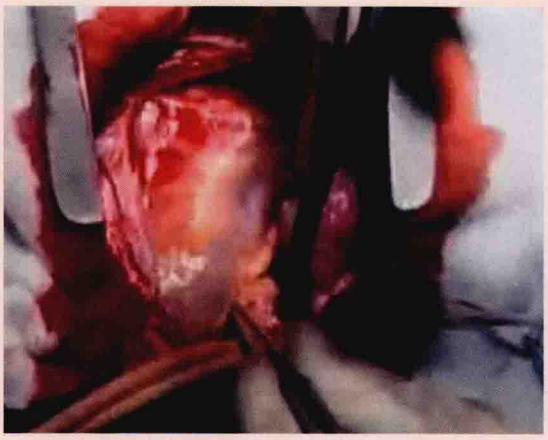


图 4-166 停跳液冷灌针口荷包缝合

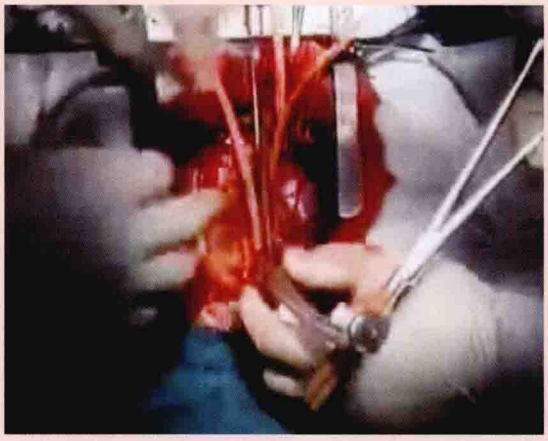


图 4-167 置入主动脉插管

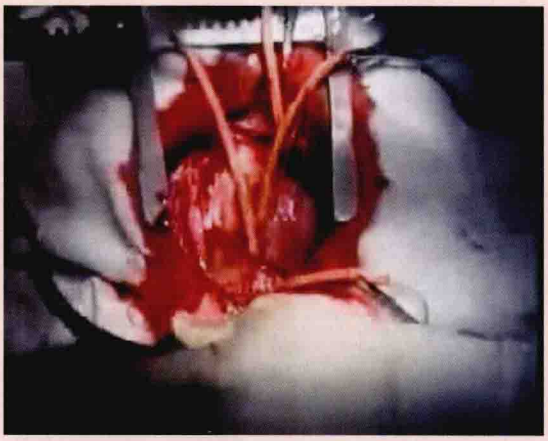


图 4-168 主动脉插管连接体外循环

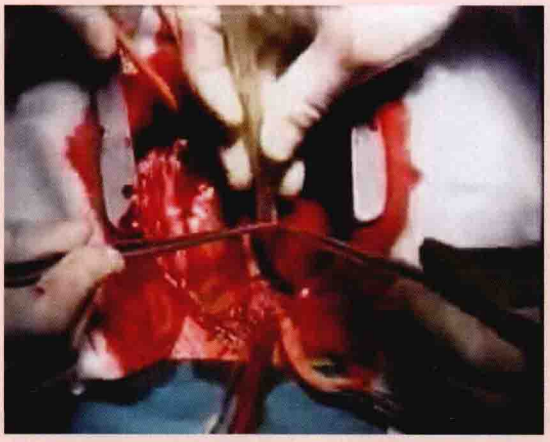


图 4-169 插入上腔静脉插管

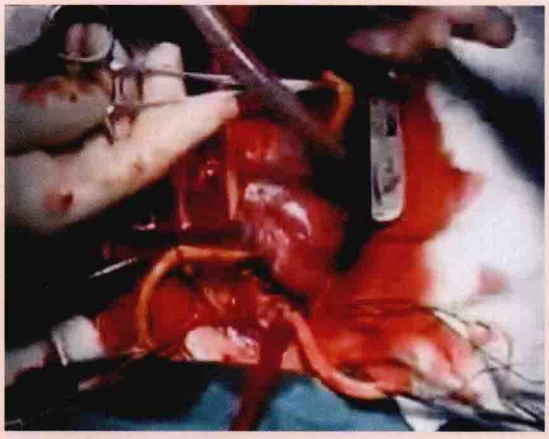


图 4-170 插入下腔静脉插管

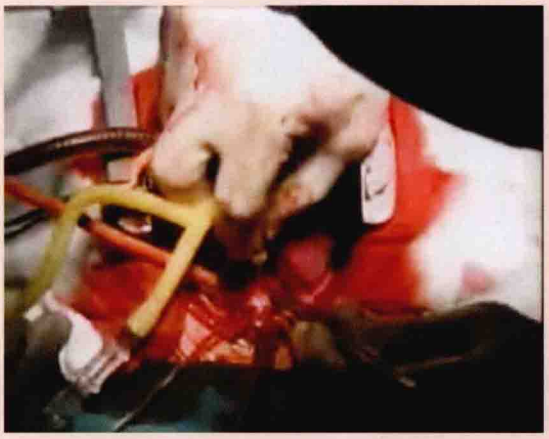


图 4-171 旋转插入停跳液冷灌针

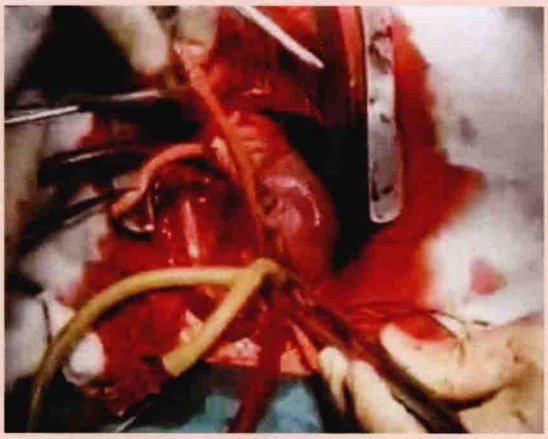


图 4-172 所有导管插入完毕

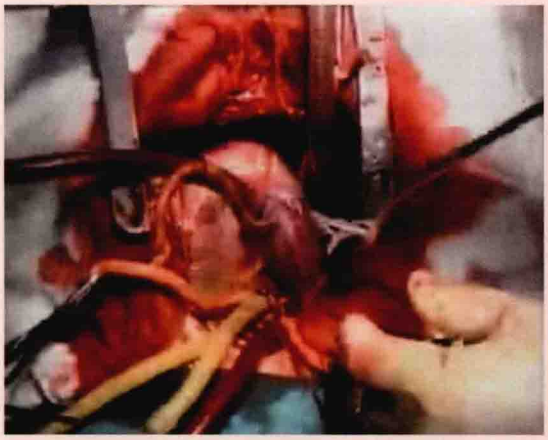


图 4-173 阻断上、下腔静脉建立体外循环

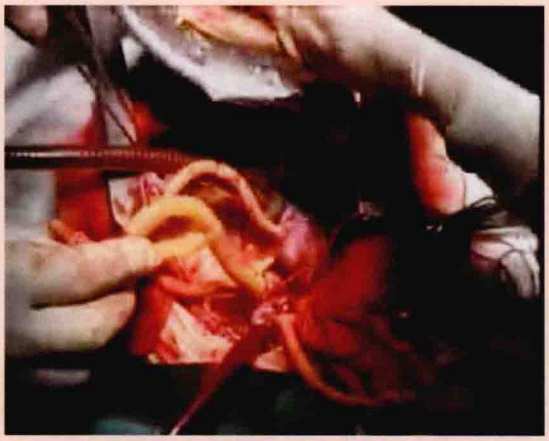


图 4-174 心表降温

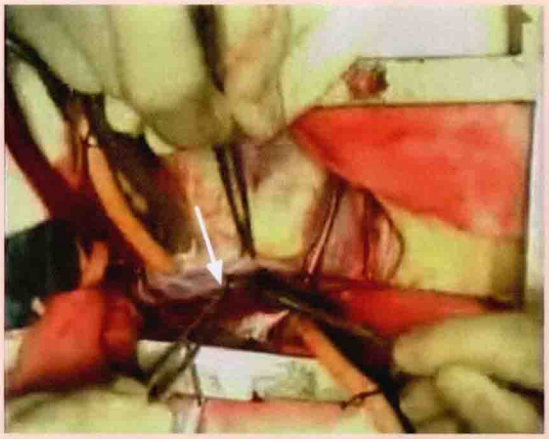


图 4-175 沿右房室沟切开右心房



图 4-176 沿右房室沟切开右心房 1 ~ 2cm

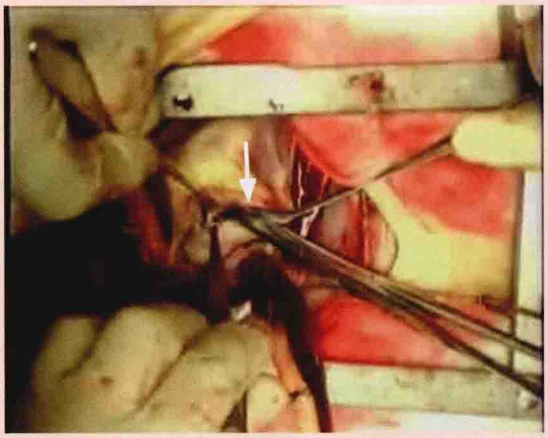


图 4-177 经三尖瓣口探查缺损位于室中隔膜部（1）



图 4-178 经三尖瓣口探查缺损位于室中隔膜部（2）



图 4-179 带垫缝合缺损部位（1）

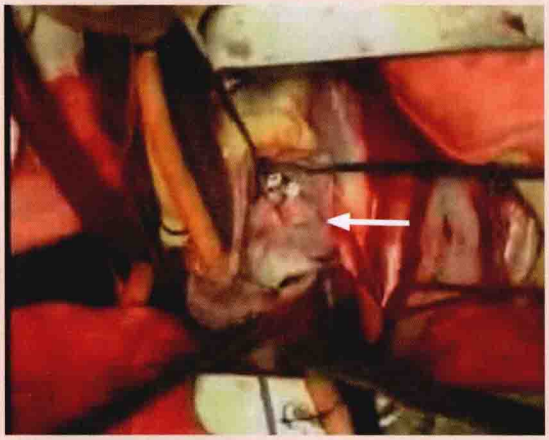


图 4-180 带垫缝合缺损部位（2）

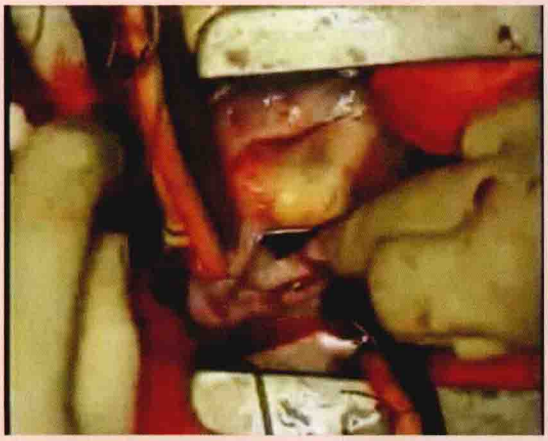


图 4-181 缝线打结



图 4-182 探查右心室流出道有无梗阻



图 4-183 开放主动脉

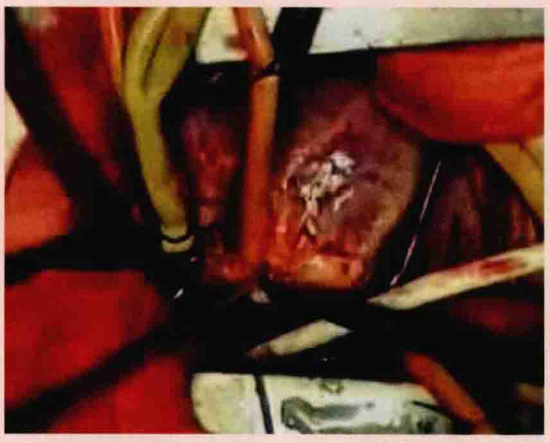


图 4-184 连续缝合右心房壁切口



图 4-185 依次拔掉上、下腔静脉及主动脉插管，停止体外循环

六、冠状动脉搭桥术

（一）示意图

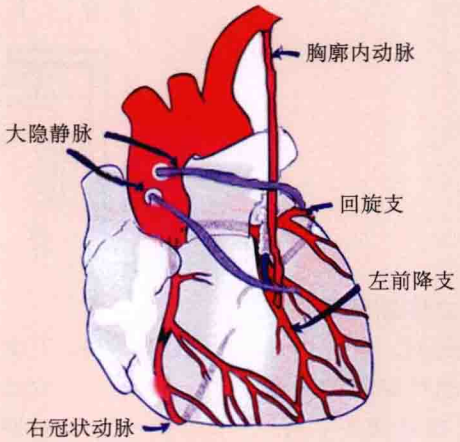


图 4–186　模式图

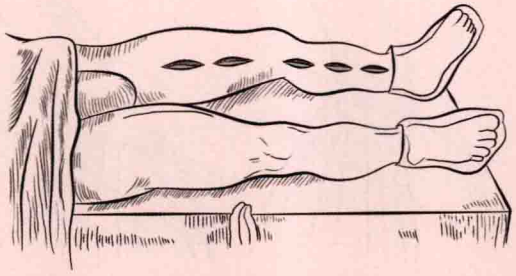


图 4–187　取胸骨正中切口。逐层切开胸壁，将胸骨沿中线劈开。切取大隐静脉作为搭桥材料

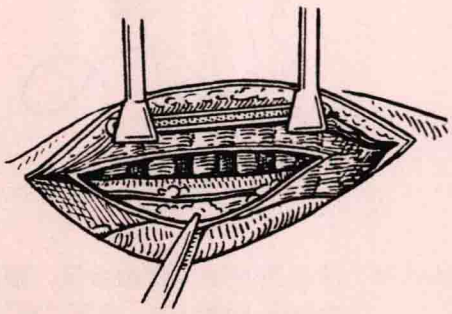


图 4–188　也可切取胸廓内动脉作为搭桥材料

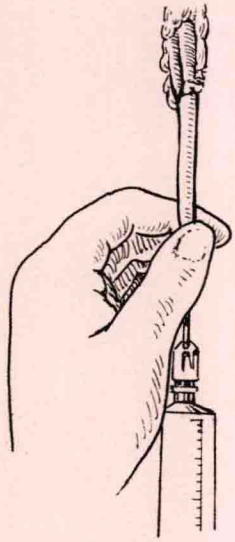


图 4–189 待切开心包，建立体外循环、开始作冠状动脉吻合时，胸廓内动脉自远端切断，也可自断端向动脉内注入 1 ： 20 罂粟碱 3 ~ 4ml 使之充分扩张，然后按常规做胸廓内动脉 – 冠状动脉端侧吻合

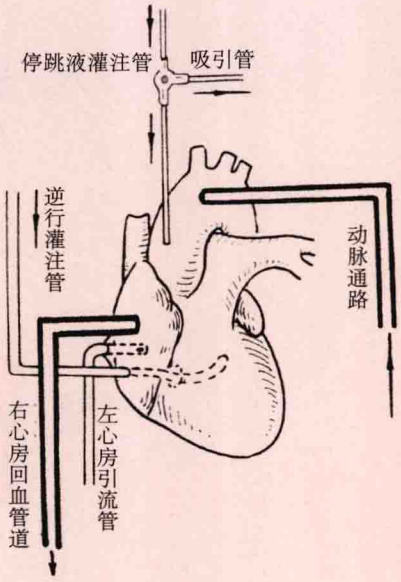


图 4–190 T 字形切开心包，心脏插管，建立体外循环，并注入心脏停搏液。在阻断主动脉之前，再次查看各冠状动脉支的走行，并选定搭桥的位置

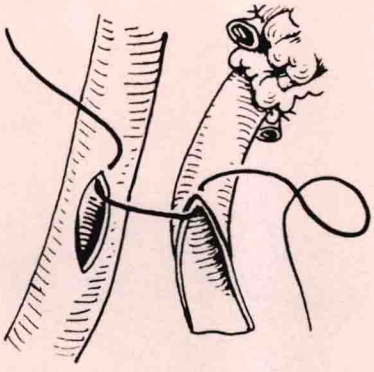


图 4–191 游离冠状动脉支吻合区，游离长度稍大于吻合口。准备“桥”体。再次检查“桥”体是否有漏血或局部病变。大隐静脉吻合端应避开大隐静脉瓣，静脉前端剪成 30° 的斜口，必要时稍向近端纵行扩大。胸廓内动脉理顺动脉走向及长度，将胸廓内动脉断端纵行切开约 5mm，然后将胸廓内动脉断端悬吊固定，以 7–0 聚丙烯线吻合

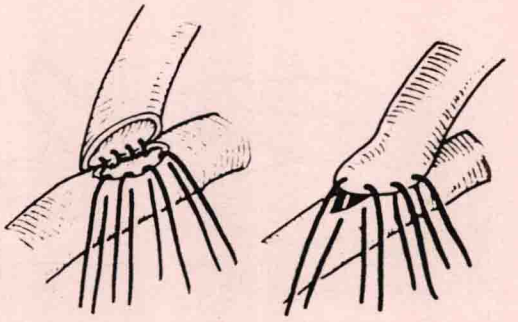


图 4–192 用尖刀切开冠状动脉正前方管壁，纵切口长 3 ~ 5mm。胸廓内动脉吻合切口应小些，特别要注意不可切伤动脉后壁，否则吻合后局部血肿将影响吻合口通畅

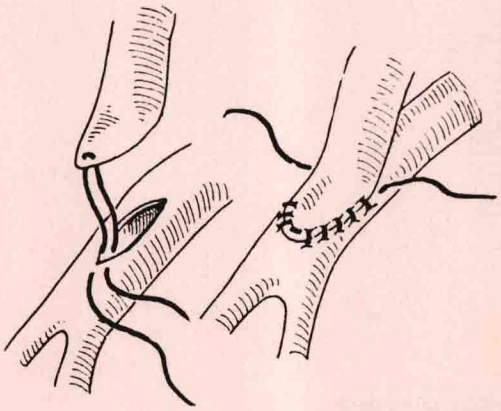


图 4-193 采用连续缝合法进行端侧吻合

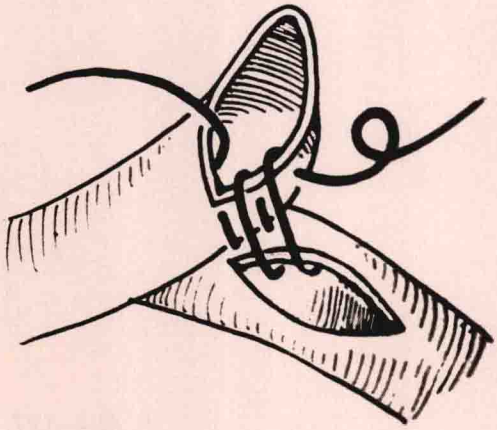


图 4-194 冠状动脉切口的远端比作时针的 6 点，近端为 12 点，大隐静脉端的前端比作 6 点，而后缘中点比作 12 点。如为端侧吻合则将两个 6 点与两个 12 点相互对准。缝线自 2 点处开始逆时针方向缝合，缝针穿过大隐静脉壁时自外向里进针，在穿过动脉壁时自里向外出针。每个针距 0.5 ~ 1.0mm，针距应均匀

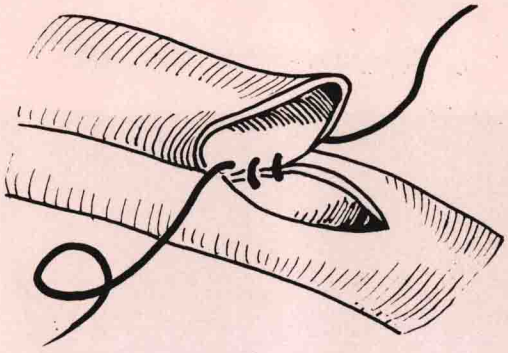


图 4-195 血管切口边缘吃针不宜过多，每针缝后应将线拉紧。在显露困难处可缝 3 ~ 4 针往返后拉紧。在连续缝合时如能带上部分心外膜，则有利于防止漏血

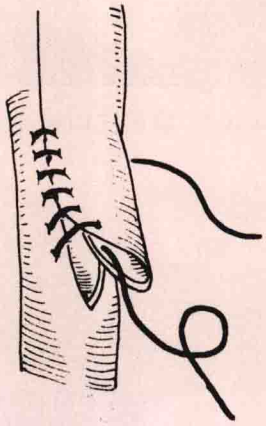


图 4-196 缝合完毕

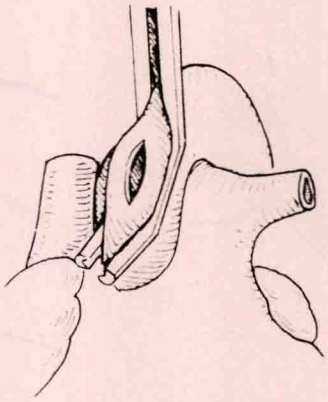


图 4-197 做冠状动脉近端吻合

（二）手术步骤



图 4-198 胸骨正中线皮肤切口

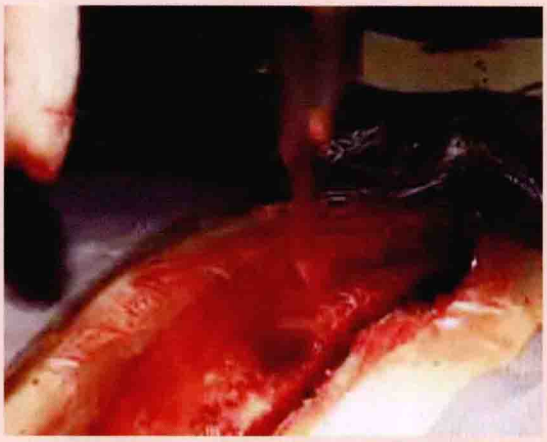


图 4-199 锯开胸骨进入胸腔

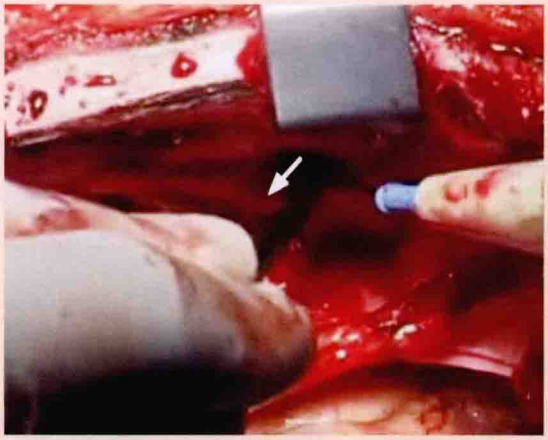


图 4-200 游离胸廓内动脉

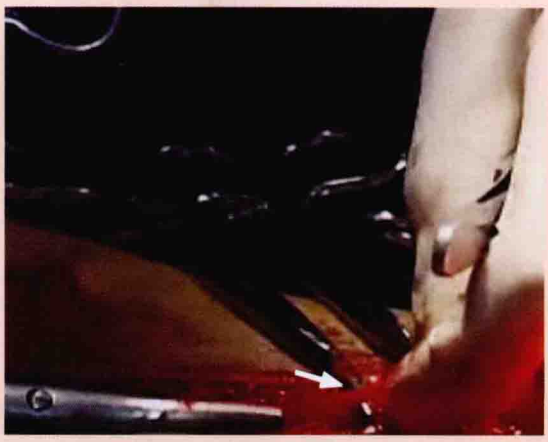


图 4-201 第 2 组术者截取大隐静脉

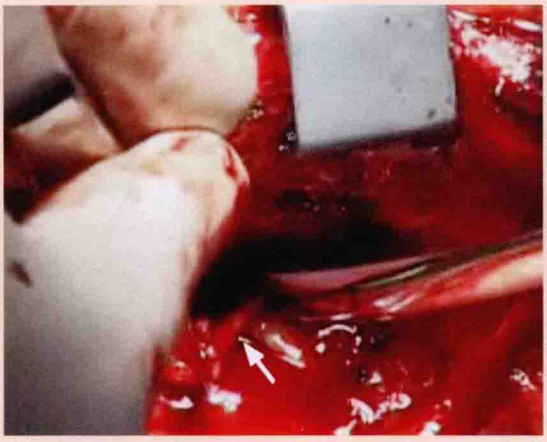


图 4-202 切断胸廓内动脉

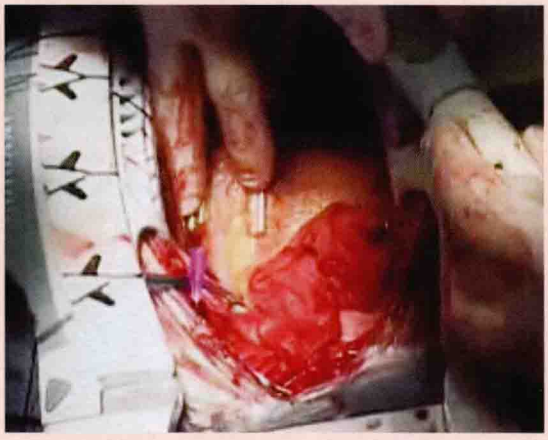


图 4-203 左冠状动脉前降支放置血管固定器

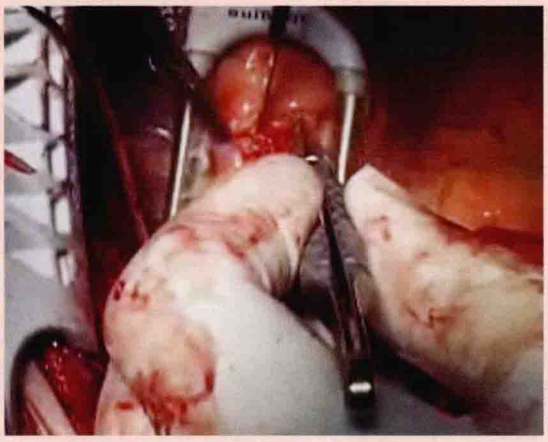


图 4-204 暴露左冠状动脉前降支

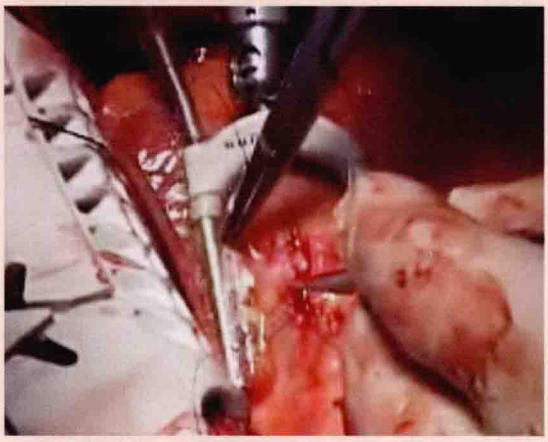


图 4-205 吻合胸廓内动脉断端与左冠状动脉前降支

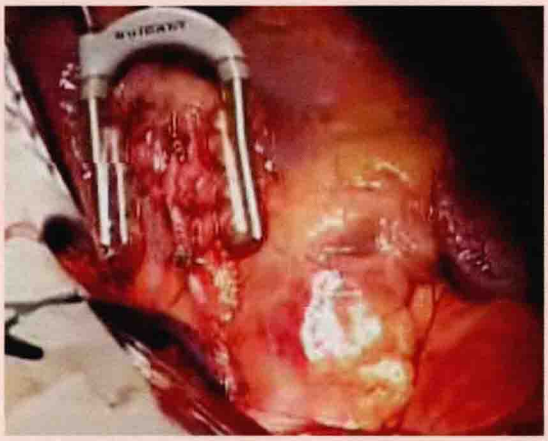


图 4-206 胸廓内动脉断端与左冠状动脉前降支缝合完毕（1）

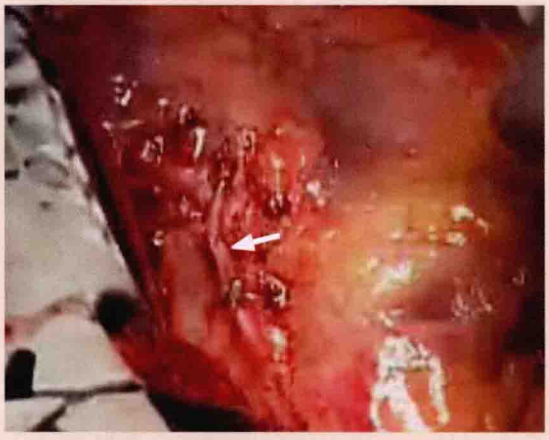


图 4-207 胸廓内动脉断端与左冠状动脉前降支缝合完毕（2）

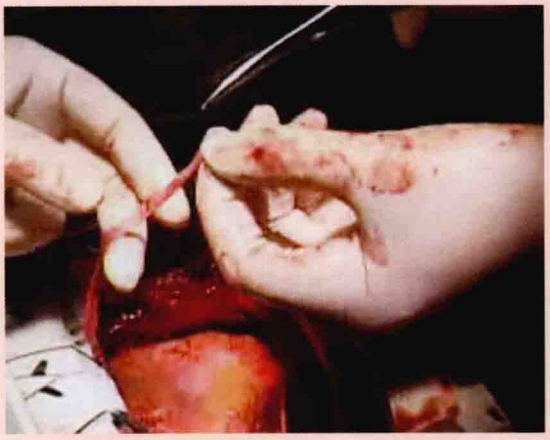


图 4-208 术者修剪大隐静脉血管桥

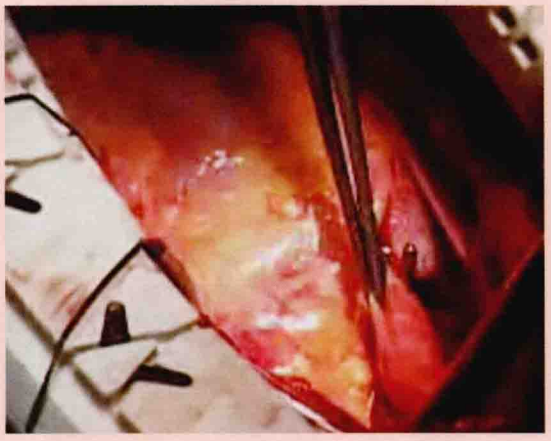


图 4-209 侧壁钳钳夹升主动脉侧壁

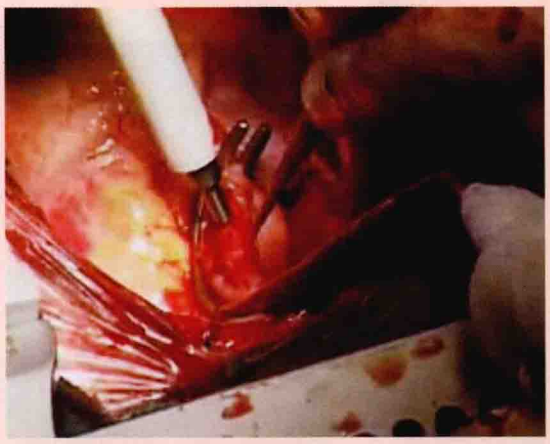


图 4-210 升主动脉侧壁制作两个吻合孔

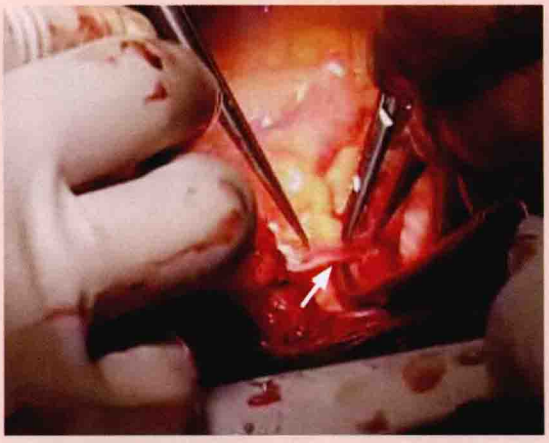


图 4-211 大隐静脉远端与升主动脉吻合孔其一吻合（1）

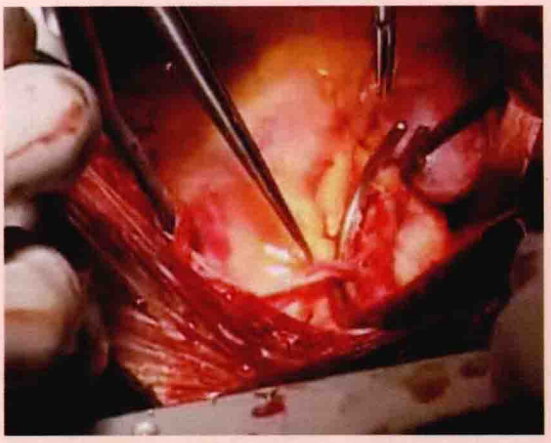


图 4-212 大隐静脉远端与升主动脉吻合孔其一吻合（2）

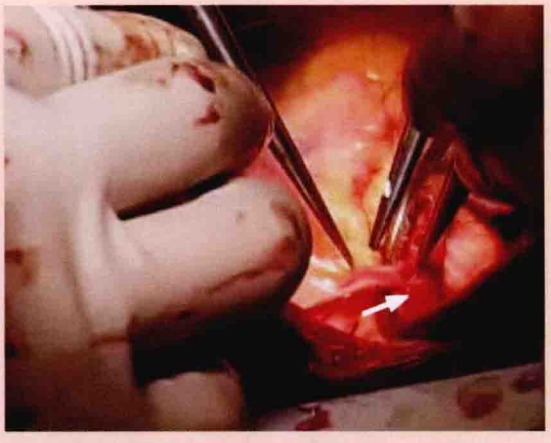


图 4-213 大隐静脉远端与升主动脉吻合孔其一吻合（3）

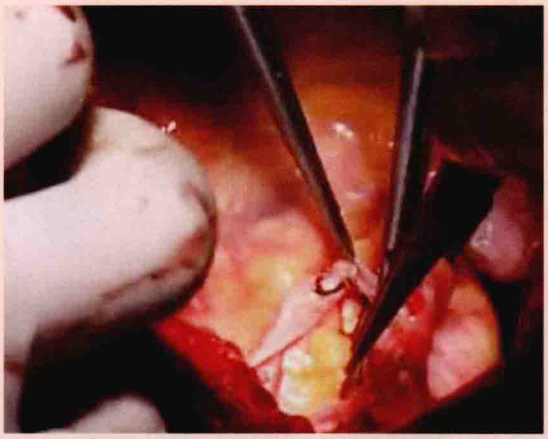


图 4-214 两条血管桥吻合完毕（1）

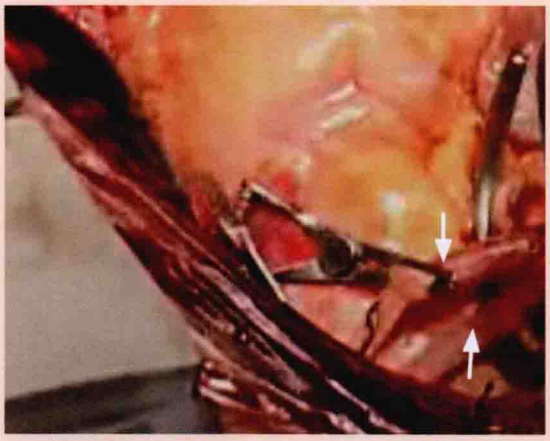


图 4-215 两条血管桥吻合完毕（2）



图 4-216 去掉侧壁钳，观察吻合孔有无漏血

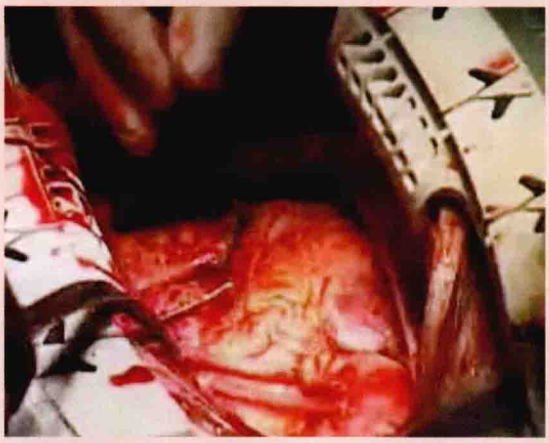


图 4-217 与升主动脉吻合完成的两条静脉血管桥

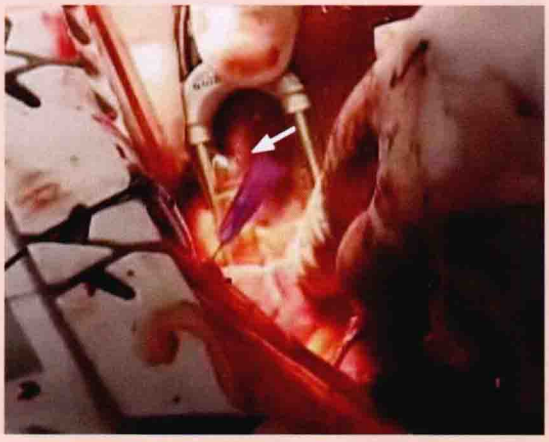


图 4-218 血管固定器固定左冠状动脉回旋支



图 4-219 将静脉血管桥与左冠状动脉回旋支远端吻合

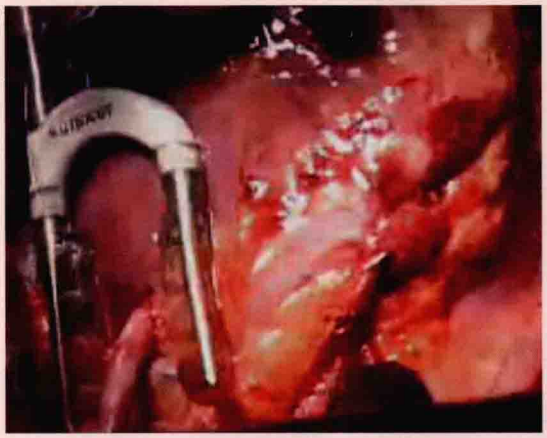


图 4-220 两条血管桥吻合均已完成



图 4-221 三条血管桥吻合均已完成

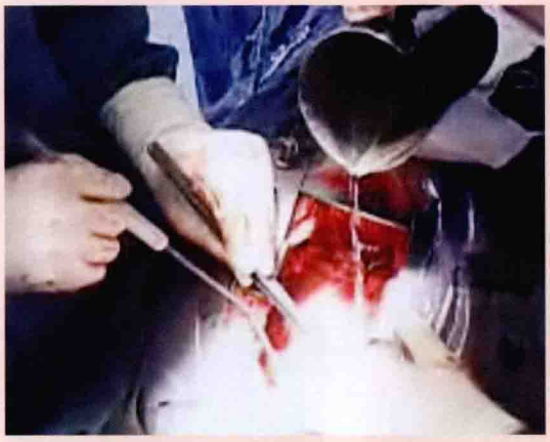


图 4-222 生理盐水冲洗胸腔

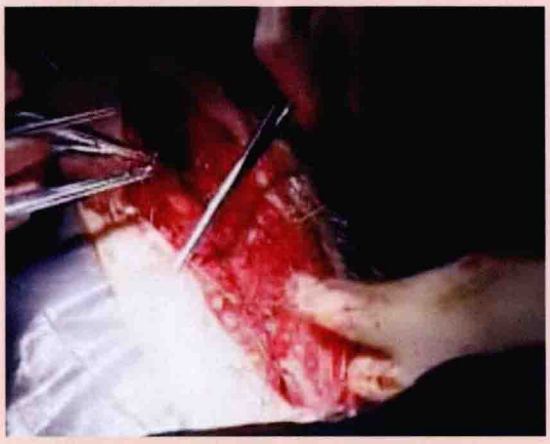


图 4-223 关闭胸腔

七、乳腺癌根治性切除术——保留胸大肌、胸小肌

（一）示意图

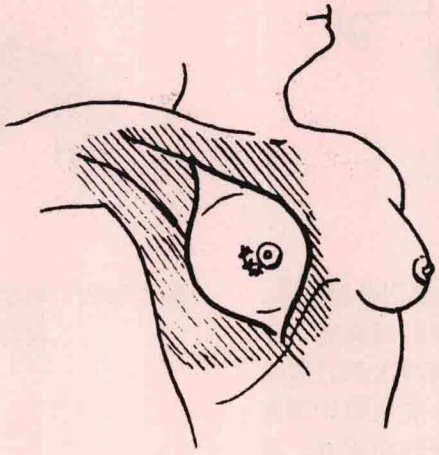


图 4-224 可采取纵形或横形切口。纵切口上端在三角肌和锁骨之间，下端到肋缘。皮肤切口应距肿瘤边缘 4 ~ 5cm。横切口内侧为胸骨缘，外侧在腋中线及腋皱襞下 2cm 处，不必进入腋窝

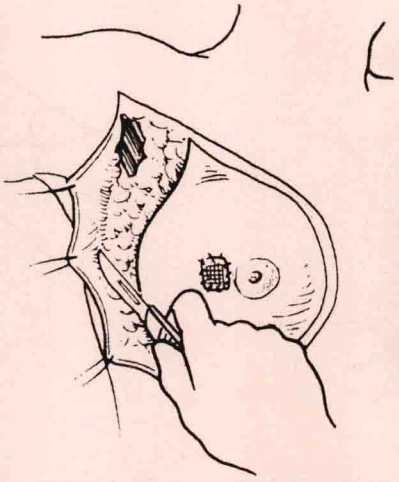


图 4-225 用神经钩、巾钳或组织钳分段夹住皮瓣边缘，拉挺、提起，用手术刀或电刀分离皮瓣。分离平面在真皮层之下，浅筋膜之上，皮瓣不应带有脂肪。皮瓣分离范围内达胸骨中线，外侧达腋中线，上达锁骨，下达腹直肌上缘

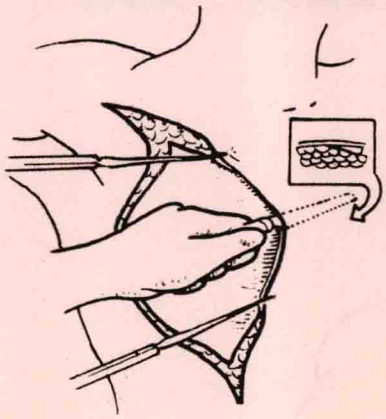


图 4-226 也可采用锋利的水果刀分离皮瓣，以节省时间。助手拉挺皮瓣，作为对抗牵引，术者将水果刀紧贴皮下插入，插入长度达预计游离的范围，刀刃斜面对向皮肤，呈 15° ~ 30° 角，用拉锯方式向前推进，使皮瓣分离

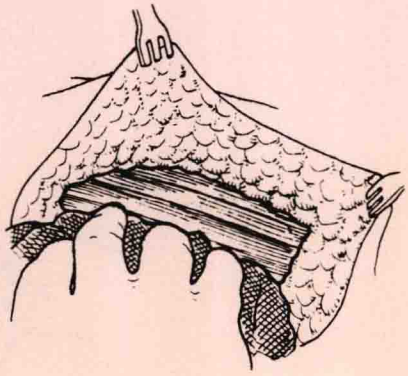


图 4-227 将乳腺与胸大肌筋膜一并自内侧向外侧分离

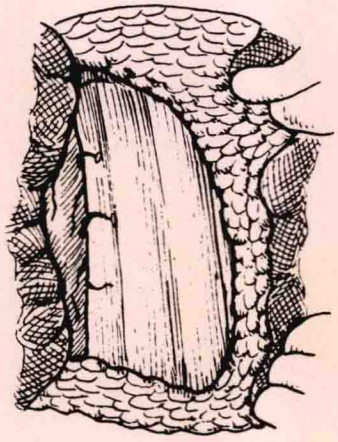


图 4-228 继续分离达胸大肌边缘，结扎切断所有穿支血管

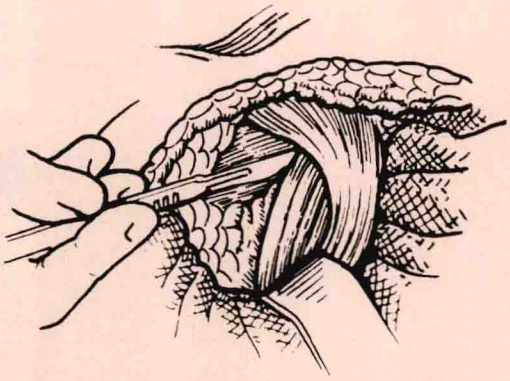


图 4-229 分离切除胸大肌与胸小肌之间的淋巴结脂肪组织，分离切除胸小肌外侧及深面的淋巴结脂肪组织

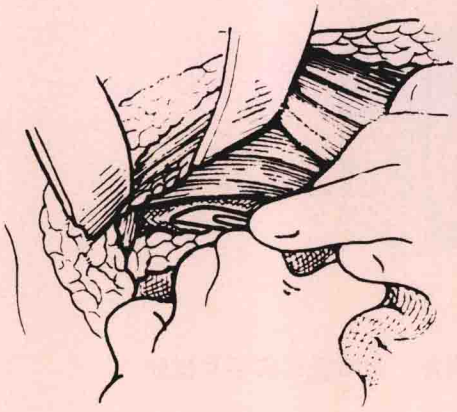


图 4-230 牵开胸大肌、胸小肌，显露腋血管鞘

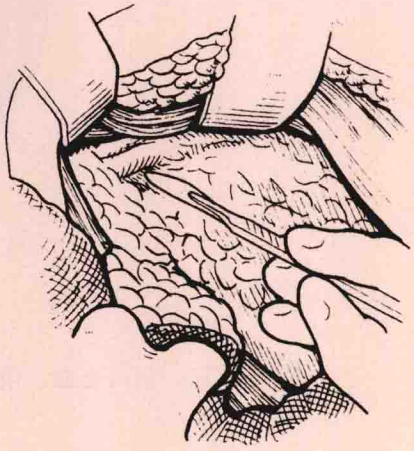


图 4-231 继续向侧方及下方分离，切开腋血管鞘，将腋窝淋巴结脂肪组织向下分离

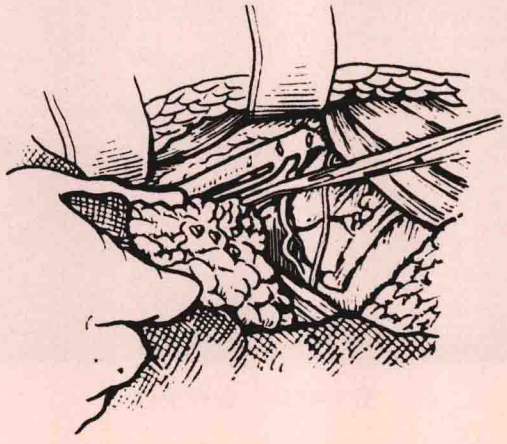


图 4-232 向上提起胸小肌、腋静脉分支结扎切断，腋窝淋巴结脂肪组织与乳腺一并向外侧分离，达背阔肌边缘，保护、保留胸背及胸长神经

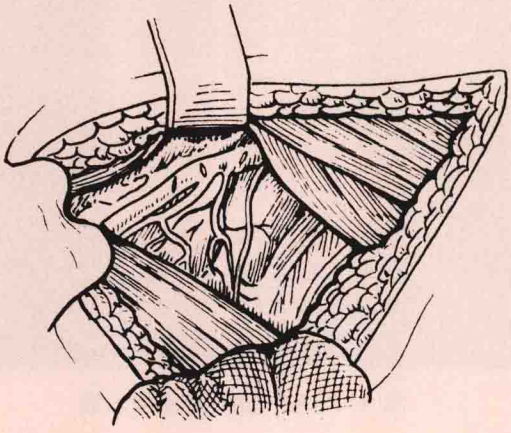


图 4-233 标本已切除，图示腋静脉以下、胸小肌内侧及背阔肌前方区域内淋巴结脂肪组织均已清除

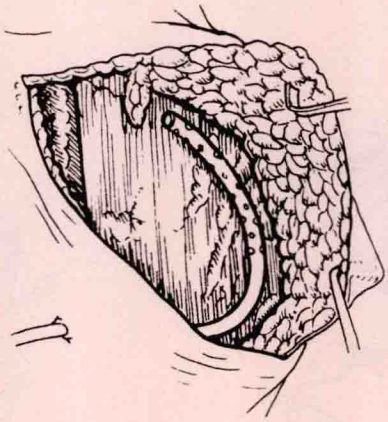


图 4-234　创口止血、清洗后放置引流管。间断缝合皮下及皮肤

（二）手术步骤

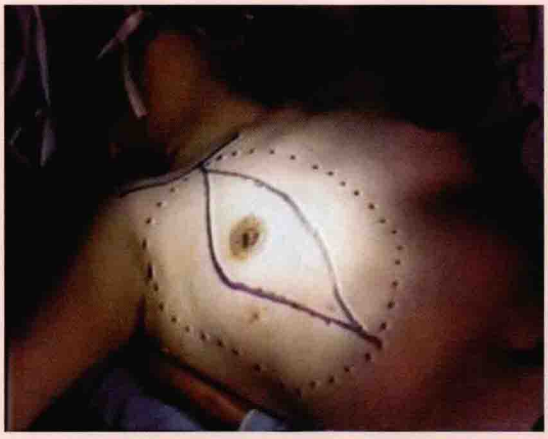


图 4-235　皮肤切口标示线



图 4-236　切开皮肤



图 4-237 皮下注入含去甲肾上腺素的生理盐水

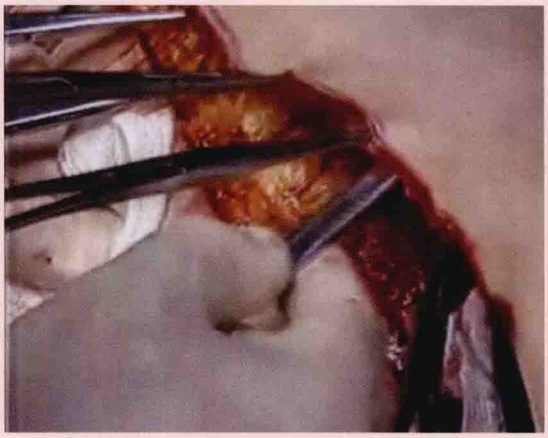


图 4-238 分离皮瓣

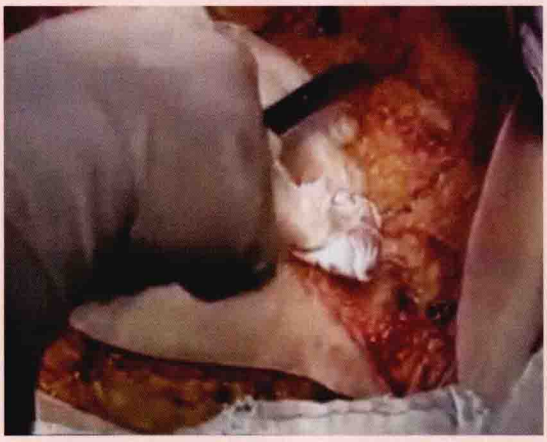


图 4-239 剪开深筋膜

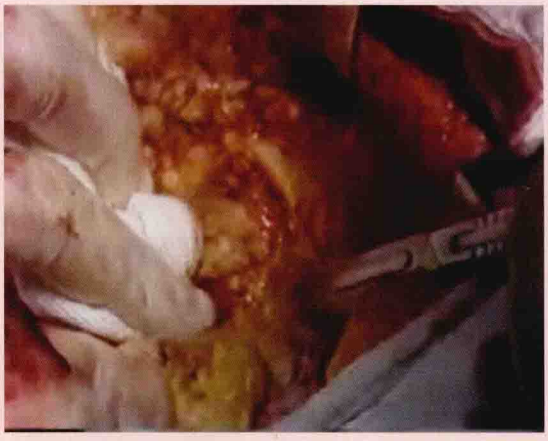


图 4-240 紧贴胸壁解离乳腺（包括深筋膜）

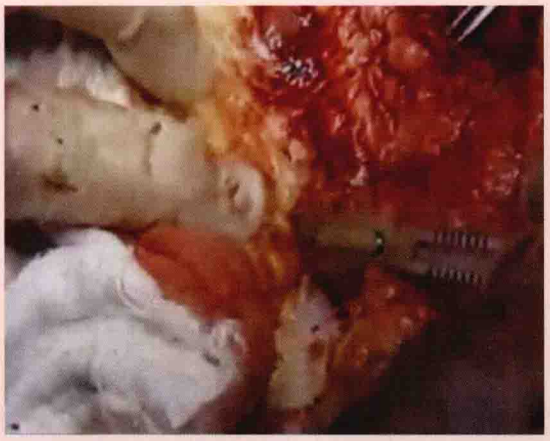


图 4-241 切开深筋膜



图 4-242 剥离乳房，暴露胸大肌

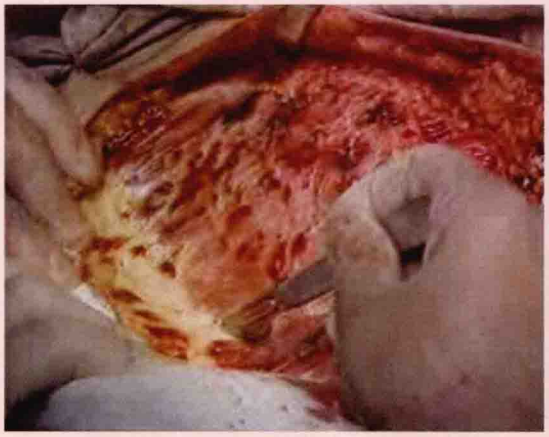


图 4-243 解离乳房并翻向外侧

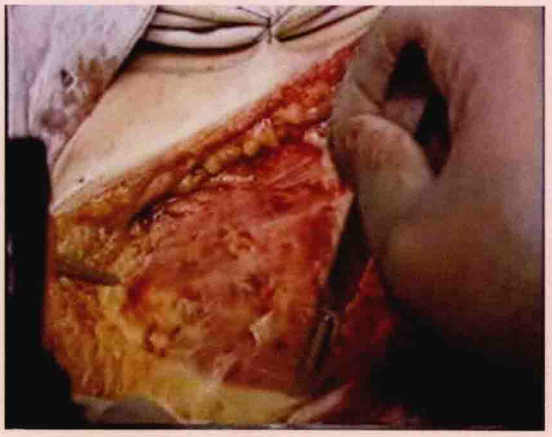


图 4-244 解离胸大肌外缘（1）

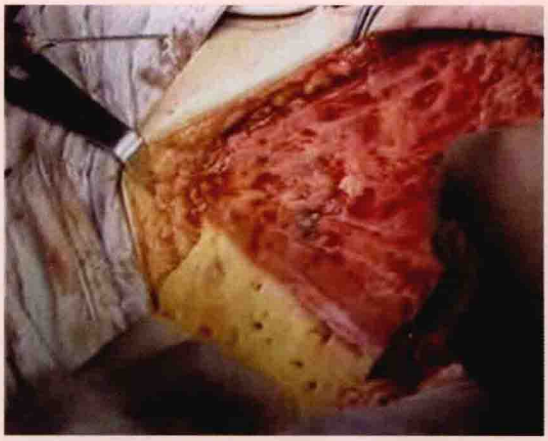


图 4-245 解离胸大肌外缘（2）

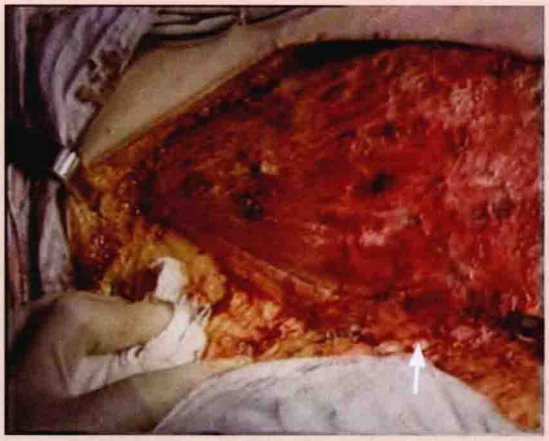


图 4-246 充分暴露胸大肌

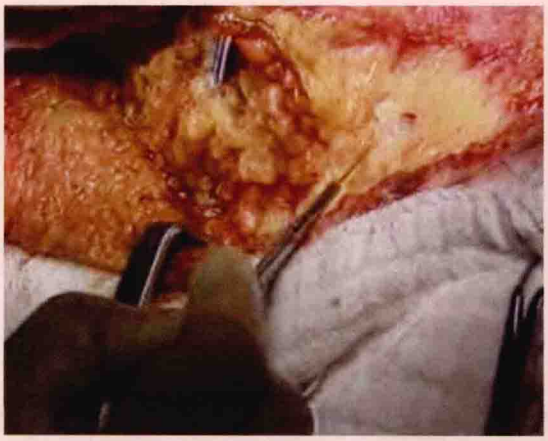


图 4-247 从下缘剥离乳腺组织

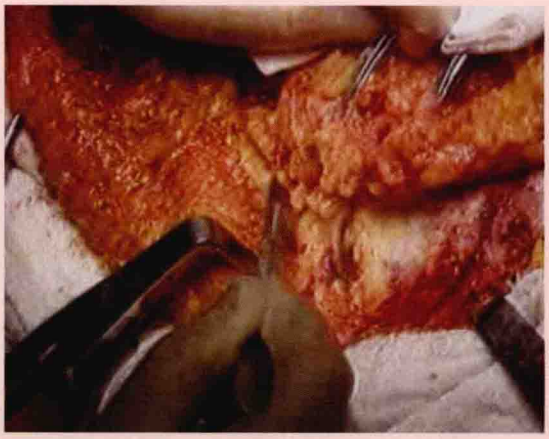


图 4-248 将乳房组织从胸壁外侧向前剥离

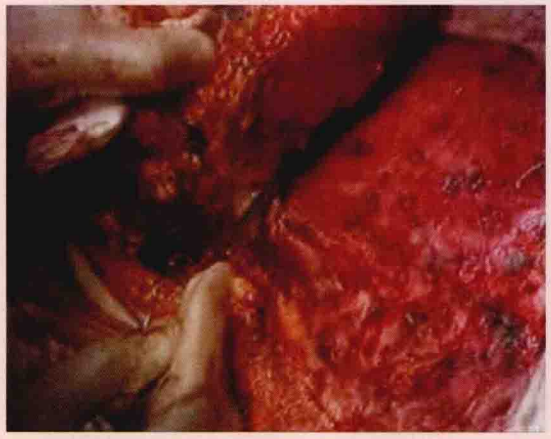


图 4-249 切除全部乳腺组织

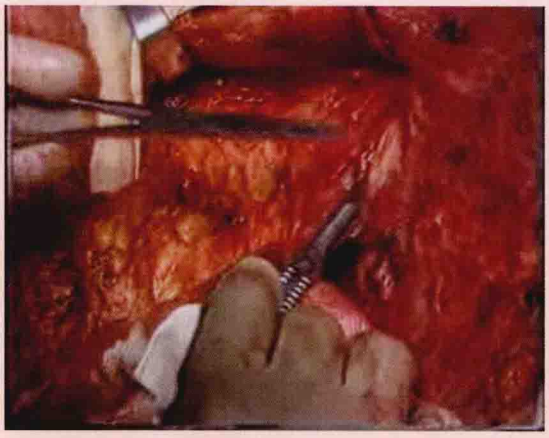


图 4-250 牵开胸大肌切开锁胸筋膜暴露胸小肌

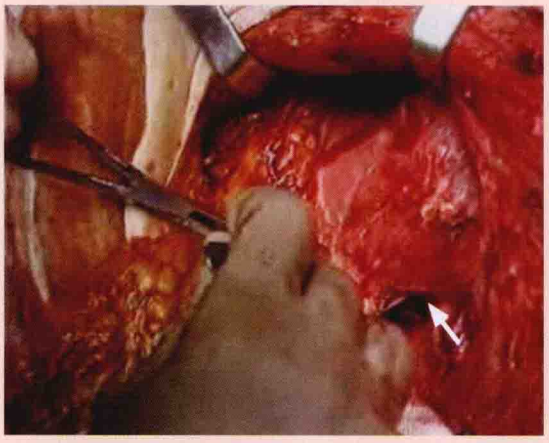


图 4-251 暴露胸小肌

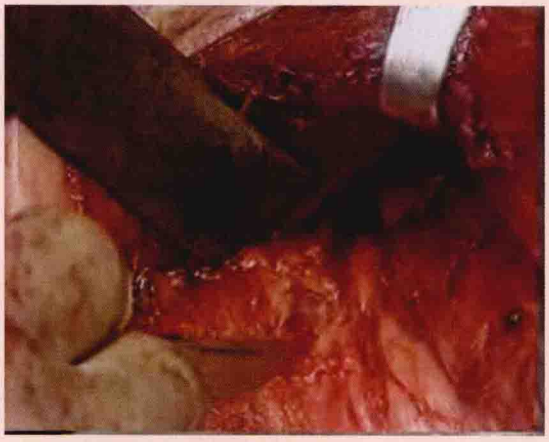


图 4-252 分离腋窝软组织

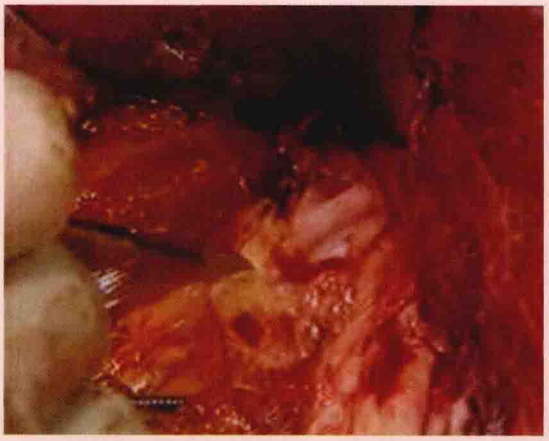


图 4-253 剥离并清除臂丛神经表面软组织

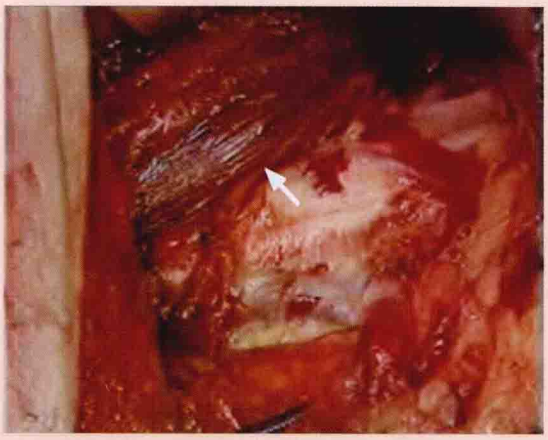


图 4-254 充分暴露臂丛神经及腋静脉

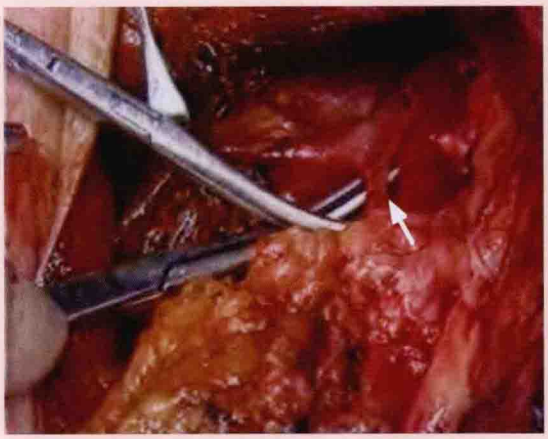


图 4-255 结扎腋静脉分支



图 4-256 解剖锁骨下及腋尖部软组织

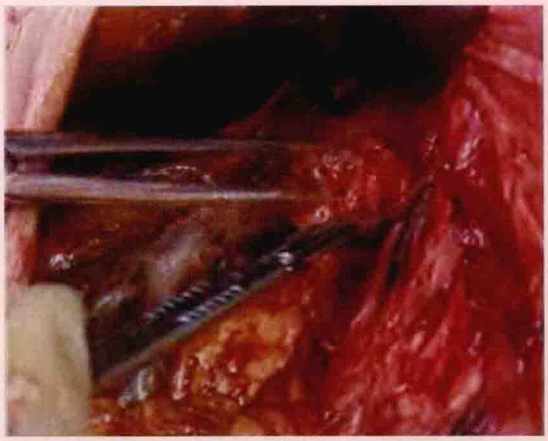


图 4-257 解离并清除腋尖部软组织

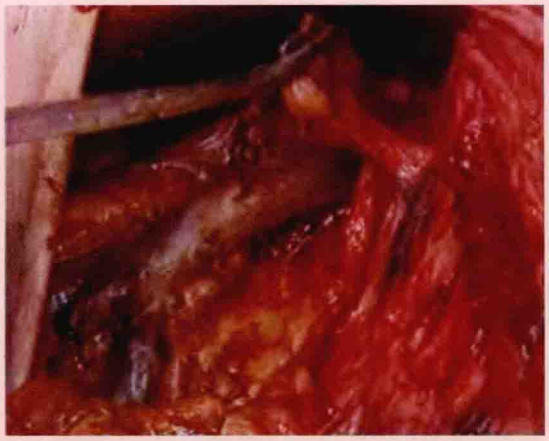


图 4-258 取腋尖部软组织行病理检查

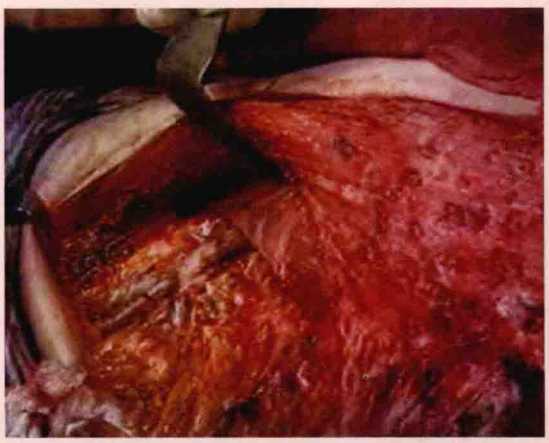


图 4-259 彻底清除胸大肌、胸小肌间淋巴结

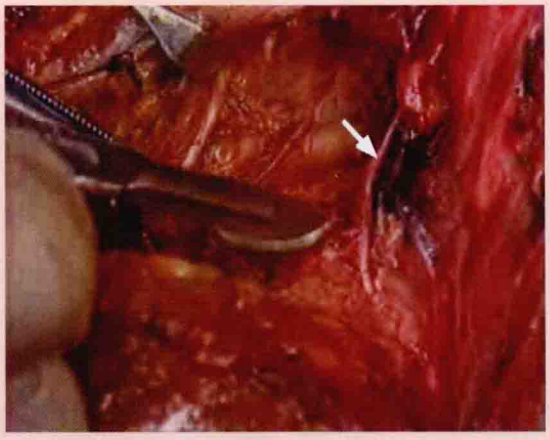


图 4-260 分离并保留胸长神经

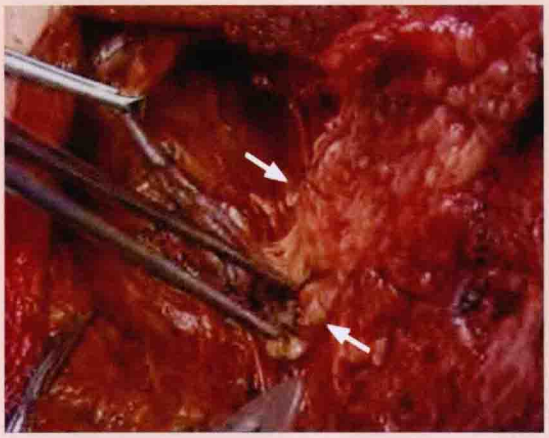


图 4-261 解剖并清除肩胛下血管周围软组织

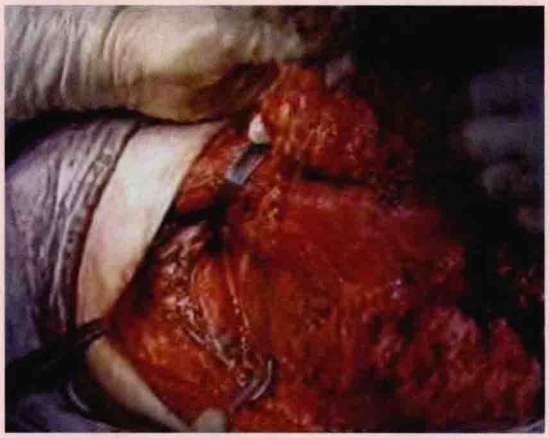


图 4-262 摘除整个乳房组织

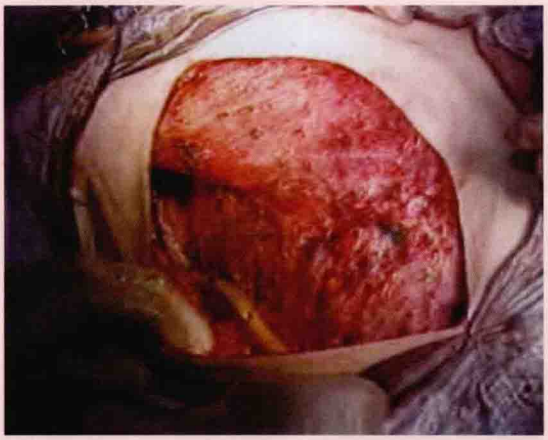


图 4-263 留置负压引流管

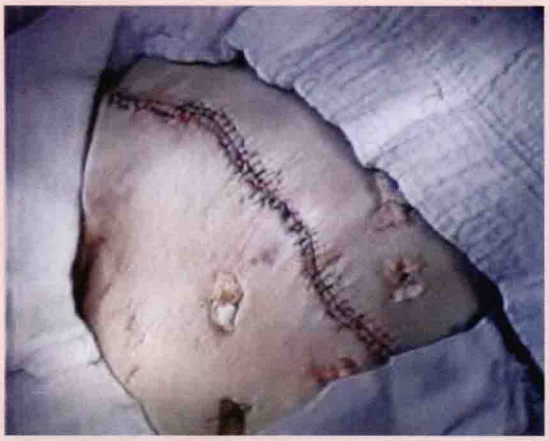


图 4-264 缝合皮肤

八、乳腺癌根治术——保留胸大肌



图 4-265 皮肤切口标识线

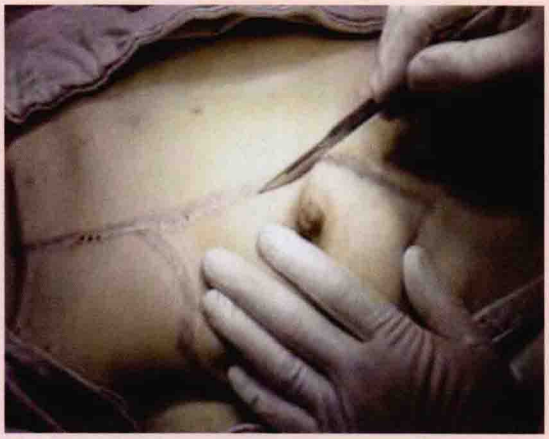


图 4-266 切开皮肤



图 4-267 皮下注射含去甲肾上腺素的生理盐水

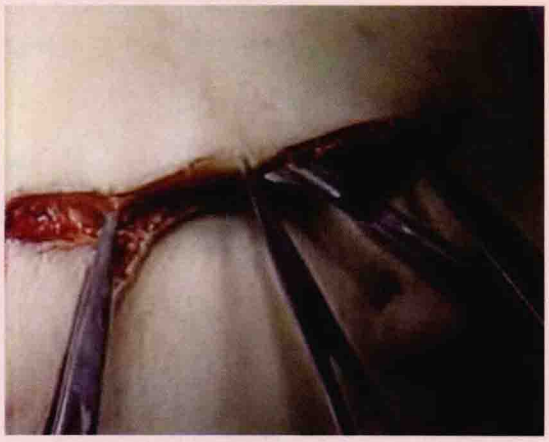


图 4-268 分离皮瓣

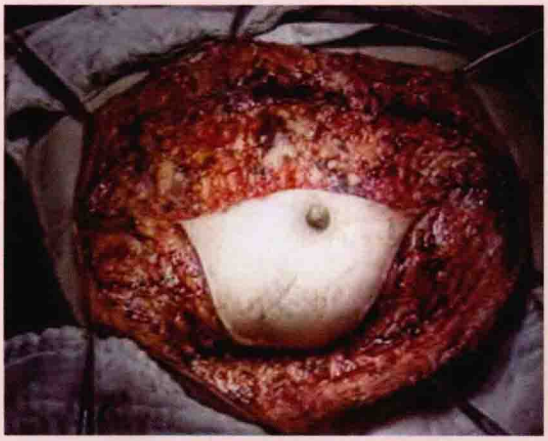


图 4-269 完全分离皮瓣

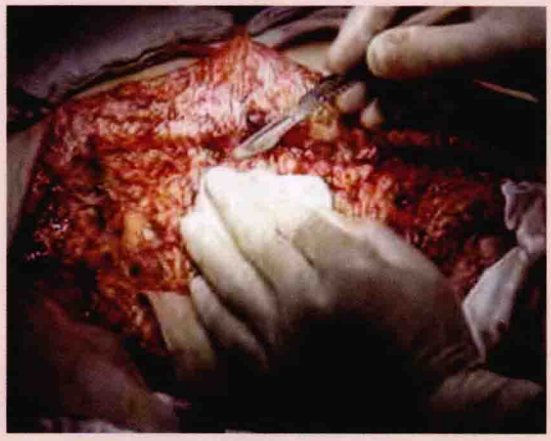


图 4-270 全乳腺切除

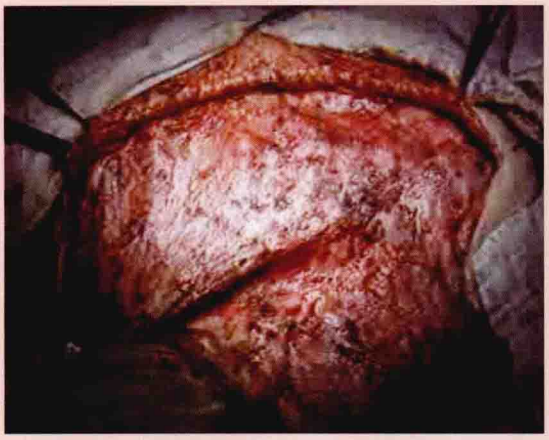


图 4-271 充分暴露胸大肌

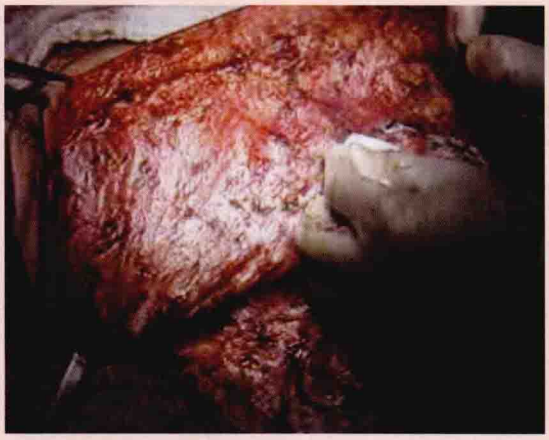


图 4-272 切断胸大肌下 3 ~ 5 肋起点



图 4-273 完全切断胸大肌下 3 ~ 5 肋起点

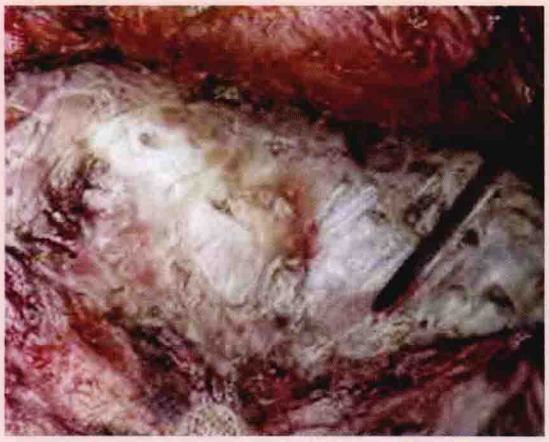


图 4-274 游离胸大肌与胸壁

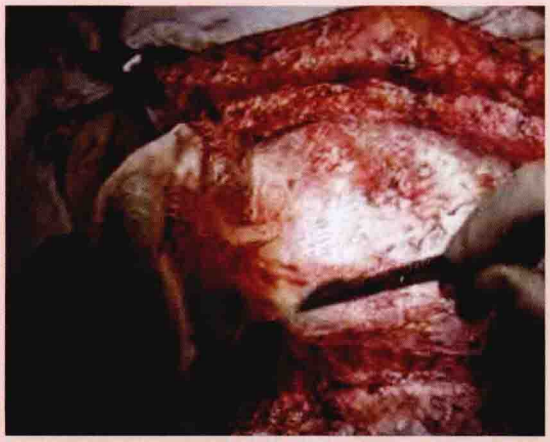


图 4-275 将胸大肌翻向上方继续游离

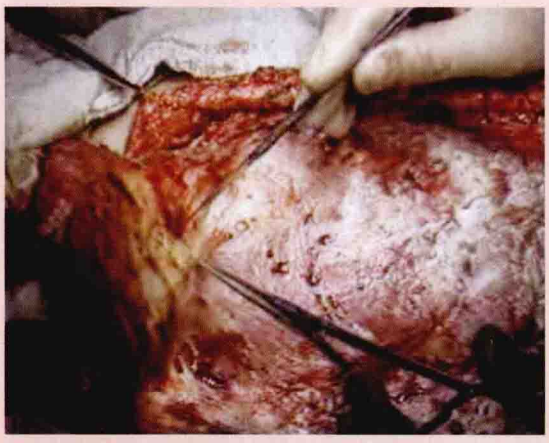


图 4-276 解剖胸大肌、胸小肌之间软组织

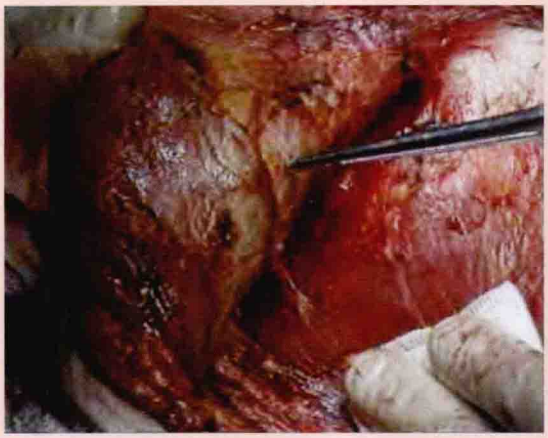


图 4-277 保留胸前神经胸大肌支及伴行血管

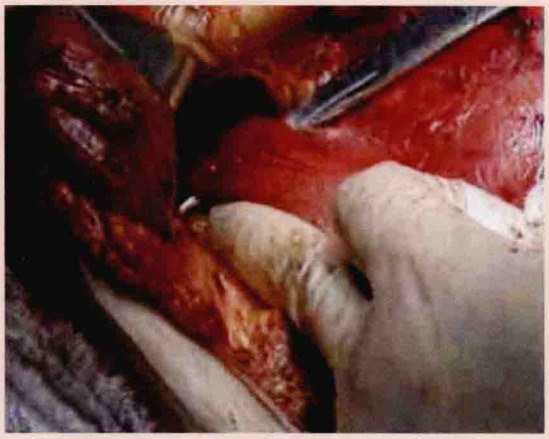


图 4-278 分离胸小肌

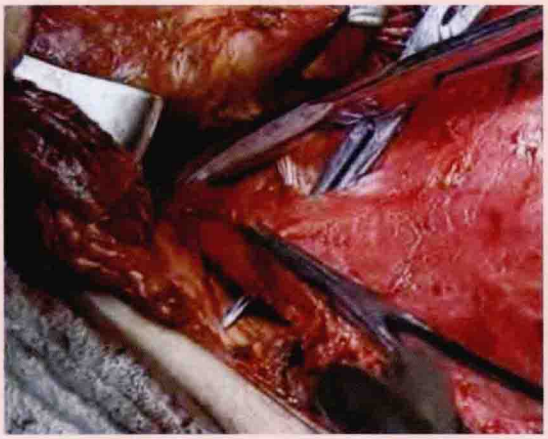


图 4-279 靠近喙突处剪断胸小肌

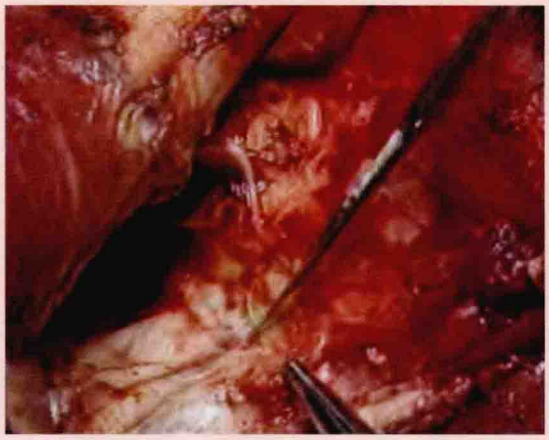


图 4-280 清理腋窝软组织

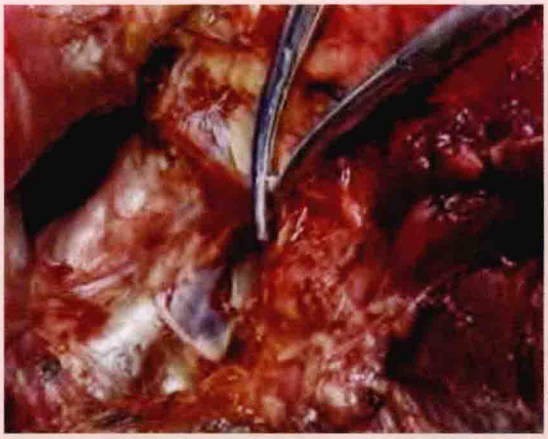


图 4-281 钳夹胸前神经胸小肌支及伴行血管

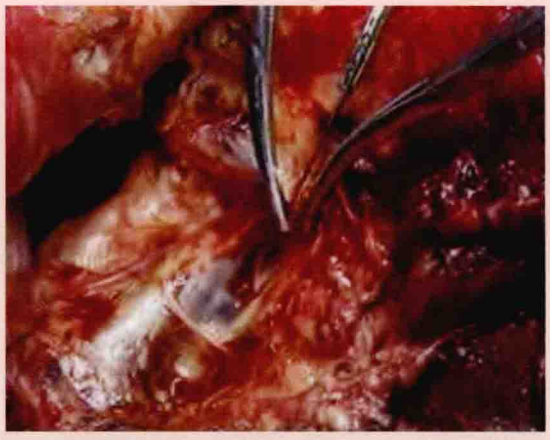


图 4-282 切断胸前神经胸小肌支及伴行血管

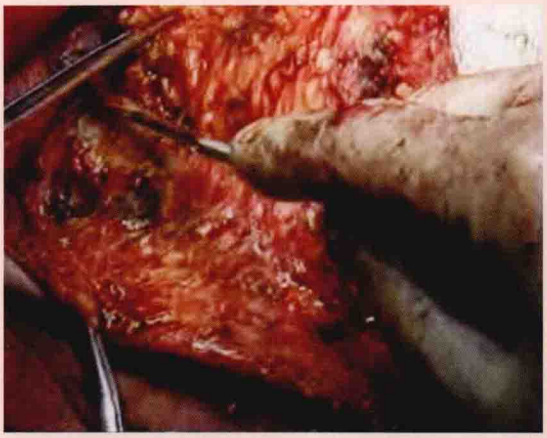


图 4-283 沿胸小肌外缘解离软组织

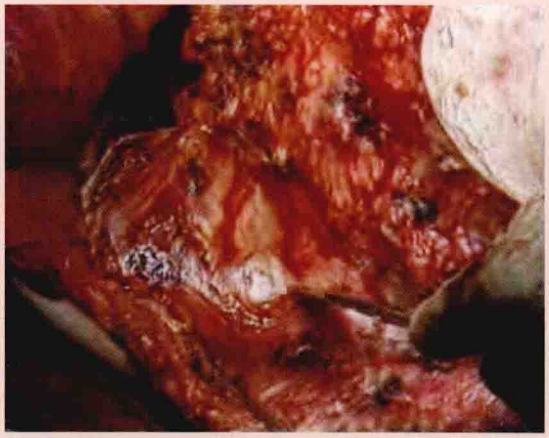


图 4-284 暴露背阔肌前缘

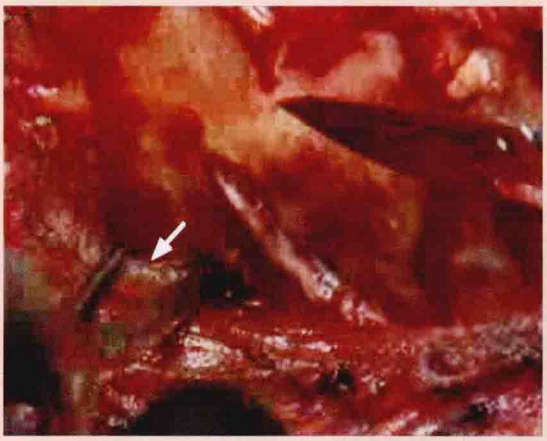


图 4-285 清理肩胛下血管周围软组织

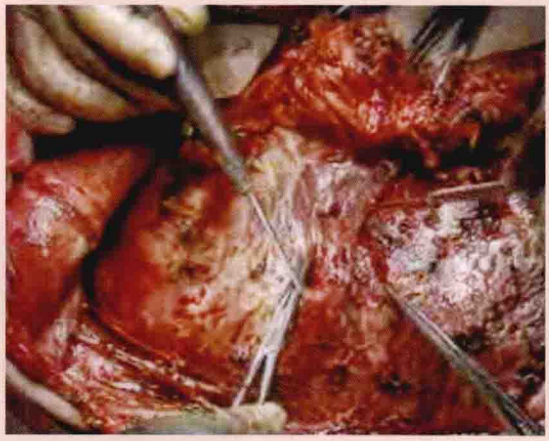


图 4-286 切断胸小肌起点

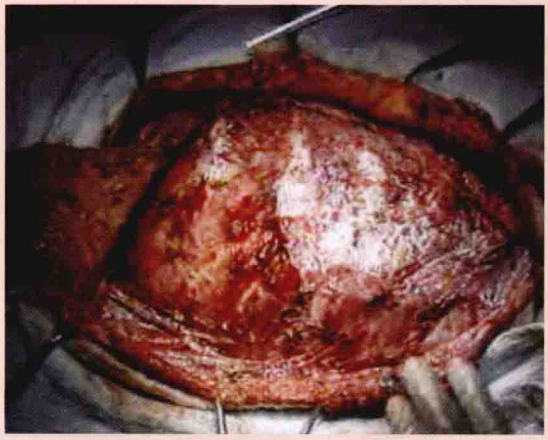


图 4-287 胸小肌完全摘除

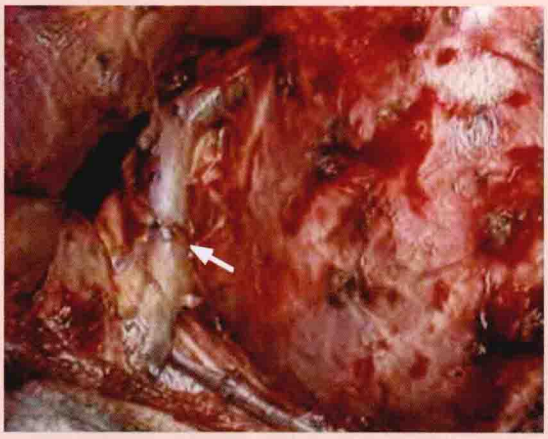


图 4-288 腋静脉周围软组织及淋巴结已彻底清除

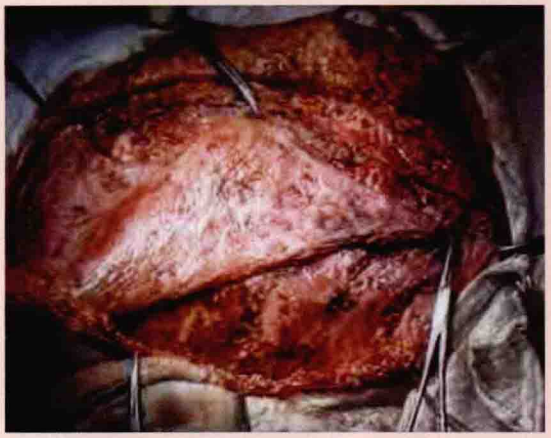


图 4-289　将胸大肌附肋缝合

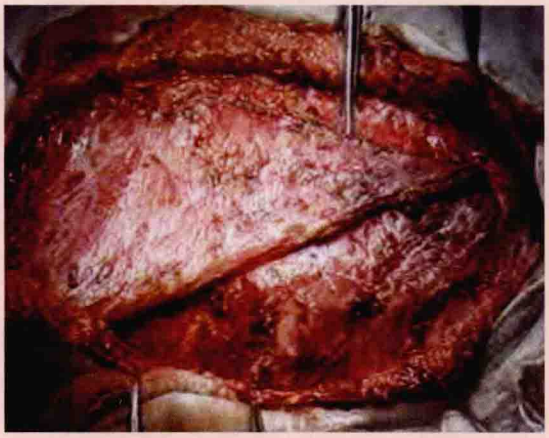


图 4-290　胸大肌附肋缝合完毕

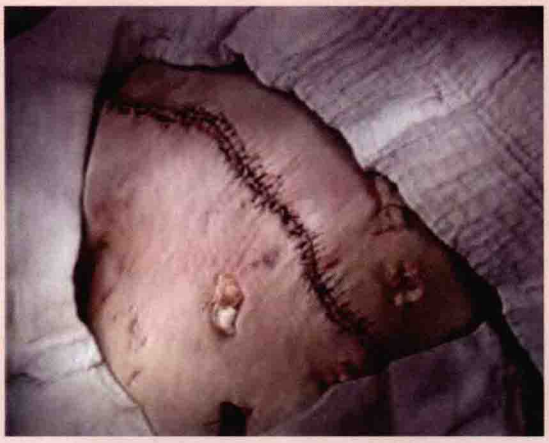


图 4-291　放置引流管，胸壁缝合，缝合皮肤

九、乳癌根治性切除术

（一）示意图

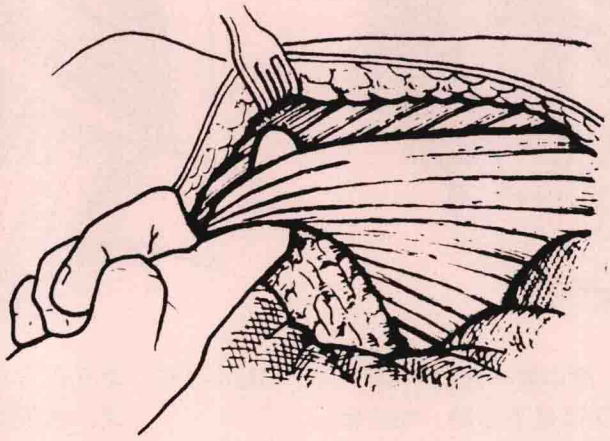


图 4-292 切口、分离皮瓣同乳癌改良根治性切除术，在皮瓣分离结束后，于锁骨下方约一横指处，沿肌纤维方向由内向外钝性分开胸大肌，直至其止点处，以示指挑起胸大肌肌腱，靠近止点处切断

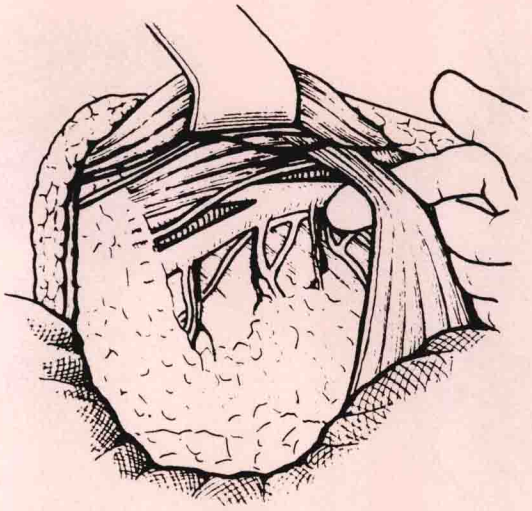


图 4-293 向下牵开胸大肌，即可显露胸小肌，切开胸小肌两侧筋膜，以示指通过其后方，向上分离胸小肌，直至其附着于喙突处，予以切断

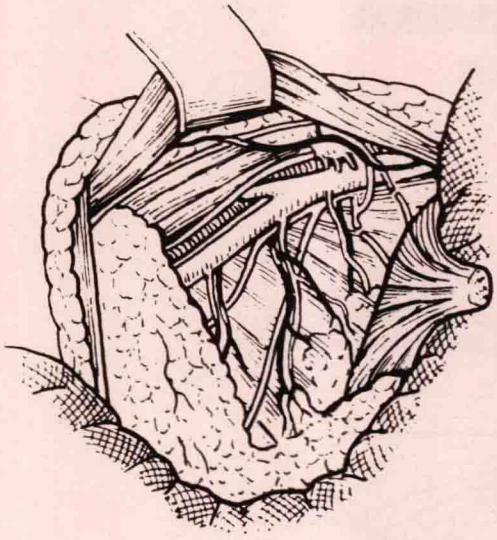


图 4-294 将胸大肌、胸小肌一起向下牵开，显露腋窝及锁骨下区域。切开锁胸筋膜，显露腋血管及臂丛。将通向胸大肌、胸小肌的血管在其起点处结扎切断，同样切断胸前神经

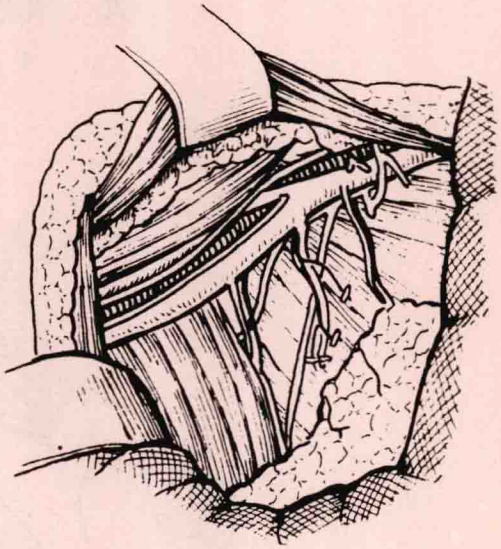


图 4-295 牵开侧方皮瓣，分离至背阔肌前缘，将腋静脉鞘连同周围的淋巴结脂肪组织一并向下分离

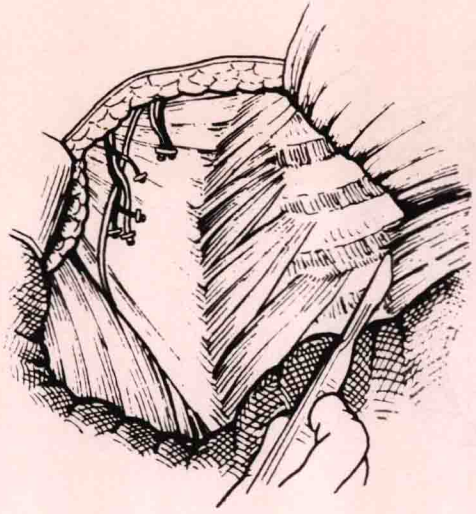


图 4-296 自上而下地将乳腺、胸大肌、胸小肌及腋窝内容一并切除

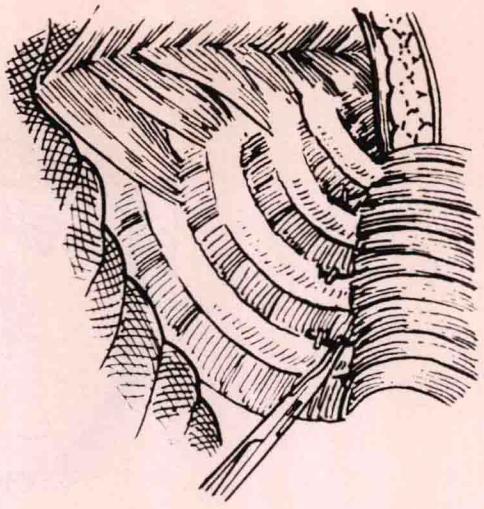


图 4-297 穿支血管予以结扎，注意勿损伤肋间肌及胸膜。以下步骤同乳癌改良根治性切除术

（二）手术步骤



图 4-298 皮肤切口标示线



图 4-299 切开皮肤及皮下组织

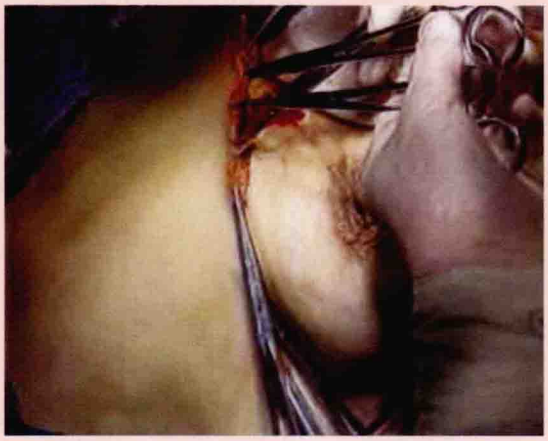


图 4-300 剥离皮下

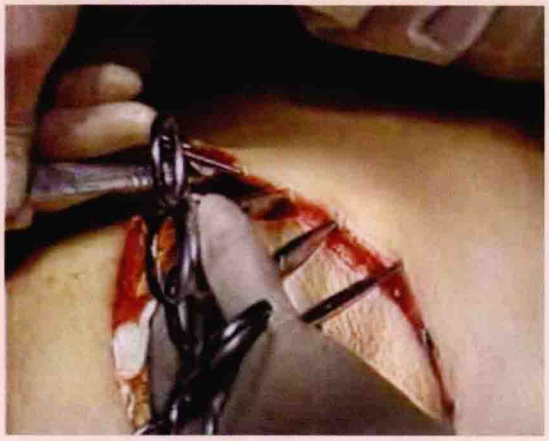


图 4-301 游离内侧胸骨中线皮瓣

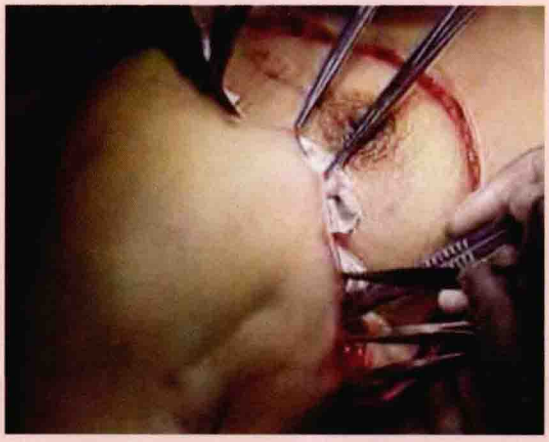


图 4-302 游离皮瓣上达锁骨下方

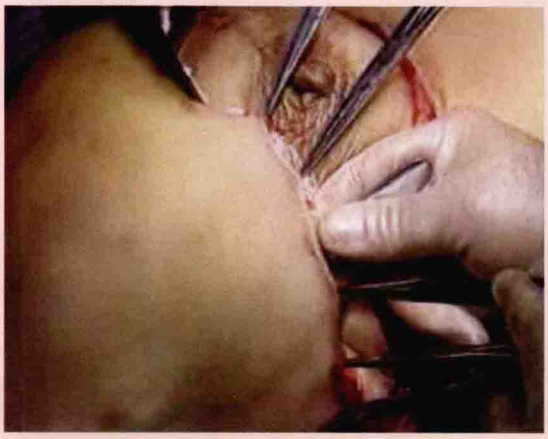


图 4-303 皮瓣游离外侧达腋窝



图 4-304 皮瓣游离下达肋弓

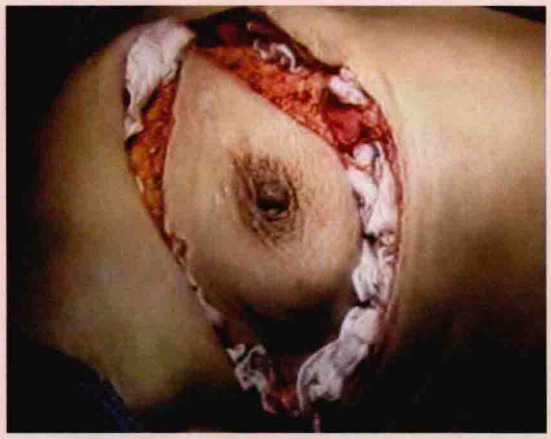


图 4-305 皮瓣游离完毕

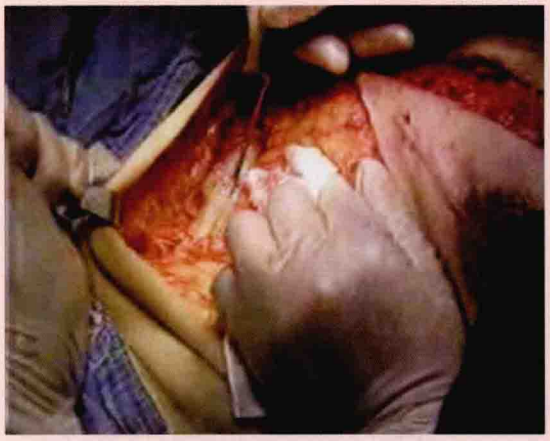


图 4-306 切开深筋膜

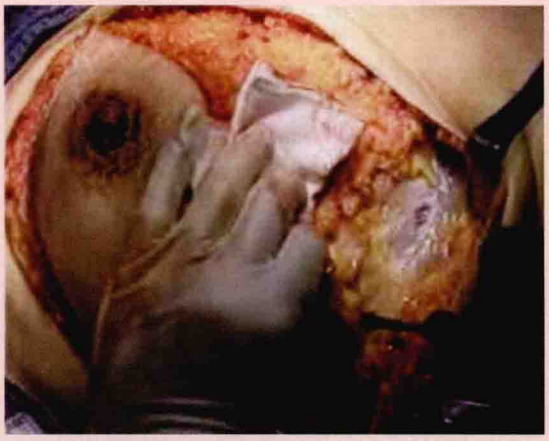


图 4-307 暴露胸大肌

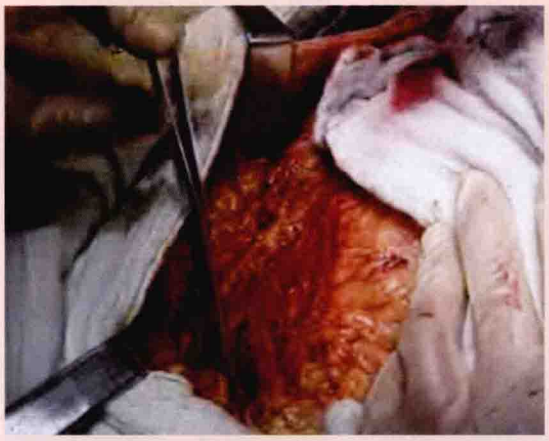


图 4-308 沿胸大肌纤维方向切开胸大肌，保留锁骨部

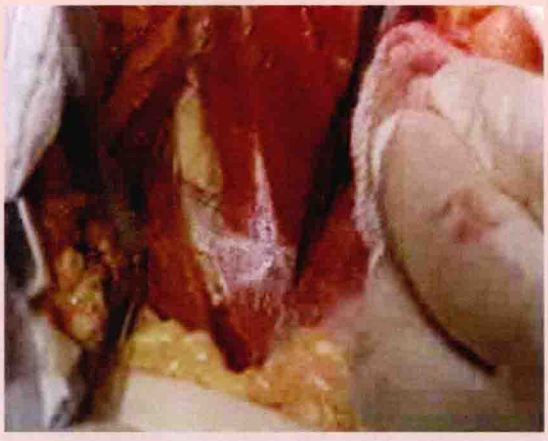


图 4-309 切开胸大肌

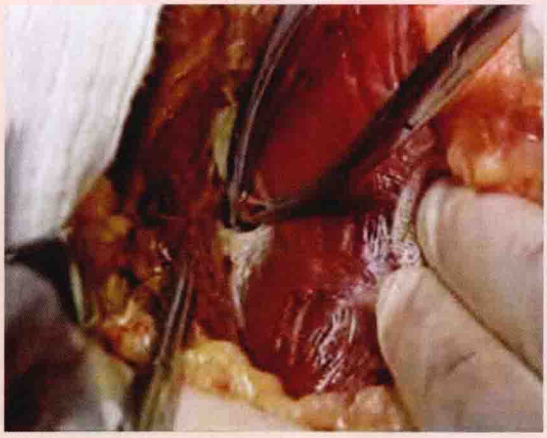


图 4-310 游离胸尖峰动脉胸肌支

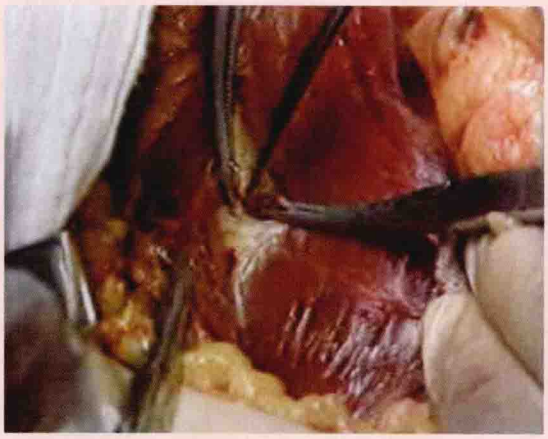


图 4-311 切断胸尖峰动脉胸肌支

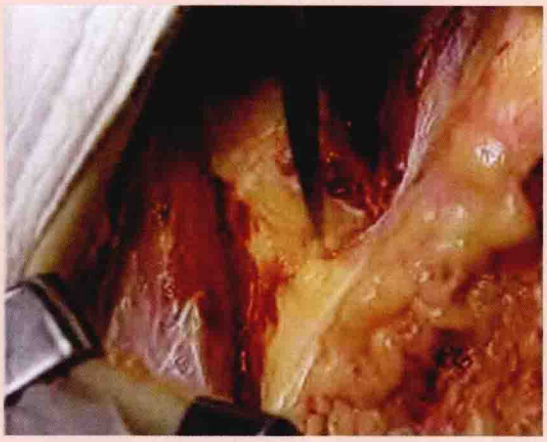


图 4-312 切断锁胸筋膜

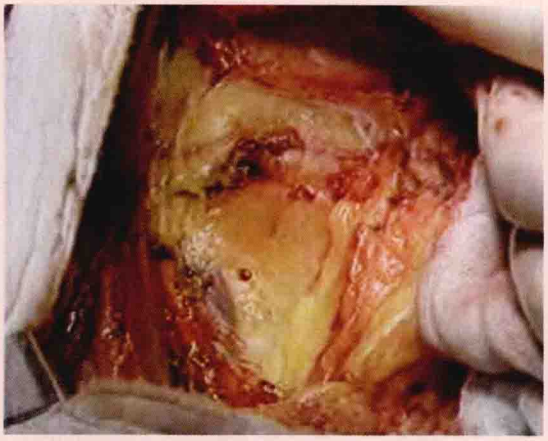


图 4-313 暴露胸小肌

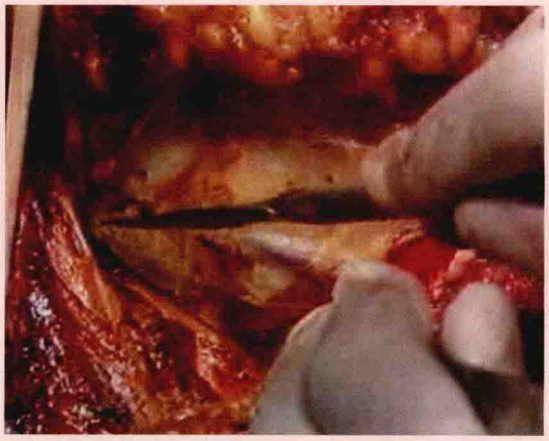


图 4-314 分离并剔出肩胛下肌周围软组织

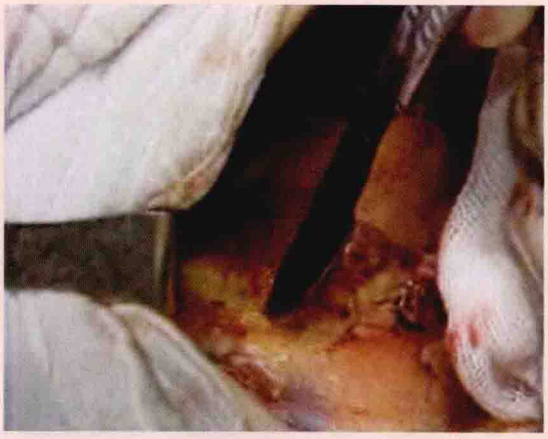


图 4-315 分离胸小肌

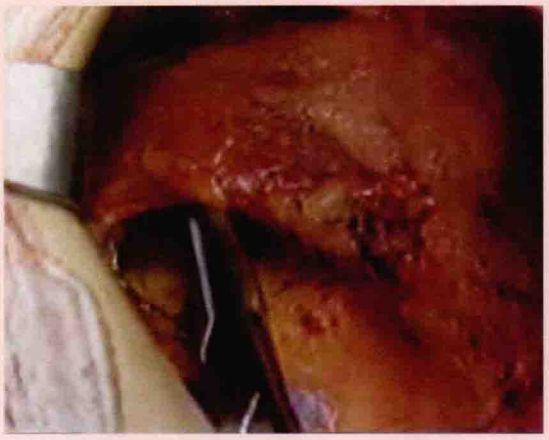


图 4-316 游离胸小肌止点

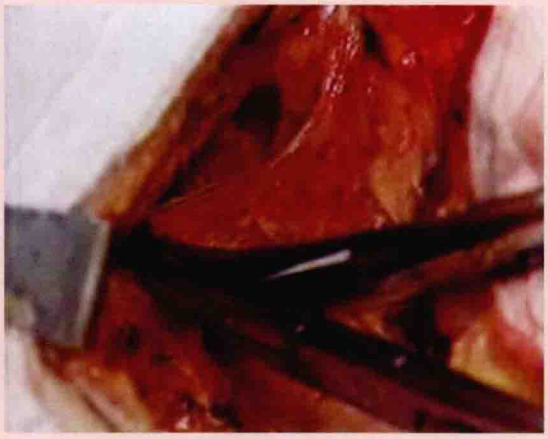


图 4-317 切断胸小肌喙突部

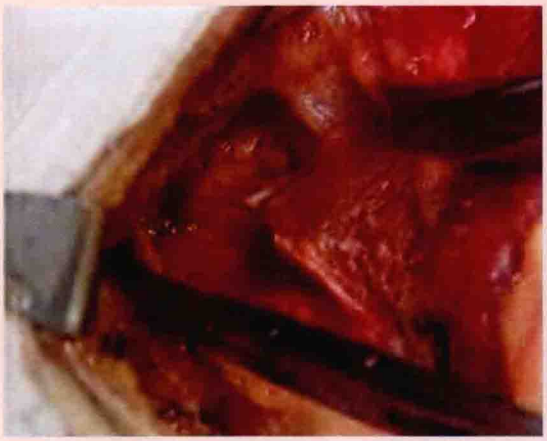


图 4-318 切断胸小肌喙突部并牵向内侧

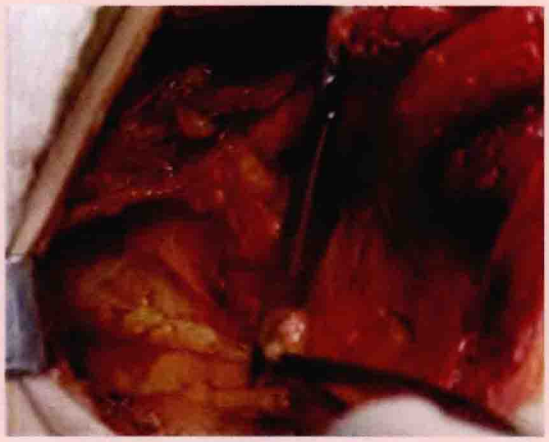


图 4-319 解离并剔除臂丛表面软组织

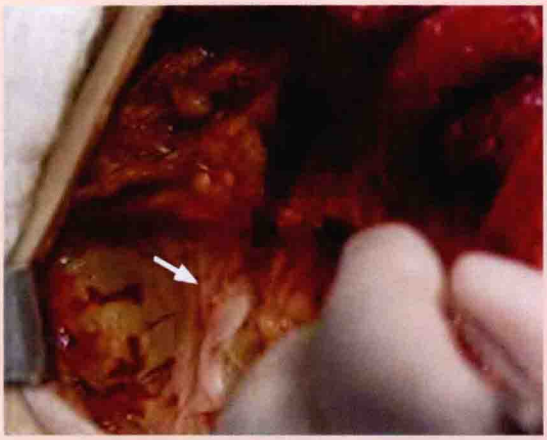


图 4-320 暴露腋静脉及臂丛

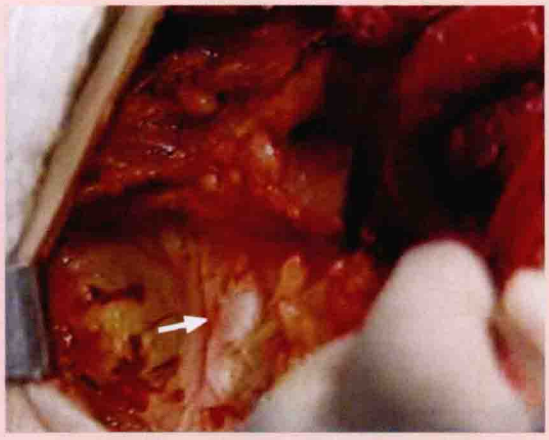


图 4-321 沿腋静脉向颈端剥离暴露锁骨下静脉

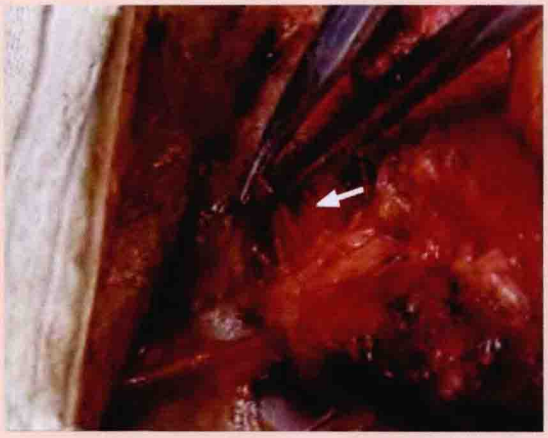


图 4-322 结扎锁骨下静脉小分支

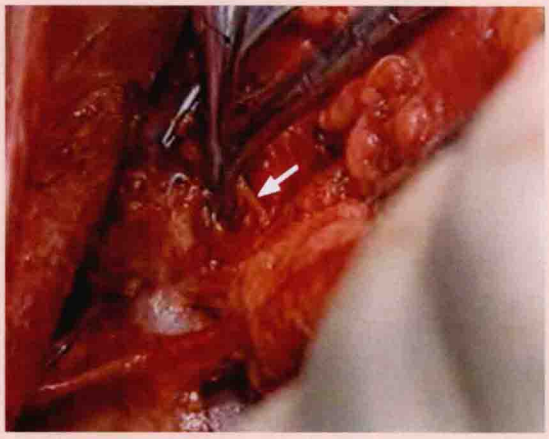


图 4-323 切断胸前神经小分支

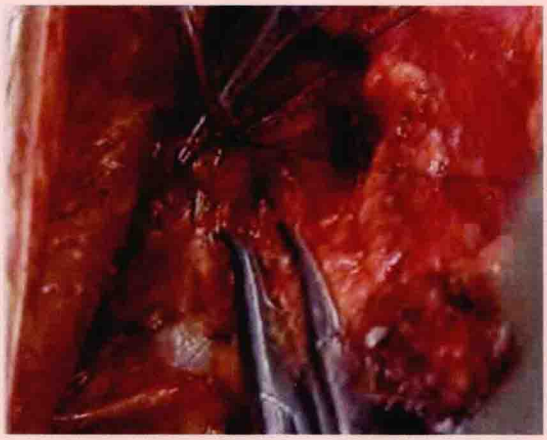


图 4-324 结扎血管及神经断端

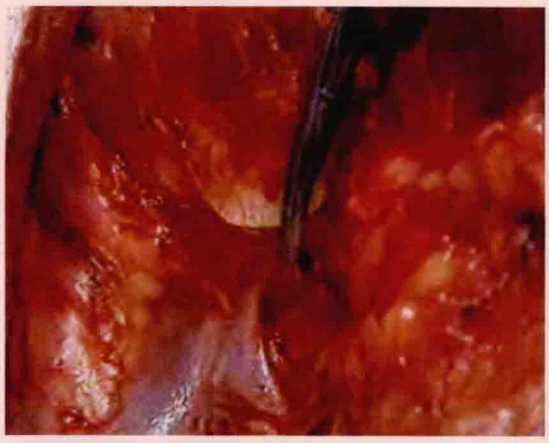


图 4-325 切断锁骨下静脉小分支

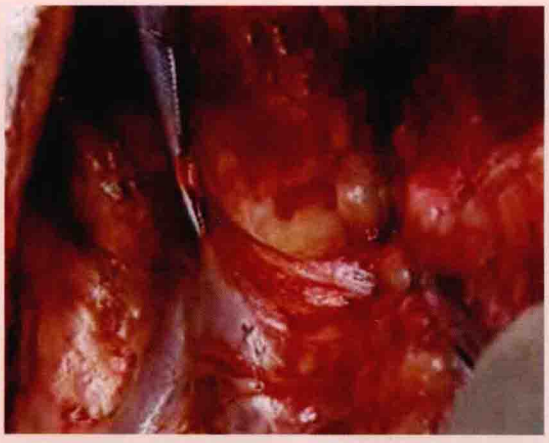


图 4-326 继续向深部剥离

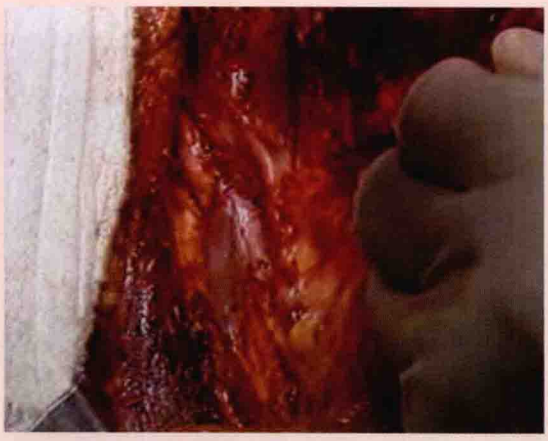


图 4-327 摘除腋尖部淋巴结达胸壁

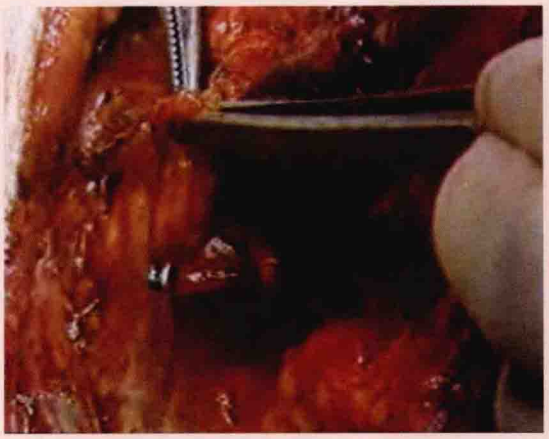


图 4-328 切取腋尖部软组织行病理检查

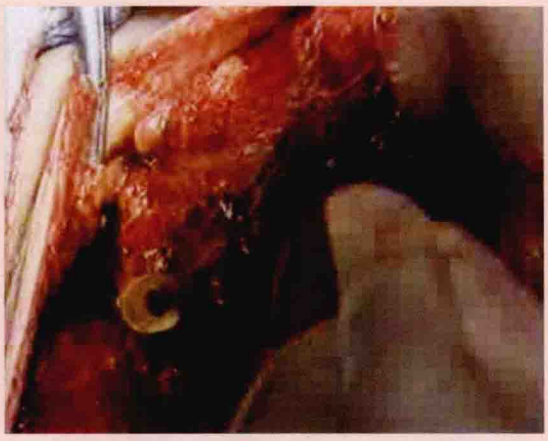


图 4-329 固定橡皮圈，标记腋尖部

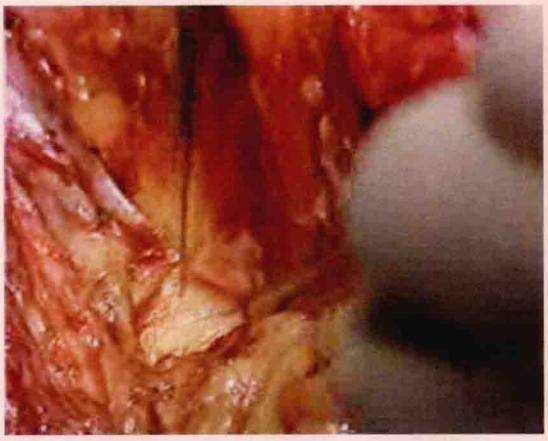


图 4-330 继续解剖并摘除腋尖部淋巴结及软组织

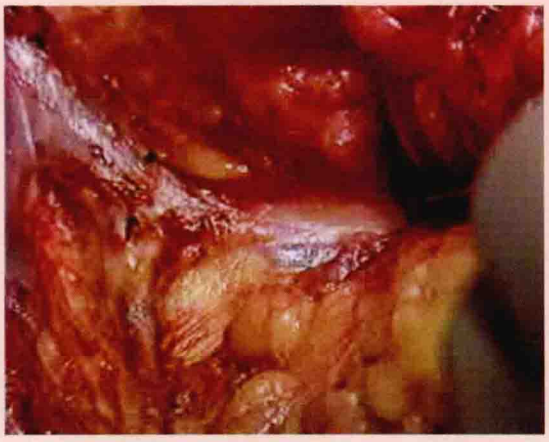


图 4-331 暴露肩胛下血管区

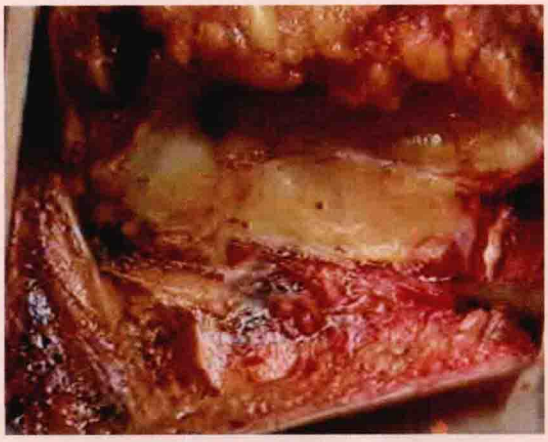


图 4-332 暴露背阔肌前缘

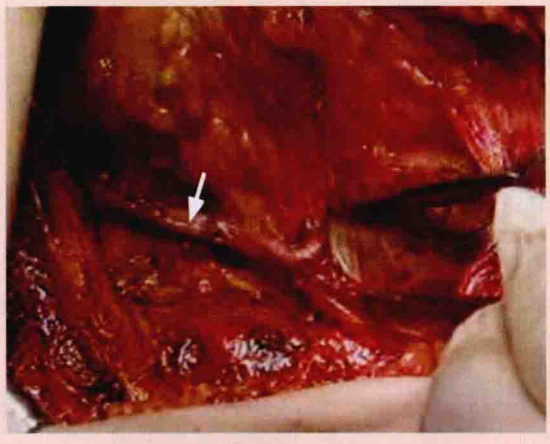


图 4-333 解离肩胛下血管周围软组织

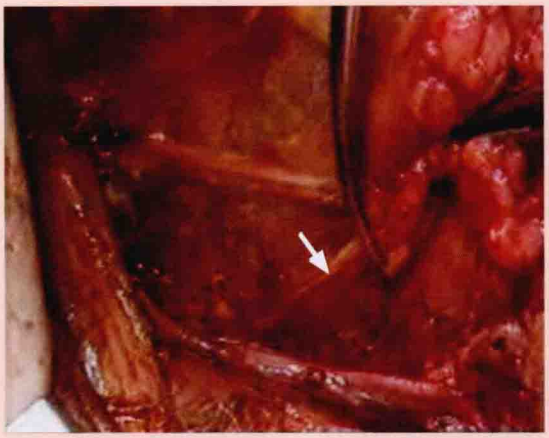


图 4-334 分离并保留胸长神经

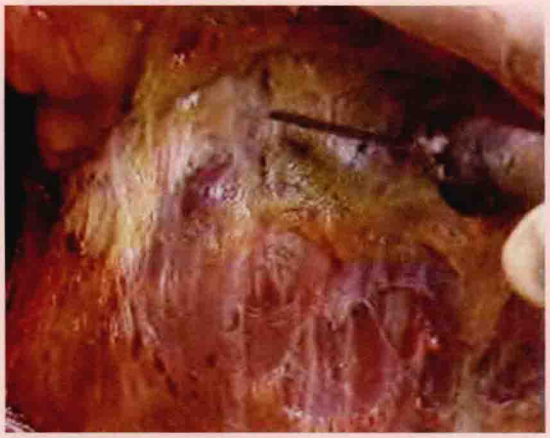


图 4-335 沿前锯肌表面分离软组织

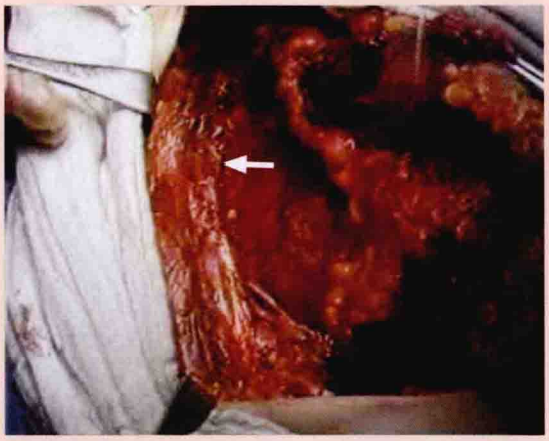


图 4-336 存留的胸大肌锁骨部

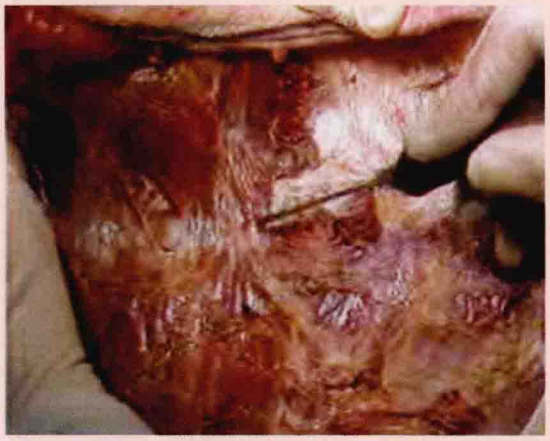


图 4-337 切断胸小肌起点

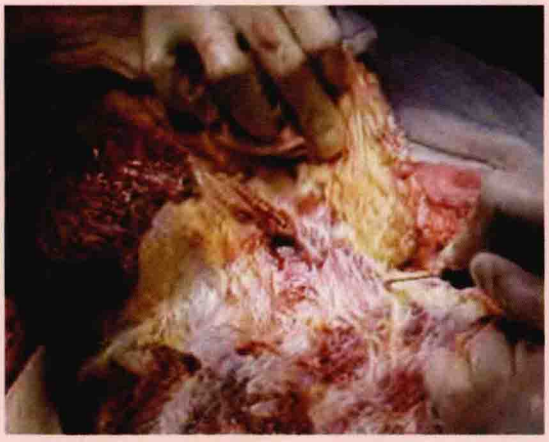


图 4-338 切断胸大肌起点

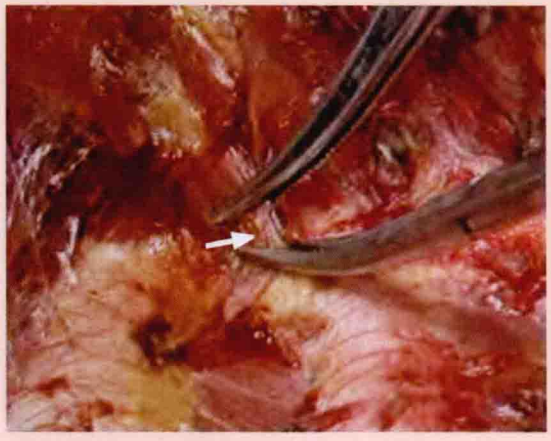


图 4-339 钳夹胸阔内动脉穿支

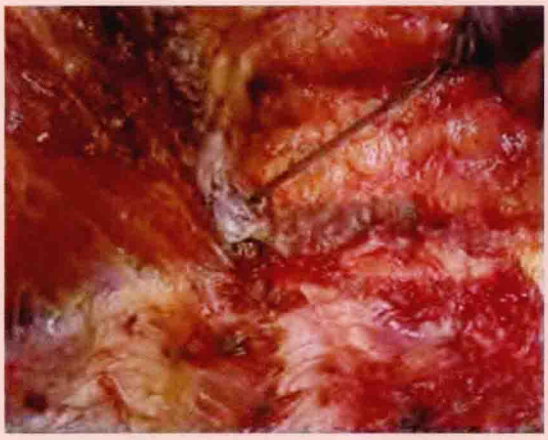


图 4-340 继续切断胸大肌起点

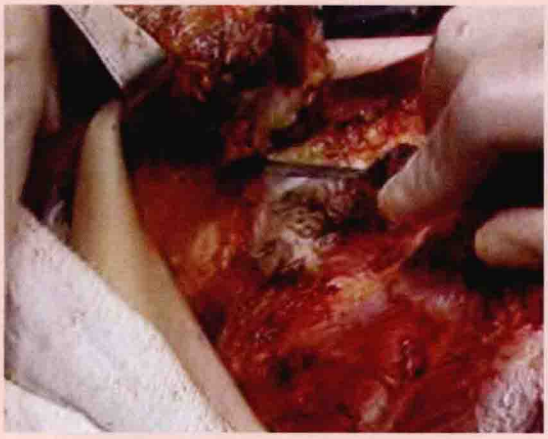


图 4-341 胸大肌及胸小肌切除完毕

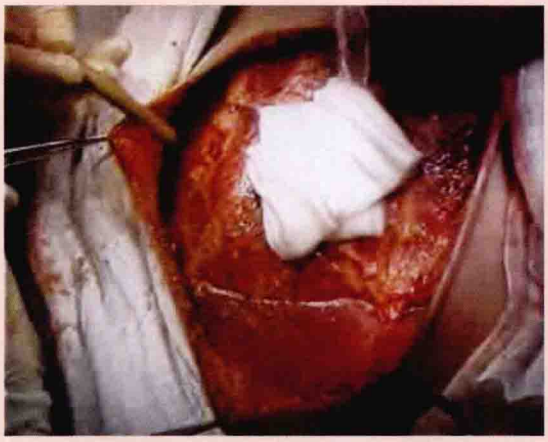


图 4-342 温生理盐水冲洗创面，检查出血点

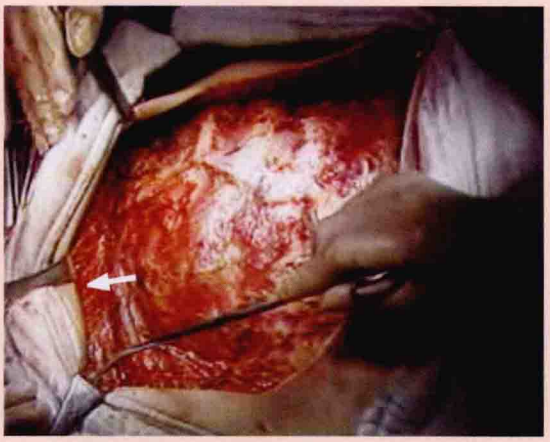


图 4-343 保留的胸大肌锁骨部

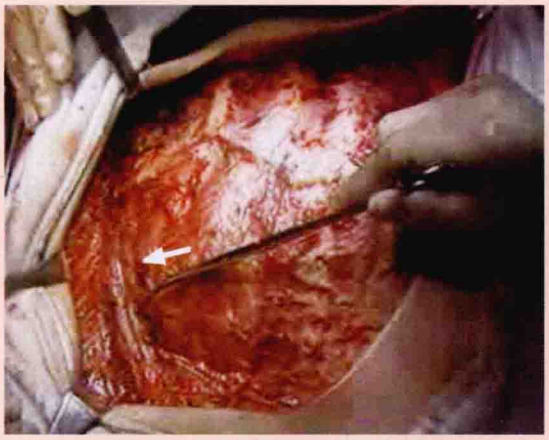


图 4-344 暴露锁骨下静脉及腋静脉

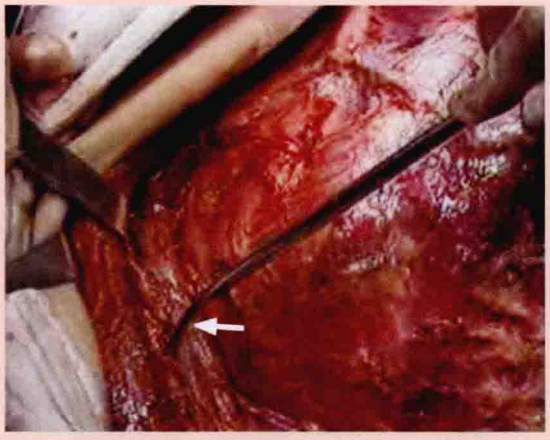


图 4-345 臂丛神经

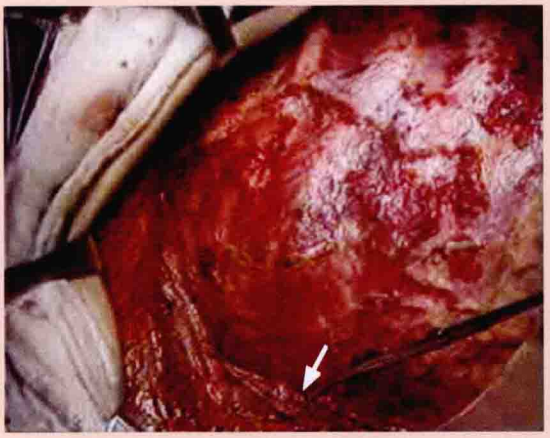


图 4-346 肩胛下脉管及神经

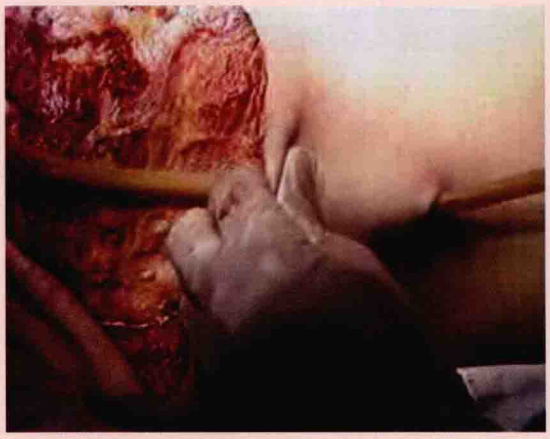


图 4-347 背阔肌前缘放置负压引流管

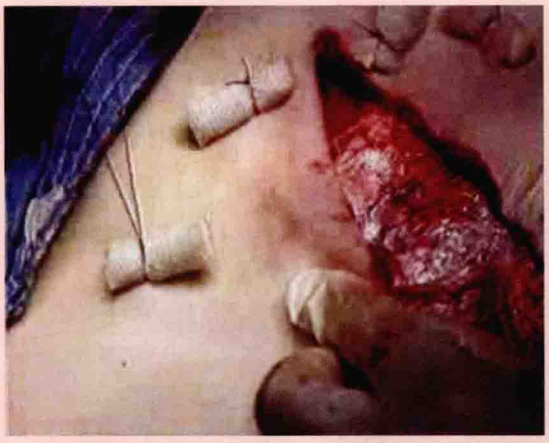


图 4-348 固定胸壁与皮肤



图 4-349 缝合切口

十、乳房局限肿块切除术

（一）示意图

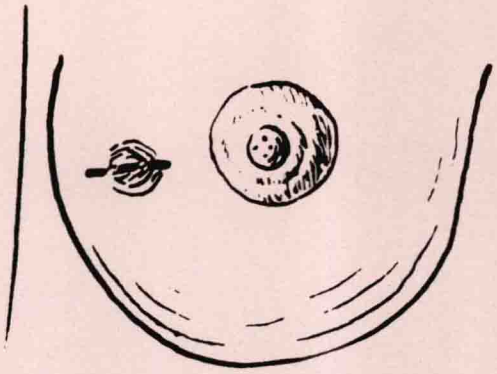


图 4-350 乳晕部肿瘤采用弧形切口，乳房部肿瘤采用放射状切口，但应设计在乳腺癌根治术的切口范围内为佳

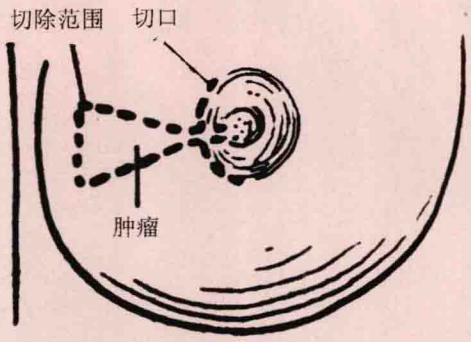


图 4-351 切开皮肤，皮下组织，显露乳腺组织后，以肿块为中心，与周围少量乳腺组织一并呈楔形切除

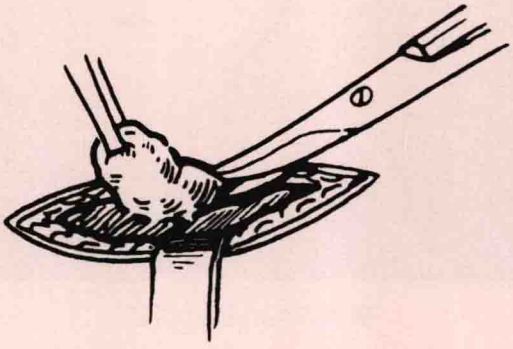


图 4-352 在乳腺组织与皮下组织之间，向四周游离皮瓣至适当范围，充分显露肿块及周围乳腺组织

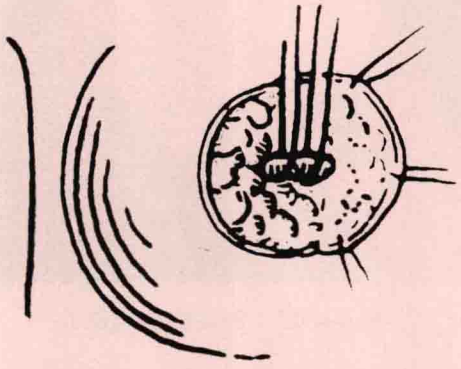


图 4-353 以组织钳夹住肿块后，将肿块提起，用手术刀或剪刀在肿块两侧呈梭形切开乳腺组织

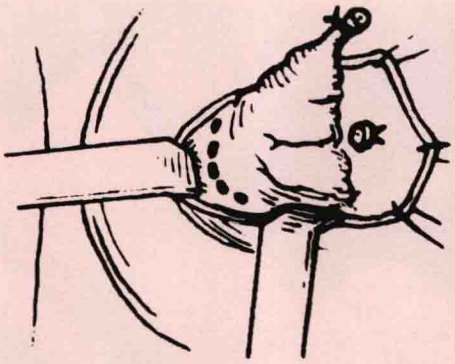


图 4-354 如在肿瘤基底部有输乳管被切断，则应缝扎，以防乳漏

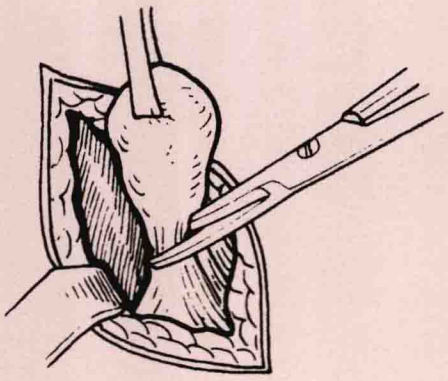


图 4-355 继续向深部切割，使两侧切口均偏向内侧，渐渐使其互相连接，即可将肿瘤及周围乳腺组织一并呈楔形切除

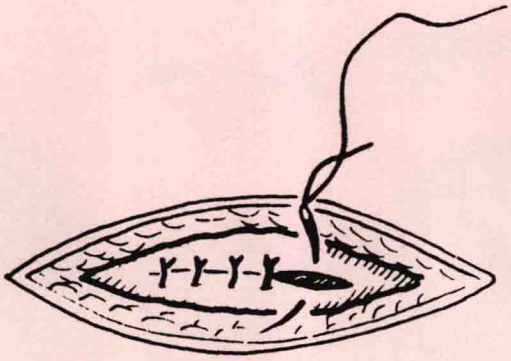


图 4-356 创面仔细止血后，用丝线做贯穿底部的间断缝合

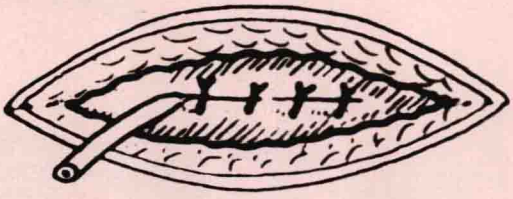


图 4-357 若肿瘤较大，出血较多，切口较大，则可在缝合皮肤前放置橡皮片引流

（二）乳房外上限纤维瘤切除手术步骤



图 4-358 标记手术切口



图 4-359 切口周围注入局部麻醉药物



图 4-360 以肿块为中心行局部浸润麻醉

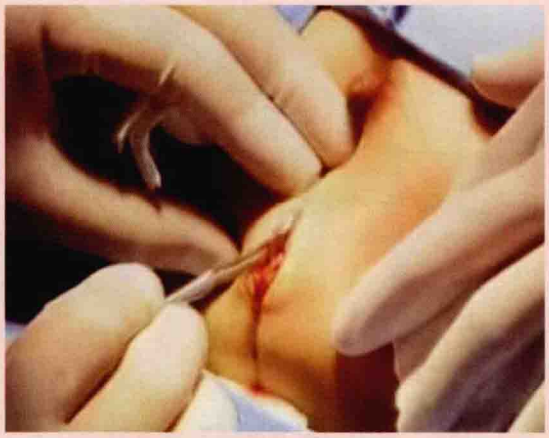


图 4-361 以麻醉针眼为中心切开皮肤及皮下脂肪达肿瘤

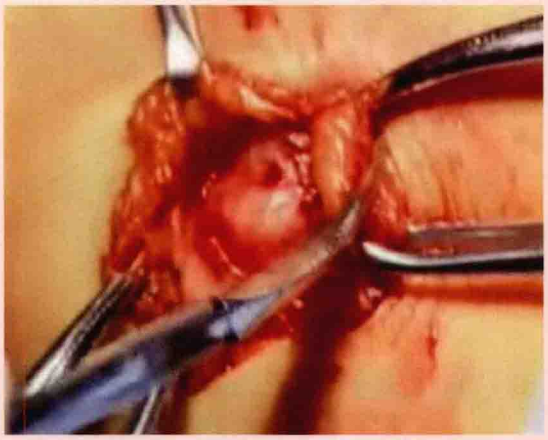


图 4-362 以血管钳牵拉肿瘤组织



图 4-363 剥离肿瘤至切口外

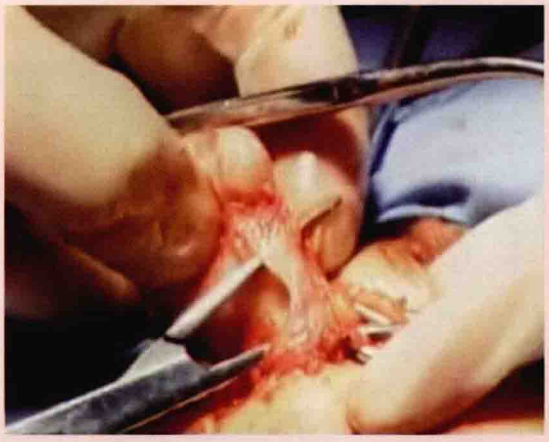


图 4-364 剥离肿瘤被膜与周围组织的粘连

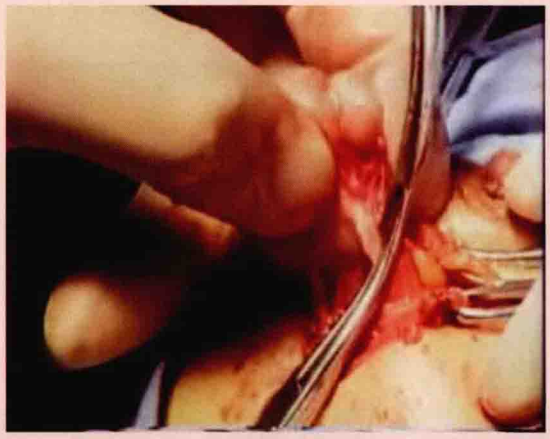


图 4-365 切断肿瘤被膜与周围软粘连组织

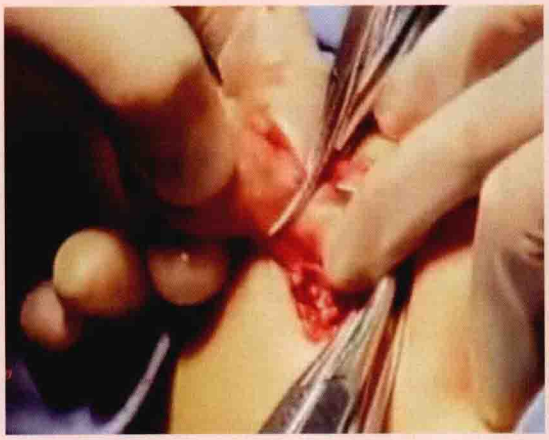


图 4-366　钳夹肿瘤蒂

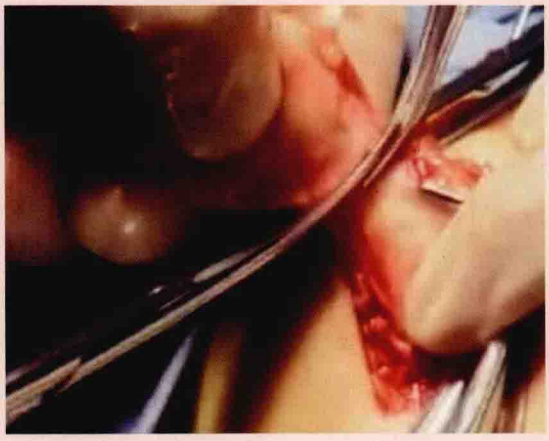


图 4-367　剪断肿瘤蒂，摘除肿瘤

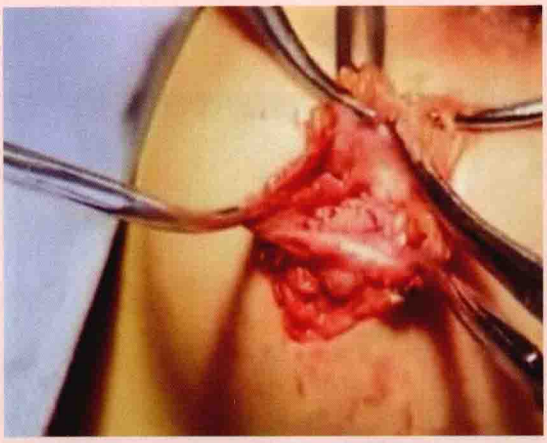


图 4-368　牵拉并钳夹正常创面彻底止血

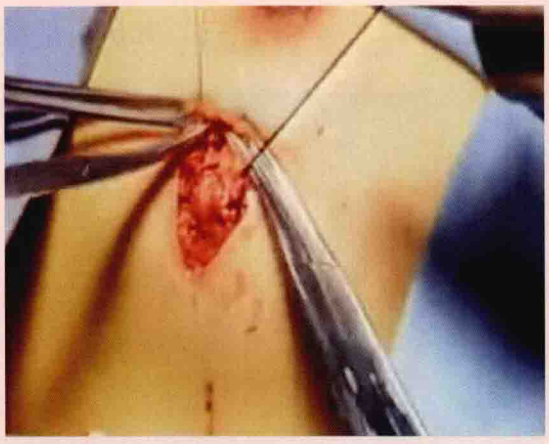


图 4-369　缝合腺体创面

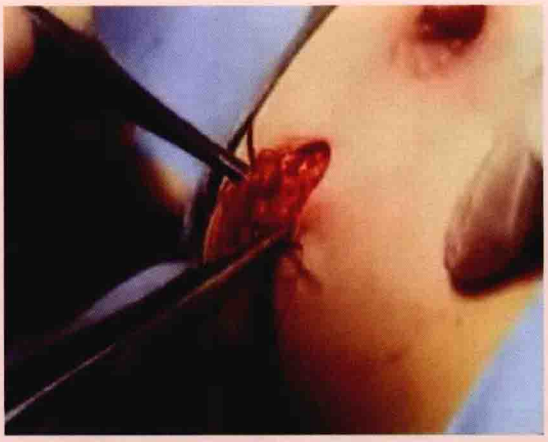


图 4-370　间断缝合皮下组织

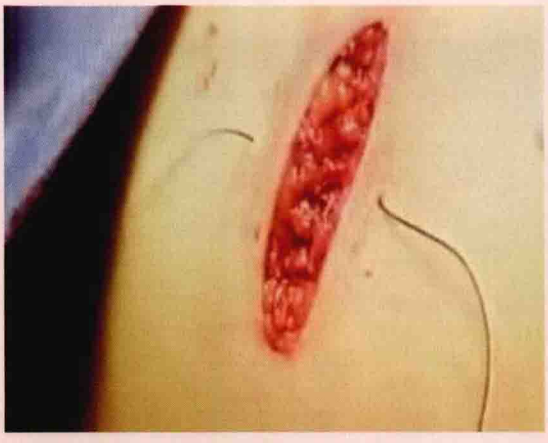


图 4-371　间断缝合皮肤（1）

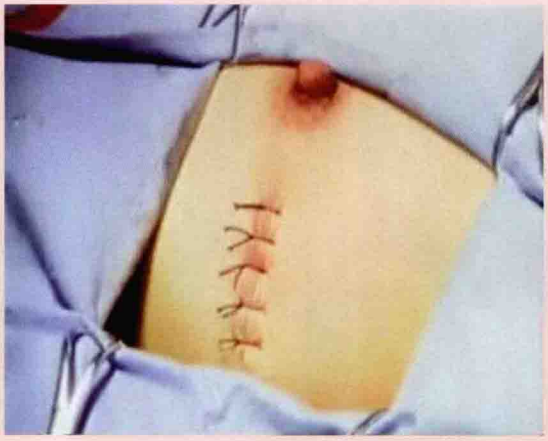


图 4-372 间断缝合皮肤（2）

（三）乳房下部纤维瘤切除术手术步骤



图 4-373 切口标示线

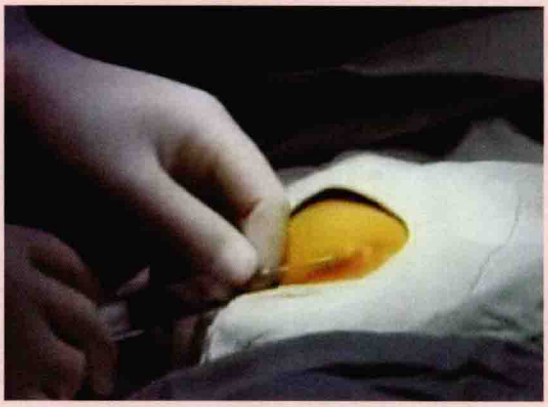


图 4-374 皮肤切口周缘行局部浸润麻醉

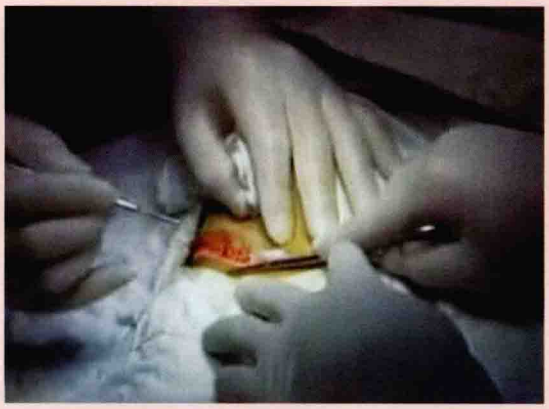


图 4-375 沿标示线切开皮肤及皮下组织

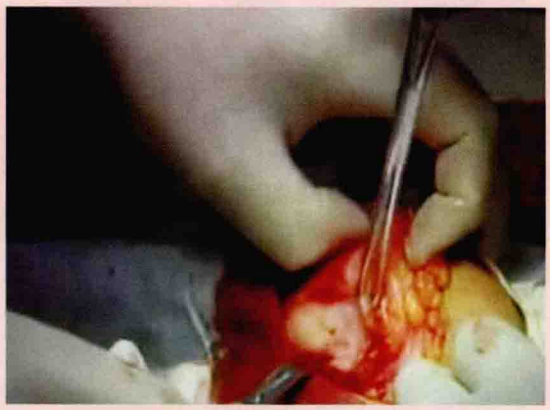


图 4-376 暴露肿瘤

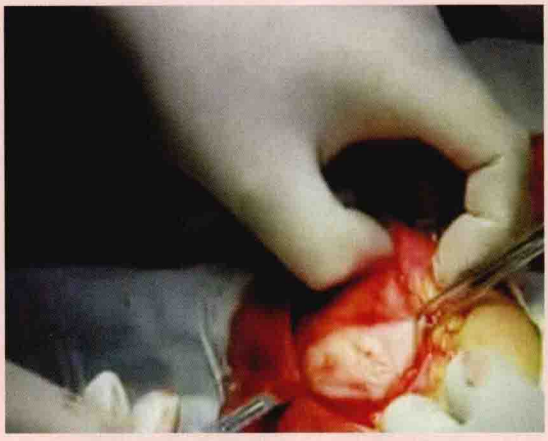


图 4-377 完整剥离肿瘤

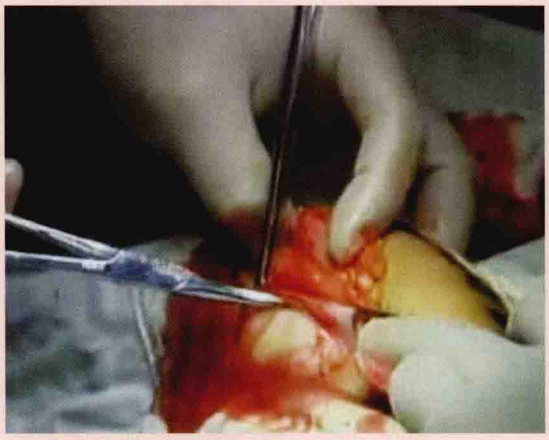


图 4-378 继续剥离肿瘤



图 4-379 将肿瘤迁出切口之外

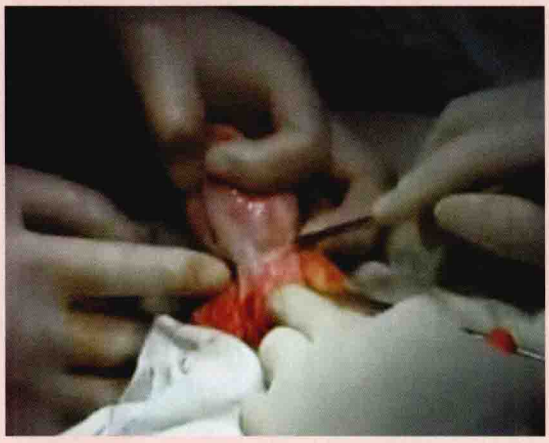


图 4-380 暴露肿瘤蒂

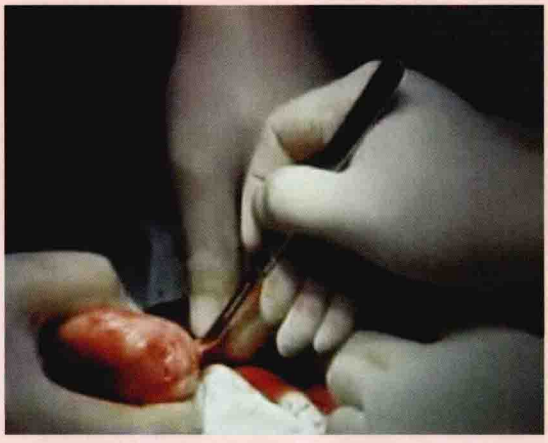


图 4-381 切断肿瘤蒂



图 4-382 完整摘除肿瘤

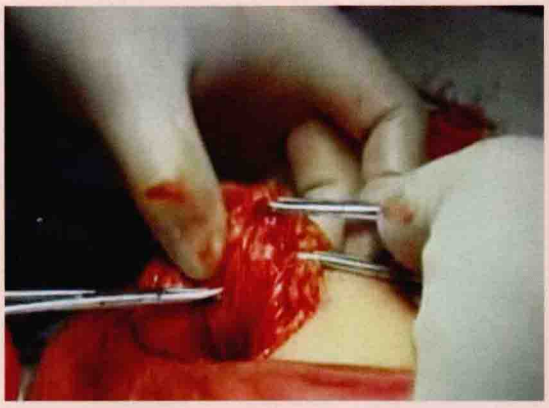


图 4-383　创面彻底止血



图 4-384　创面放置橡皮引流条



图 4-385　缝合创面

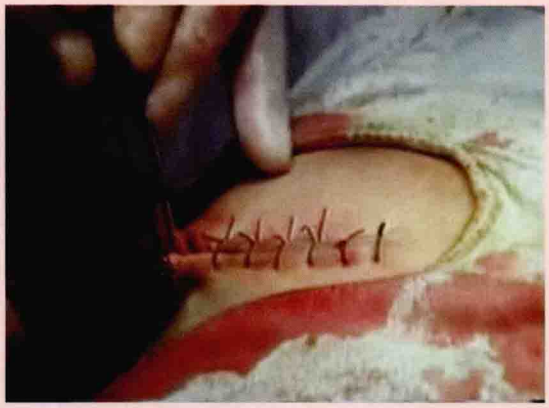


图 4-386　缝合皮肤

十一、食管良性肿瘤摘除术

（一）示意图

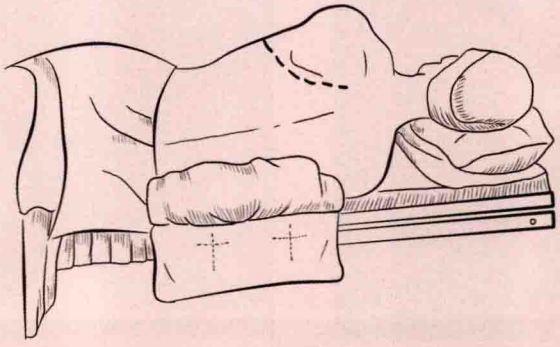


图 4-387　沿左第 6 肋骨全长做胸壁切口

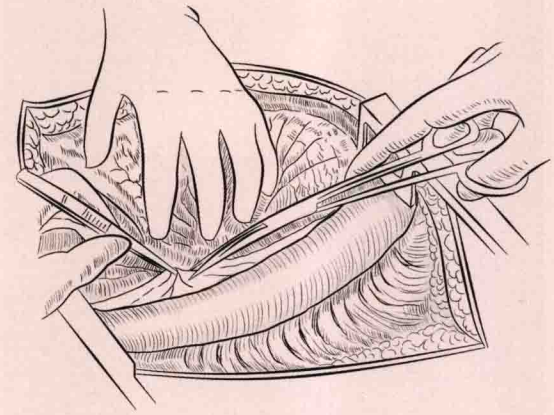


图 4-388 将肺向前方推开，显露后纵隔，剪开纵隔胸膜，游离食管

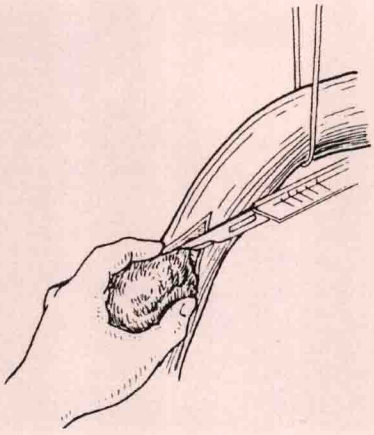


图 4-389 寻找到肿瘤后，切开食管完整摘除肿瘤

（二）手术步骤

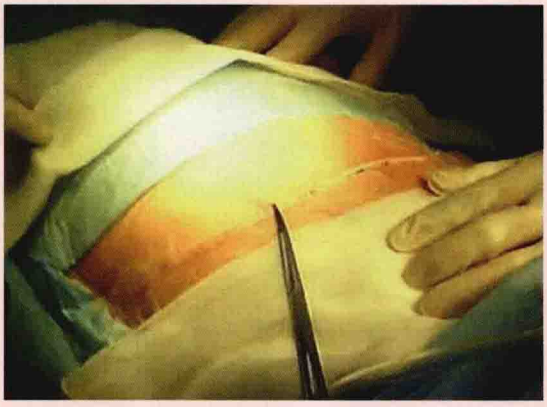


图 4-390 皮肤切口（胸后外侧壁切口）

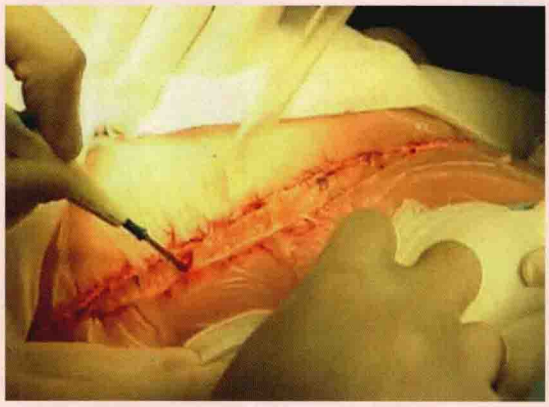


图 4-391 切开皮肤及皮下组织，电凝止血

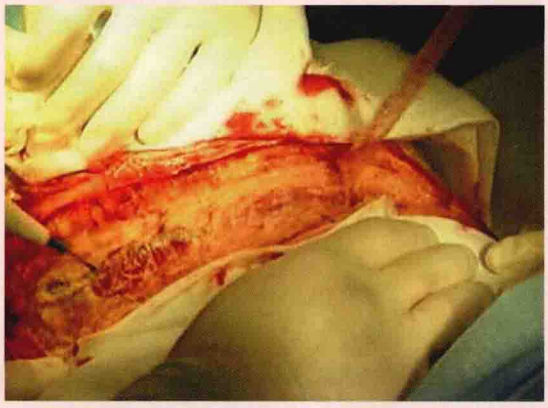


图 4-392 切开背阔肌

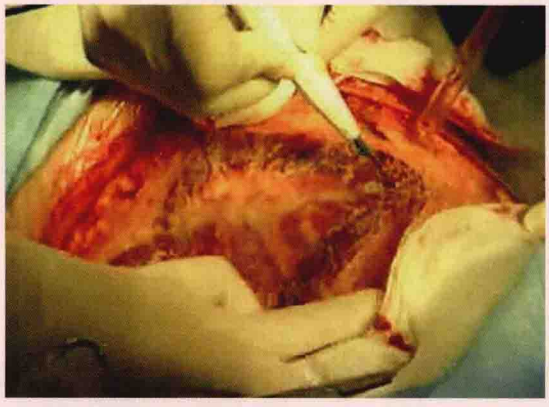


图 4-393 切开前锯肌

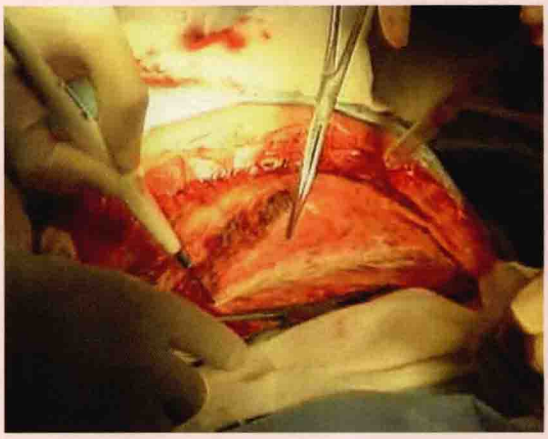


图 4-394 切开斜方肌和菱形肌

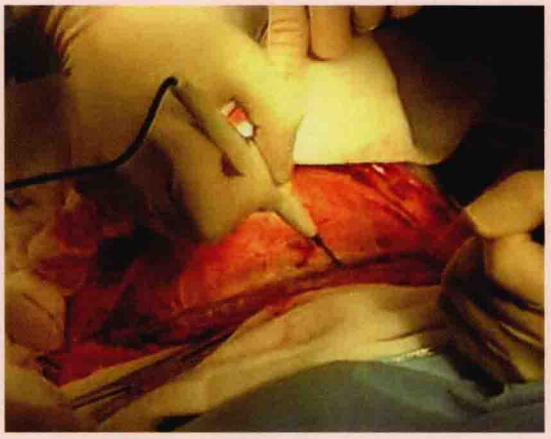


图 4-395 沿第 5 肋下缘切开肋间肌

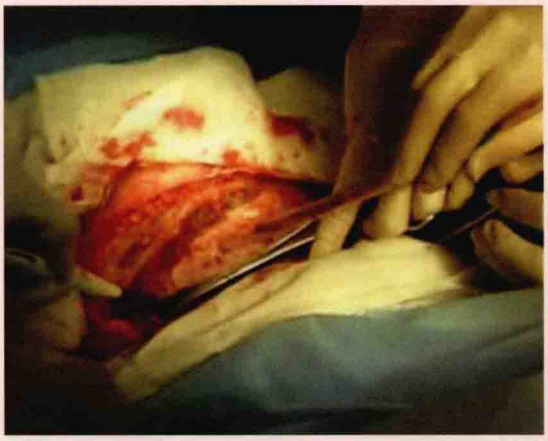


图 4-396 切开壁胸膜



图 4-397 肋间隙置入肋骨撑开器

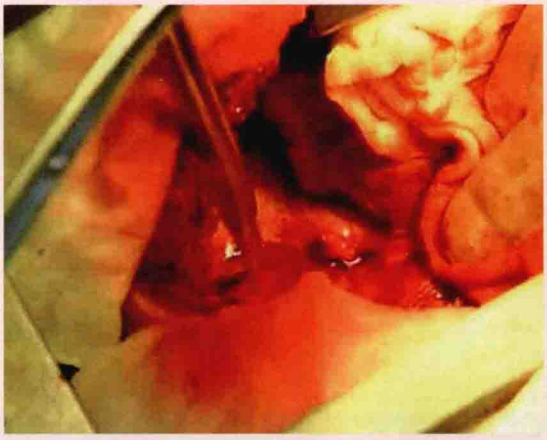


图 4-398 暴露胸腔内结构

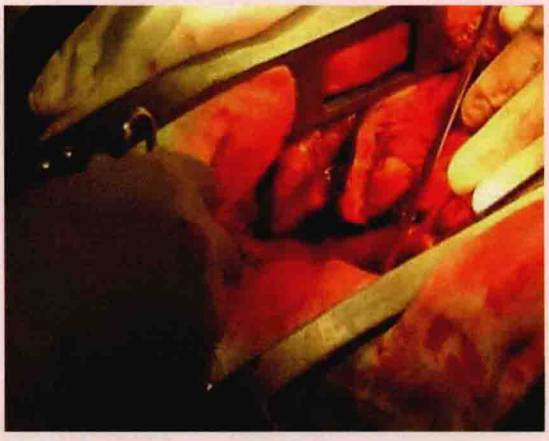


图 4-399 结扎供应食管的小血管



图 4-400 暴露食管肿瘤

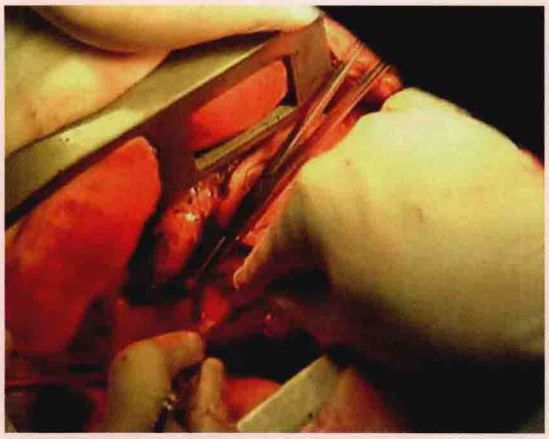


图 4-401 纵行切开食管表面肌层，暴露肿瘤（1）

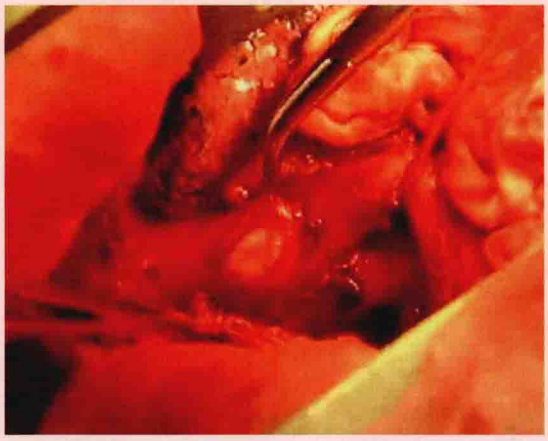


图 4-402 纵行切开食管表面肌层，暴露肿瘤（2）

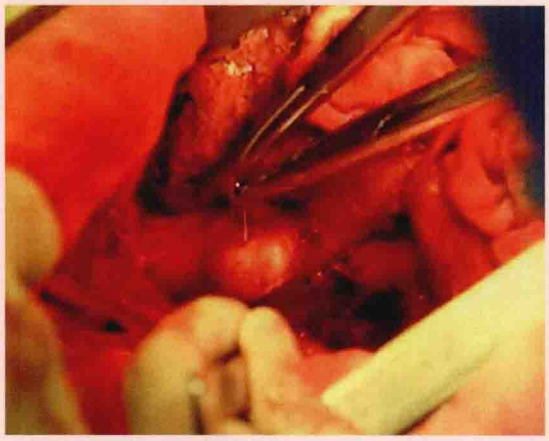


图 4-403 肿瘤表面做“8”字缝合，用以牵引

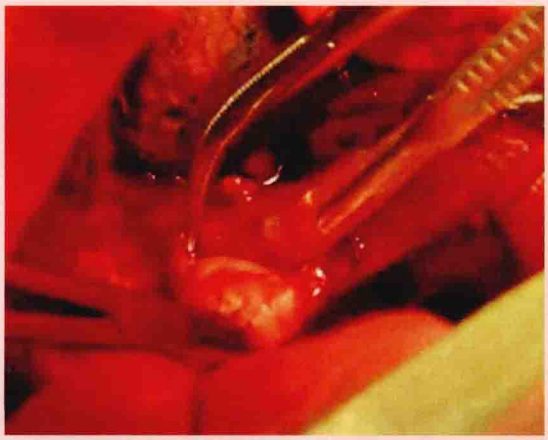


图 4-404 用尖刀于肿瘤表面行锐性剥离（1）

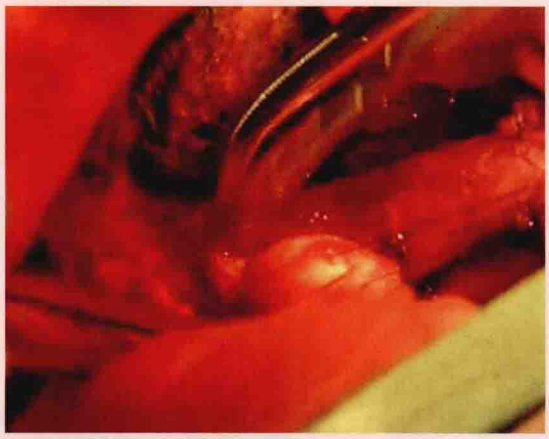


图 4-405 用尖刀于肿瘤表面行锐性剥离（2）

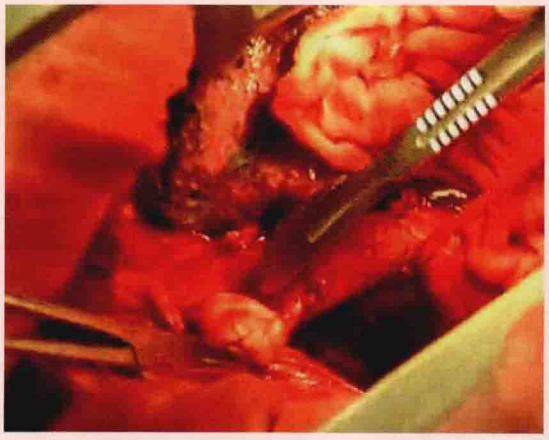


图 4-406 用尖刀于肿瘤表面行锐性剥离(3)

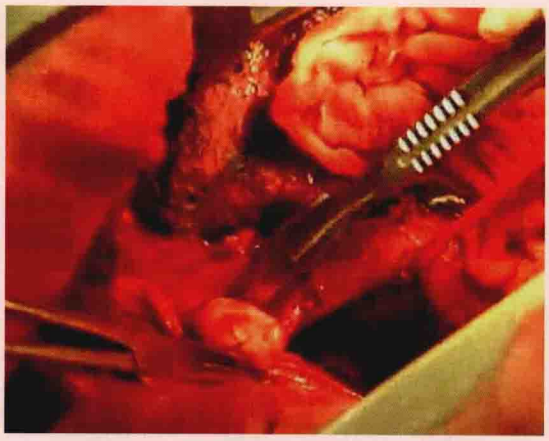


图 4-407 用尖刀于肿瘤表面行锐性剥离(4)

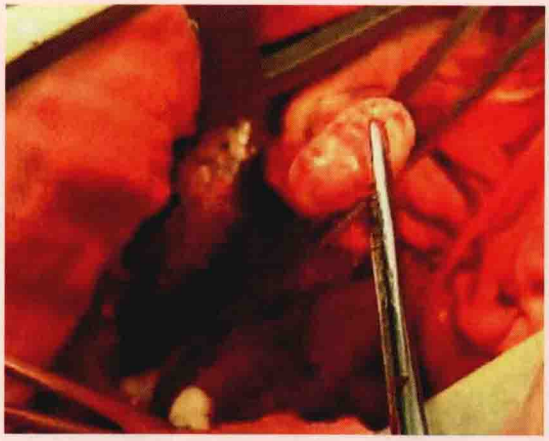


图 4-408 完整摘除肿瘤

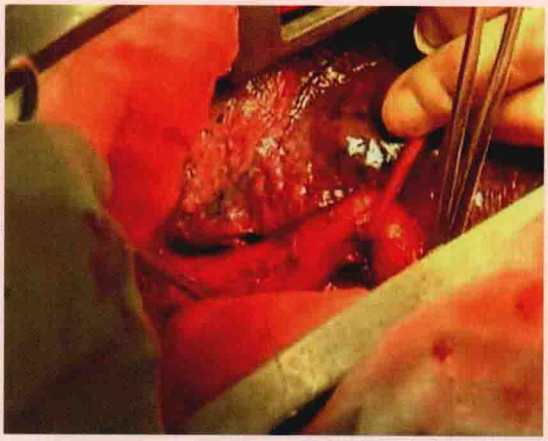


图 4-409 食管内注水，观察有无黏膜破损及食管漏水现象

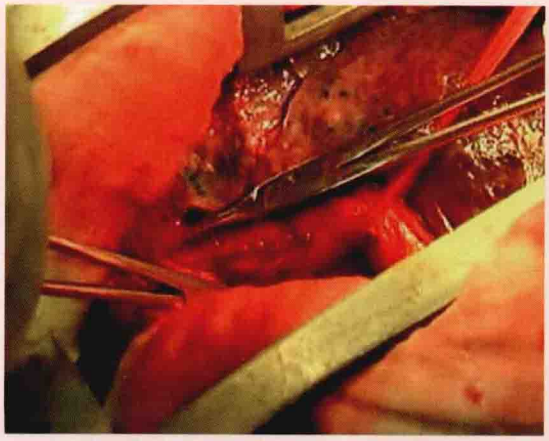


图 4-410 用可吸收线间断缝合食管肌层(1)

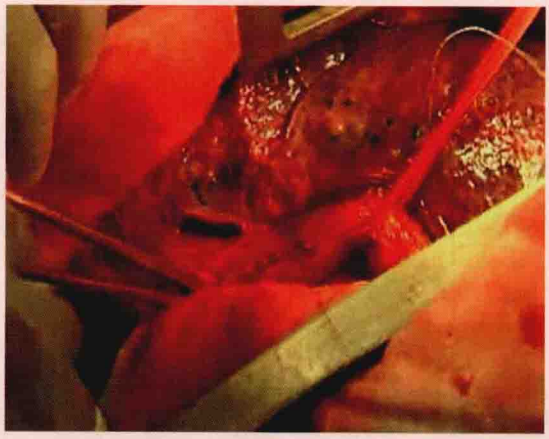


图 4-411 用可吸收线间断缝合食管肌层(2)



图 4-412 缝合纵隔胸膜

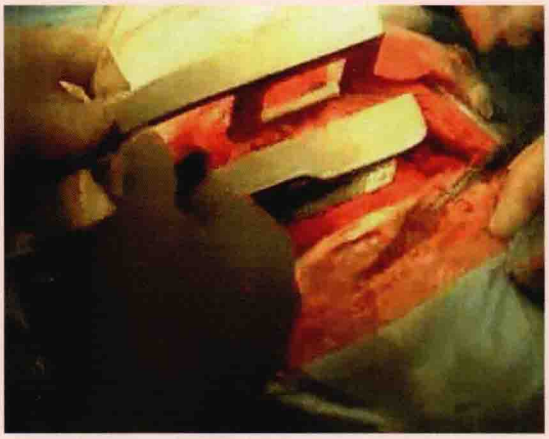


图 4-413 撤掉肋骨撑开器

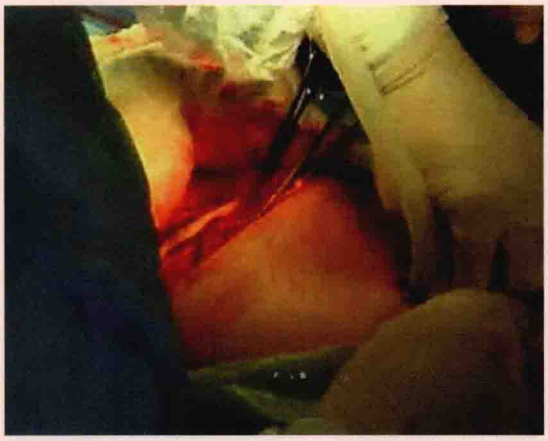


图 4-414 于腋中线第 7 或第 8 肋间隙处安放胸膜闭式引流管

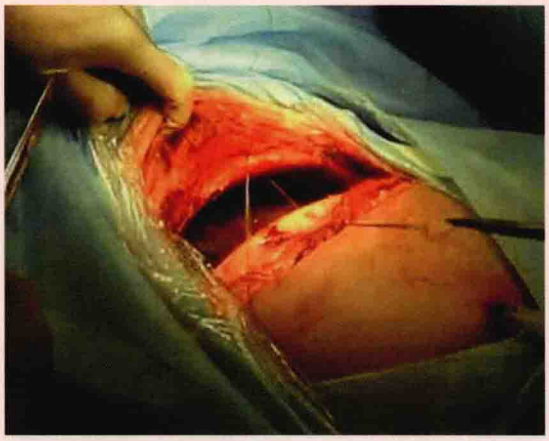


图 4-415 于第 5 肋骨上缘及第 6 肋骨下缘处缝合肋骨（1）



图 4-416 于第 5 肋骨上缘及第 6 肋骨下缘处缝合肋骨（2）

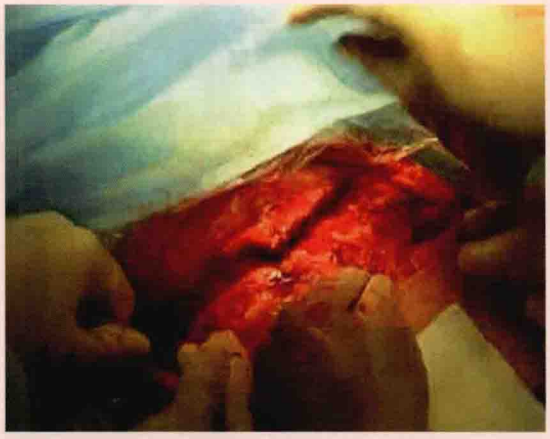


图 4-417 肋骨缝合结束

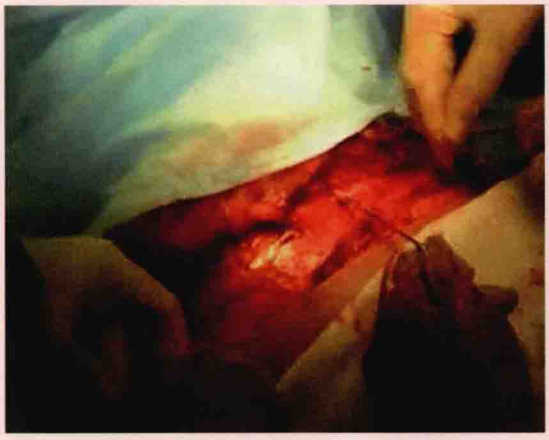


图 4-418　缝合斜方肌、菱形肌和前锯肌

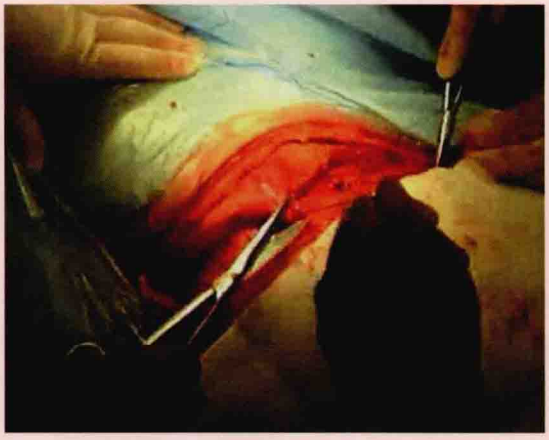


图 4-419　缝合背阔肌

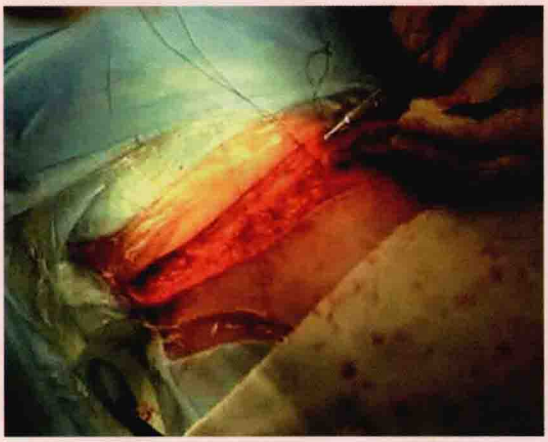


图 4-420　缝合皮下组织（1）

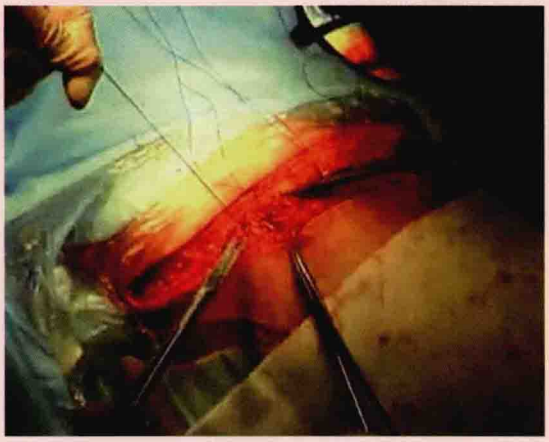


图 4-421　缝合皮下组织（2）

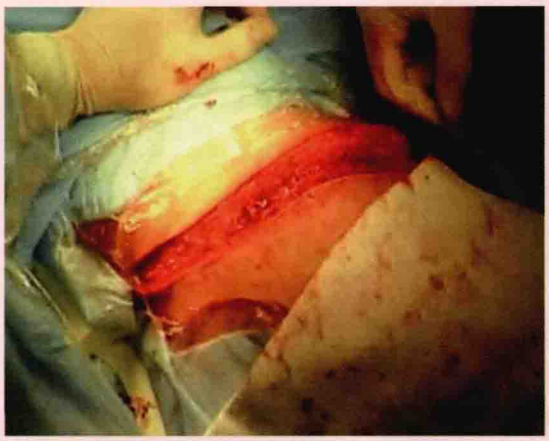


图 4-422　缝合皮下组织（3）

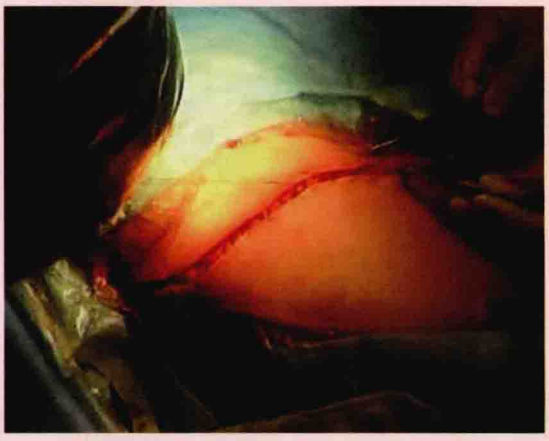


图 4-423　缝合皮下组织（4）



图 4-424　缝合皮肤（1）

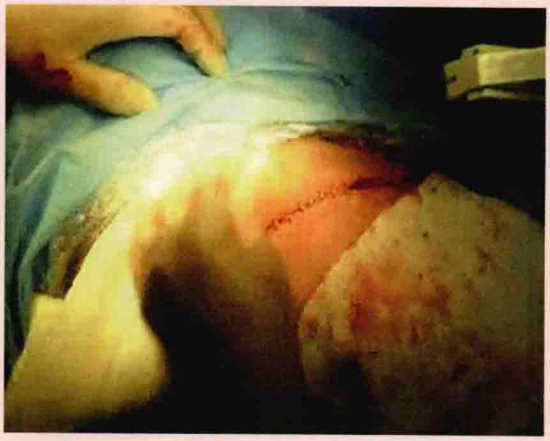


图 4-425　缝合皮肤（2）

十二、肺局部切除术

（一）示意图

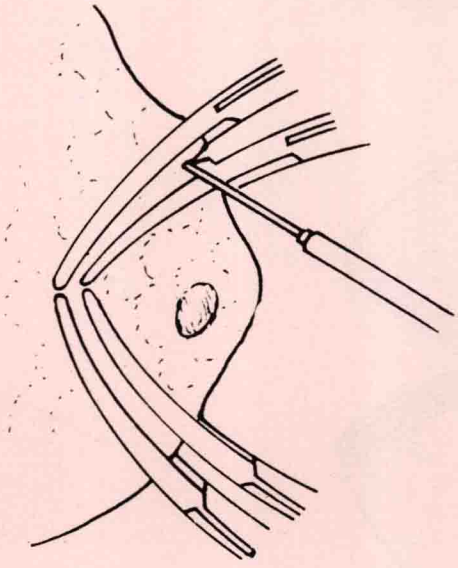


图 4-426　进胸后，当肺轻度充气或萎陷情况下，用弯长血管钳夹住离肿块 1cm 区域的楔形肺组织

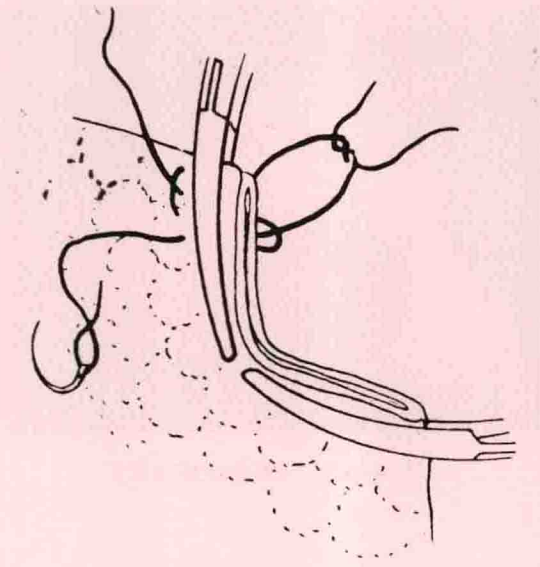


图 4-427 在每侧两把长钳之间，用电刀或刀切除肿块及其邻近肺组织，残留切面采用交叉褥式缝合，待肺充气扩张时，观察有无漏气或渗血，分别用细针线缝合

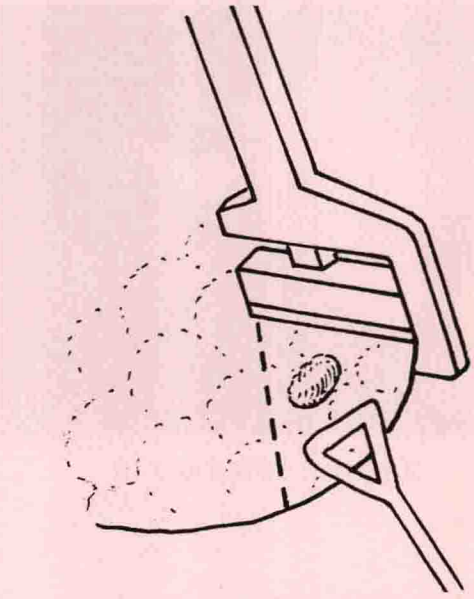


图 4-428 亦可采用支气管缝闭器夹住肺组织做楔形切除

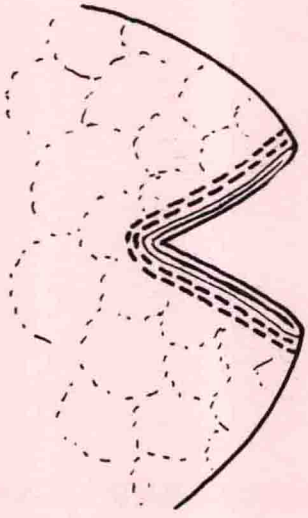


图 4-429 钽钉缝合，手术野清楚，断面整齐，不影响肺的再度扩张

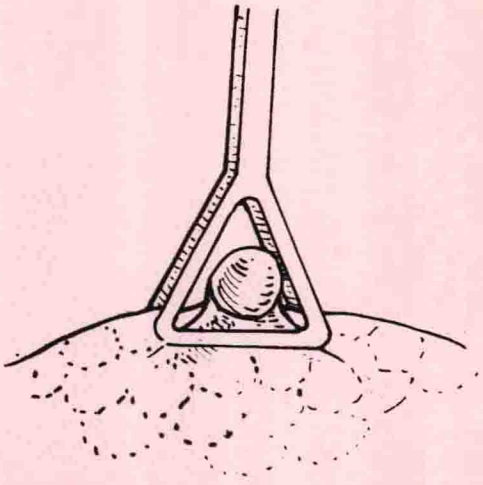


图 4-430 对肺表浅孤立性肿块，先在它根部用肺钳夹住牵引，用支气管缝闭器缝闭肺组织，将肿块连同邻近组织切除

（二）手术步骤



图 4-431　胸侧壁沿第 5 肋皮肤切口（肩胛下角下两横指→锁骨中线）

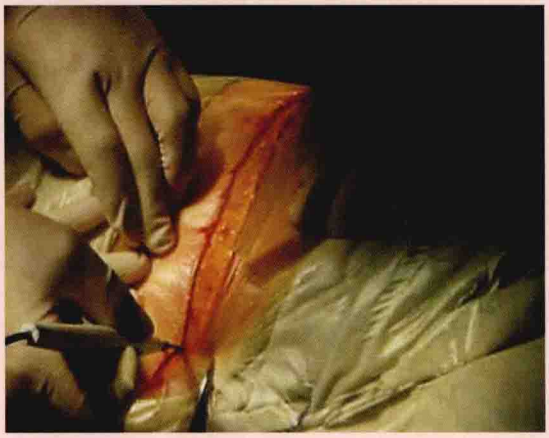


图 4-432　切开皮肤，暴露浅筋膜（1）

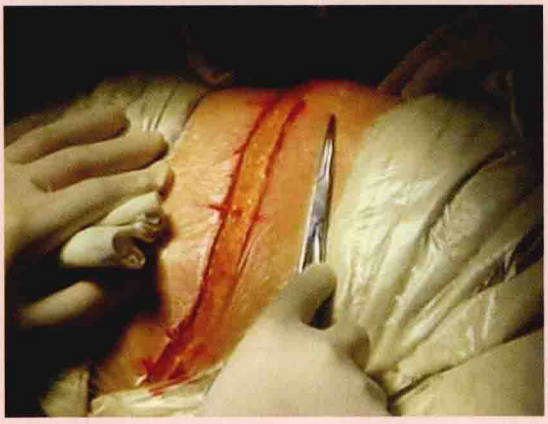


图 4-433　切开皮肤，暴露浅筋膜（2）



图 4-434　切开浅筋膜



图 4-435　向前切开背阔肌

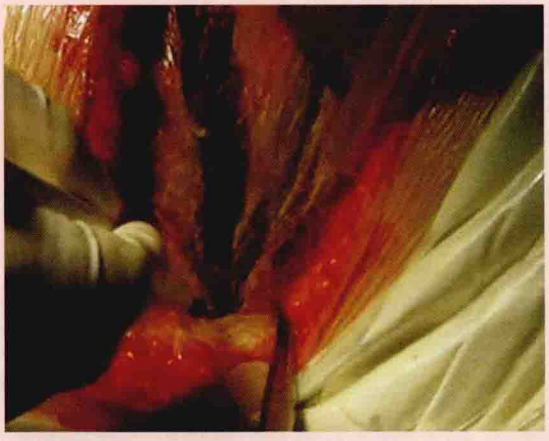


图 4-436　切开前锯肌

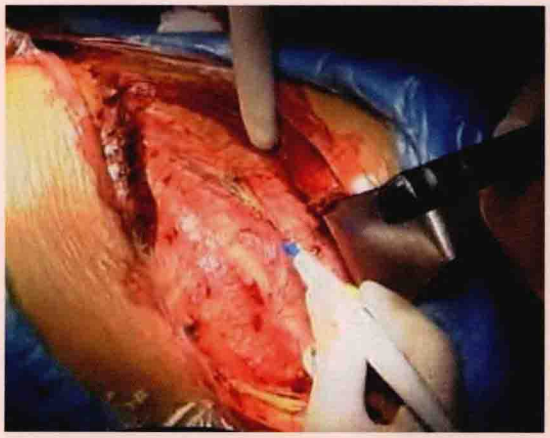


图 4-437 暴露第 5 肋及肋间肌

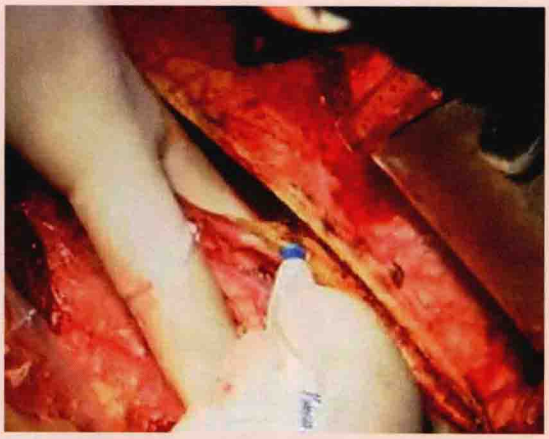


图 4-438 切断肋间肌

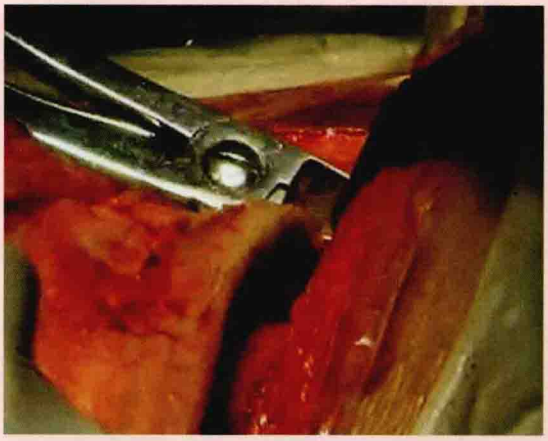


图 4-439 切断第 5 肋骨

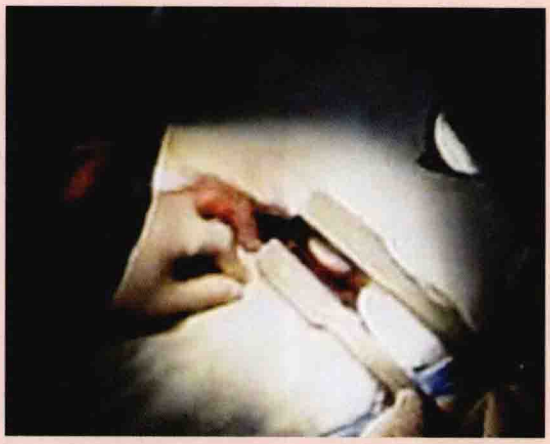


图 4-440 用肋骨张开器扩大切口

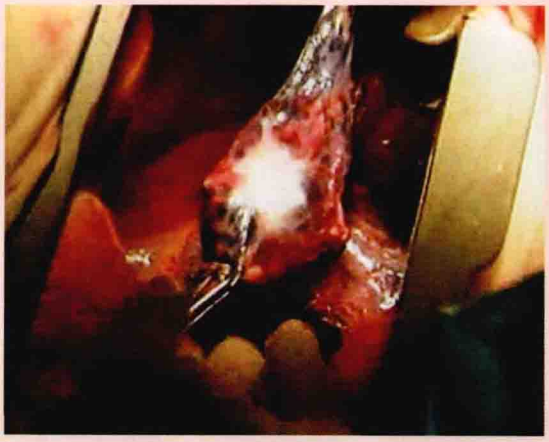


图 4-441 牵出并检查肺部病变部位（肿瘤）



图 4-442 在肿瘤周围上两把自动缝合器（1）



图 4-443 在肿瘤周围上两把自动缝合器(2)

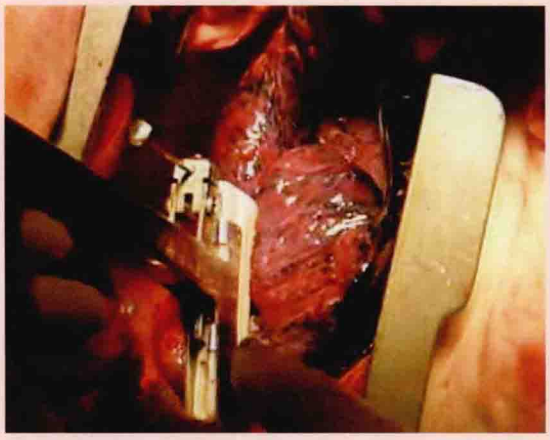


图 4-444 缝合后移开自动缝合器

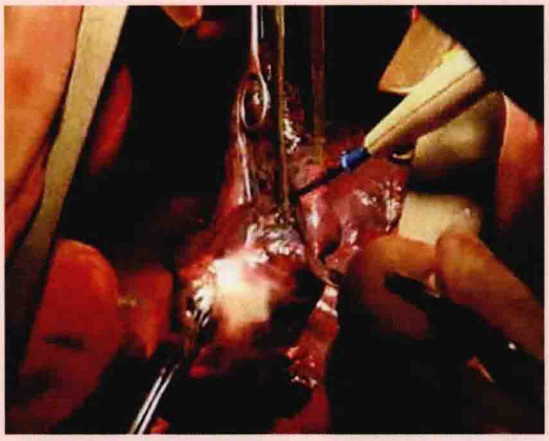


图 4-445 切除病变,边切除边电凝止血(1)

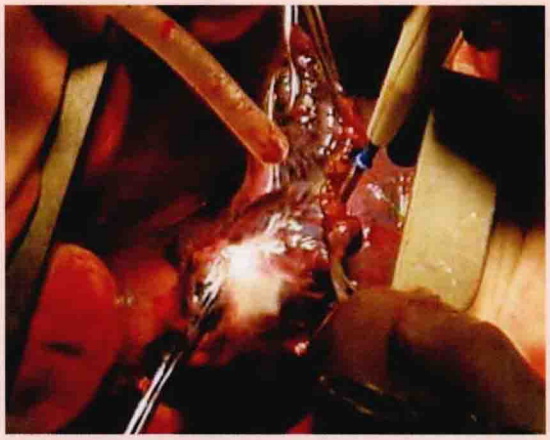


图 4-446 切除病变,边切除边电凝止血(2)

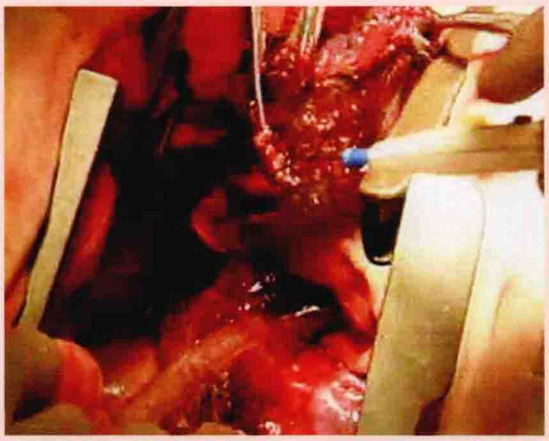


图 4-447 切除的病变组织(1)



图 4-448 切除的病变组织(2)

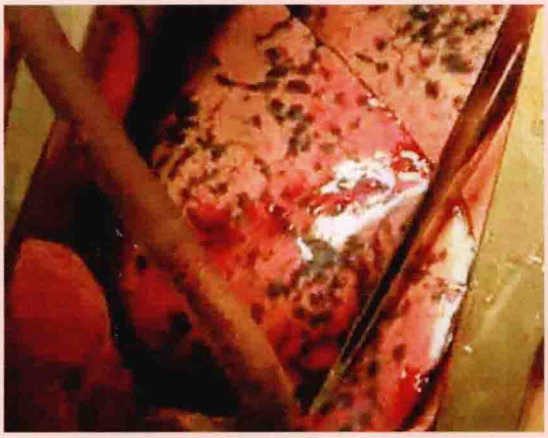


图 4-449　冲洗胸腔，放入闭式引流管

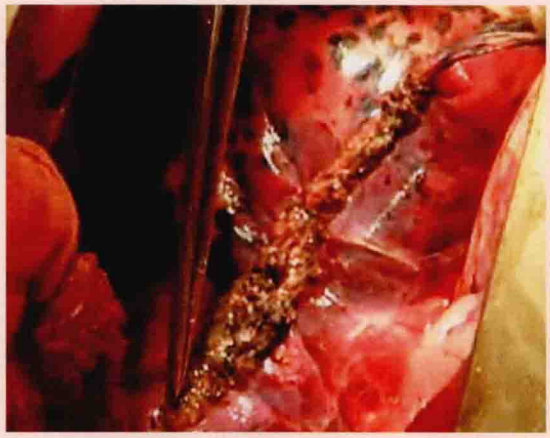


图 4-450　用封闭胶粘合切缘（1）

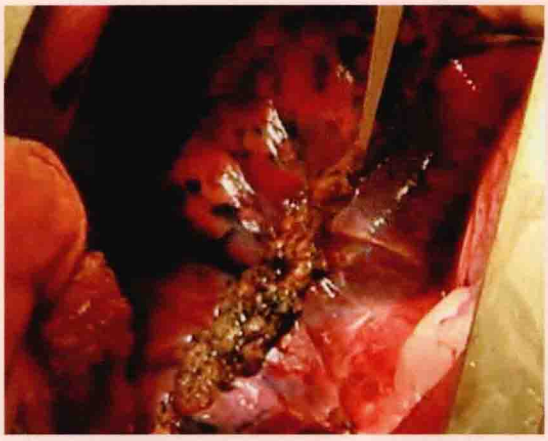


图 4-451　用封闭胶粘合切缘（2）

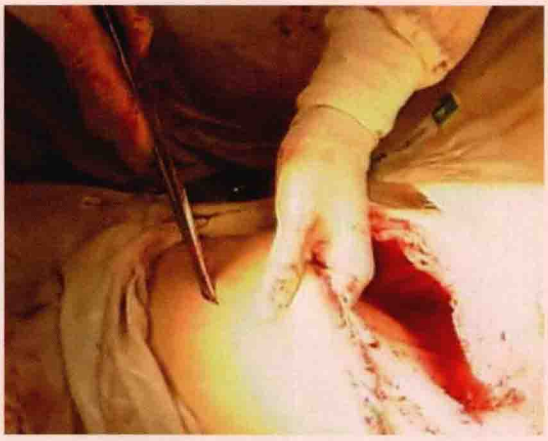


图 4-452　放入胸腔闭式引流管



图 4-453　固定胸腔闭式引流管

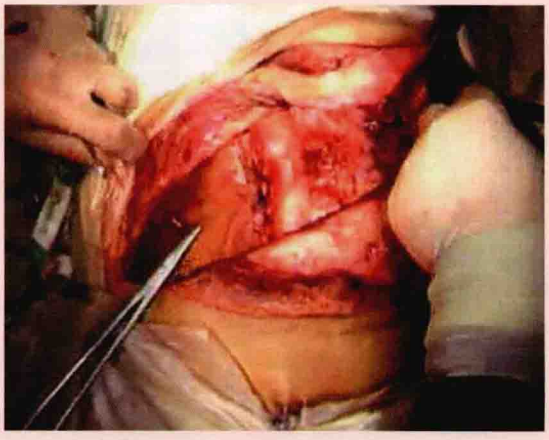


图 4-454　用 7 号丝线缝合肋骨切口

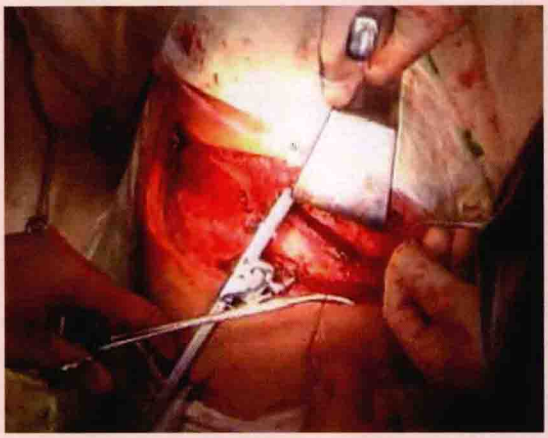


图 4-455 用 4 号丝线缝合前锯肌

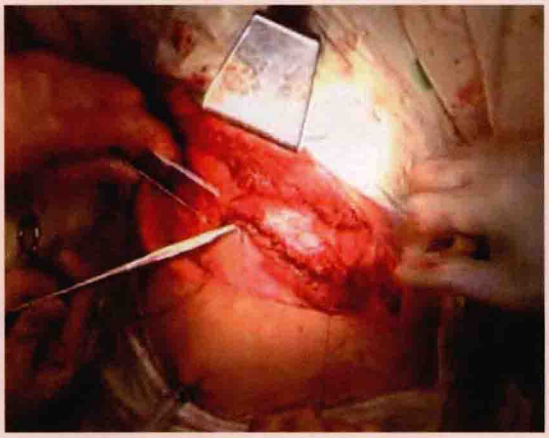


图 4-456 用 4 号丝线缝合背阔肌（1）



图 4-457 用 4 号丝线缝合背阔肌（2）



图 4-458 用 1 号丝线缝合浅筋膜



图 4-459 缝合皮肤（1）

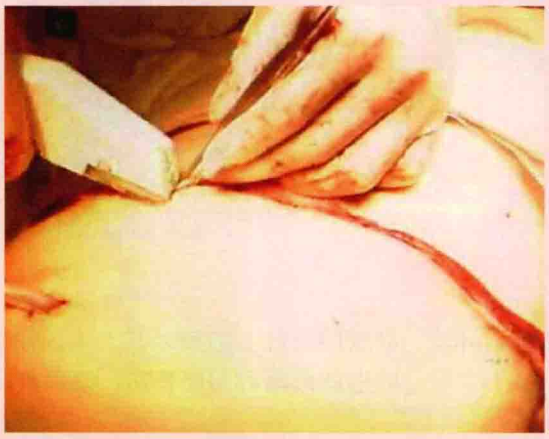


图 4-460 缝合皮肤（2）

十三、肺上叶切除术

（一）示意图

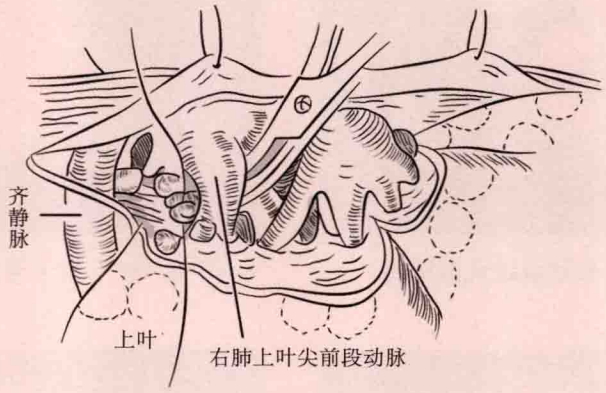


图 4-461 处理肺上静脉及其分支。进入胸腔后，切开前纵隔胸膜，将肺向后下方牵拉，可见到肺门上方奇静脉，上腔静脉后方的肺动脉干，该动脉下方显现表浅的肺上静脉，将该静脉内外侧分离出尖前、后、下三分支合成的上叶静脉。结扎上叶静脉三个分支的汇合部或分别结扎三个分支后，再缝扎近心端的主干

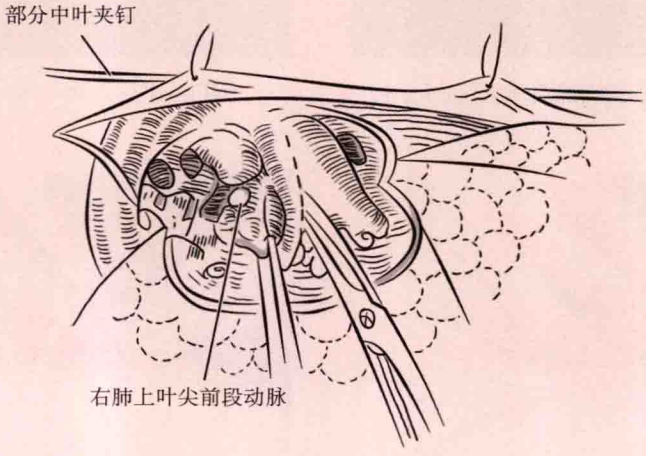


图 4-462 处理肺上叶尖前段动脉。尖前段动脉可在奇静脉下方肺动脉干处游离显露，或者上叶静脉分离后即能暴露，该尖前段动脉可游离后切断，两端做“8”字缝扎

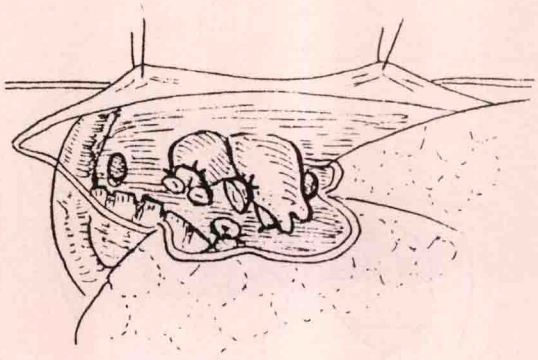


图 4-463 若该段血管较短，则近心端结扎后，分别结扎尖、前支远端，再行切断，并在近心端做双重结扎

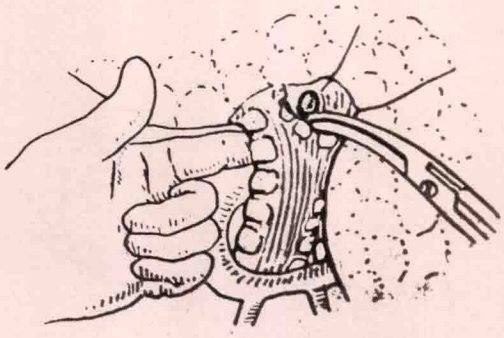


图 4-464 处理上叶后段动脉。在叶间隙中可显现肺动脉下干的各分支，剪开该血管鞘，即可出现中、下叶动脉的分支，凡见有自下分支的动脉通向上叶的，即为上叶后段动脉。将该动脉切断，近心端缝扎、远端结扎

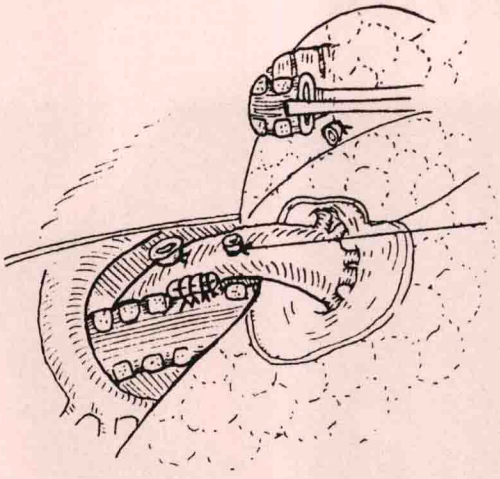


图 4-465 处理上叶支气管和段支气管。伸入支气管缝合器的钳爪，在上叶支气管与段支气管平面做封闭切断。将切除支气管远端轻轻提出，即可出现叶间隙深处出来的血管伸入上肺叶后段即是后段动脉，结扎两道后予以切断。支气管残端可边切边缝，亦可结扎后加缝扎

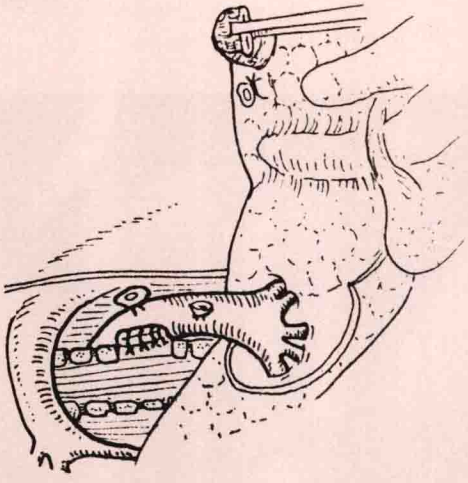


图 4-466 处理肺叶间的不完全肺裂。右上叶肺门结构处理后，上叶后段与下叶上段或上中叶之间均有不完全肺裂连着，可以手指轻缓分离，一般细小交通支可结扎分离，毋需缝扎

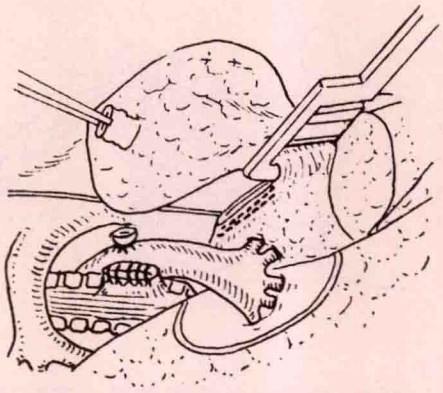


图 4-467 上叶与下叶上段之间的不完全肺裂，可用支气管缝闭器夹住切断

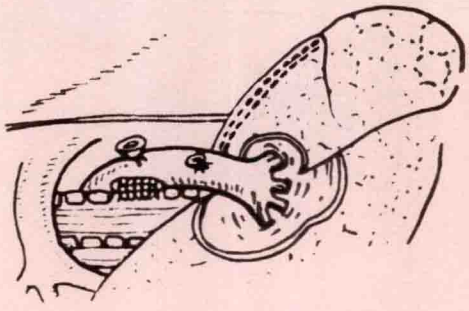


图 4-468 切断肺下韧带。右上叶切除，逐一止血后，可切断肺下韧带，可使中下叶充盈后，减少右上叶切除后的残腔

（二）左肺上叶切除术手术步骤

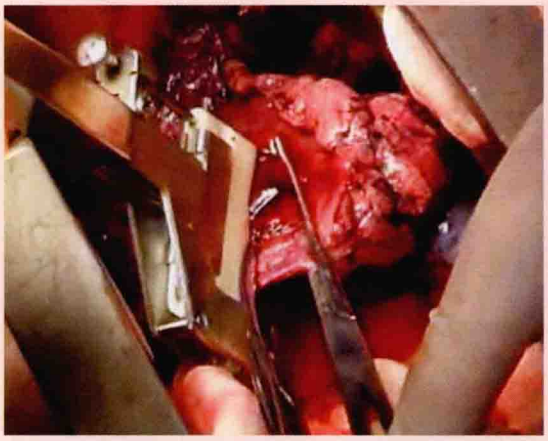


图 4-469 开胸后分离不全肺裂，自动缝合器结扎

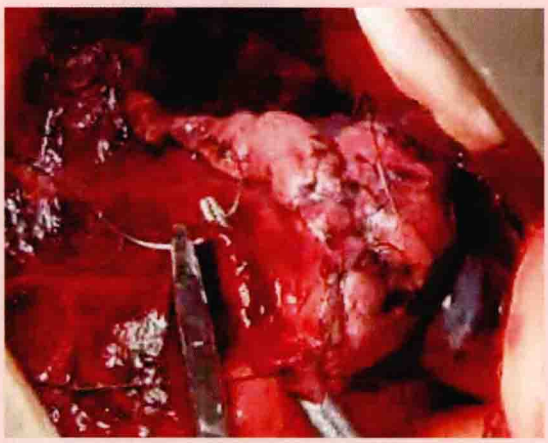


图 4-470 切断不全肺裂，一侧用 7 号丝线缝扎

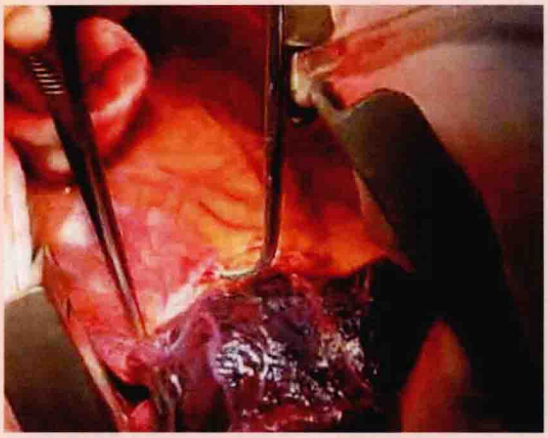


图 4-471 在肺门处打开纵隔胸膜

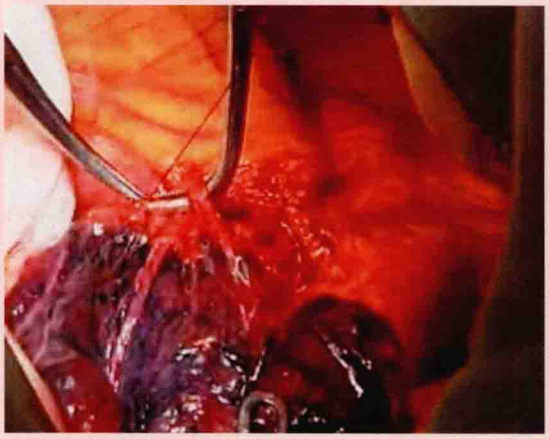


图 4-472 解剖左肺上叶后段静脉

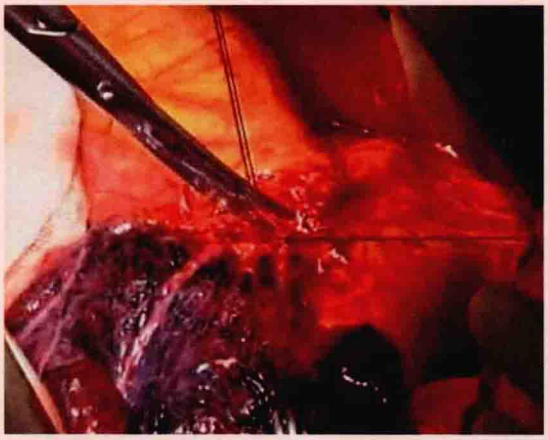


图 4-473 游离并结扎左肺上叶后段静脉

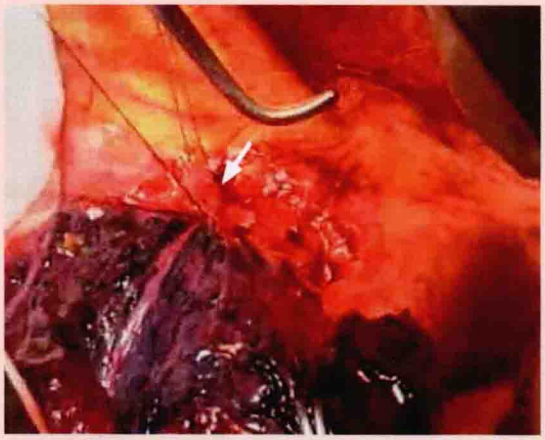


图 4-474 剪断左肺上叶后段静脉

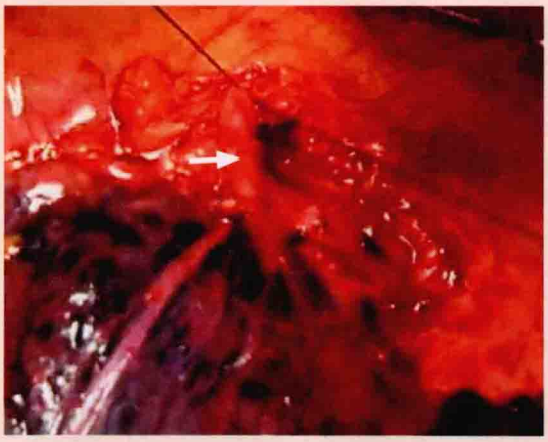


图 4-475 处理左肺上叶尖段静脉（1）

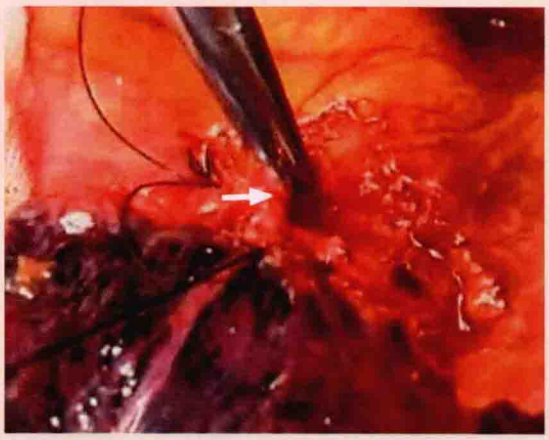


图 4-476 处理左肺上叶尖段静脉（2）

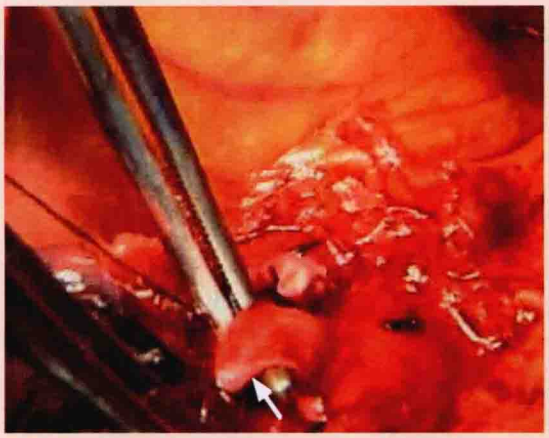


图 4-477 处理左肺前段动脉（1）

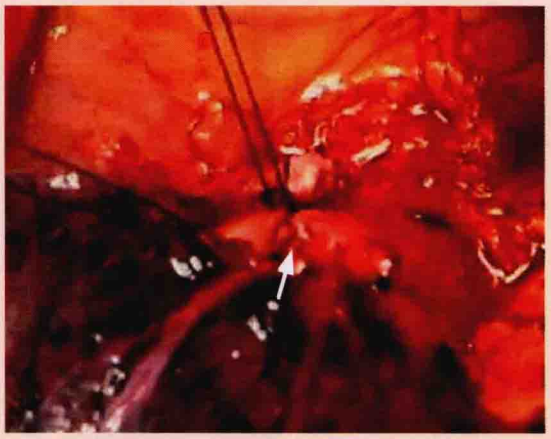


图 4-478 处理左肺前段动脉（2）

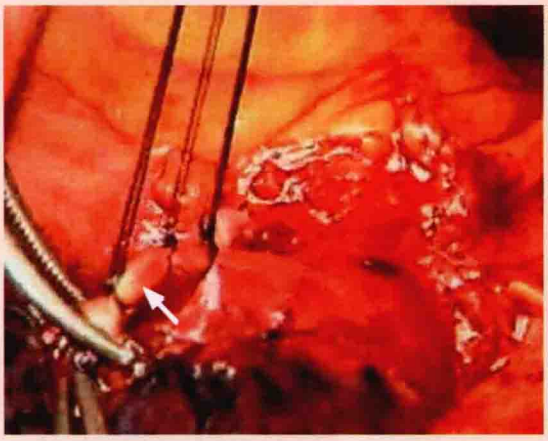


图 4-479 处理左肺前段动脉（3）

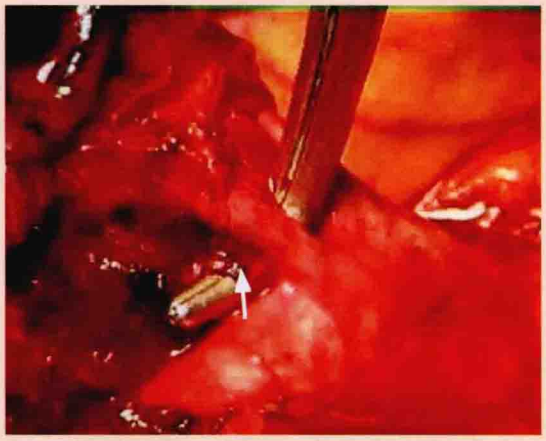


图 4-480 处理左肺尖后段动脉（1）

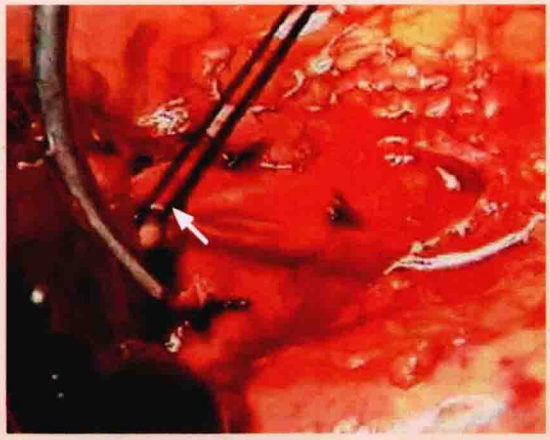


图 4-481 处理左肺尖后段动脉（2）

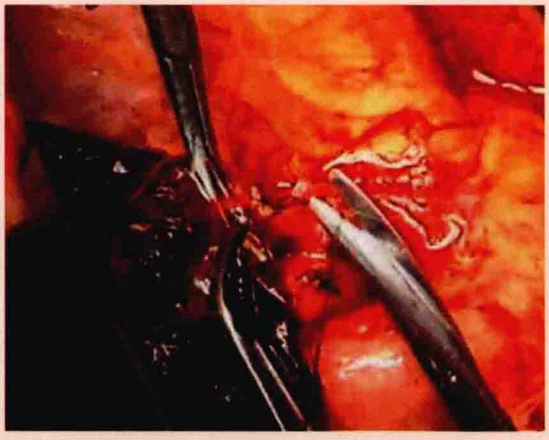


图 4-482 剪断并结扎左肺尖后段动脉

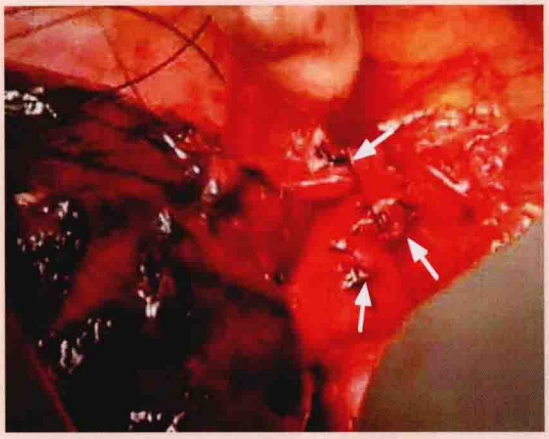


图 4-483 处理后的左肺上叶动静脉分支断端

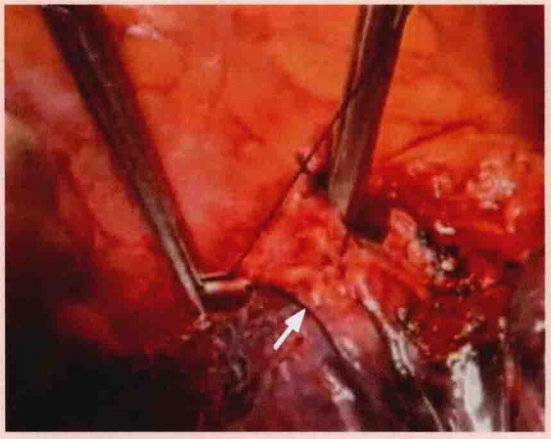


图 4-484 游离解剖左肺上叶静脉

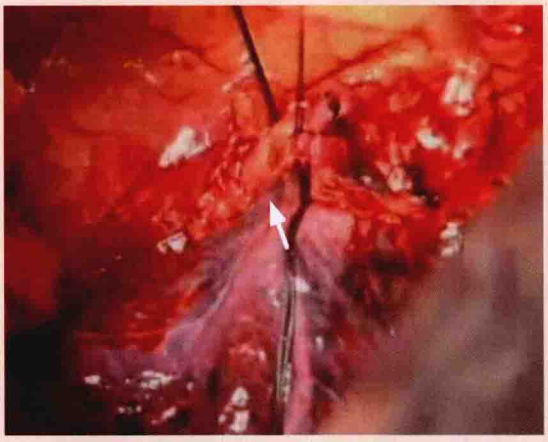


图 4-485 结扎左肺上叶静脉

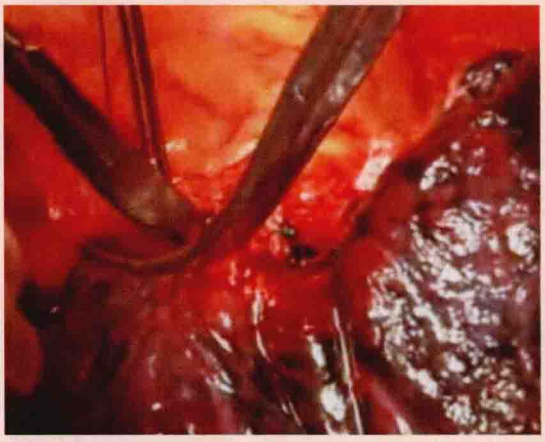


图 4-486 切断并结扎左肺上叶静脉

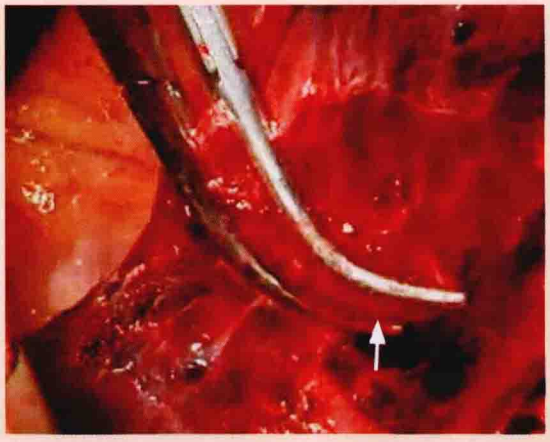


图 4-487 切断不全肺裂（1）

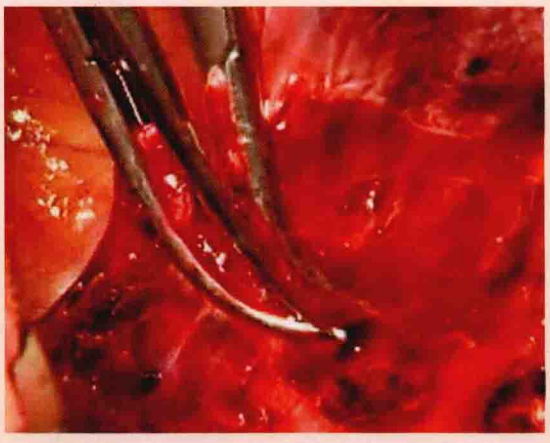


图 4-488 切断不全肺裂（2）

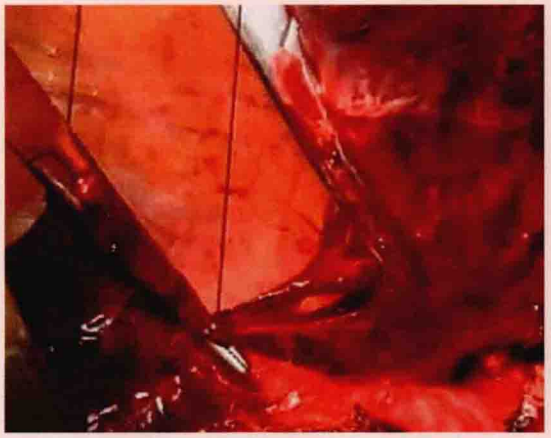


图 4-489 切断并结扎不全肺裂

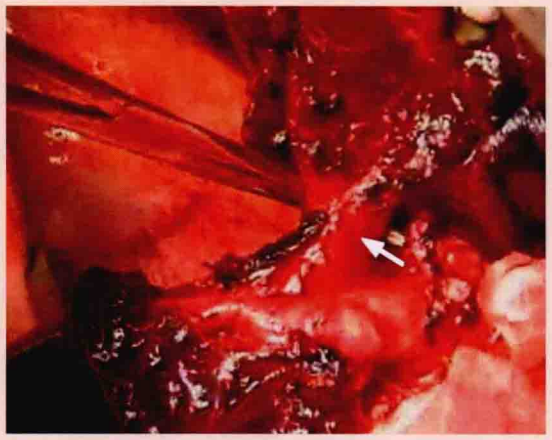


图 4-490 暴露左上叶支气管

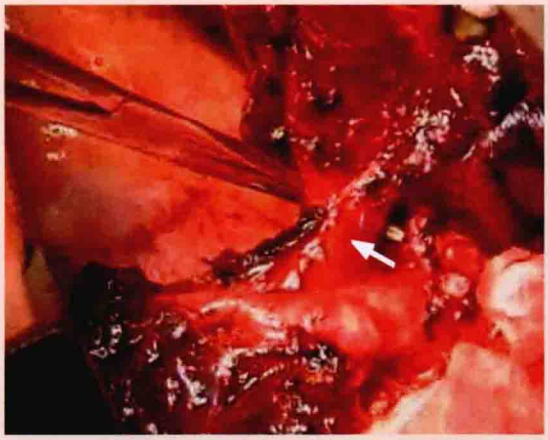


图 4-491 上大直角钳，切断左上叶支气管，移除肺叶

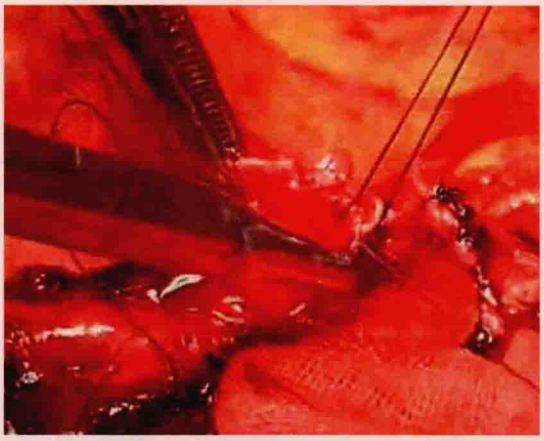


图 4-492 结扎左上叶支气管断端

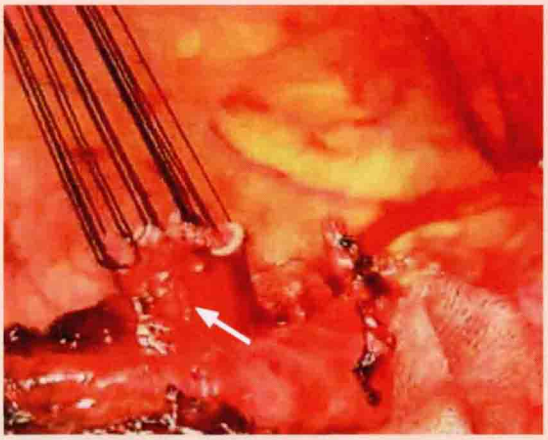


图 4-493 缝合左上支气管残端

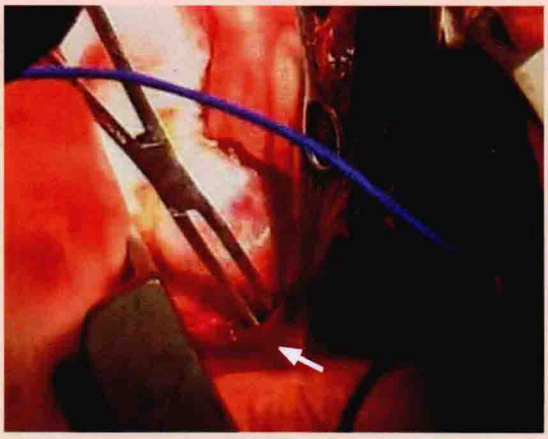


图 4-494 松解左肺下叶韧带

十四、左全肺切除术

（一）示意图

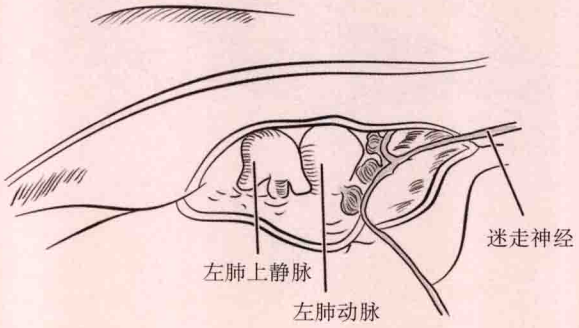


图 4-495 解剖肺门结构。进胸后，将左肺向前下方牵拉，显露主动脉弓下的左肺门上方，切开主动脉弓至左肺下静脉之间纵隔胸膜，并切断通向肺门后方的迷走神经分支，显露左肺动脉干，它的下后方为左总支气管，肺上静脉在肺动脉下方与左主支气管前方。在这两结构下为肺下静脉

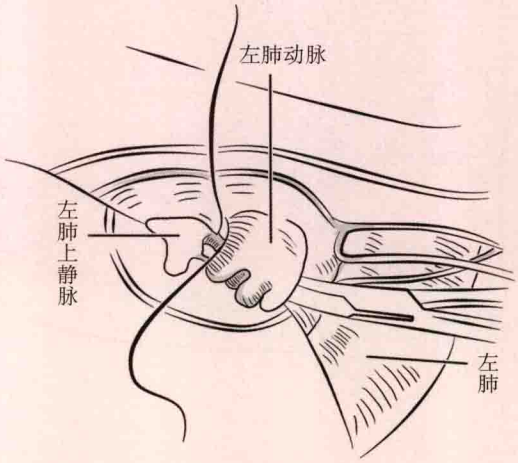


图 4-496 将左肺上叶向下牵引，显露肺门前上方左肺动脉干，游离该主干的上缘及前面，分离与下方肺上静脉的间隙，用手指或用血管钳伸入左肺动脉干与左主支气管之间的疏松组织，自上而下的轻缓分开。钳夹、切断左肺动脉并缝扎。在处理左肺动脉时，应防止损伤喉返神经或左主支气管

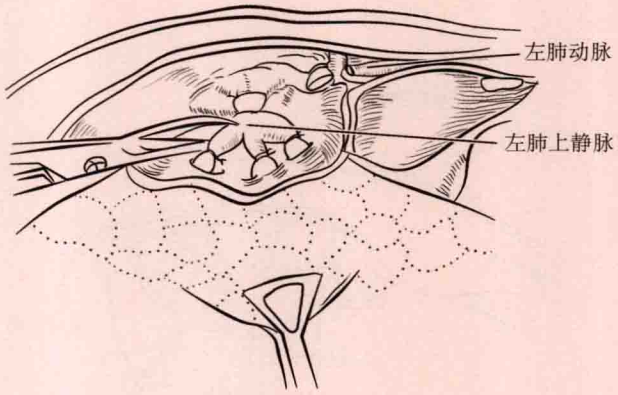


图 4-497 将肺向后牵拉，显露肺门前上方的肺上静脉，剪开静脉鞘，与后方肺动脉分开（若已切断肺动脉则静脉更易于操作），近端结扎后，远端各分支分别结扎，夹住总干切断后再做近心端静脉的“8”字缝合

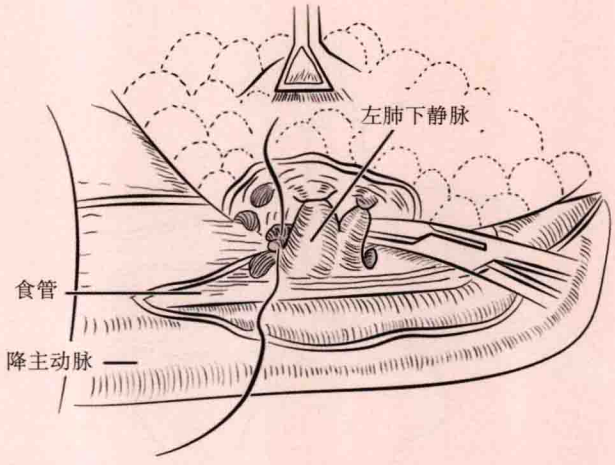


图 4-498 将左肺下叶向上前方牵拉，剪断肺下韧带，结扎其中小动脉分支，向上分离至淋巴结即为肺下静脉下缘的标记。切开血管鞘先分别结扎远端各静脉分支，再处理主干，以期留有充分长度的主干，便于结扎、缝扎、离断

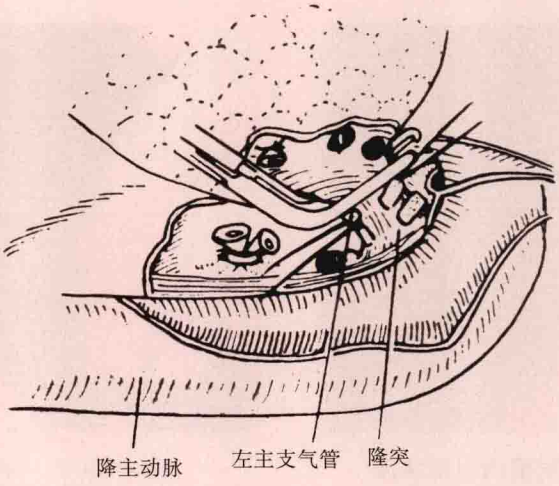


图 4-499 将病肺向下方牵引，逐一结扎、切断左主支气管周围的支气管动脉和迷走神经分支，连同隆突下及支气管周围淋巴结一起做高位切除。左主支气管切端间断缝合，亦可用支气管缝闭器缝闭

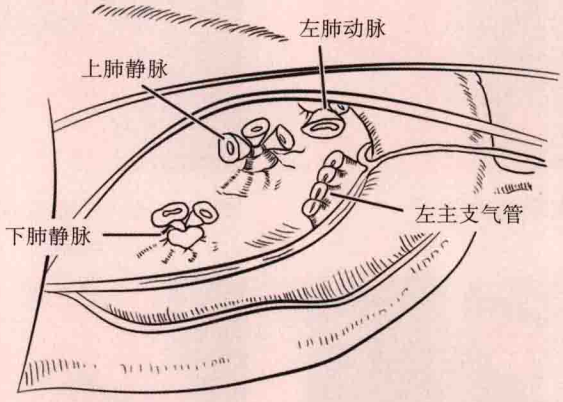


图 4-500 切端用带蒂胸膜瓣覆盖。关胸前，用温生理盐水冲洗 3 次，未见渗血漏气后，将胸腔引流管自第 7 至第 8 肋间引出，固定在胸壁上，术后连接于床边水封瓶

（二）手术步骤

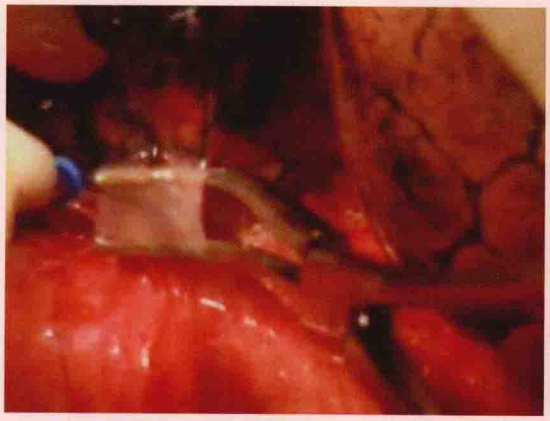


图 4-501　切开肺门周围的纵隔胸膜

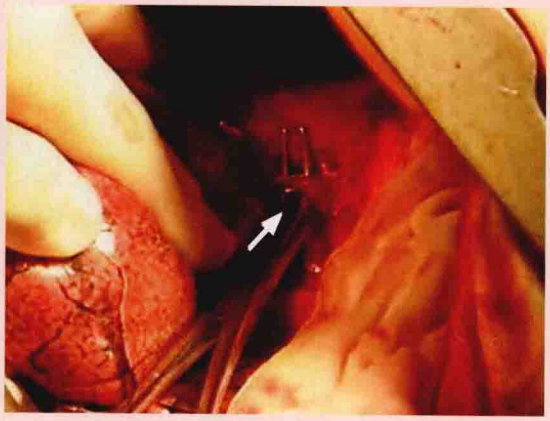


图 4-502　切断迷走神经肺支

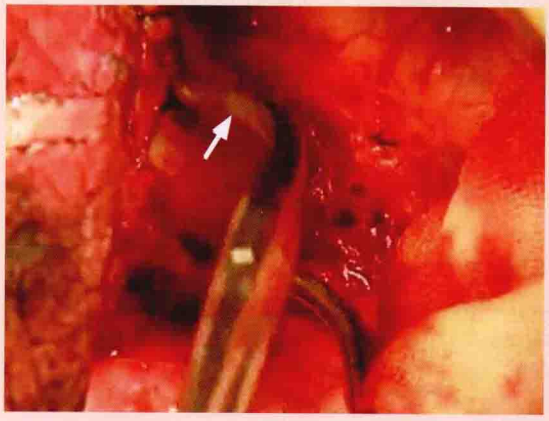


图 4-503　钳夹左肺动脉干

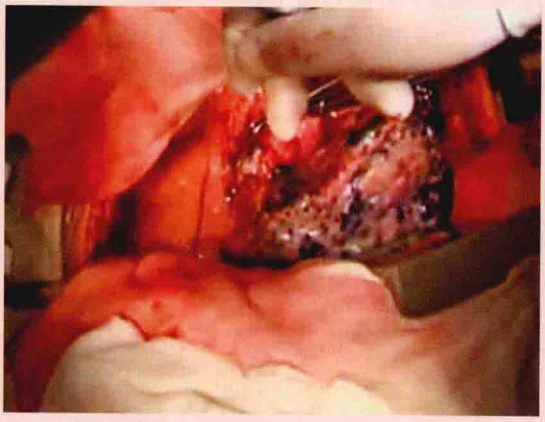


图 4-504　切断左肺动脉干，残端以 0 号丝线缝扎

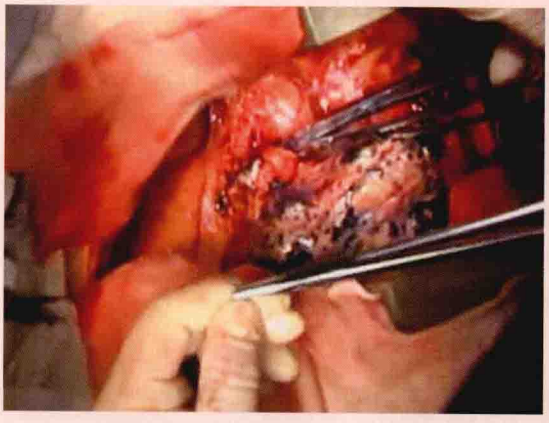


图 4-505　缝扎左肺动脉干残端

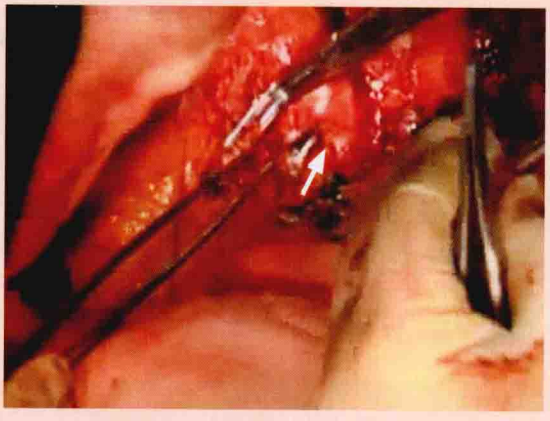


图 4-506　在肺门与心包之间游离肺上静脉

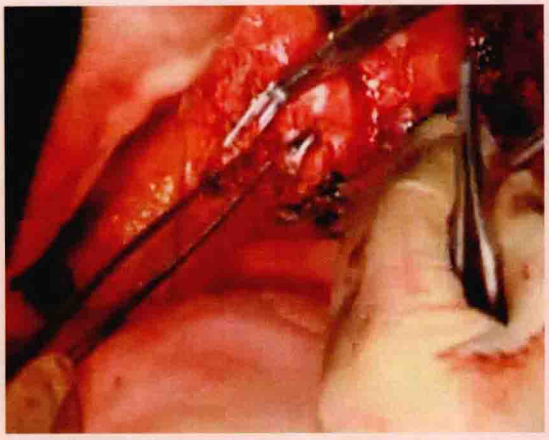


图 4-507 钳夹肺上静脉

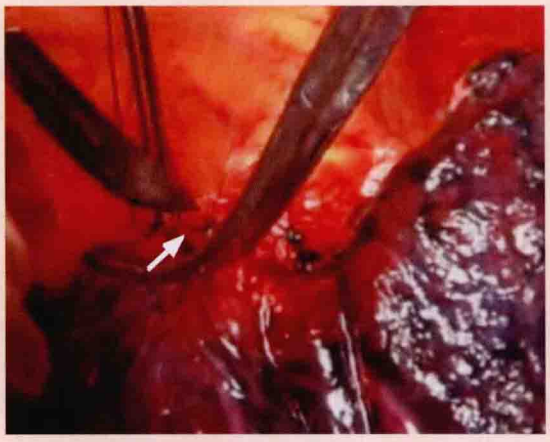


图 4-508 切断肺上静脉

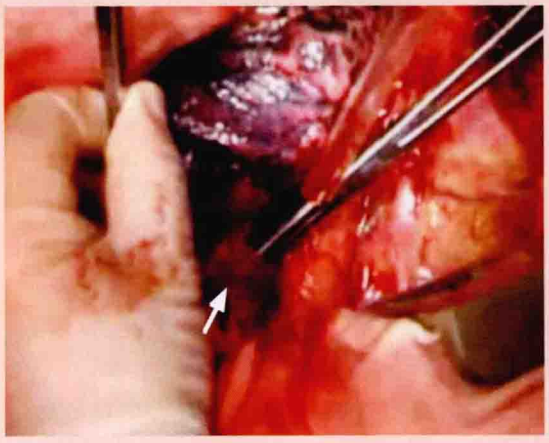


图 4-509 左肺前移，切断左肺下韧带

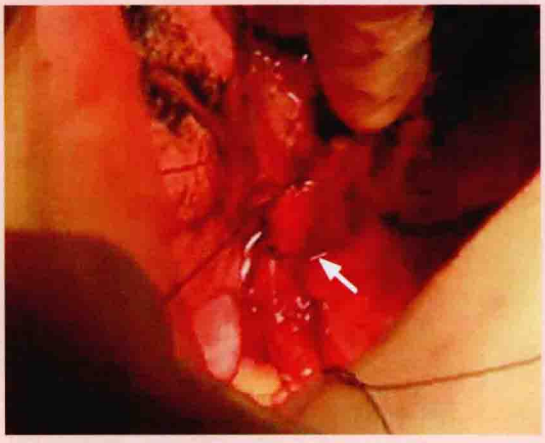


图 4-510 寻找并结扎左肺下静脉

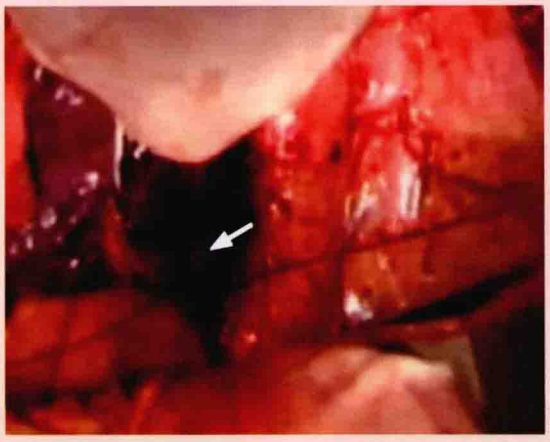


图 4-511 暴露左主支气管

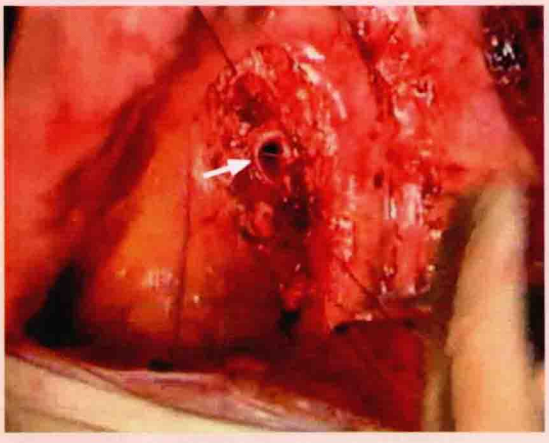


图 4-512 切断左主支气管，移出左肺

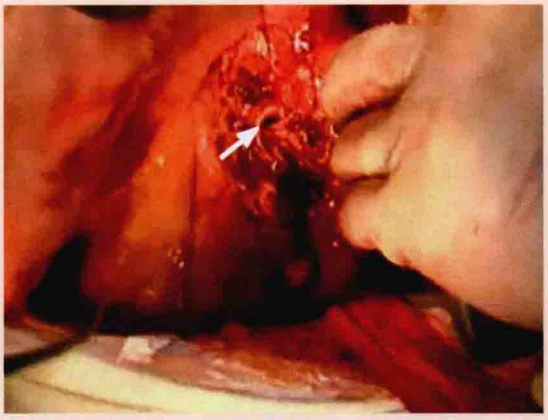


图 4-513 间断缝合左主支气管残端

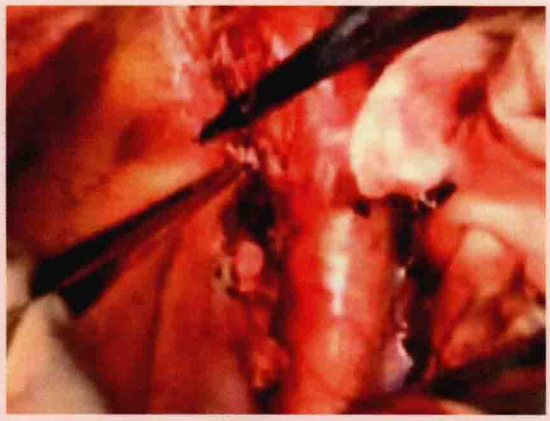


图 4-514 用周围组织包埋支气管残端

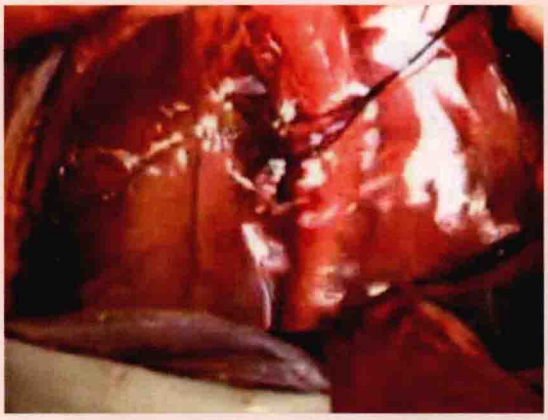


图 4-515 生理盐水冲洗胸腔

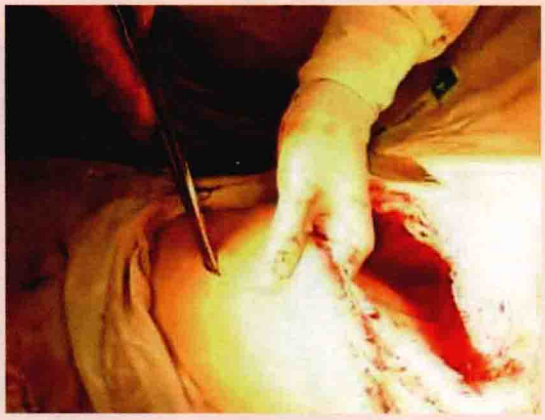


图 4-516 行胸腔闭式引流，逐层关胸

十五、胸腺良性肿瘤切除术

（一）示意图

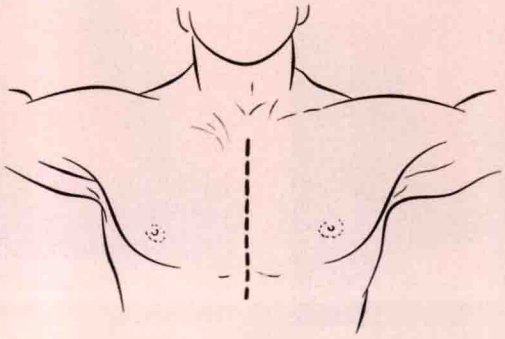


图 4-517 胸骨正中切口

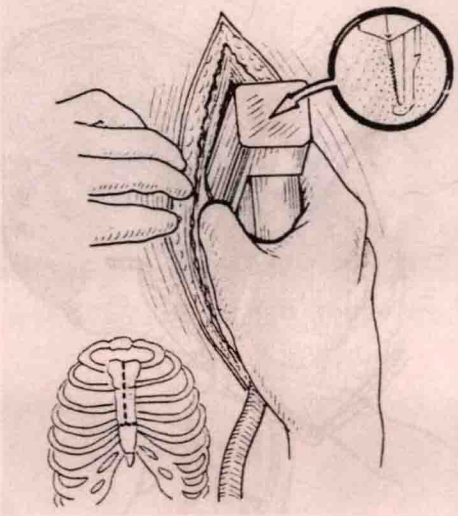


图 4-518 用胸骨刀切开胸骨

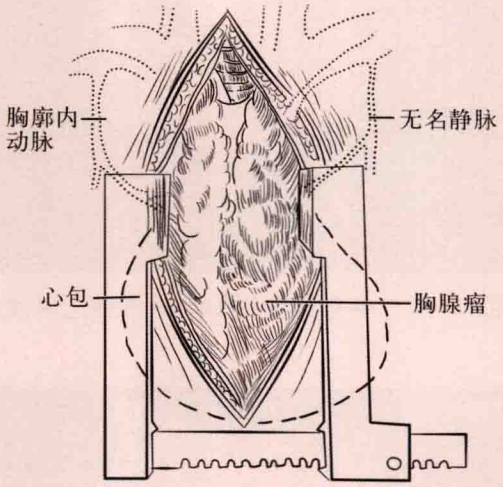


图 4-519 用胸骨张开器扩大切口，暴露胸腺肿瘤并切除

（二）手术步骤

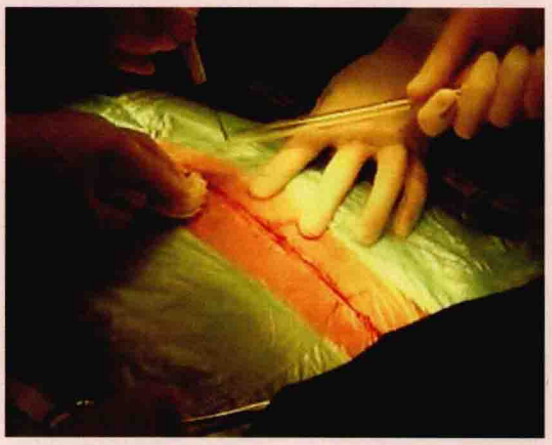


图 4-520 胸前壁正中切口（从胸骨切迹沿正中线至剑突下 1.5 cm）

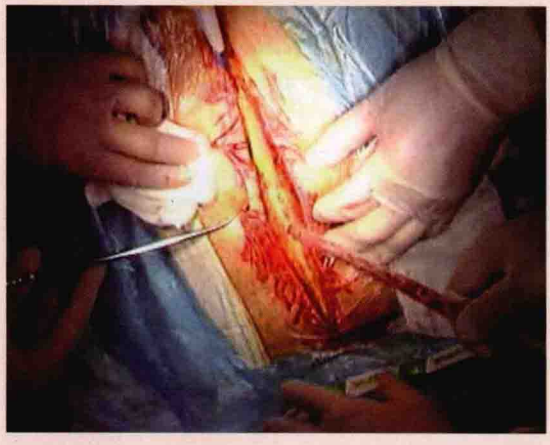


图 4-521 切开皮肤及皮下组织，剥离胸骨甲状肌的胸骨附着处

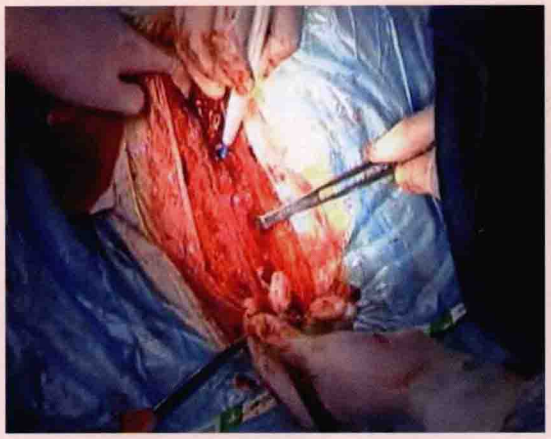


图 4-522 手指置于胸骨后方推移上纵隔结构

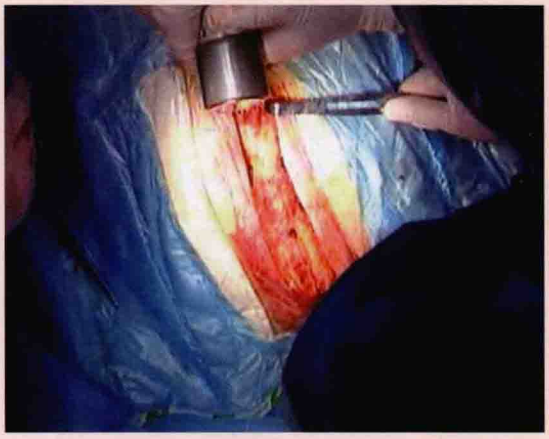


图 4-523 用胸骨刀沿正中线纵行切开胸骨

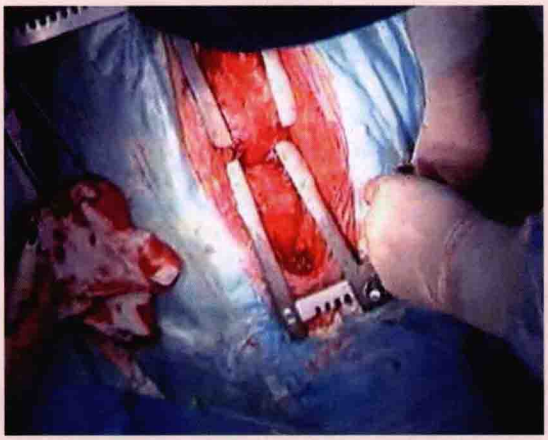


图 4-524 置入胸骨撑开器

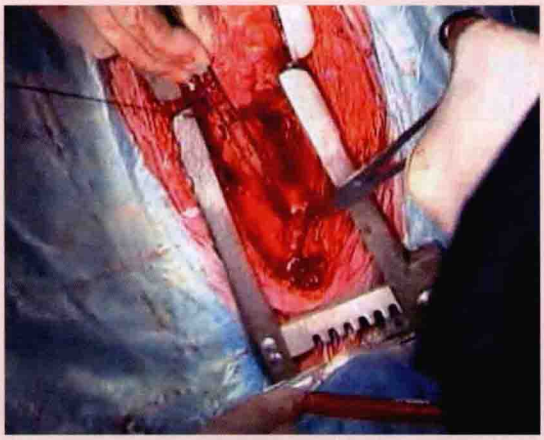


图 4-525 观察胸腔内结构

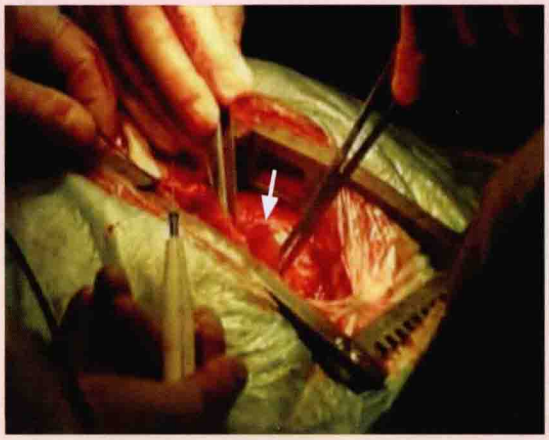


图 4-526 探查肿瘤生长情况

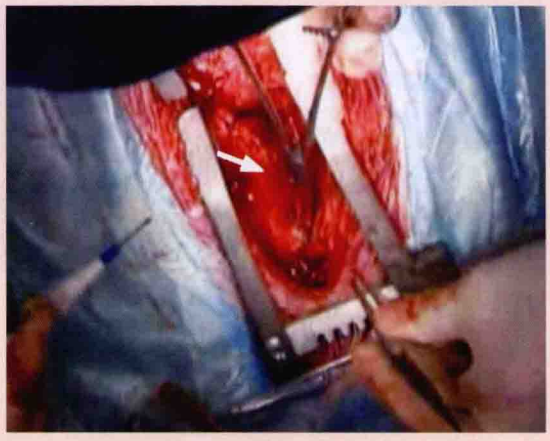


图 4-527 游离肿瘤并切断肿瘤血管（1）

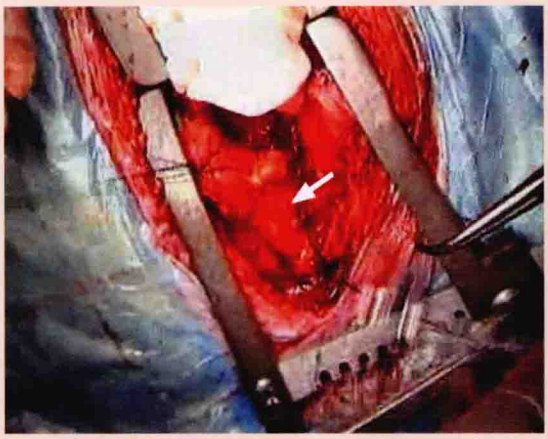


图 4-528 游离肿瘤并切断肿瘤血管（2）

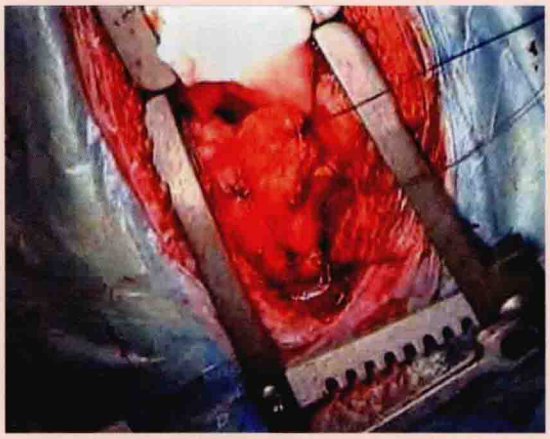


图 4-529 游离肿瘤并切断肿瘤血管（3）

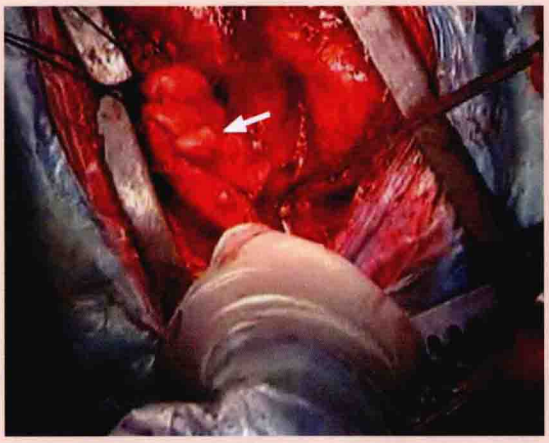


图 4-530 游离肿瘤并切断肿瘤血管（4）

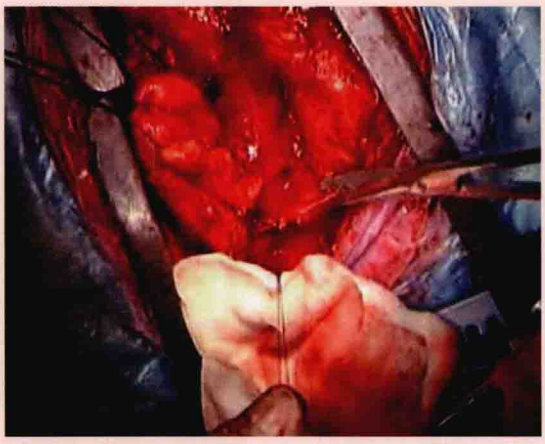


图 4-531 游离肿瘤并切断肿瘤血管（5）

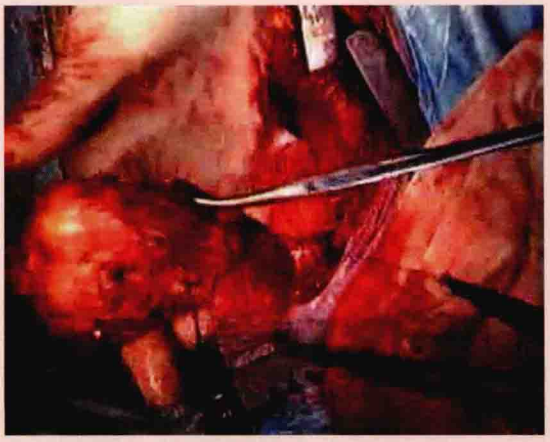


图 4-532 完整切除肿瘤（1）

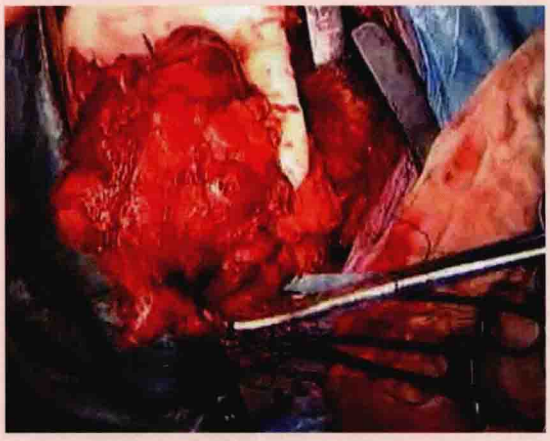


图 4-533 完整切除肿瘤（2）

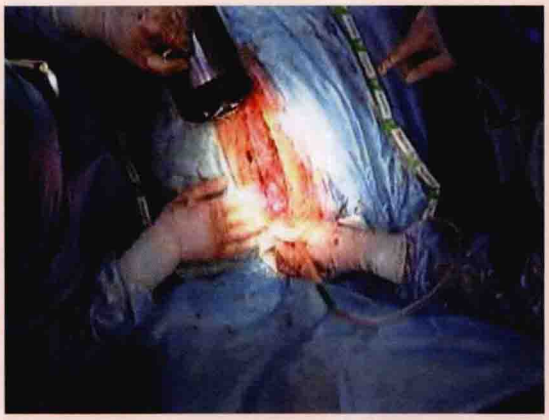


图 4-534 彻底止血并冲洗手术创面

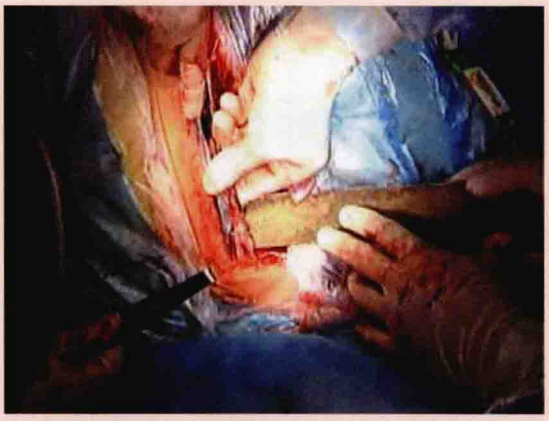


图 4-535 于胸骨上、下部缝合 3 ~ 4 根细钢丝（1）

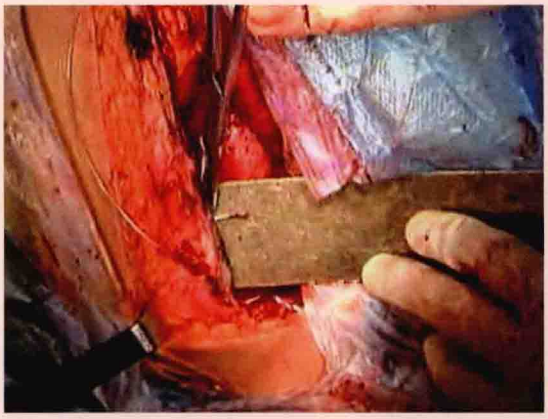


图 4-536 于胸骨上、下部缝合 3 ~ 4 根细钢丝（2）

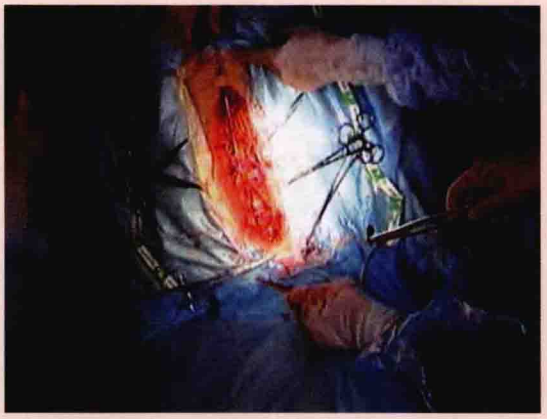


图 4-537 纵隔下方放置多孔引流管，于上腹壁小切口引出（1）

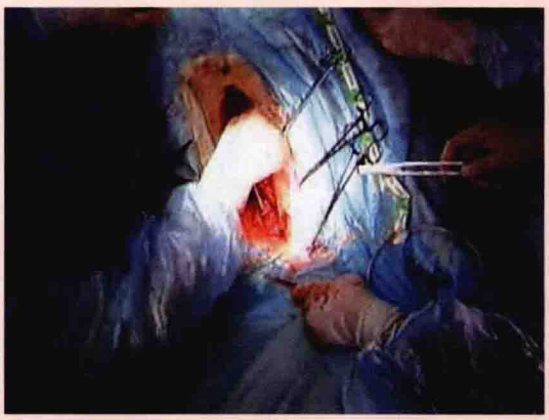


图 4-538 纵隔下方放置多孔引流管，于上腹壁小切口引出（2）

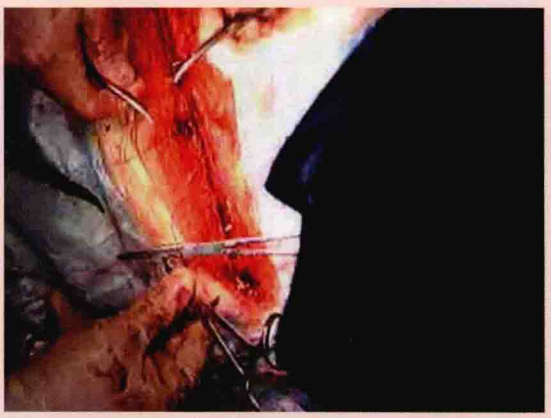


图 4-539 严密对合胸骨切口，分别绕行缠紧钢丝，断端弯向胸骨（1）

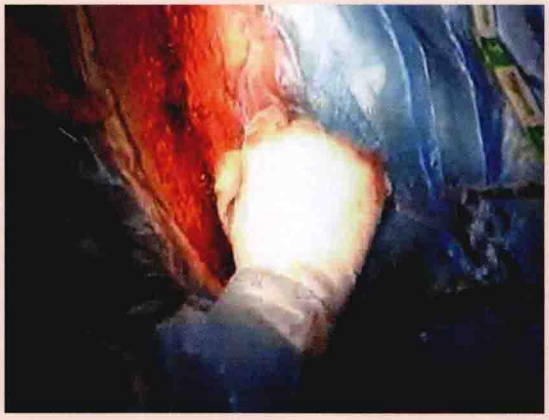


图 4-540 严密对合胸骨切口，分别绕行缠紧钢丝，断端弯向胸骨（2）

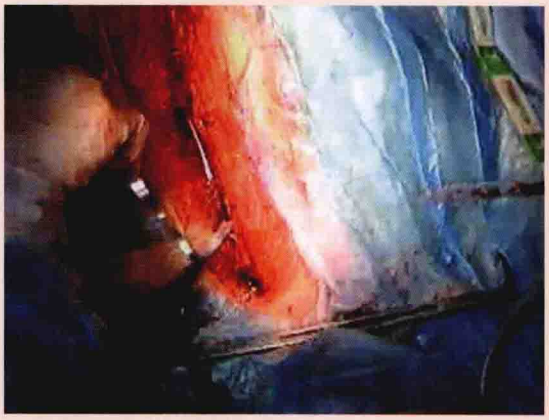


图 4-541 严密对合胸骨切口，分别绕行缠紧钢丝，断端弯向胸骨（3）

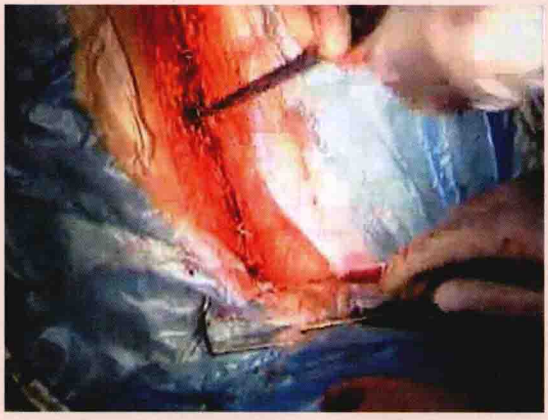


图 4-542 严密对合胸骨切口，分别绕行缠紧钢丝，断端弯向胸骨（4）

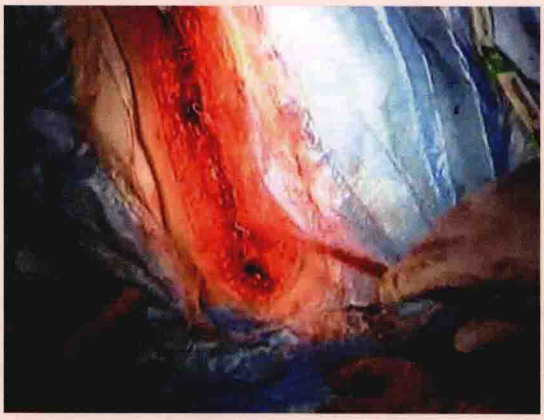


图 4-543 严密对合胸骨切口，分别绕行缠紧钢丝，断端弯向胸骨（5）

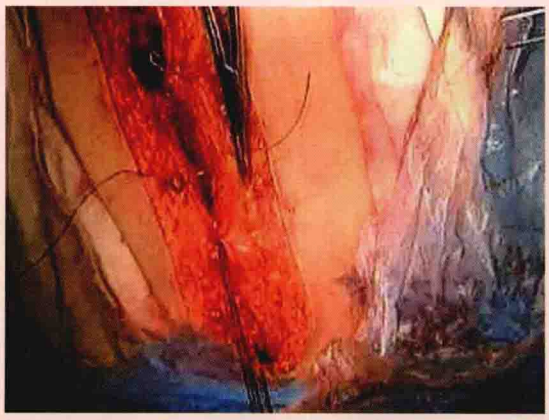


图 4-544 间断缝合皮下组织（1）

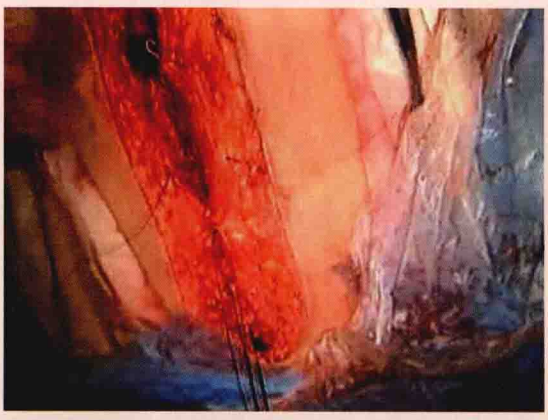


图 4-545 间断缝合皮下组织（2）



图 4-546 缝合皮肤

十六、胸膜顶部神经纤维瘤切除术

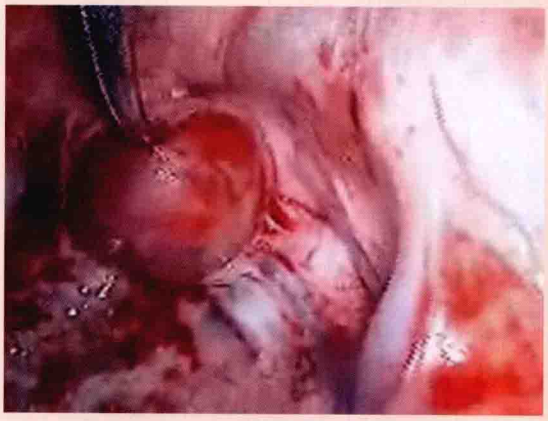


图 4-547 暴露肿瘤

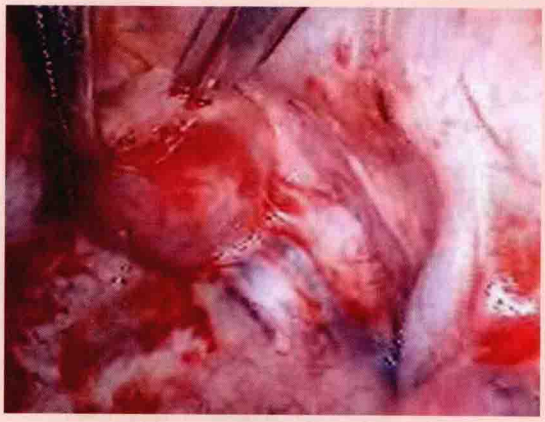


图 4-548 打开纤维瘤被膜

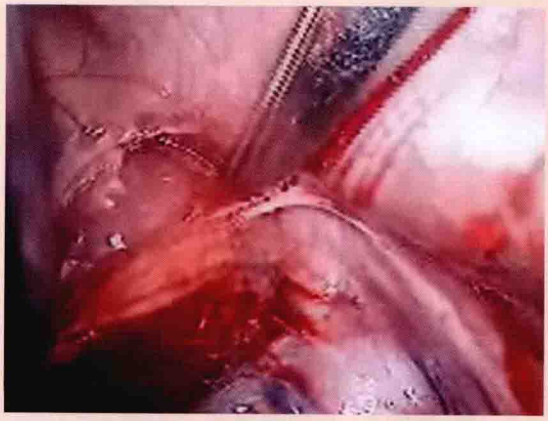


图 4-549 扩大肿瘤被膜切口

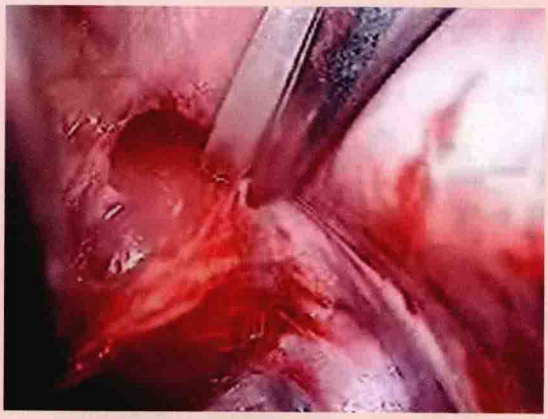


图 4-550 剪开肿瘤被膜（1）

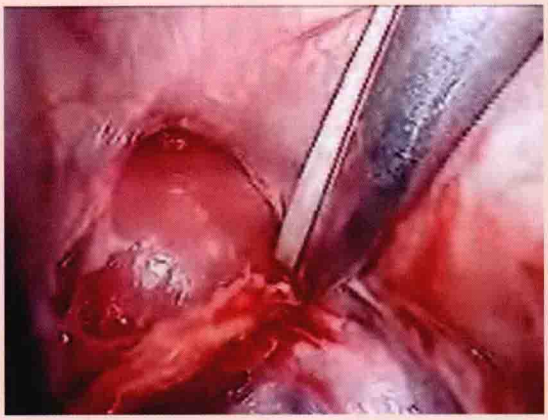


图 4-551 剪开肿瘤被膜（2）

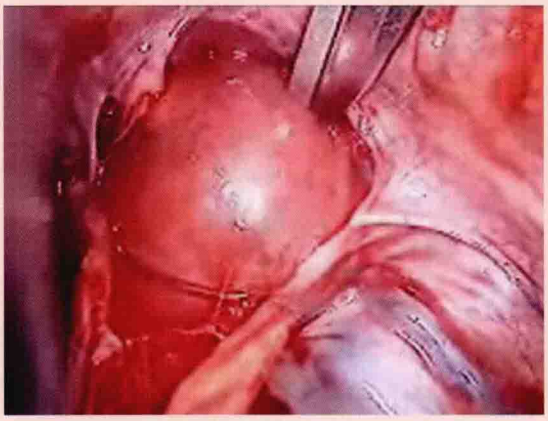


图 4-552 剥离肿瘤与被膜的粘连（1）



图 4-553 剥离肿瘤与被膜的粘连（2）

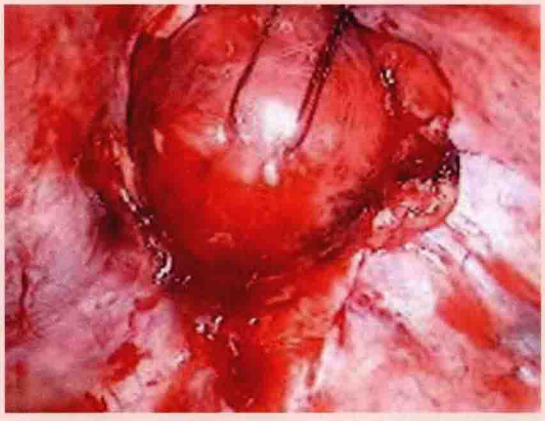


图 4-554 剥离肿瘤与被膜的粘连（3）



图 4-555 缝入 7 号缝合线，作为牵引（1）

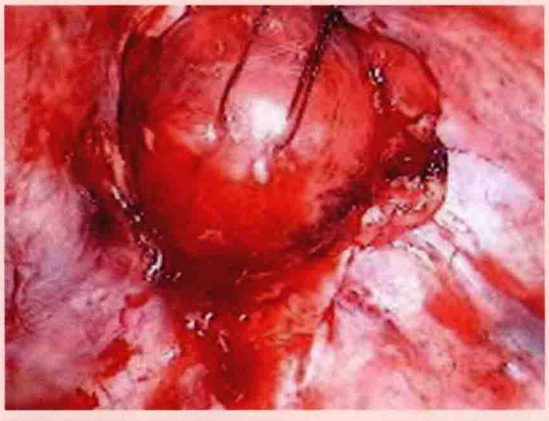


图 4-556 缝入 7 号缝合线，作为牵引（2）

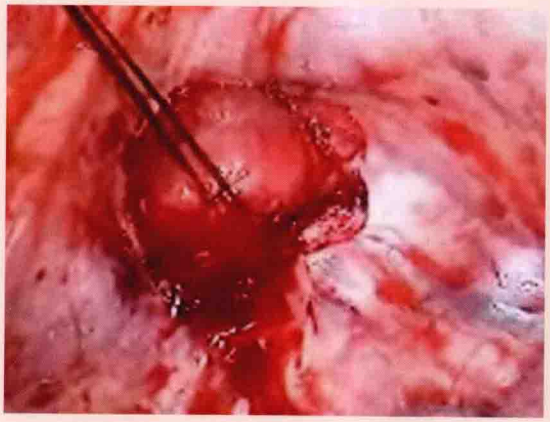


图 4-557 缝入 7 号缝合线，作为牵引（3）

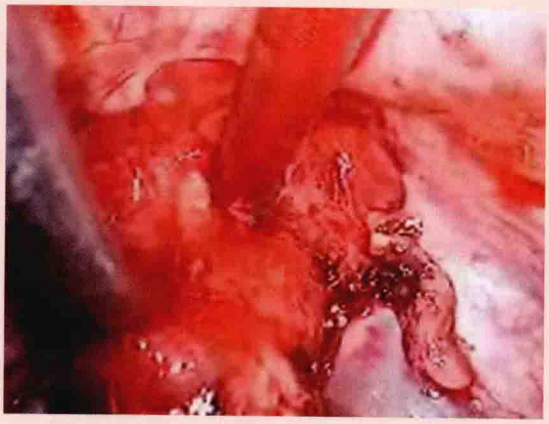


图 4-558 剥离肿瘤深部粘连，并彻底止血（1）

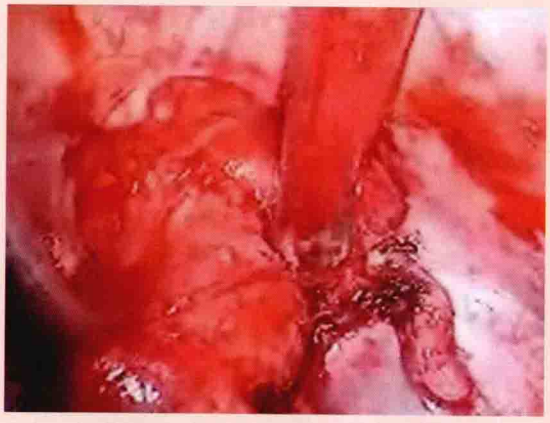


图 4-559 剥离肿瘤深部粘连，并彻底止血（2）



图 4-560 剥离肿瘤深部粘连，并彻底止血（3）



图 4-561 切除的肿瘤组织



图 4-562 缝合胸膜创面（1）

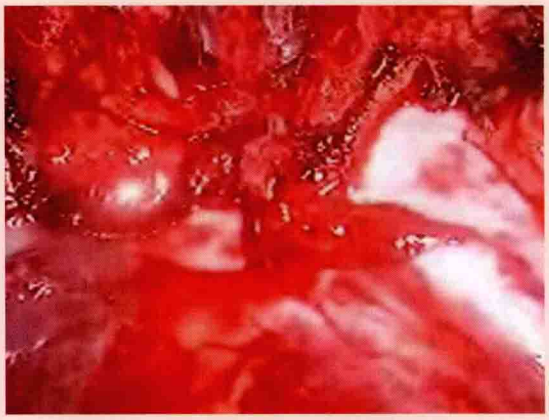


图 4-563 缝合胸膜创面（2）

[General Information]
SS号=13492162