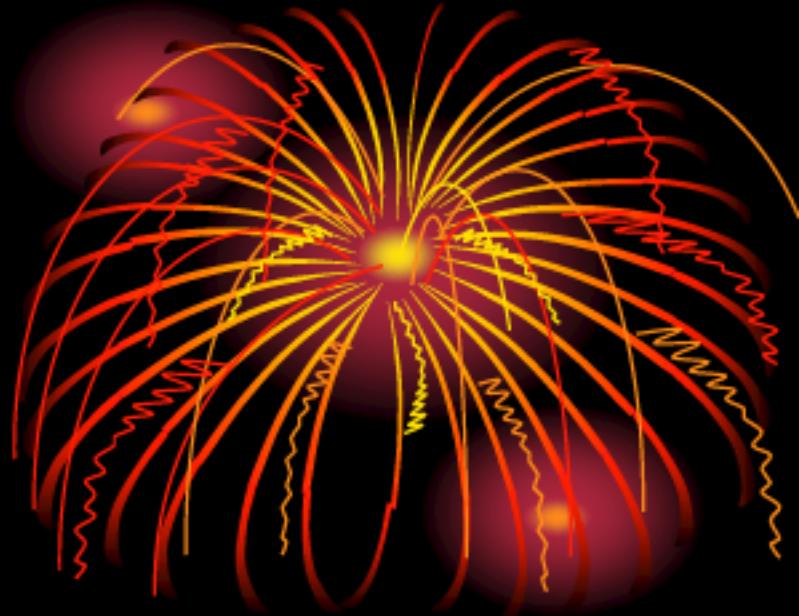




胸片de读片技巧

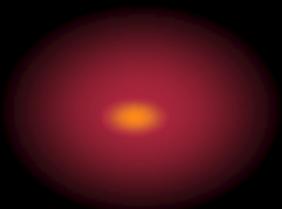
# 读片步骤



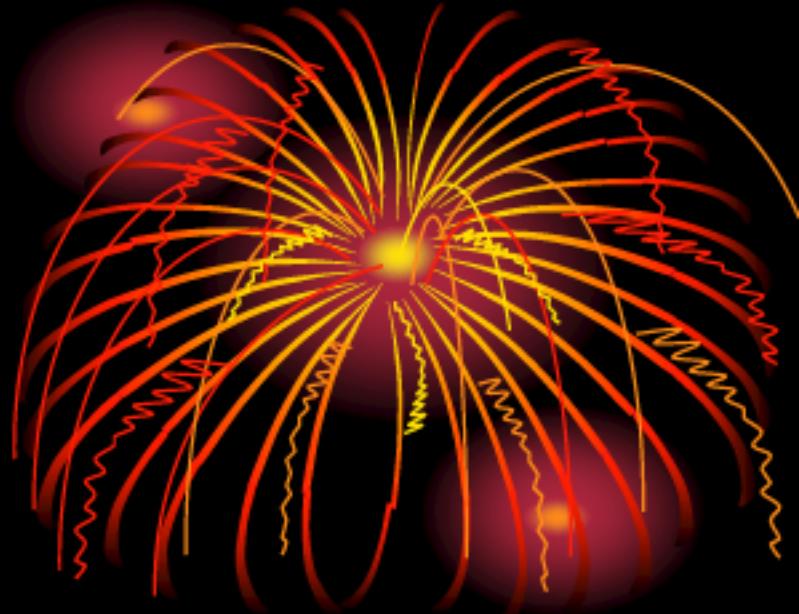
- **Step 1:** 发现病变
- **Step 2:** 解剖定位
- **Step 3:** 推测病理
- **Step 4:** 探讨病因

# 具体步骤

- 核查姓名、日期
- 检查摄片质量及左右方向
- 全面预览，用心罗列你所发现的异常
- 仔细观察病变部位的特点，定位、推测病理类型
- 结合病史给出可能的诊断



# 摄片质量



## □ 体位：

正位：常规后前位，有时为前后位（床旁）  
侧位（靠近胶片侧）：左侧位、右侧位

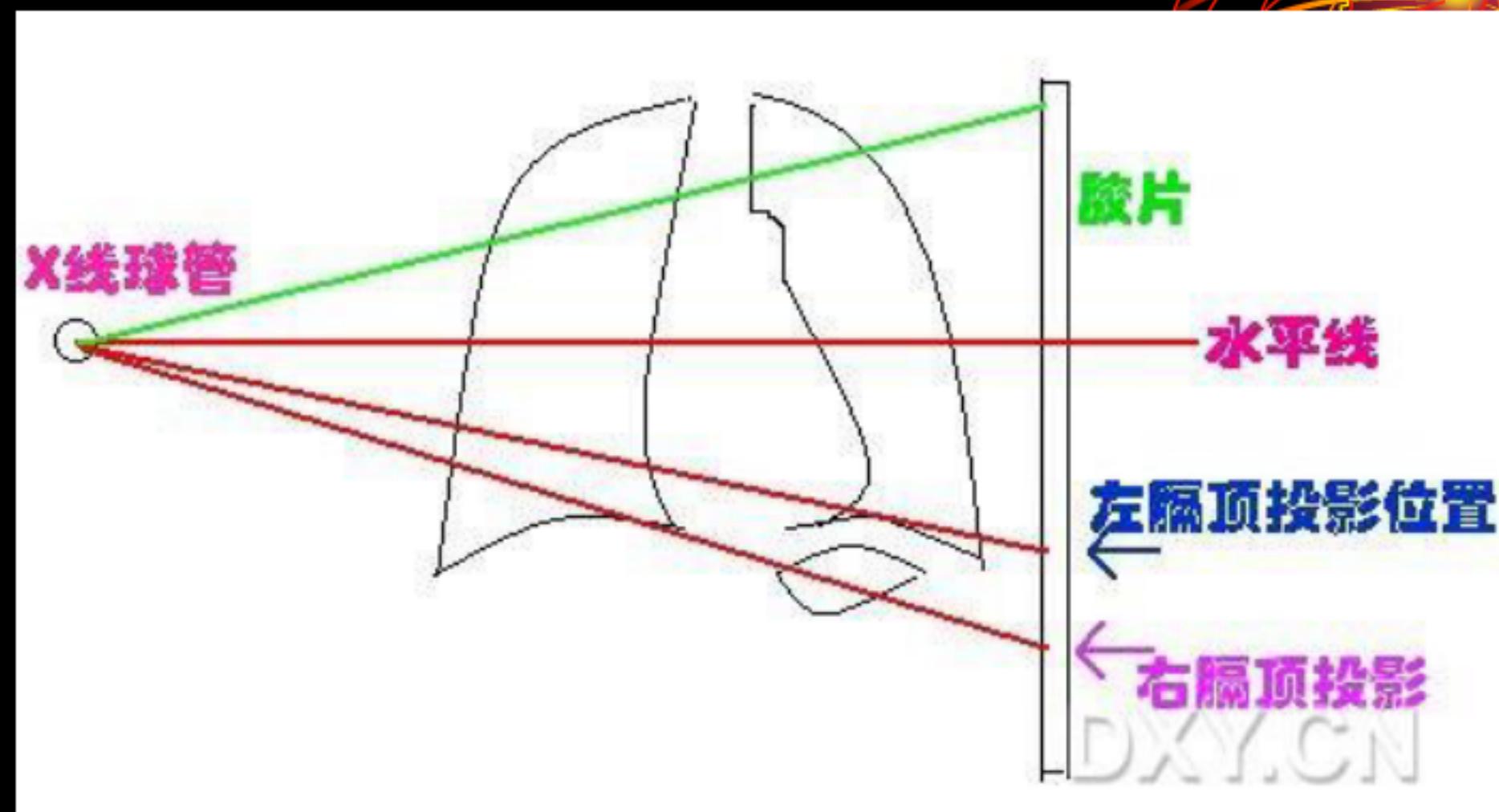
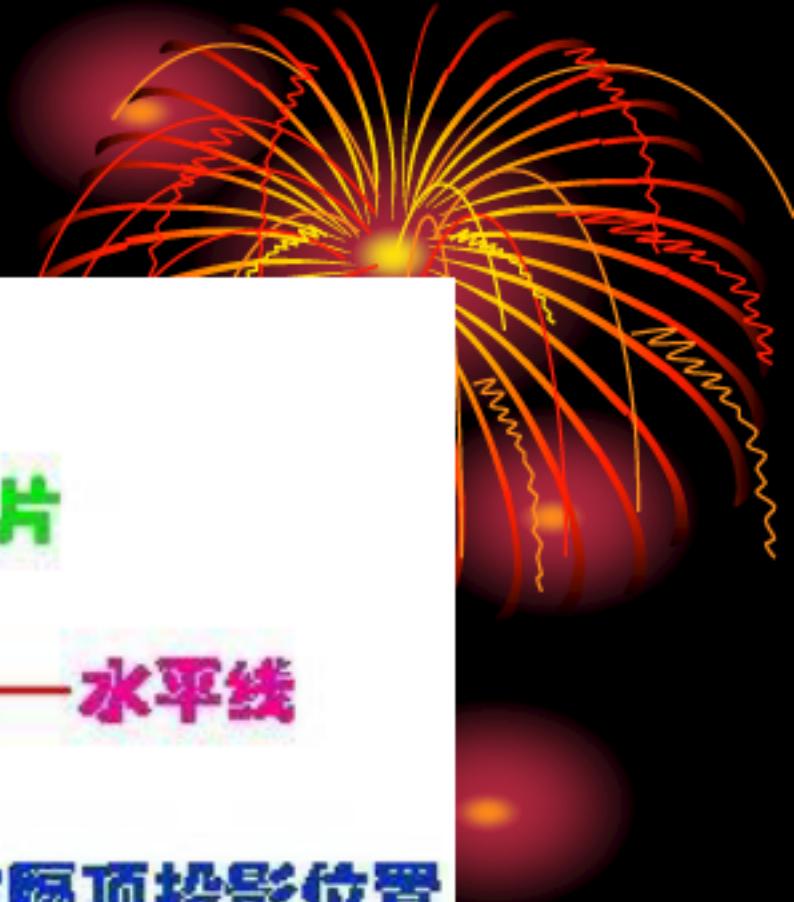




正位片



侧位片

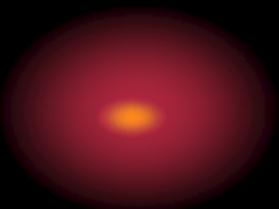
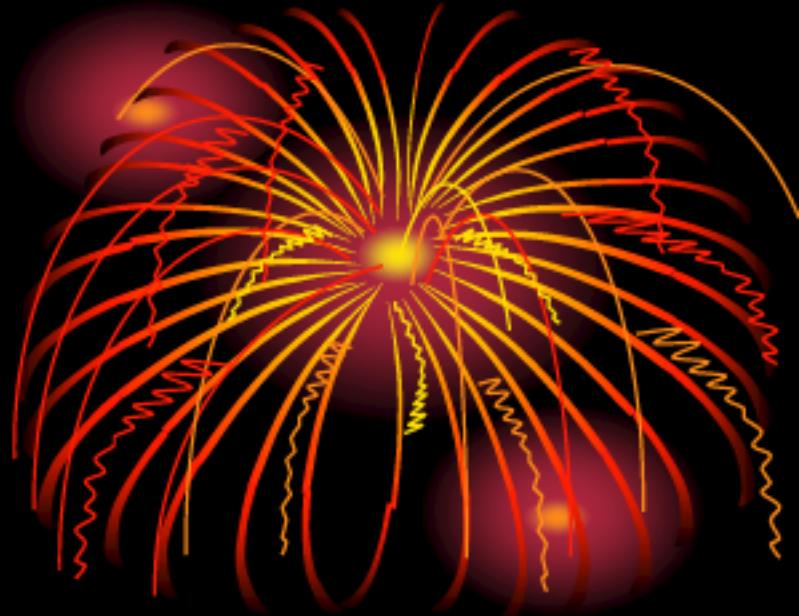


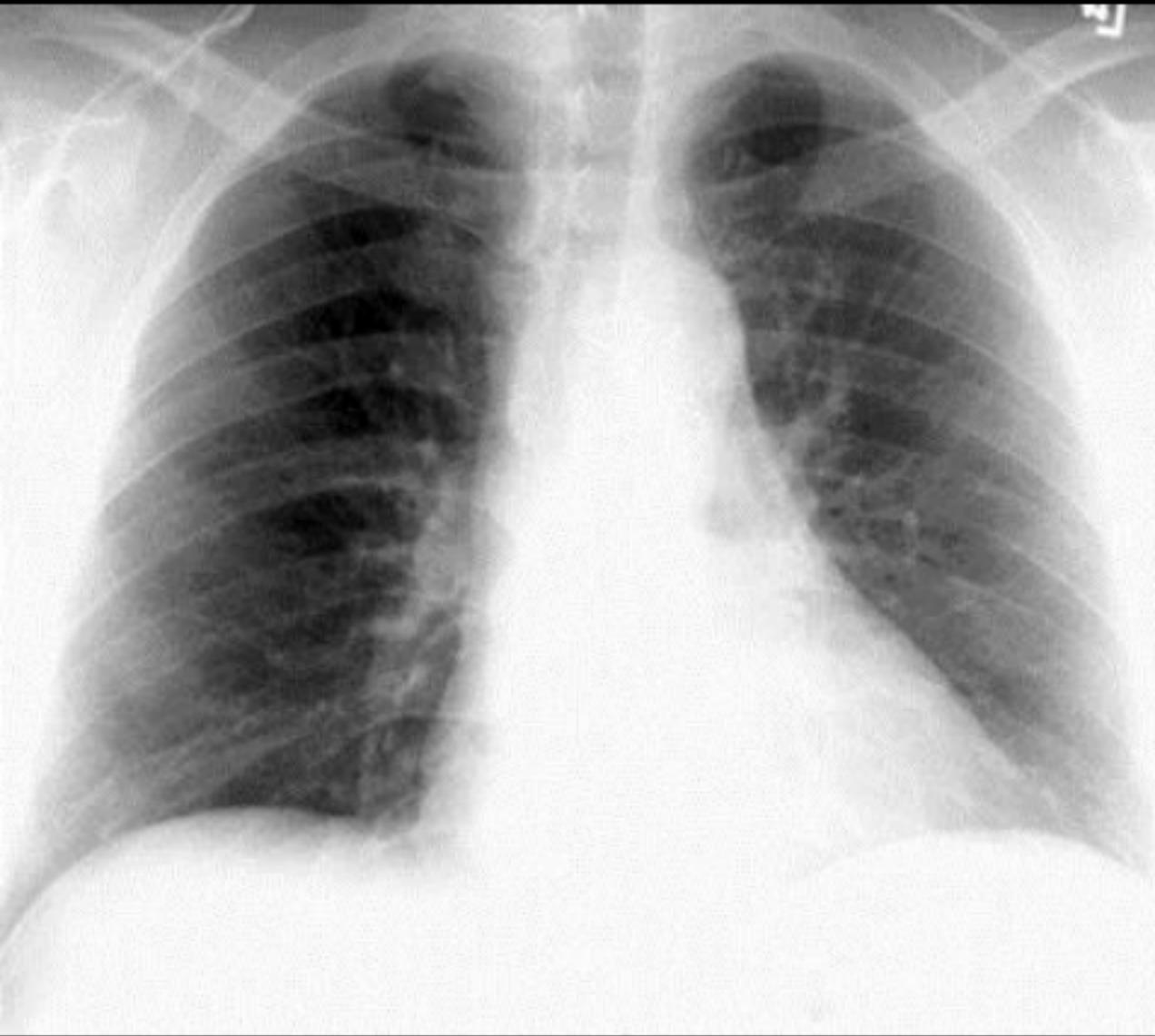
物体越远离胶片投影越大、影像越模糊  
使病变侧靠近胶片

# 摄片质量

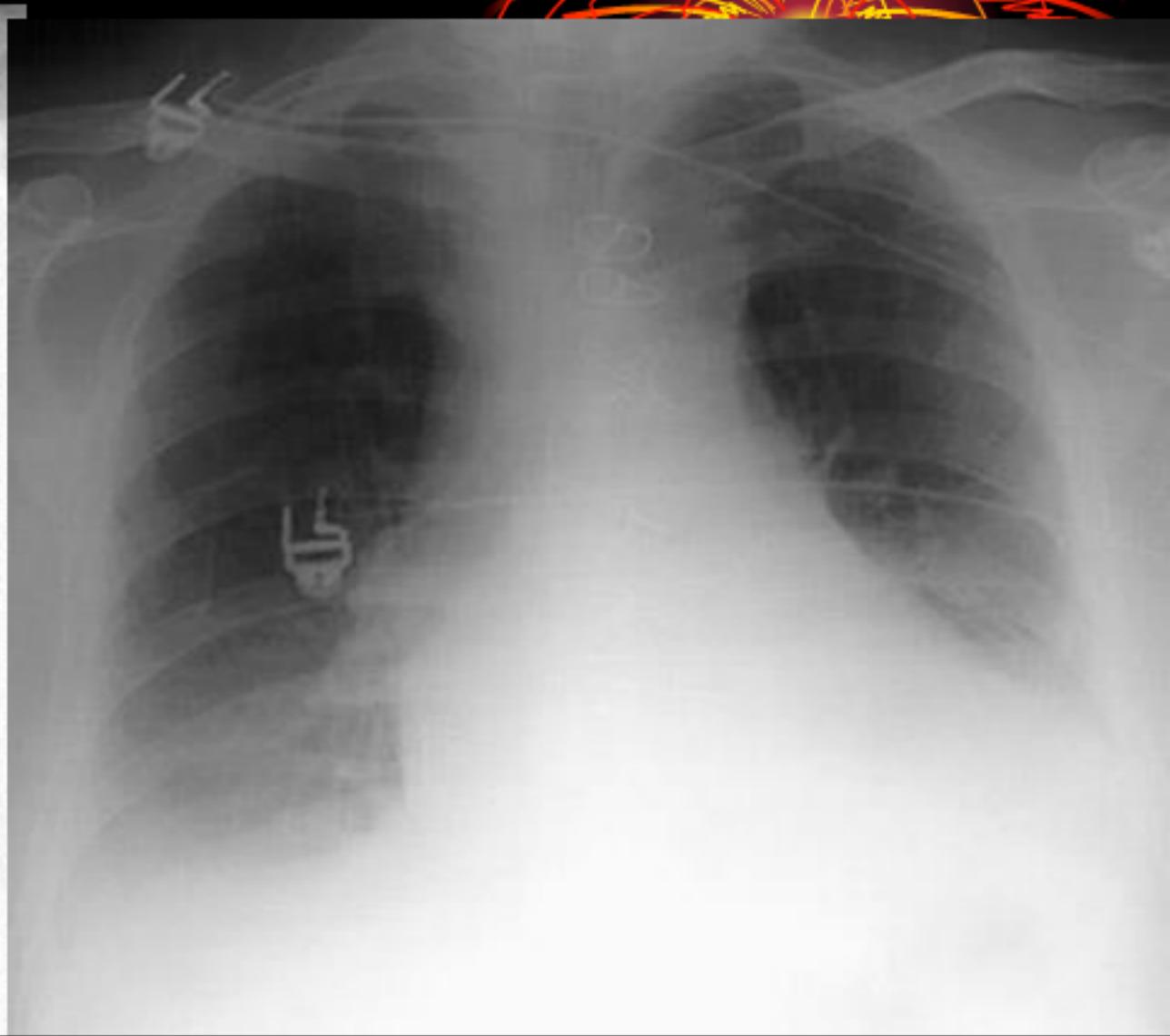
## □ 体位

注意：前后位胸片心影和纵隔可能变形  
是卧位还是立位

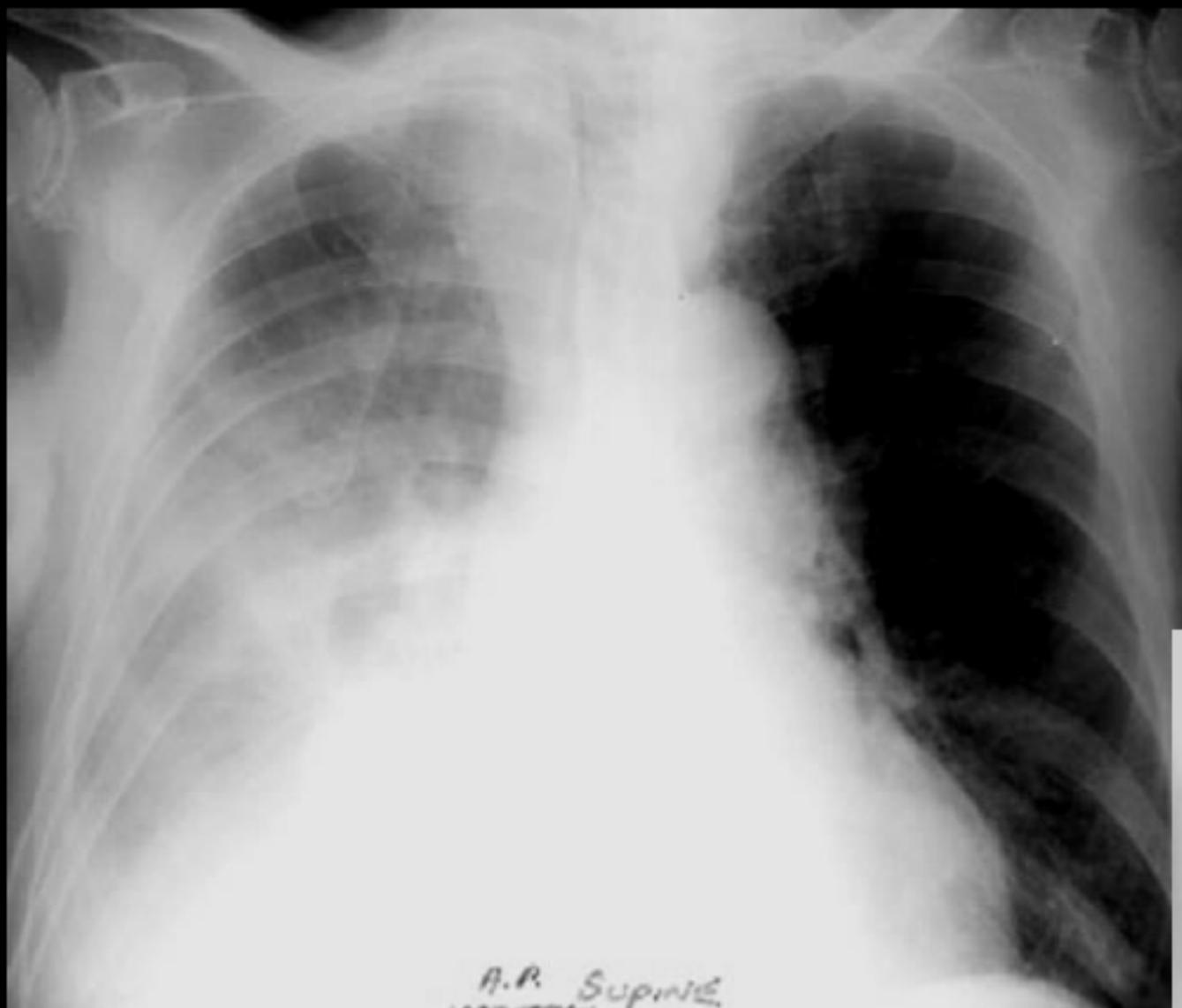




**PA**



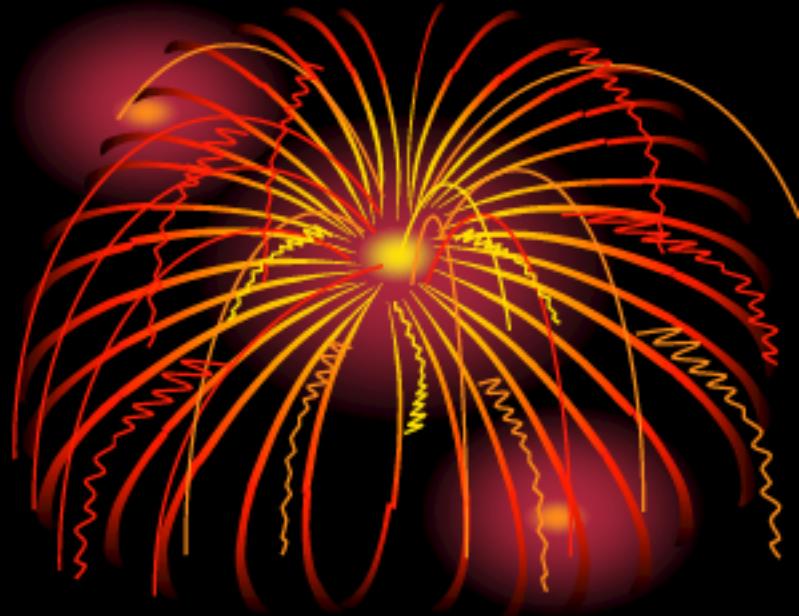
**AP**



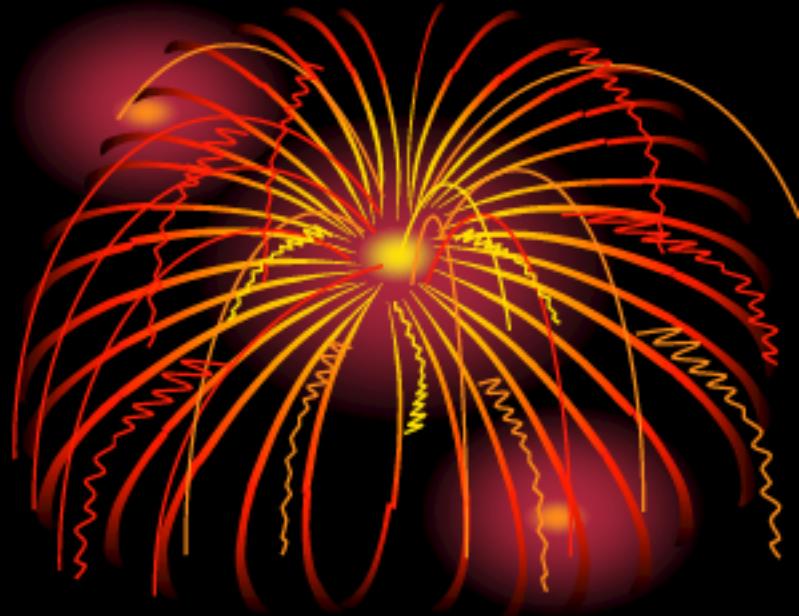
左侧胸腔积液 (卧位)



左侧胸腔积液 (立位)



# 摄片质量

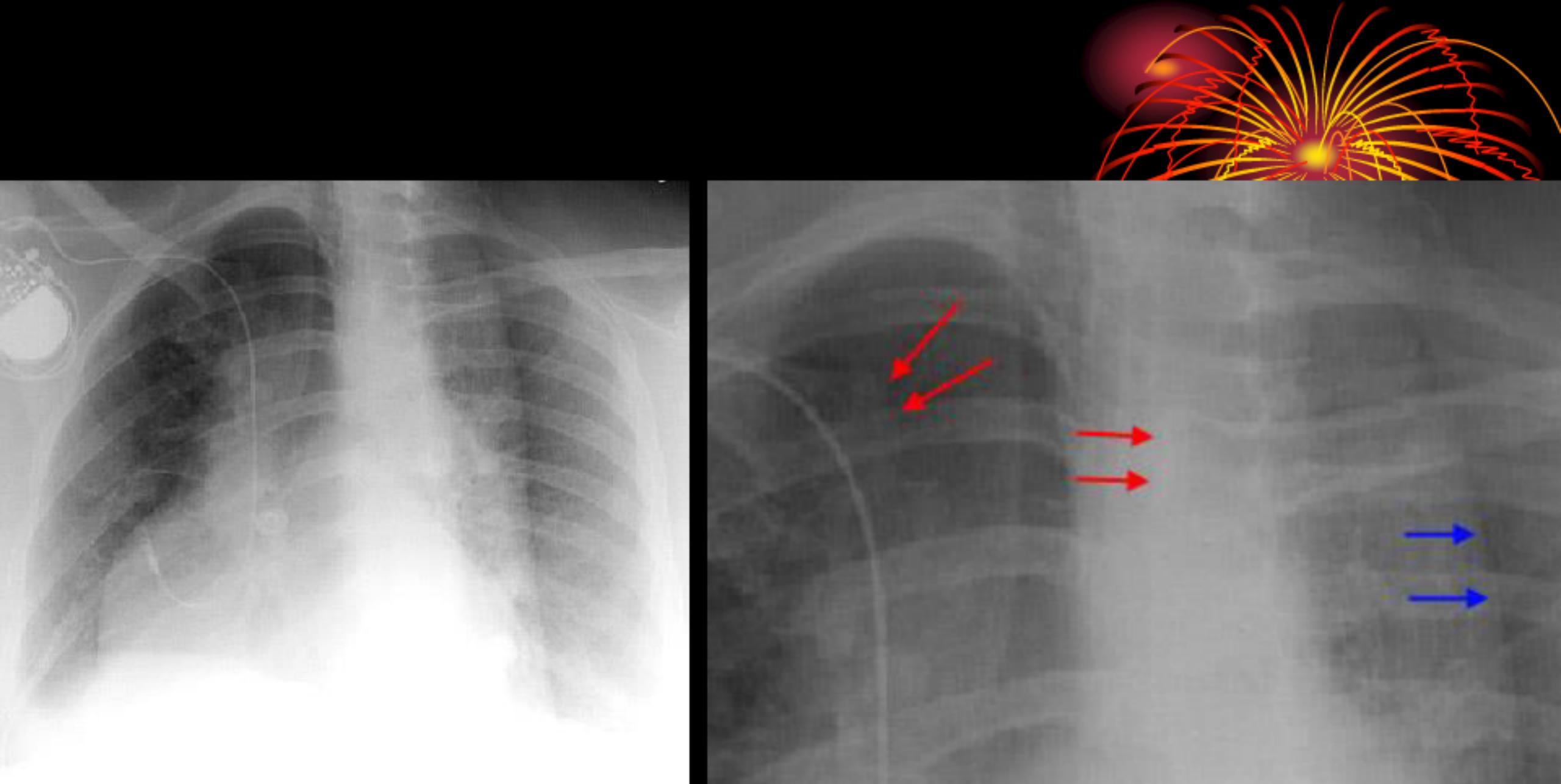


- 体位
- 旋转：气管居中、锁骨头至脊突的距离左右相等。  
该距离较短的一侧肺较白。



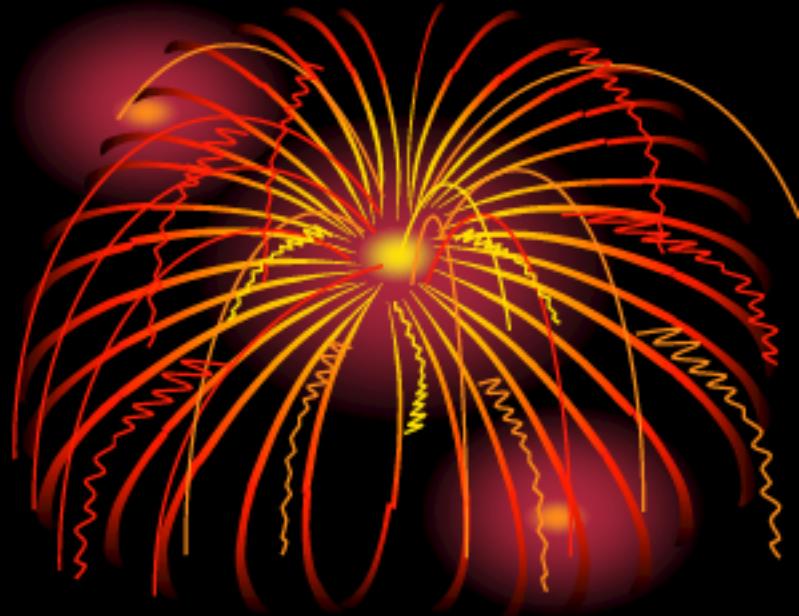
Centered  
Equal distance between  
medial end of clavicle  
and midline



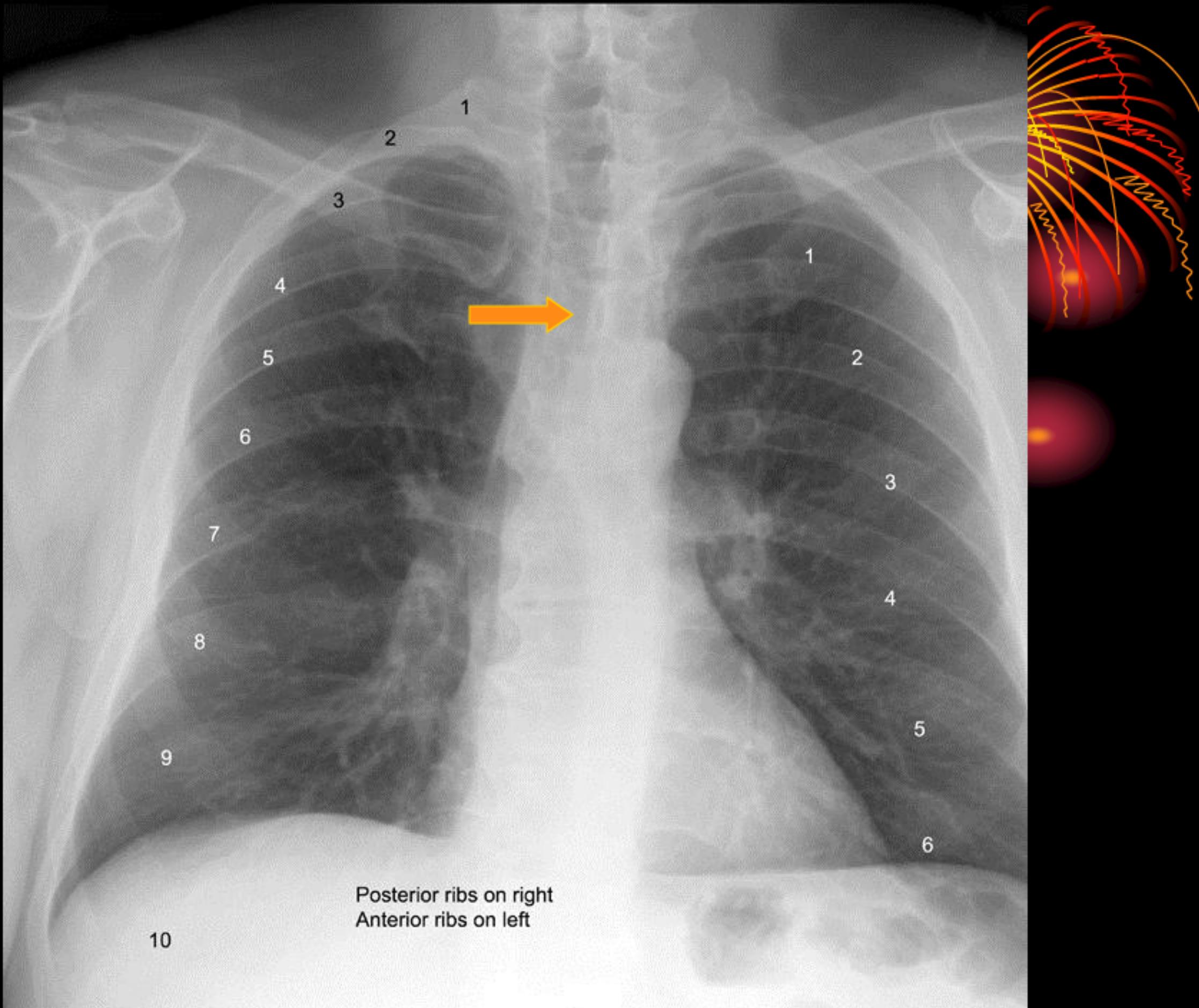


体位旋转

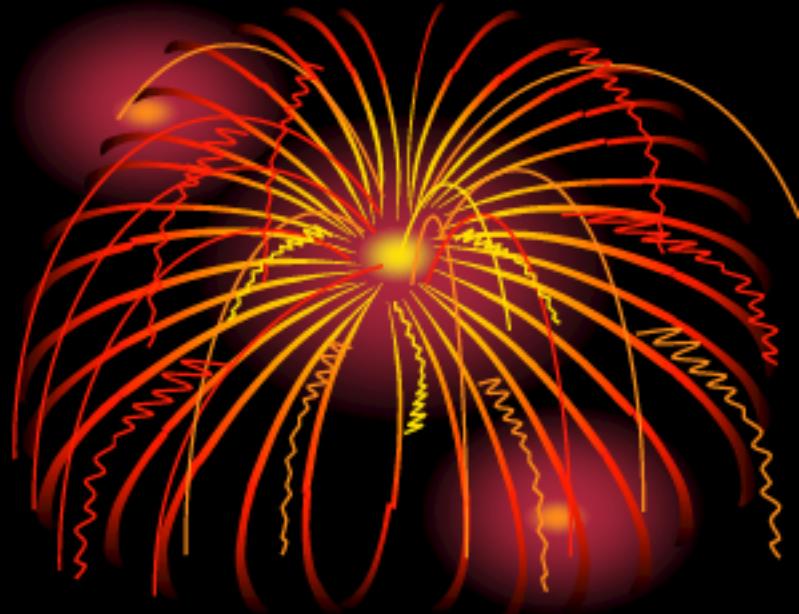
# 摄片质量



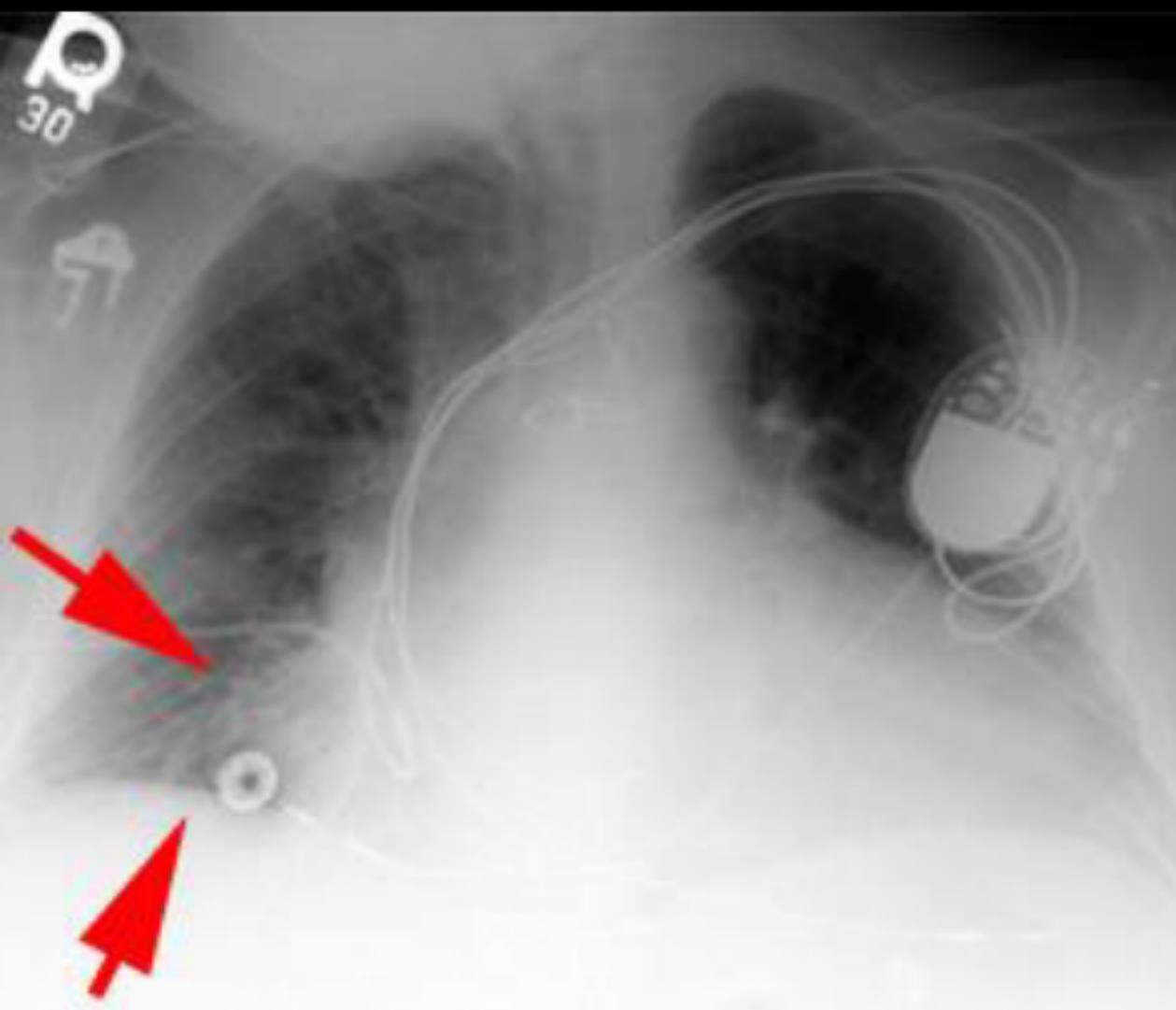
- 体位
- 旋转
- 强度：透过气管能看清第1~4胸椎，下部胸椎与心脏重叠，隐约可见。



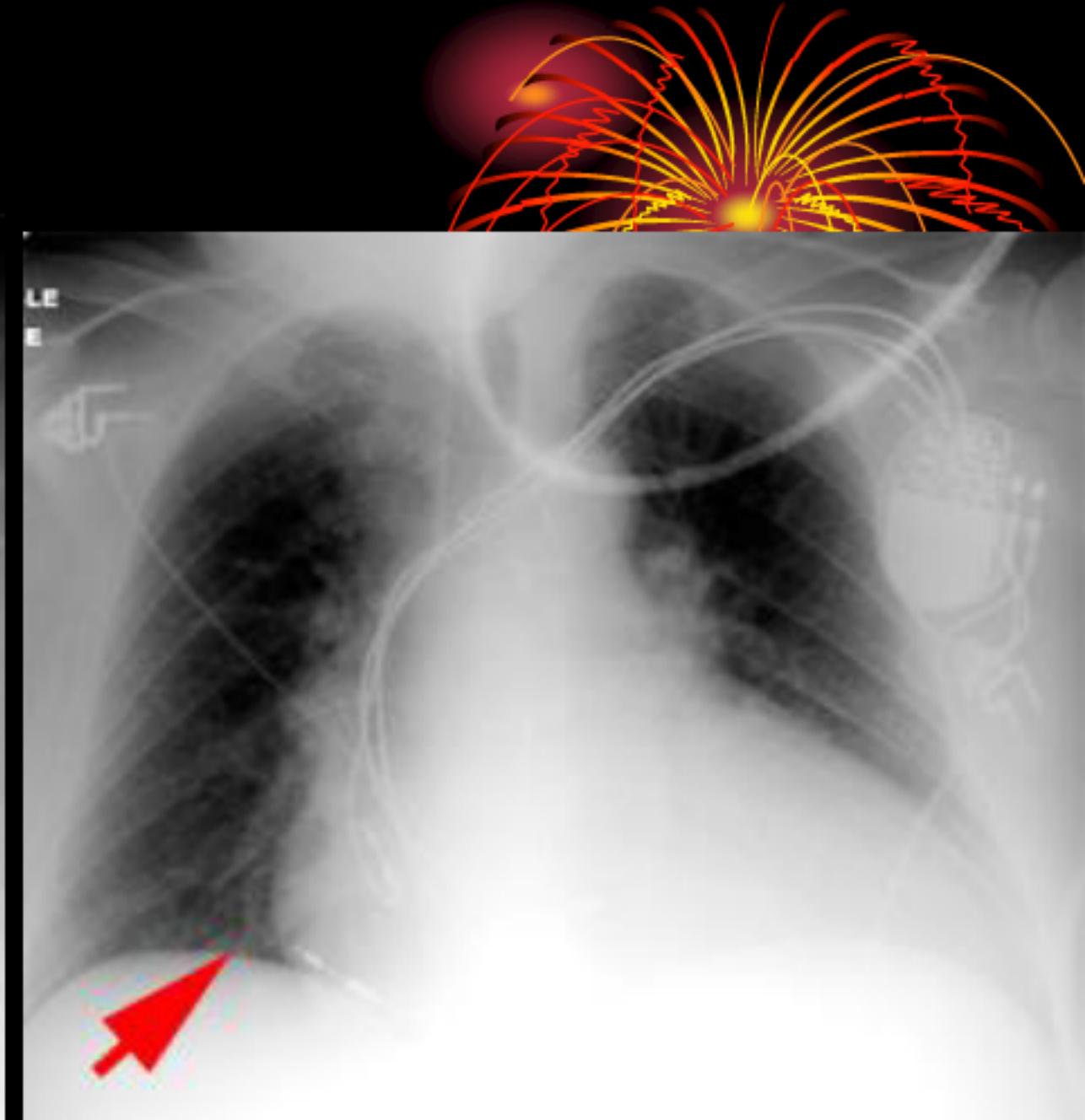
# 摄片质量



- 体位
- 旋转
- 强度
- 吸气：右膈顶位于第9、10后肋，第6前肋间隙。  
吸气不足会引起心影变大、肺底部出现阴影、  
气管向右偏移。



吸气不足

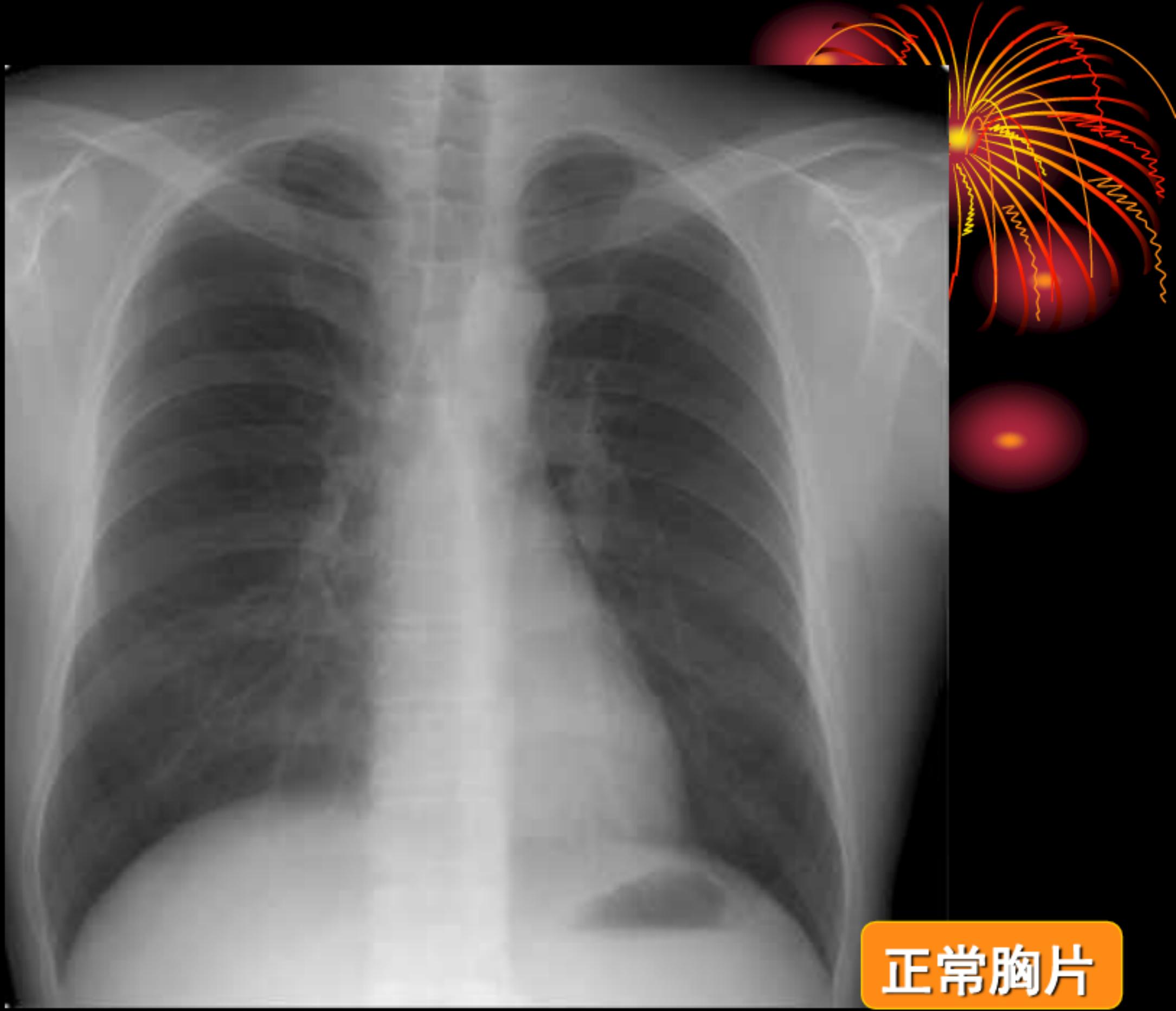


吸气充足

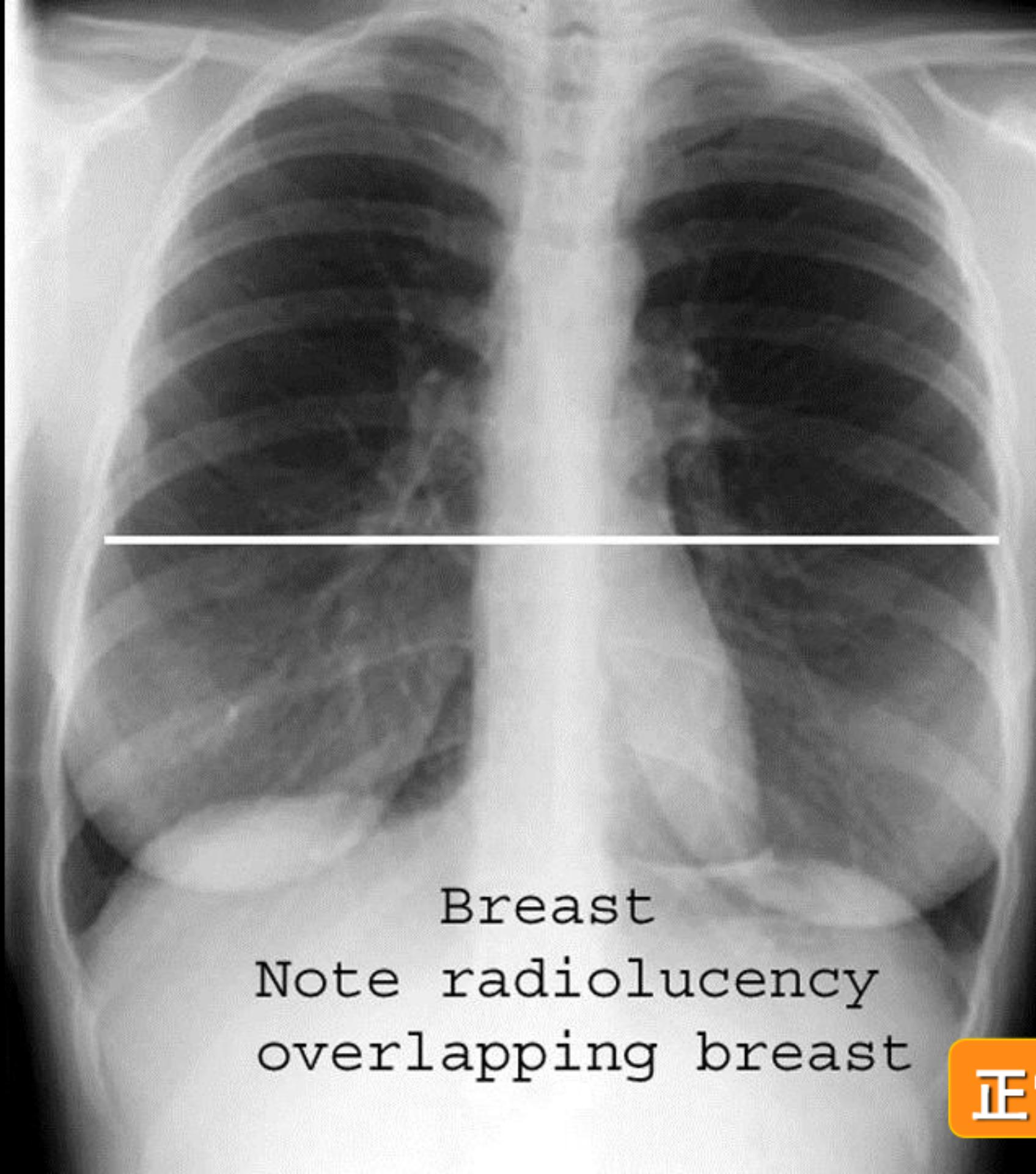
# 读片顺序



1. 肺野：双侧对比，注意肺野大小、透亮度
2. 肺纹理：粗→细，内 $2/3$ ，下多上少，边界清晰；  
气管/伴行血管直径
3. 肺门：位于第2~4前肋间，左侧比右侧高1~2cm
4. 气管和纵隔：居中，气管右侧缘宽度 $<2\sim 3\text{mm}$
5. 心影：最大径 $<1/2$ 胸廓最大横径；形态
6. 横膈：位置(右膈比左膈高1~2cm)、形态、肋膈角
7. 膈下：膈下气体，胃泡、肠管
8. 骨骼和软组织



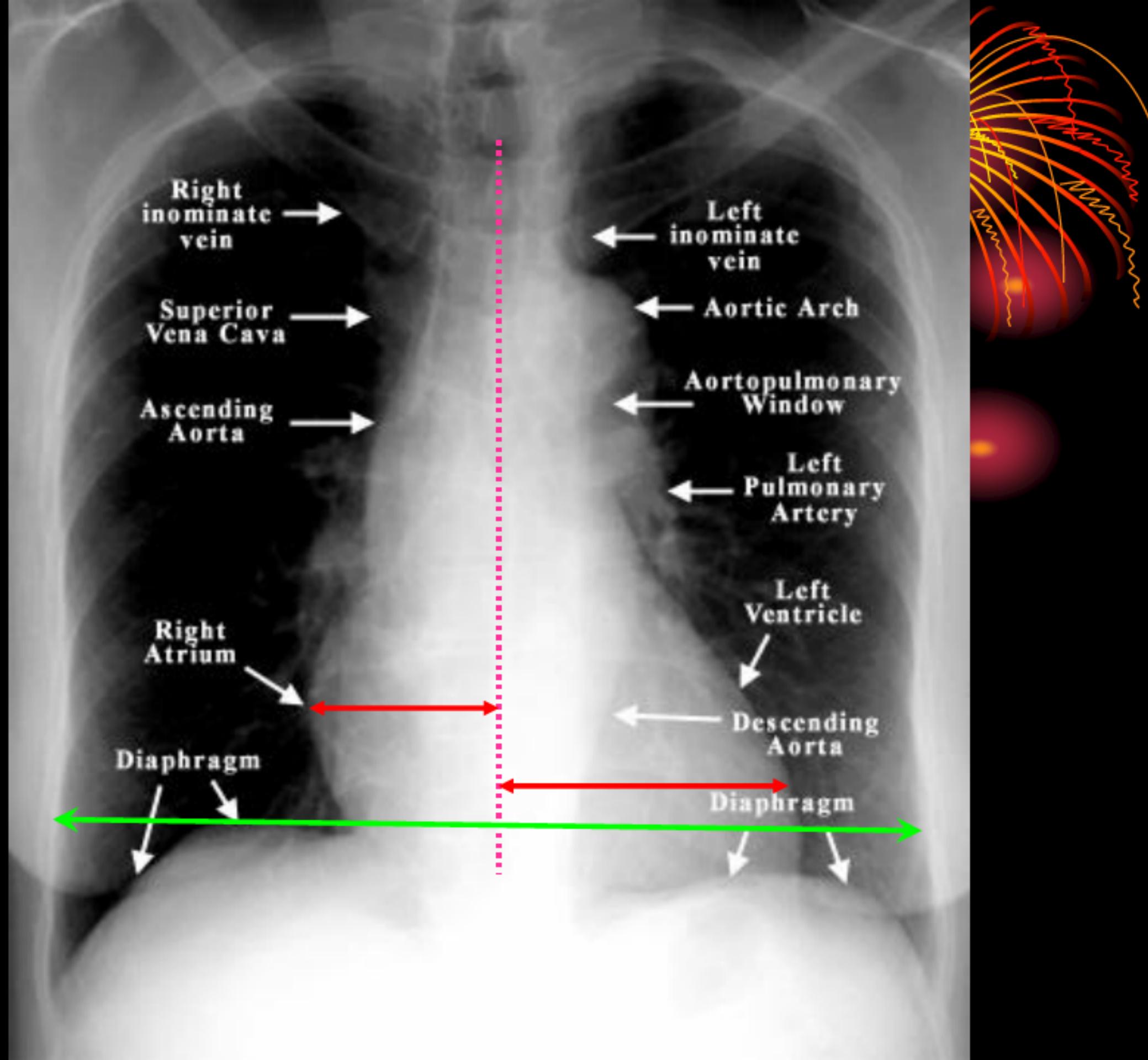
正常胸片



Breast  
Note radiolucency  
overlapping breast

正常胸片







锁骨



肩胛骨



胸膜



横膈



肋膈角



正常胸片

水平裂呈细线样从肺门  
膈肌上缘延伸达胸廓整个胸廓，  
在心缘清晰可见。左膈经  
前缘通过时似乎消失了。  
**水平裂**

**肺门**  
比较胸骨后区和心影后方，肺野密度应相同。

**斜裂**  
**锥体**

**肋膈角**

**心影**

**右膈**

**左膈**

# 定位



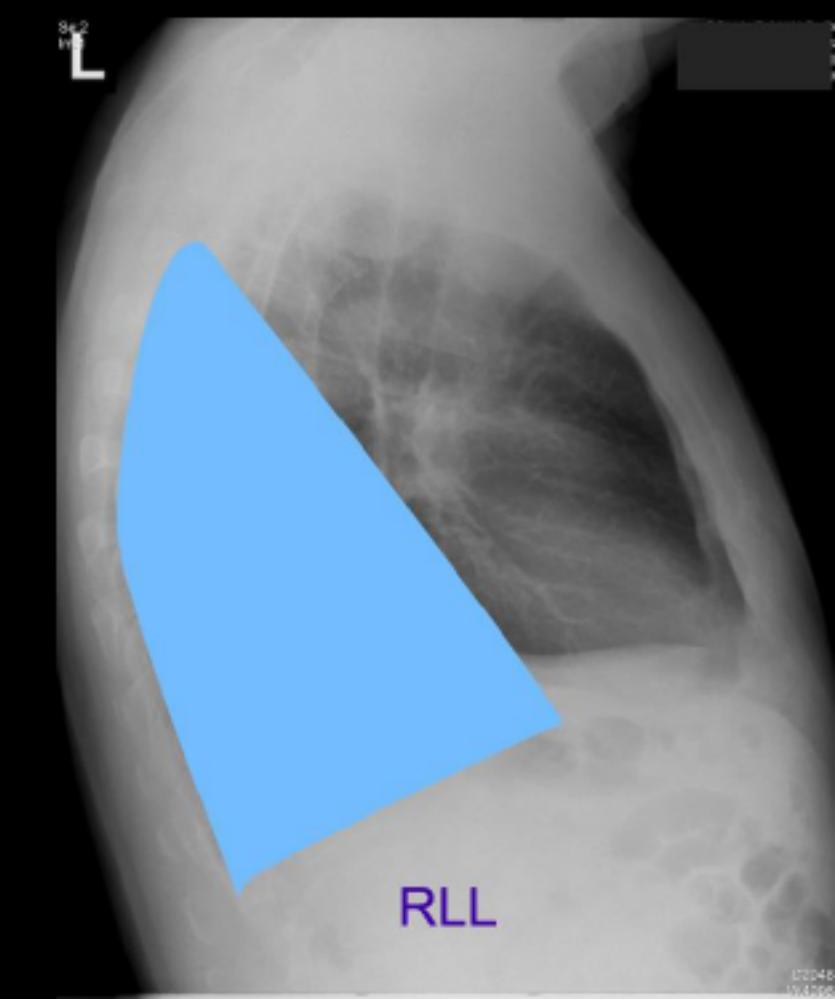
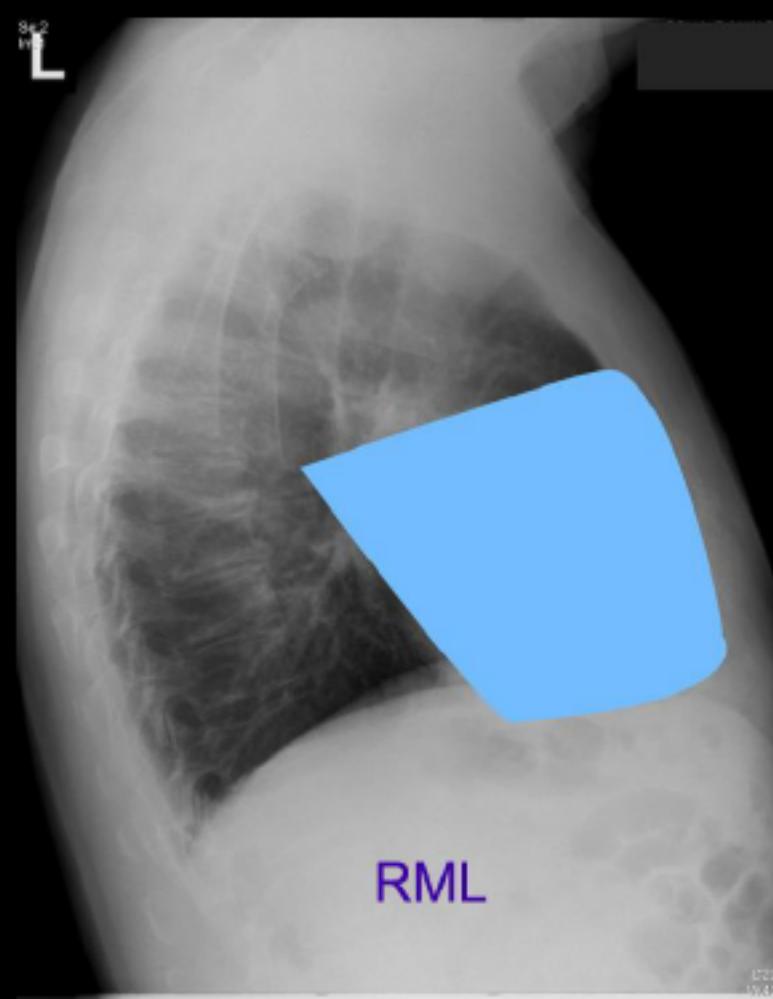
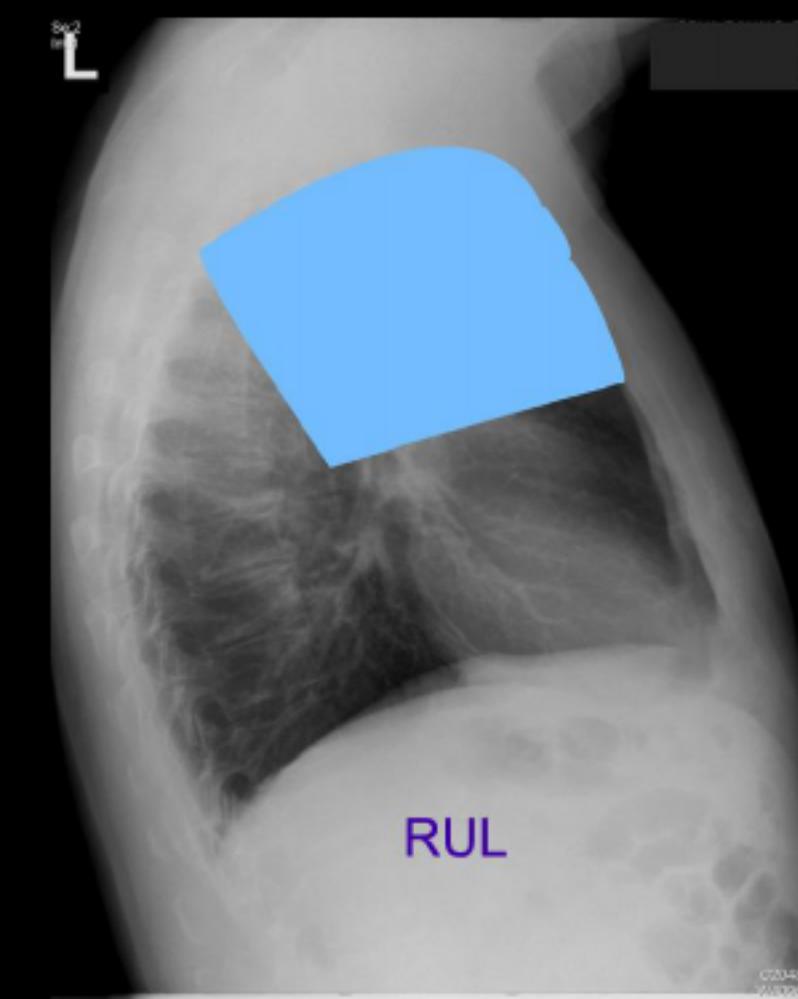
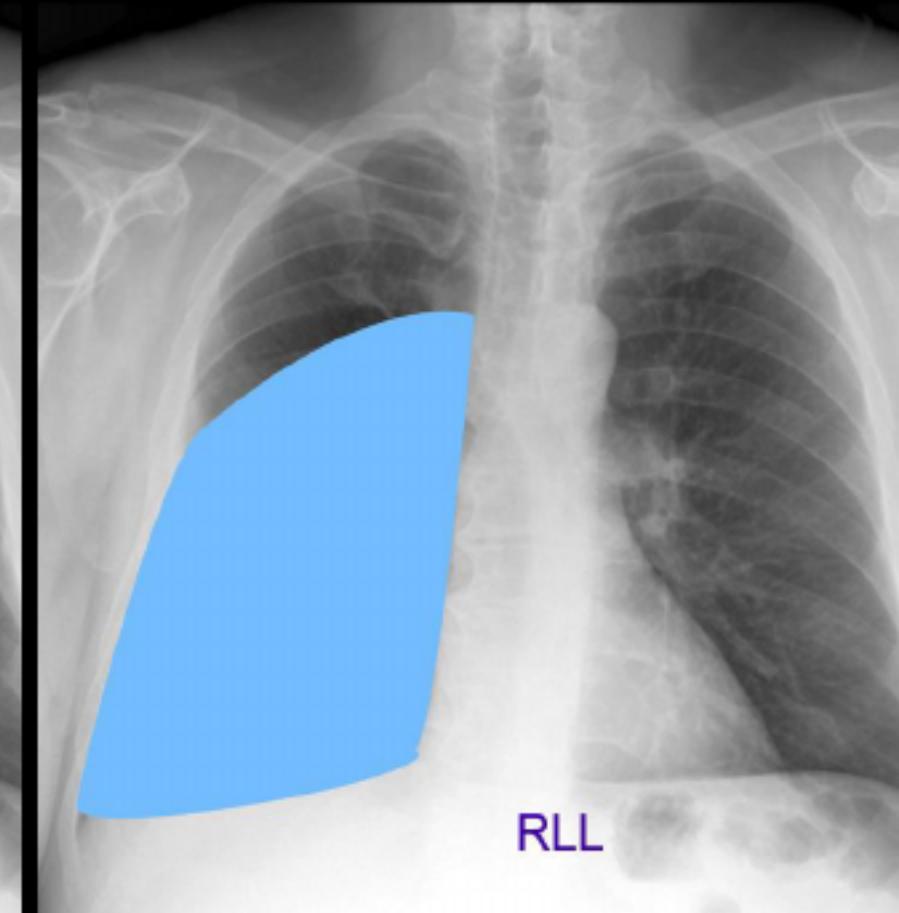
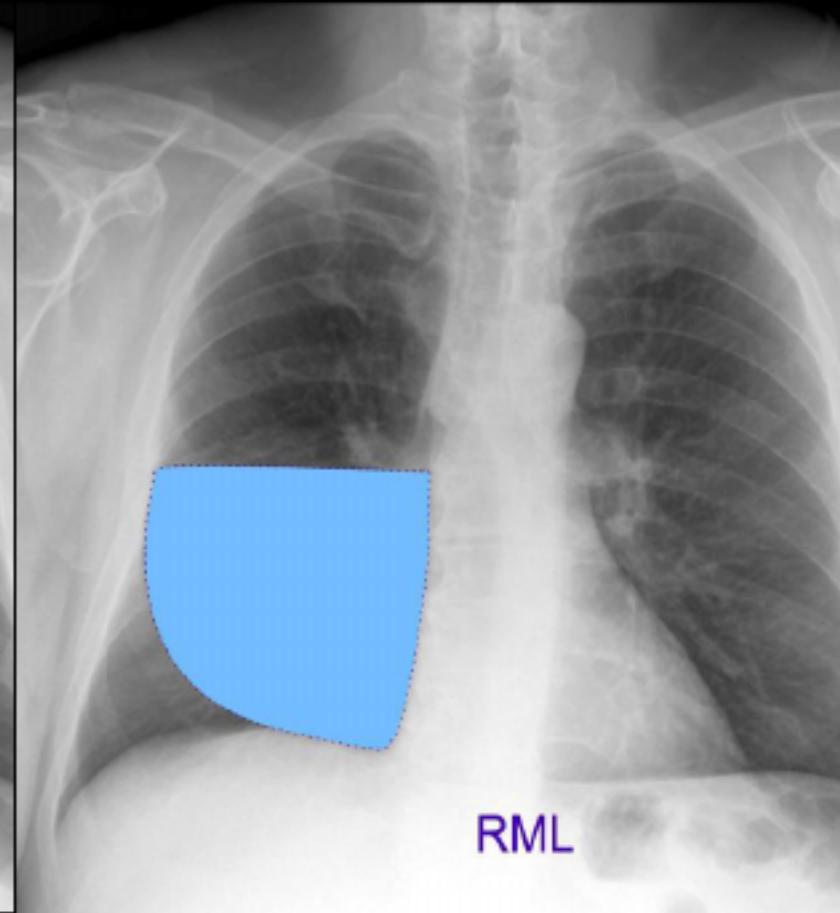
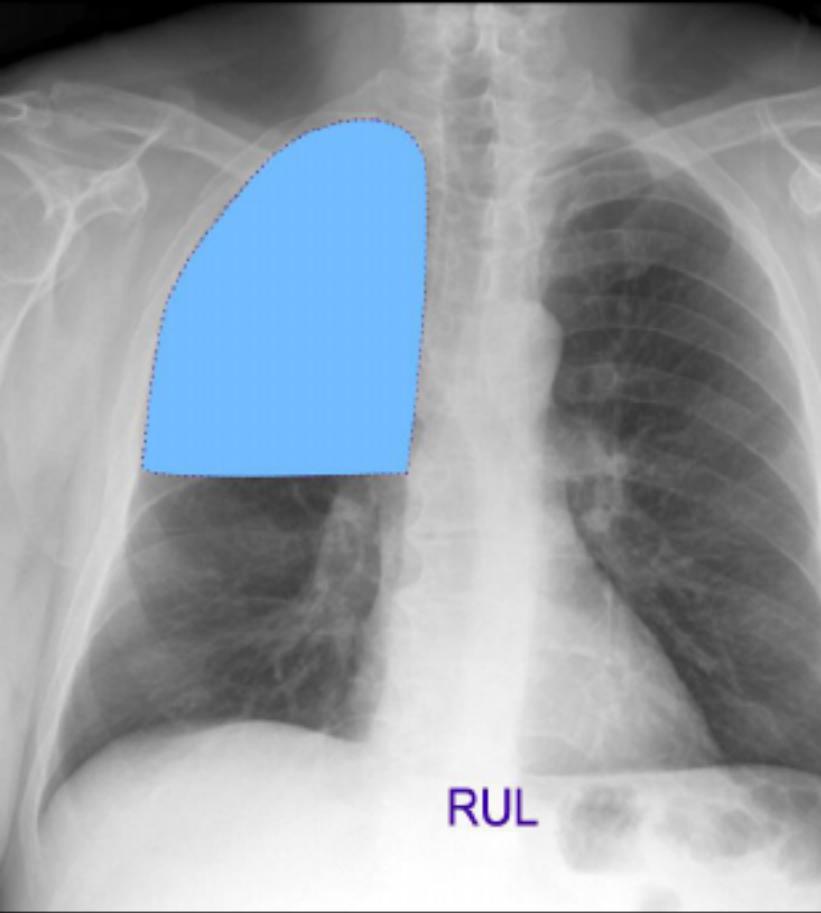
- 人为划分：一侧肺野纵行分为3等分，称为内、中、外带；在第2、4前肋下缘画水平线，将肺野分为上、中、下3野。有助于描述病变位置，但无肺叶含义。
- 按肺叶定位

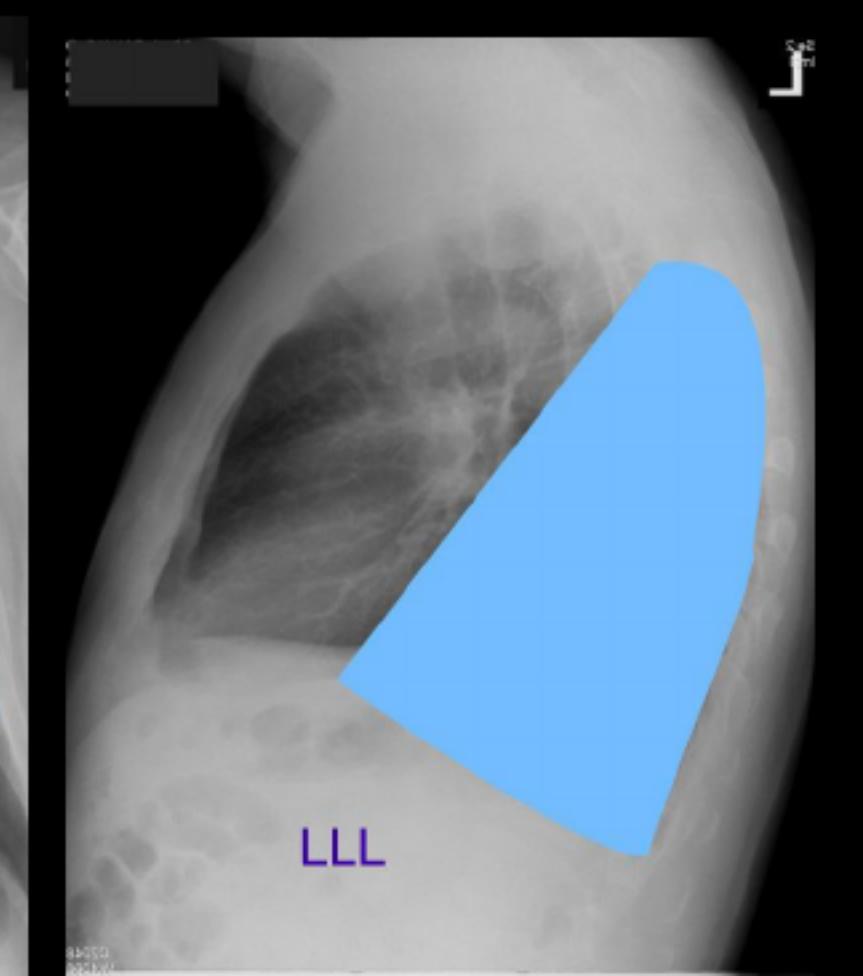
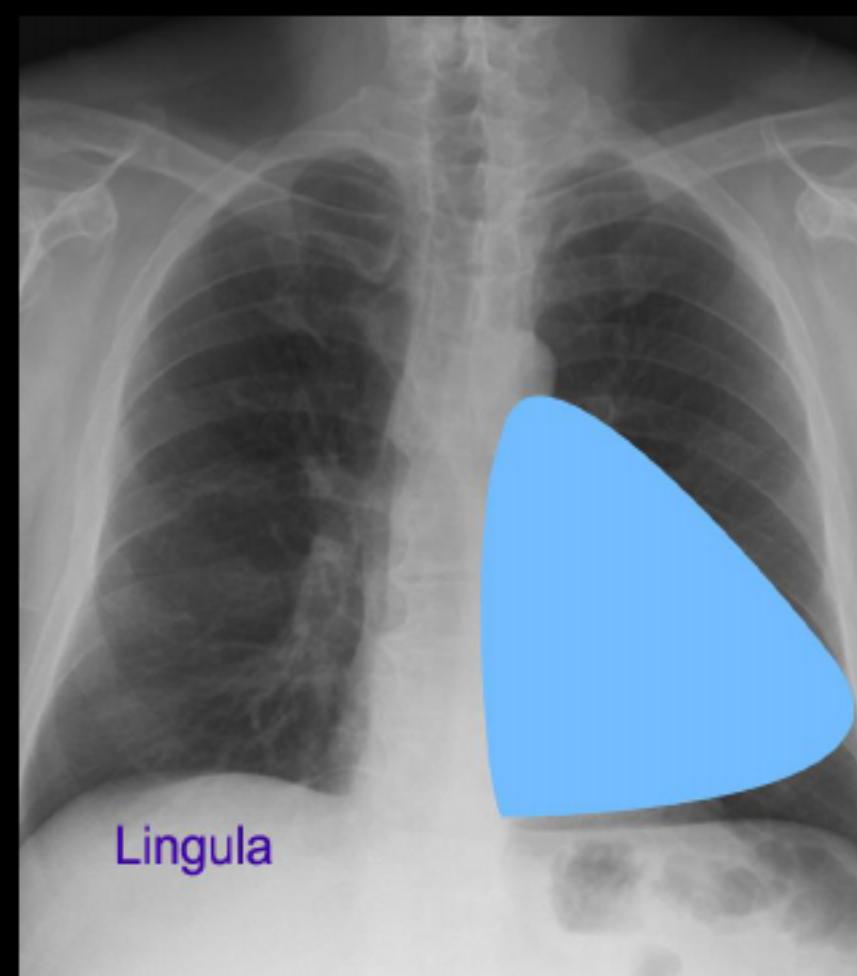
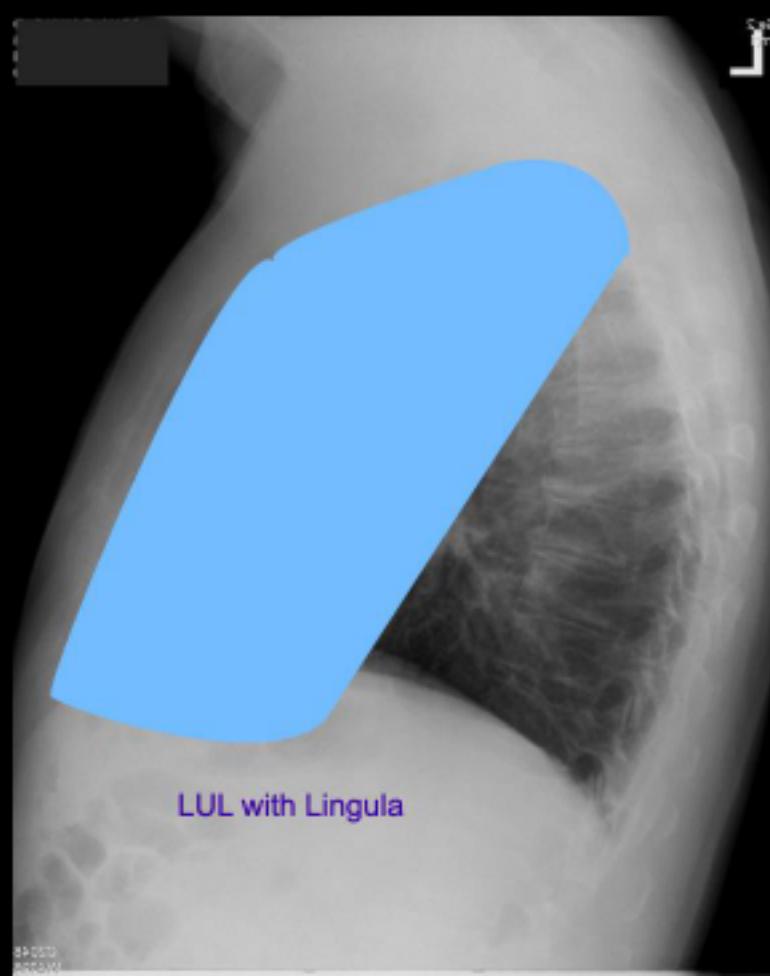
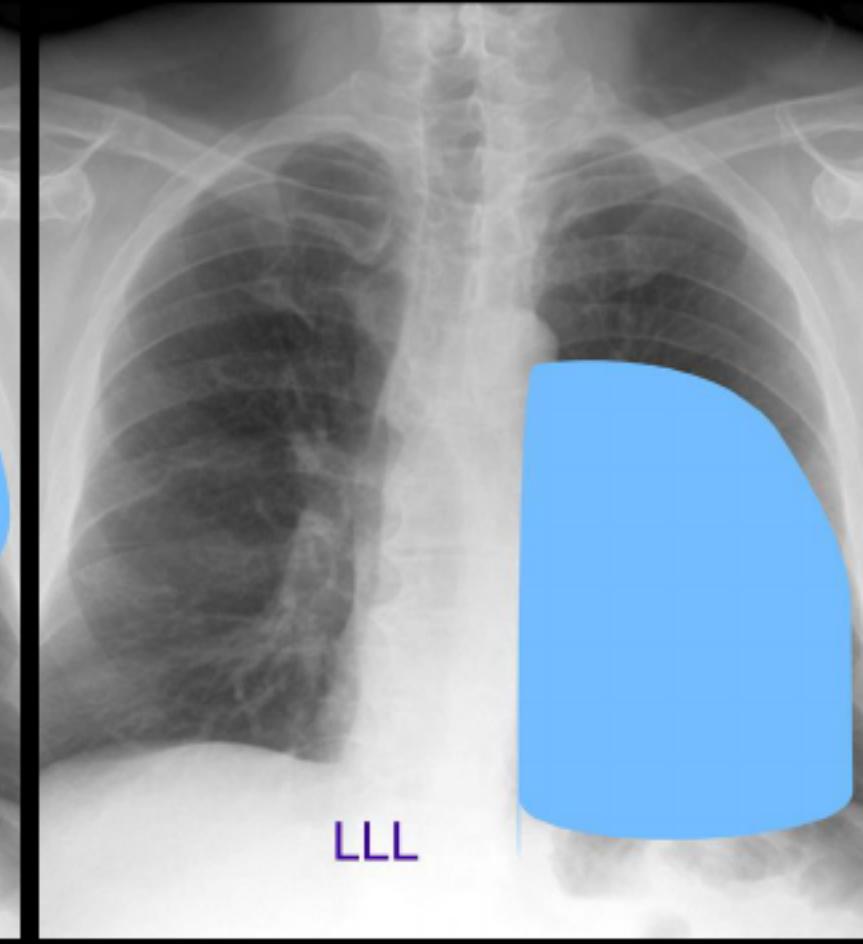
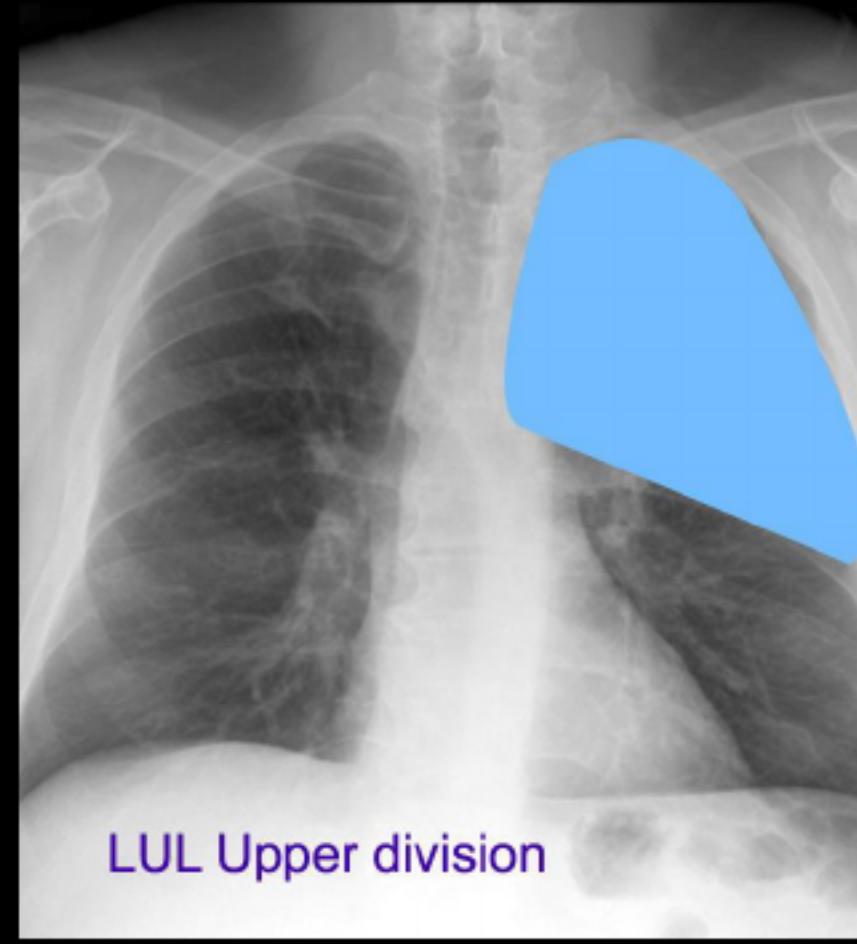
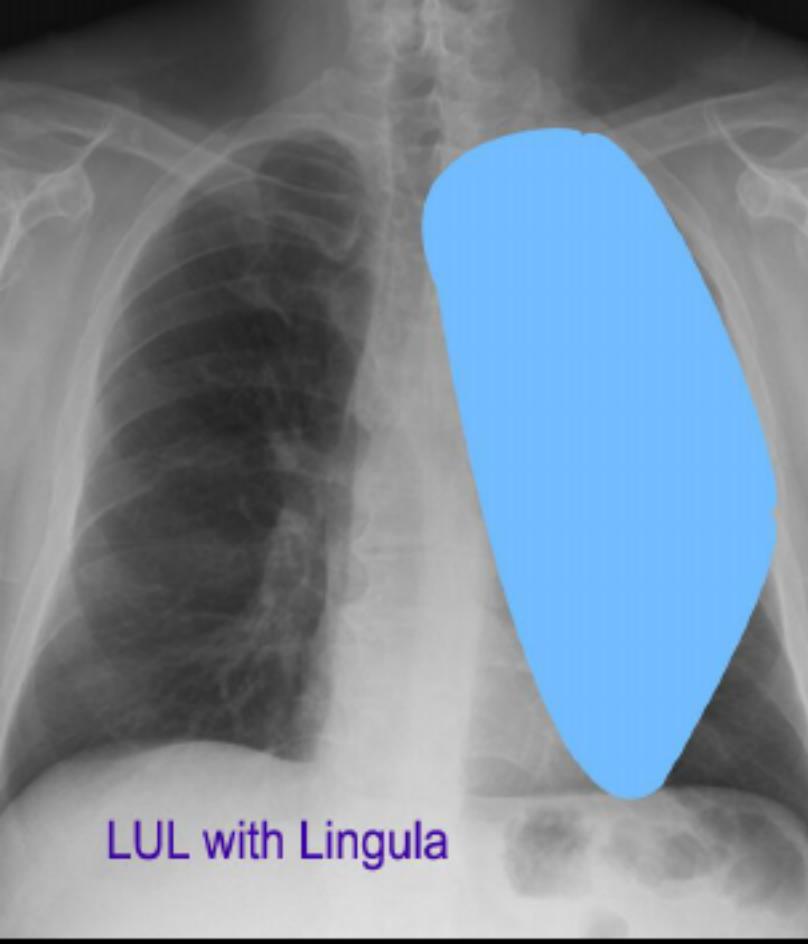
右肺：

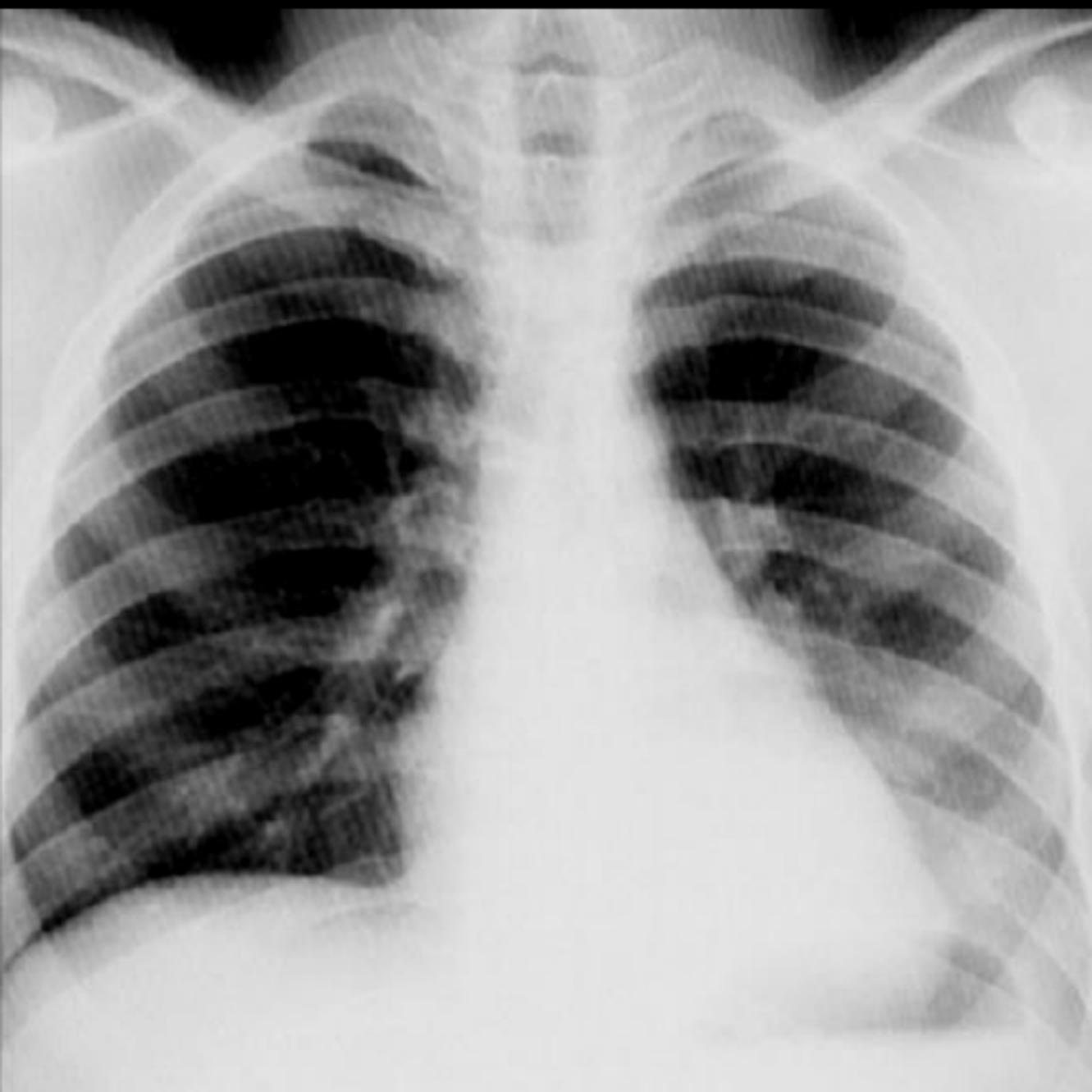
1. 识别斜裂：如果病变在斜裂后方，无论位置多高，病变也一定在下叶
2. 如果病变在斜裂前方，识别水平裂。如果在水平裂下方，定位在中叶；如果在水平裂上方，定位在上叶。

左肺：

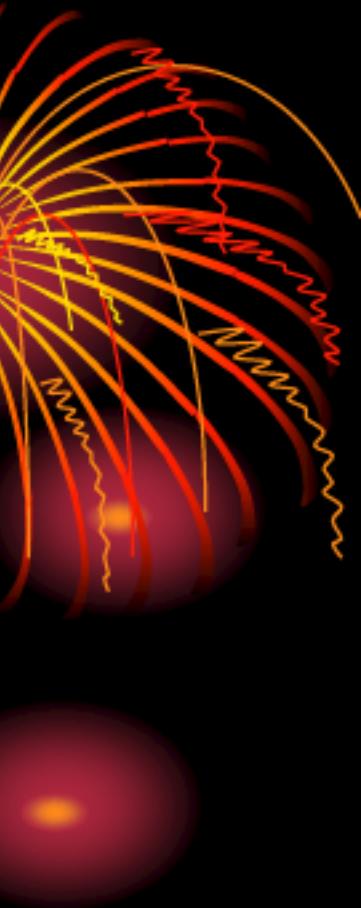
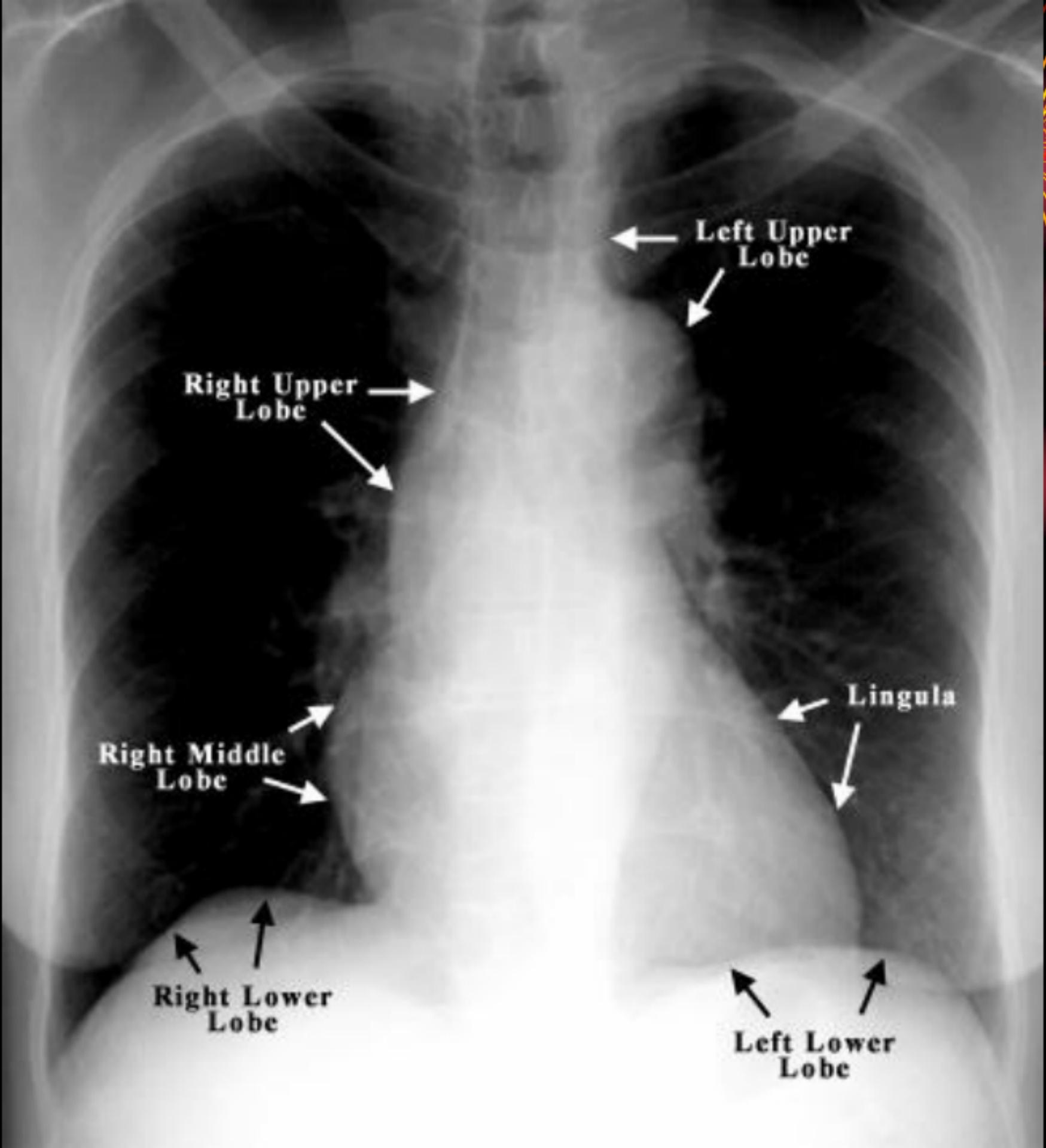
识别斜裂，如果病变在斜裂后方，则定位在下叶；如果病变在斜裂前方，则定位在上叶。





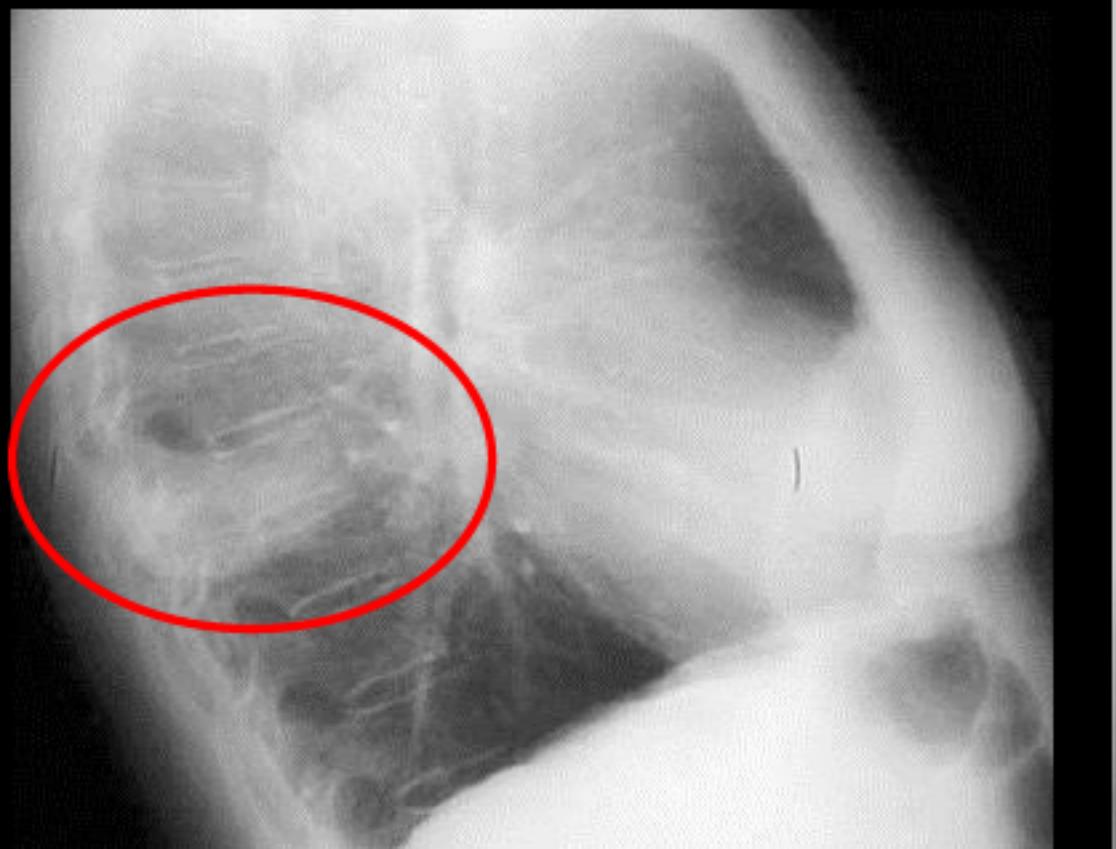
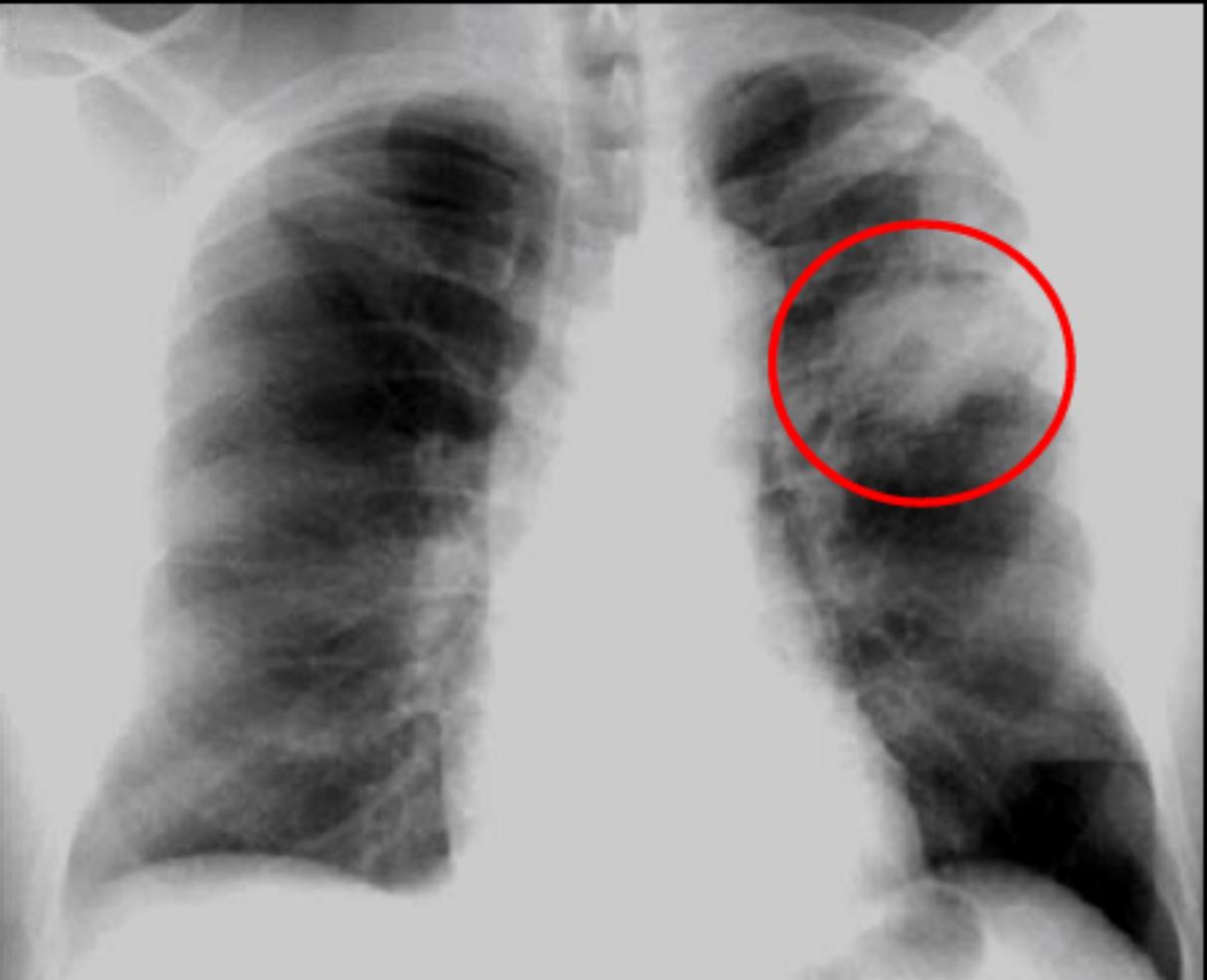
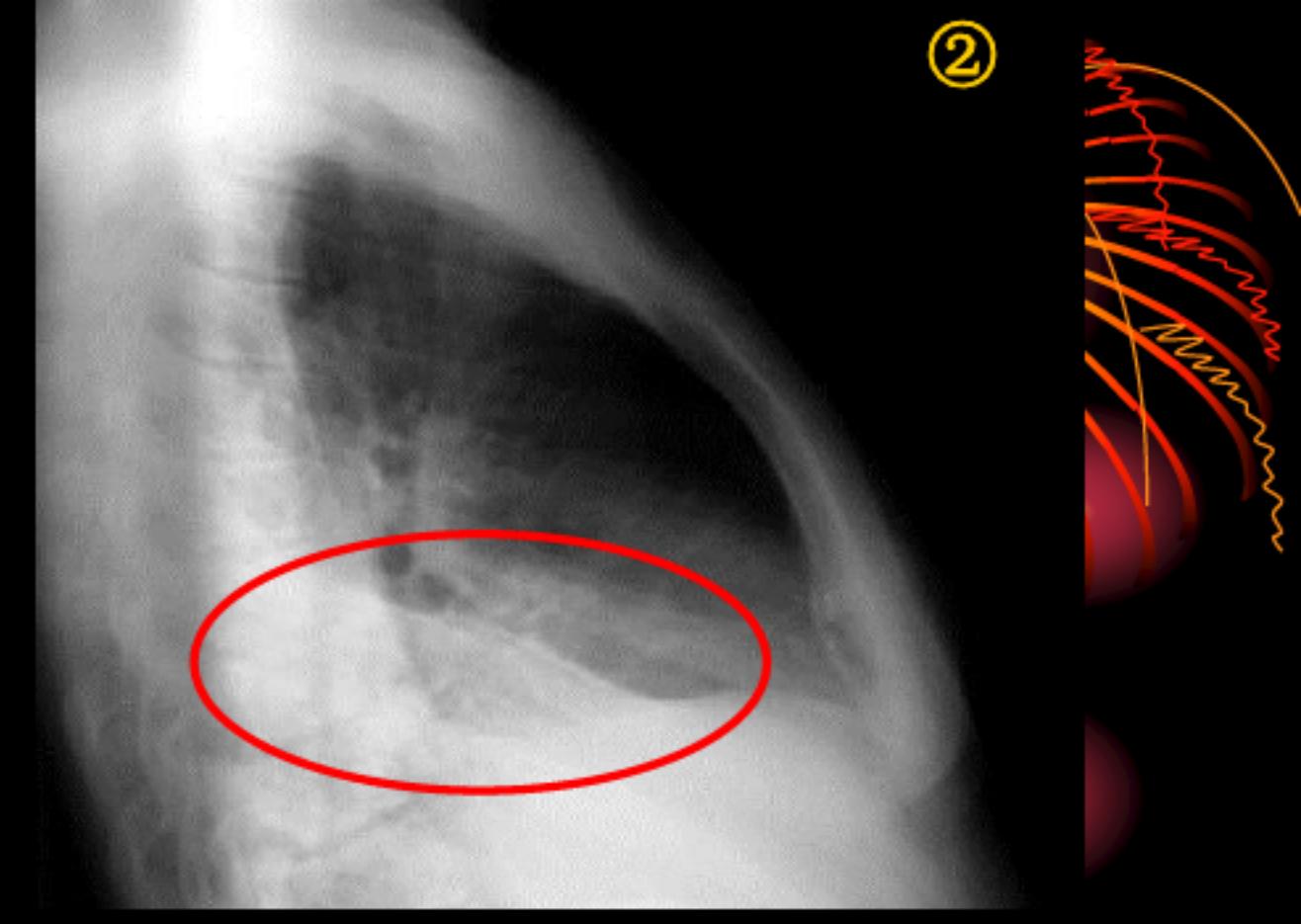
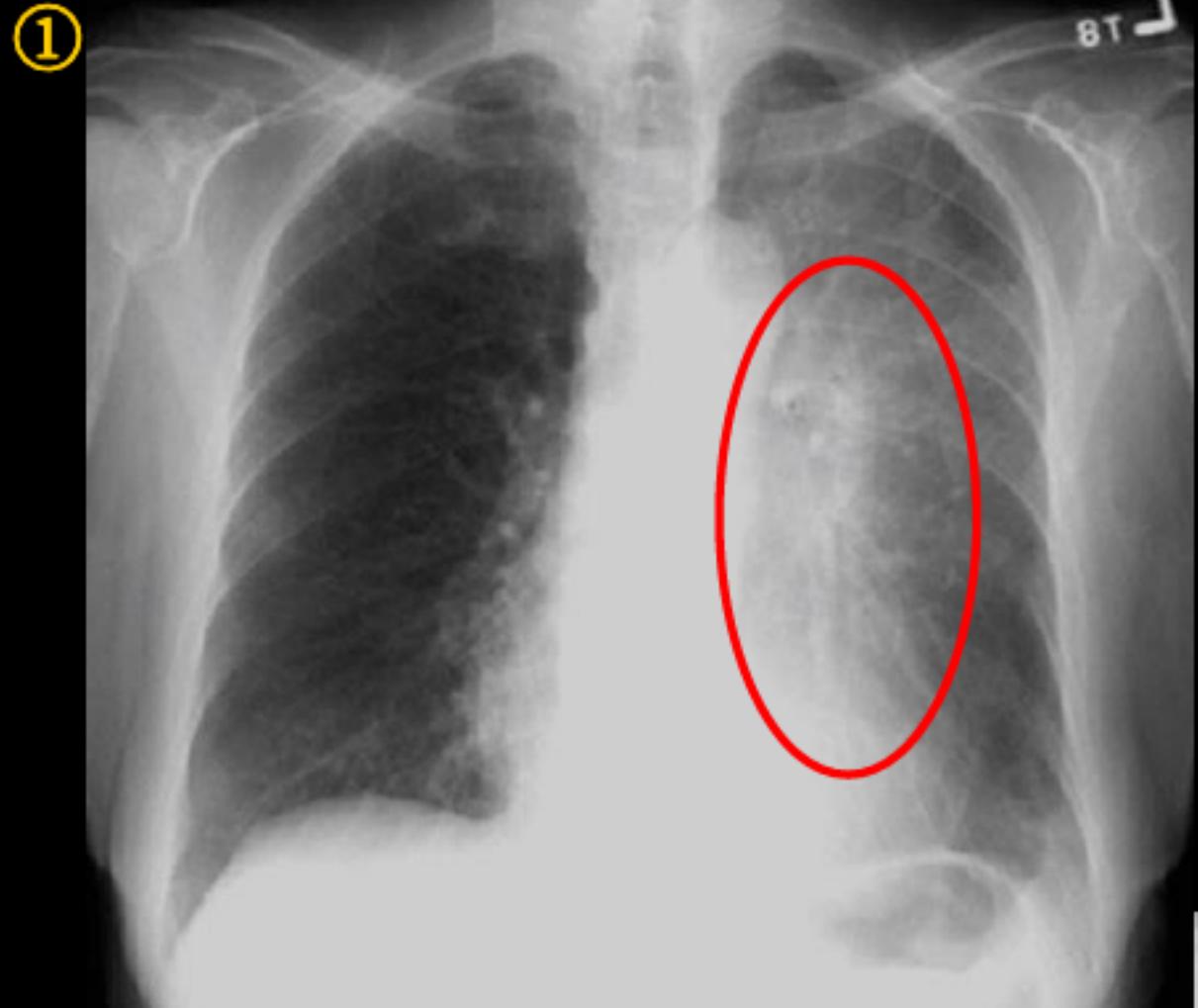


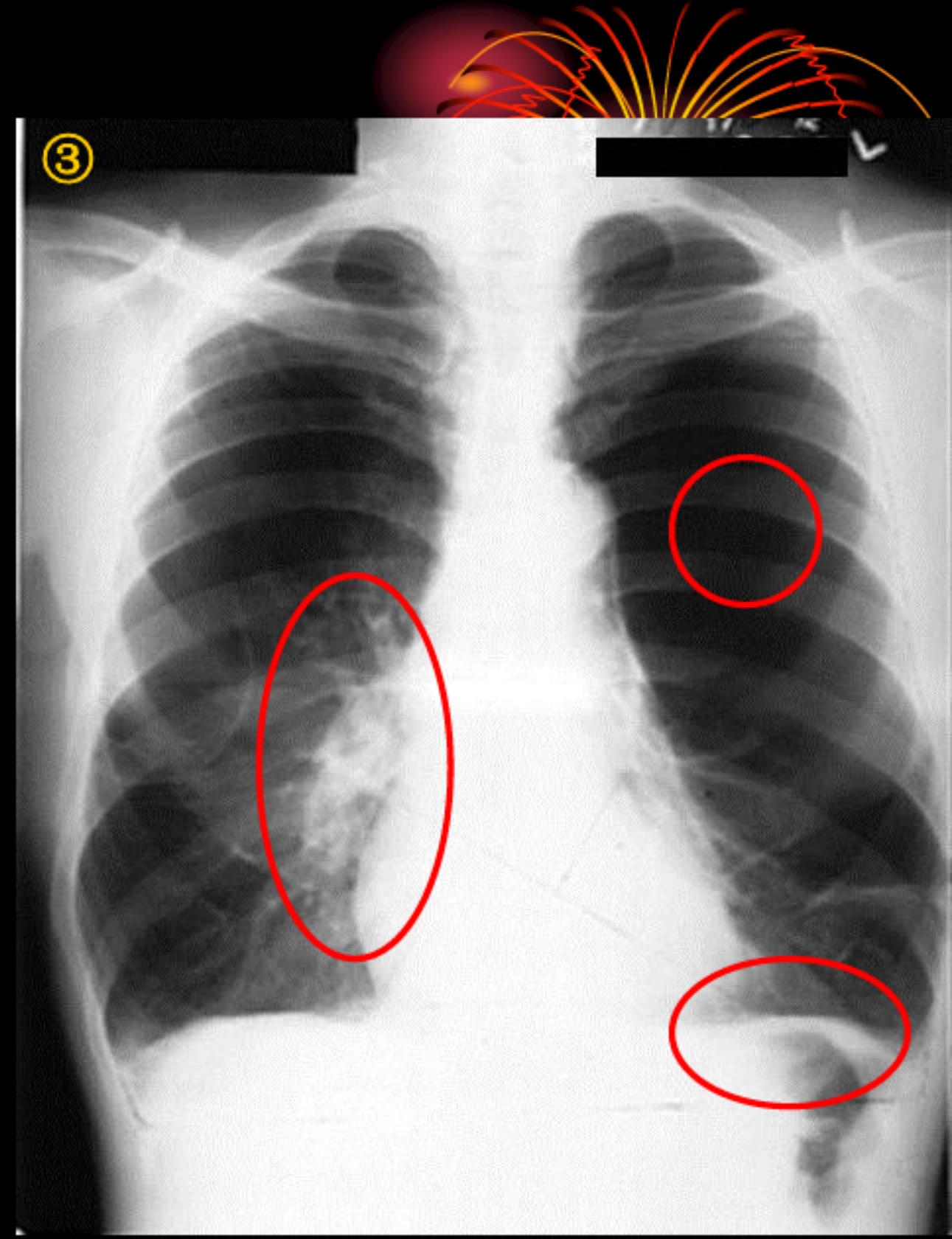
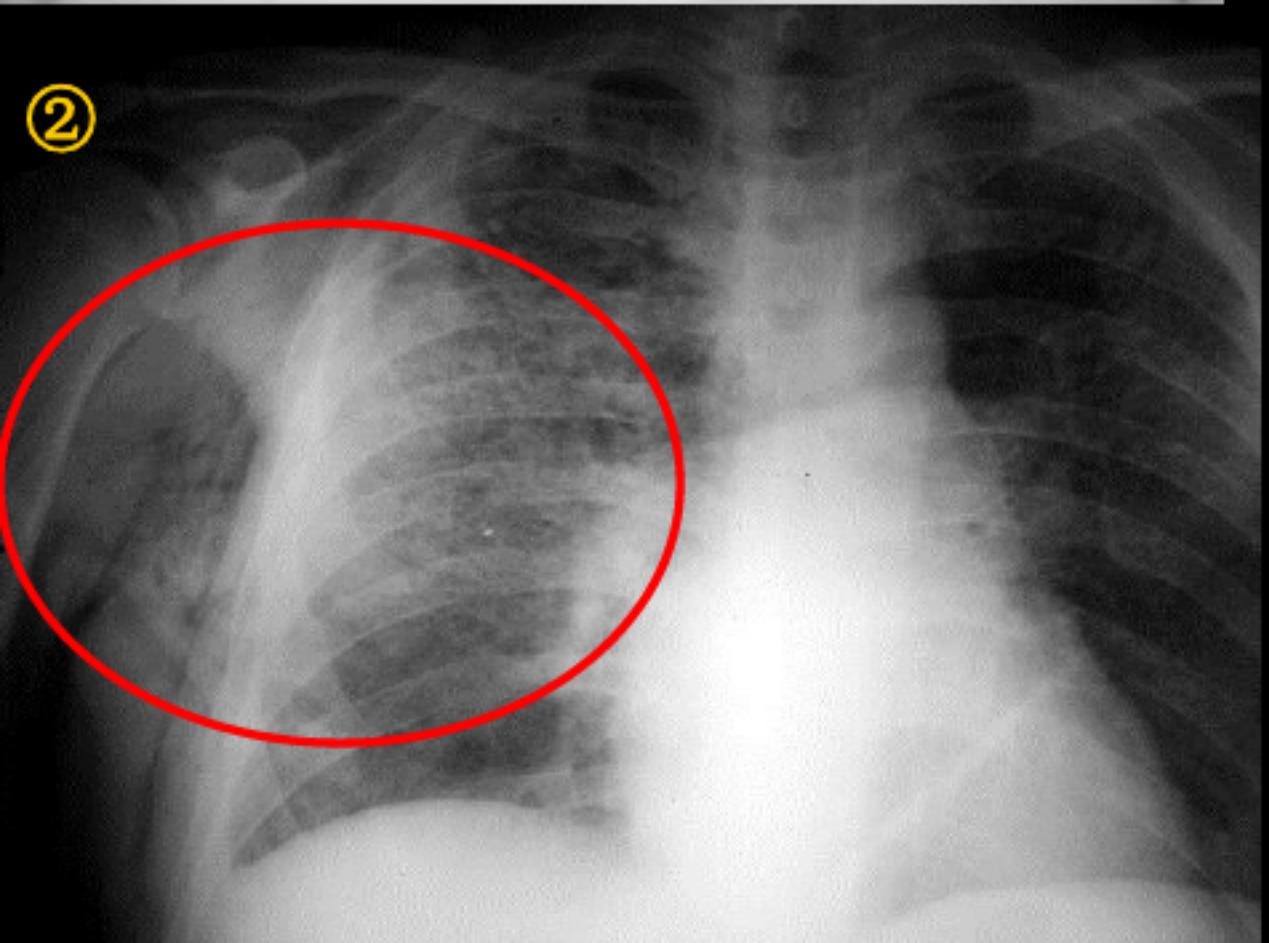
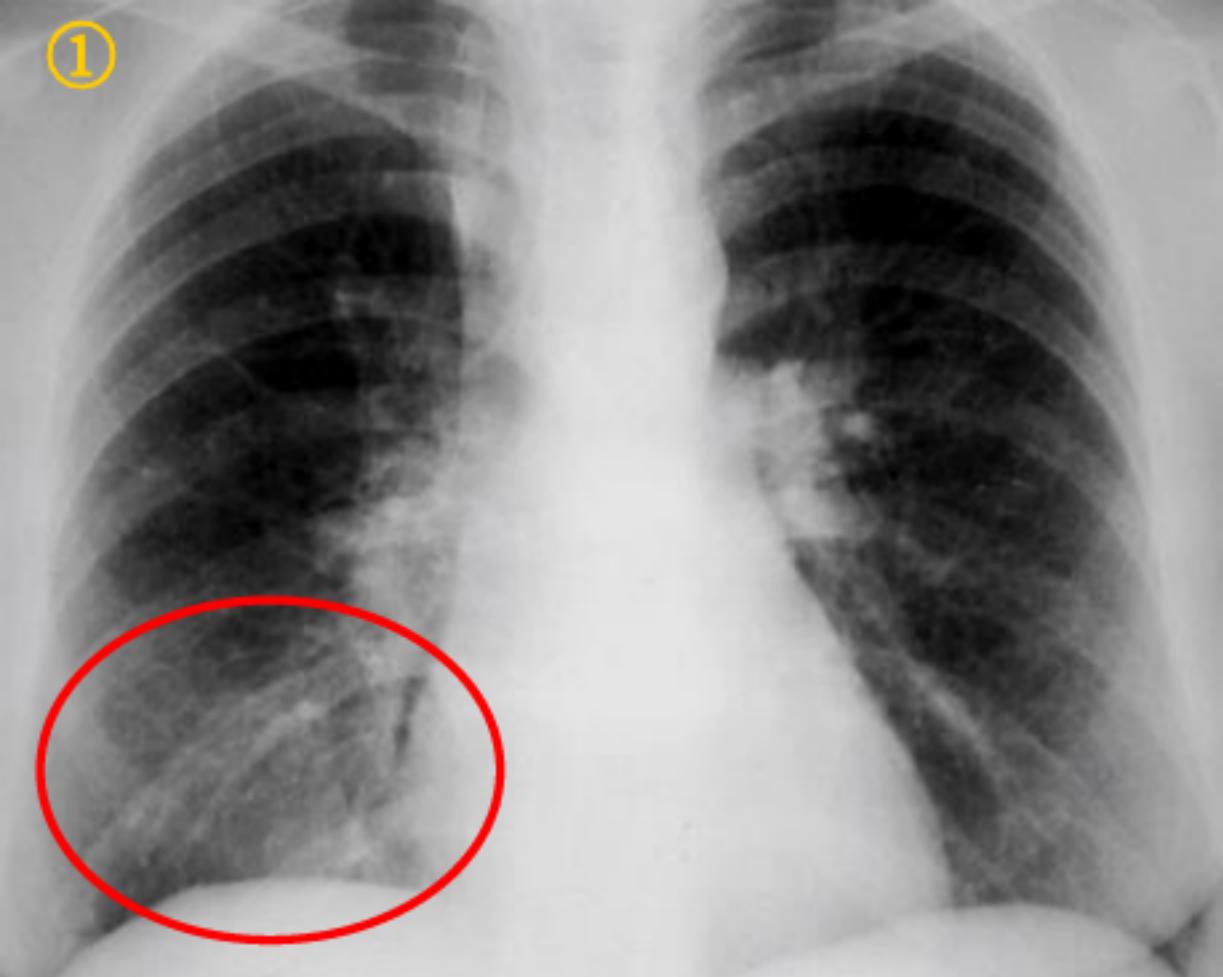
□ “轮廓征”：若病变与致密结构相邻，则病变与该结构之间的界限消失。

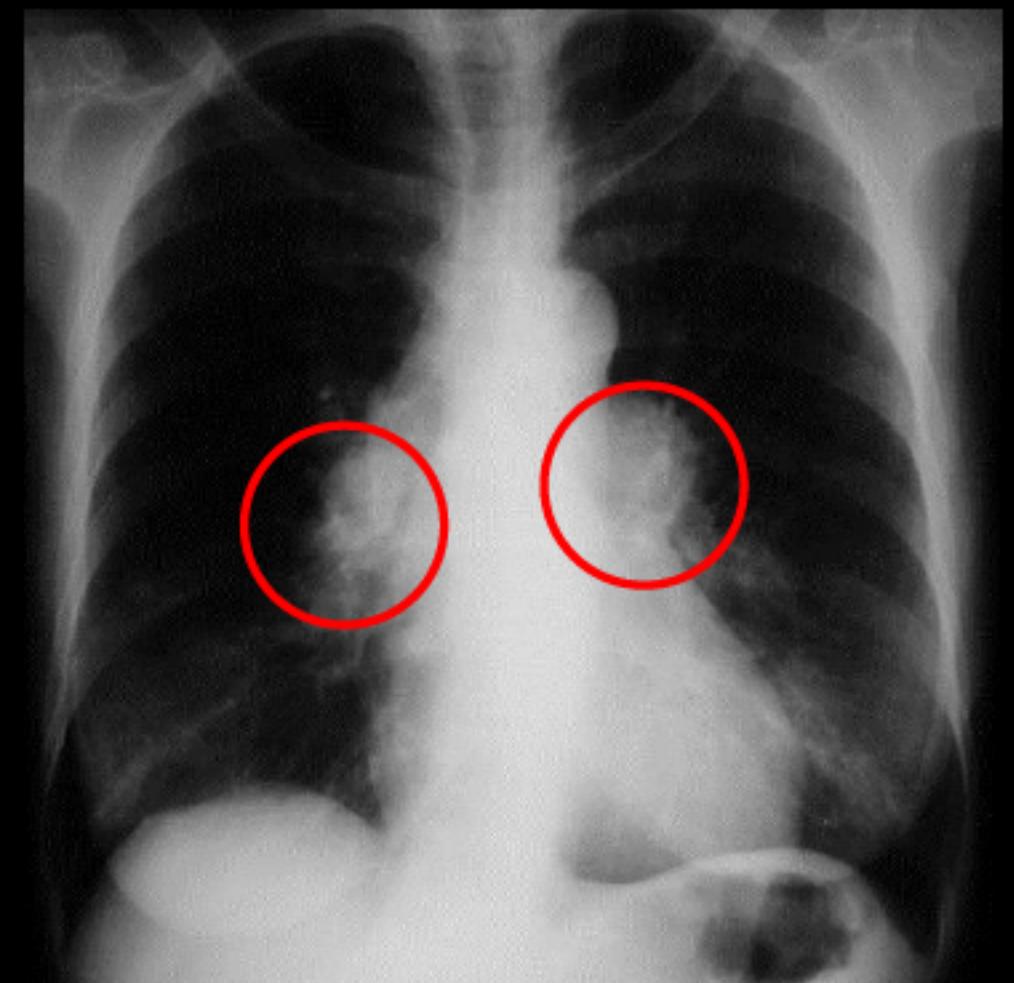
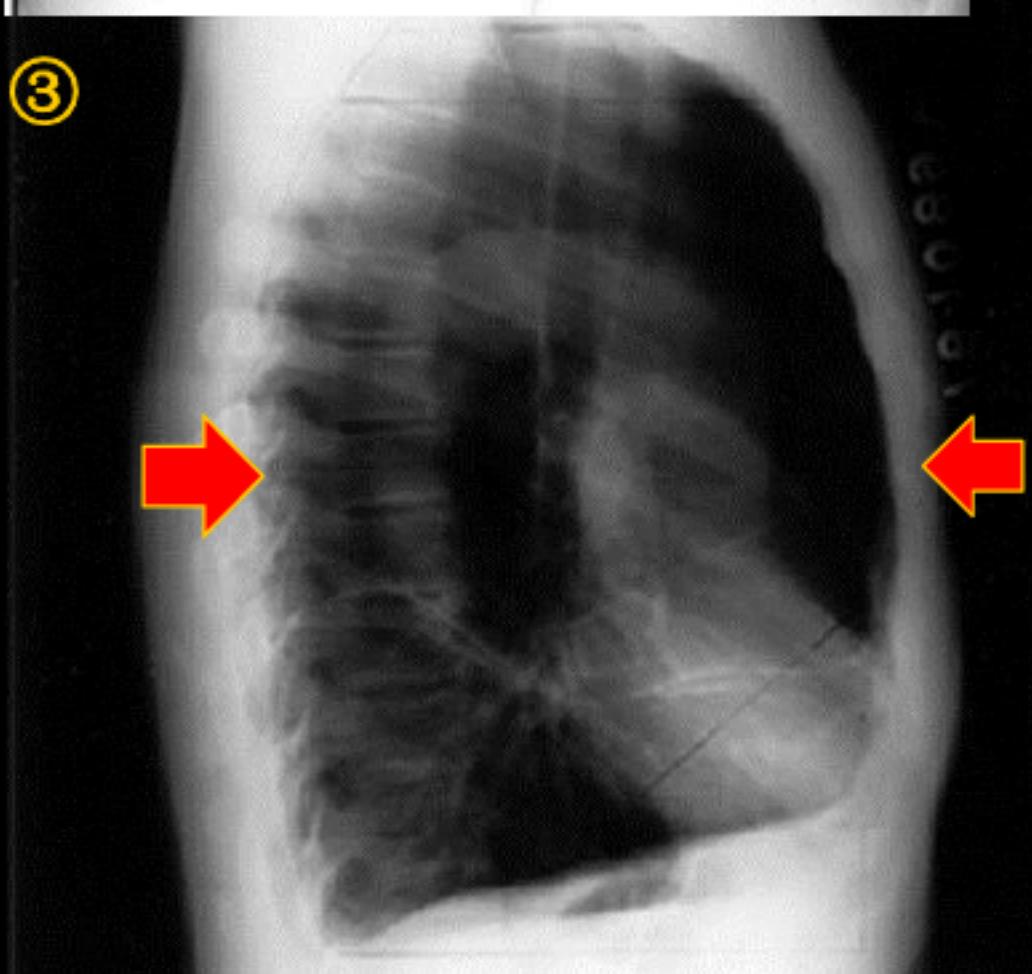
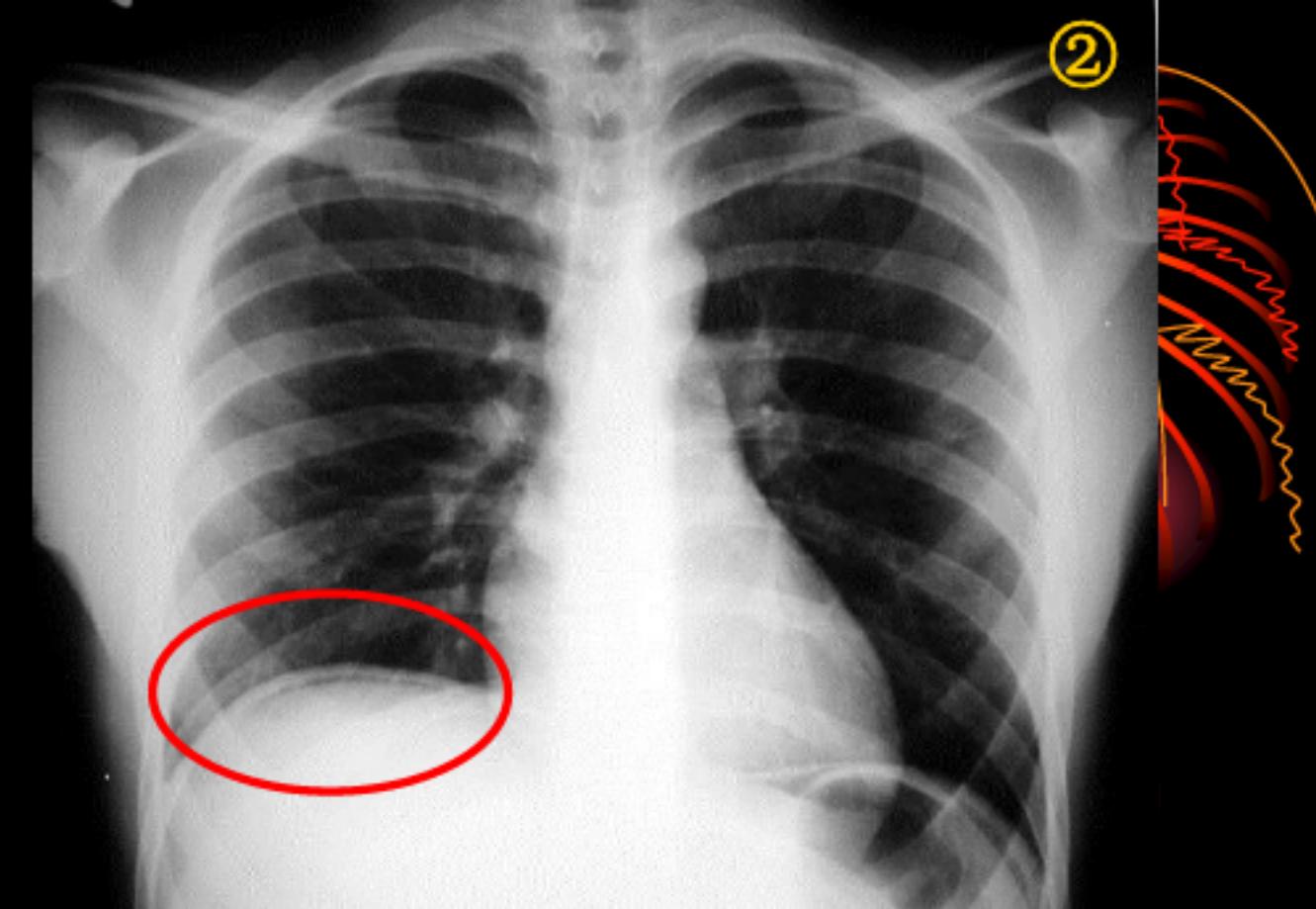
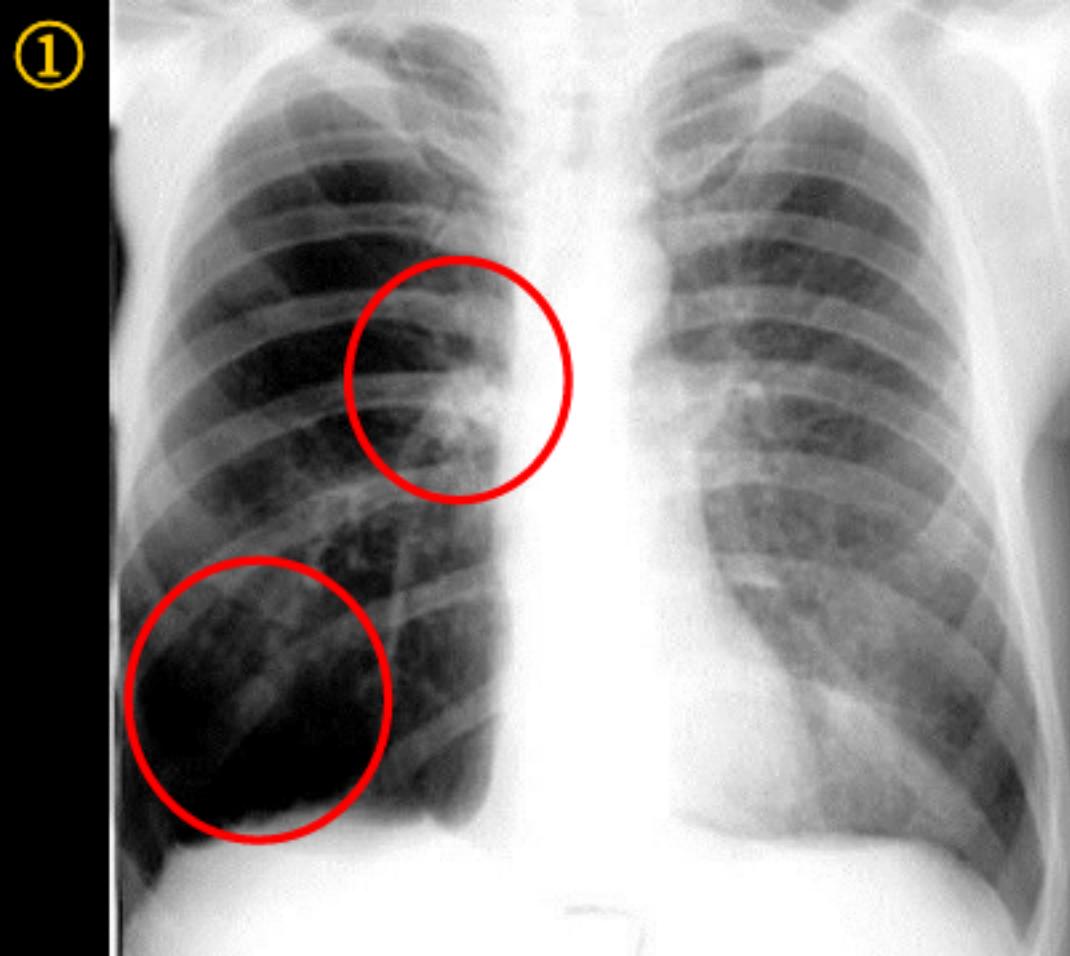


# 找问题









④

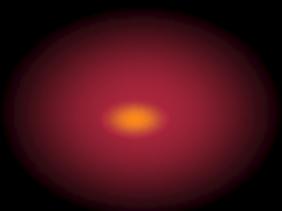
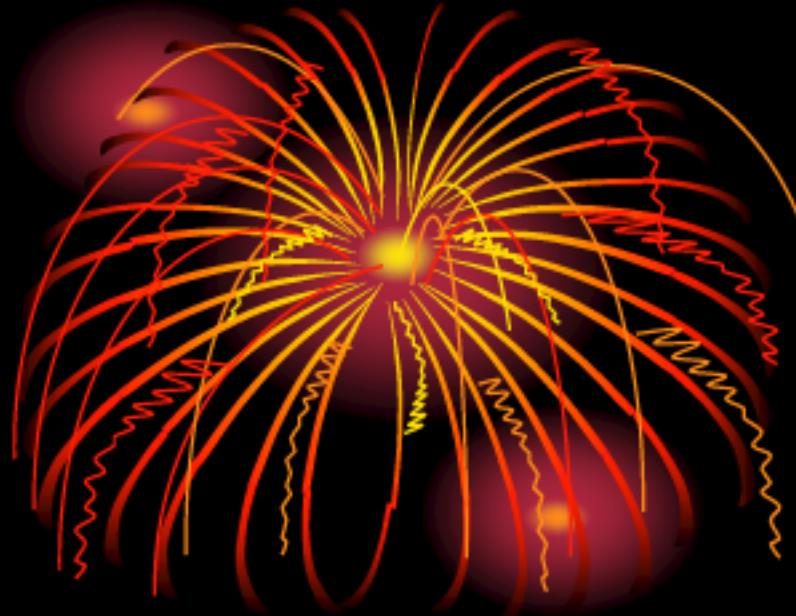
# 胸部病变基本X-ray表现



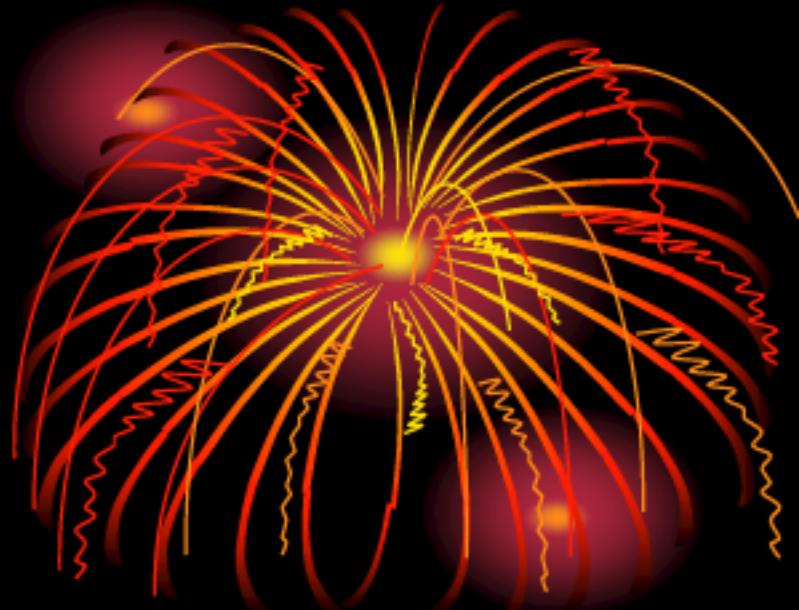
- 肺内病变
  - 肺容积改变
  - 透亮度改变
- 胸膜病变
- 纵隔病变
- 骨骼、软组织病变

# 肺内病变

## □ 肺容积改变

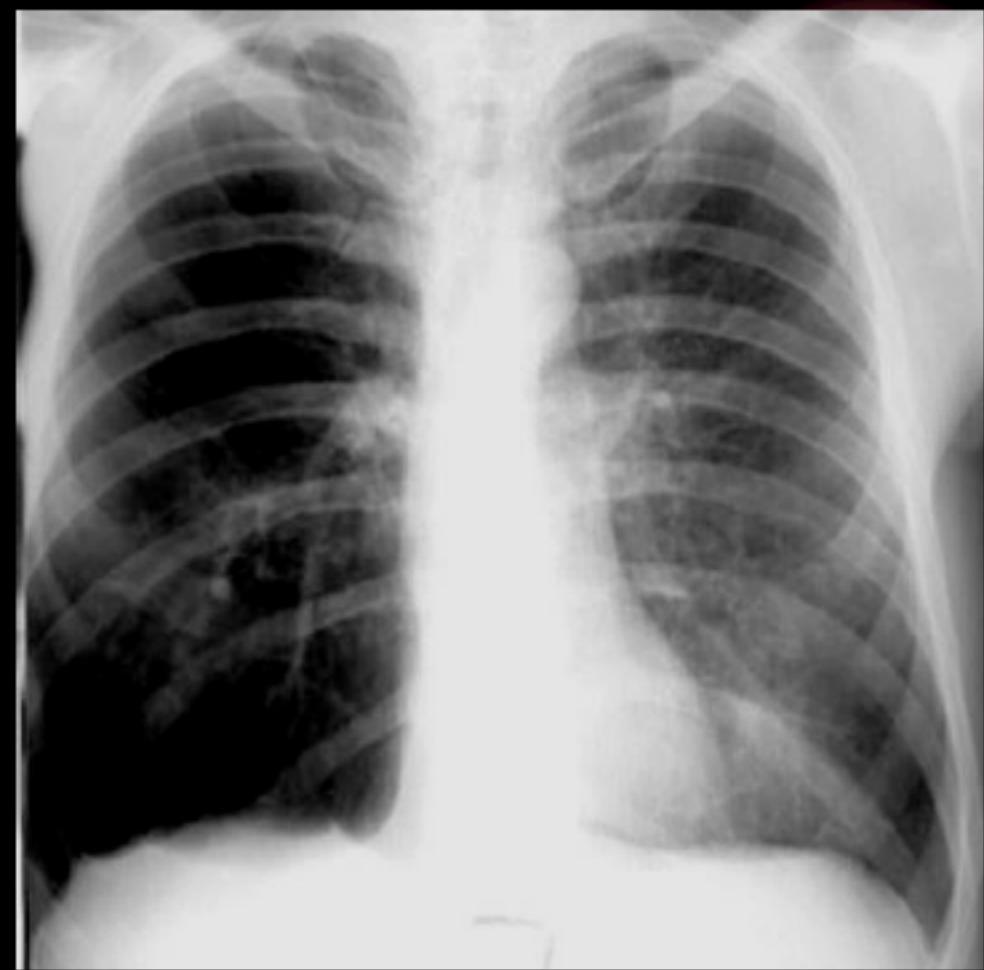


# 肺内病变

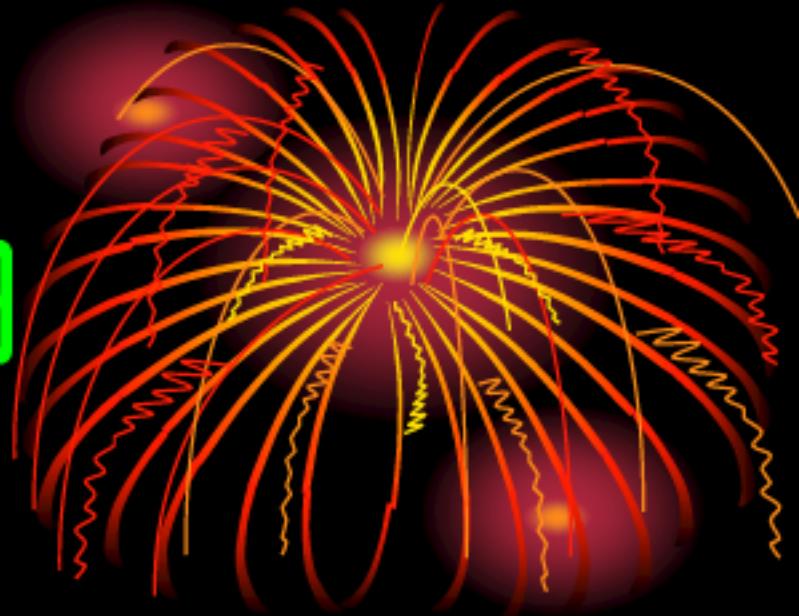


## □ 肺透亮度的改变

- 太黑：含气量过多
- 太白：病理性物质  
含气量减少



# 肺透亮度降低——太白



## □ 基本形态分类

- 点：结节、肿块、空洞
- 线：线、条索、网格、囊
- 面：片状影

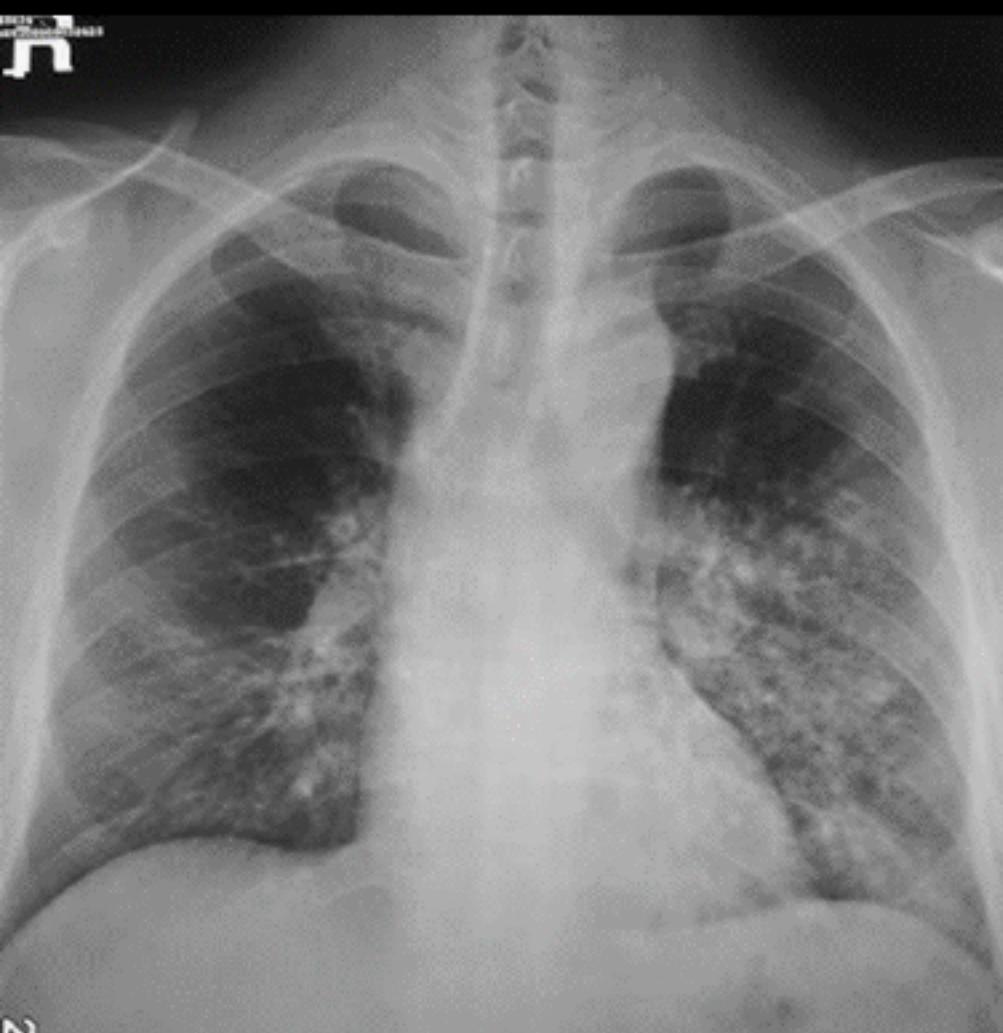
# 肺内病变——**一**



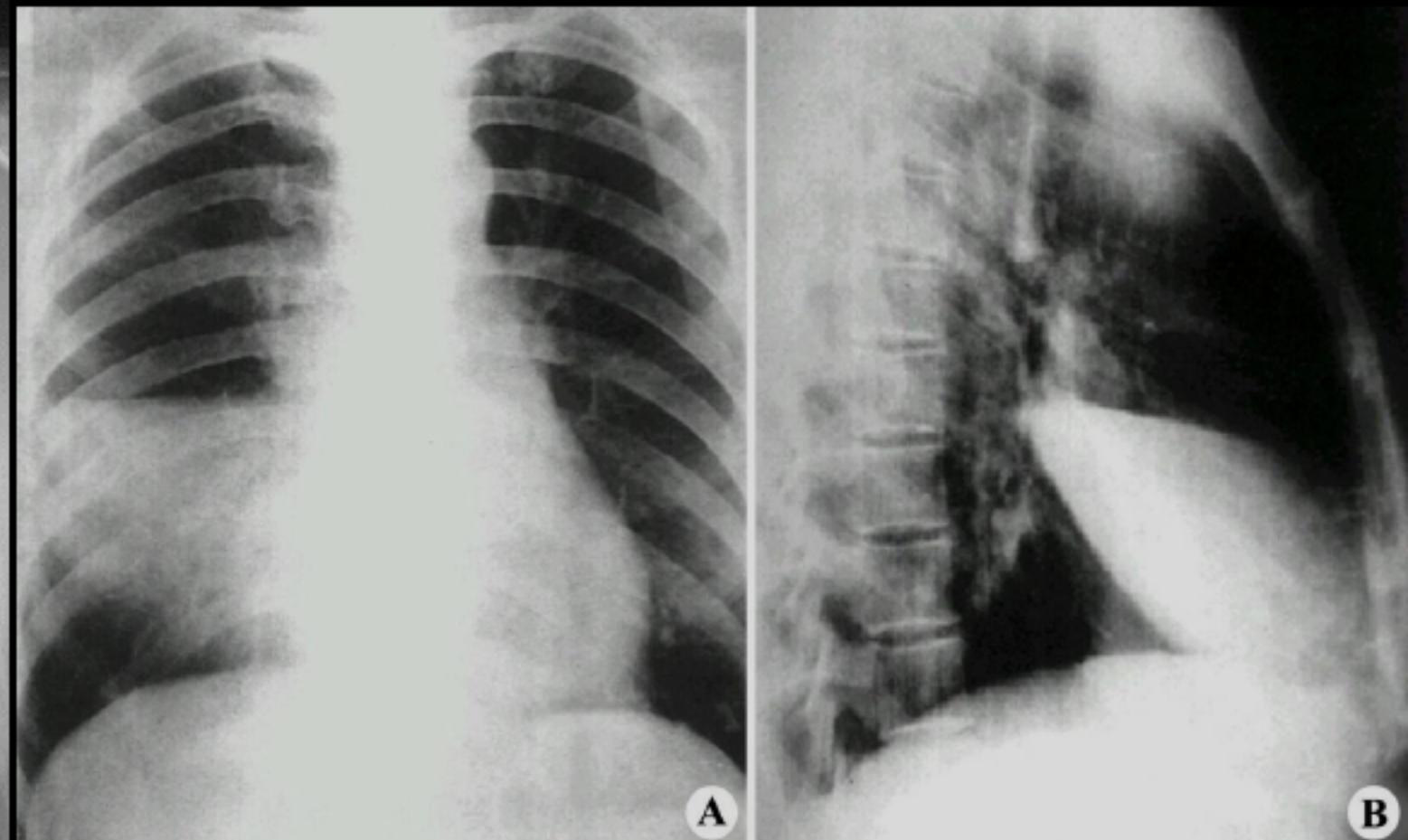
## □ 按病理类型分类

- 渗出：肺泡内气体被病理性物质取代  
**肺容积不减小**
  - 淡片样、云絮样：隐约可见肺纹理
  - 实变：遮盖肺纹理，可有支气管充气征
- 肺不张：阻塞、压迫→肺含气量↓  
**肺容积减小**

# 渗出性病变——基本征象

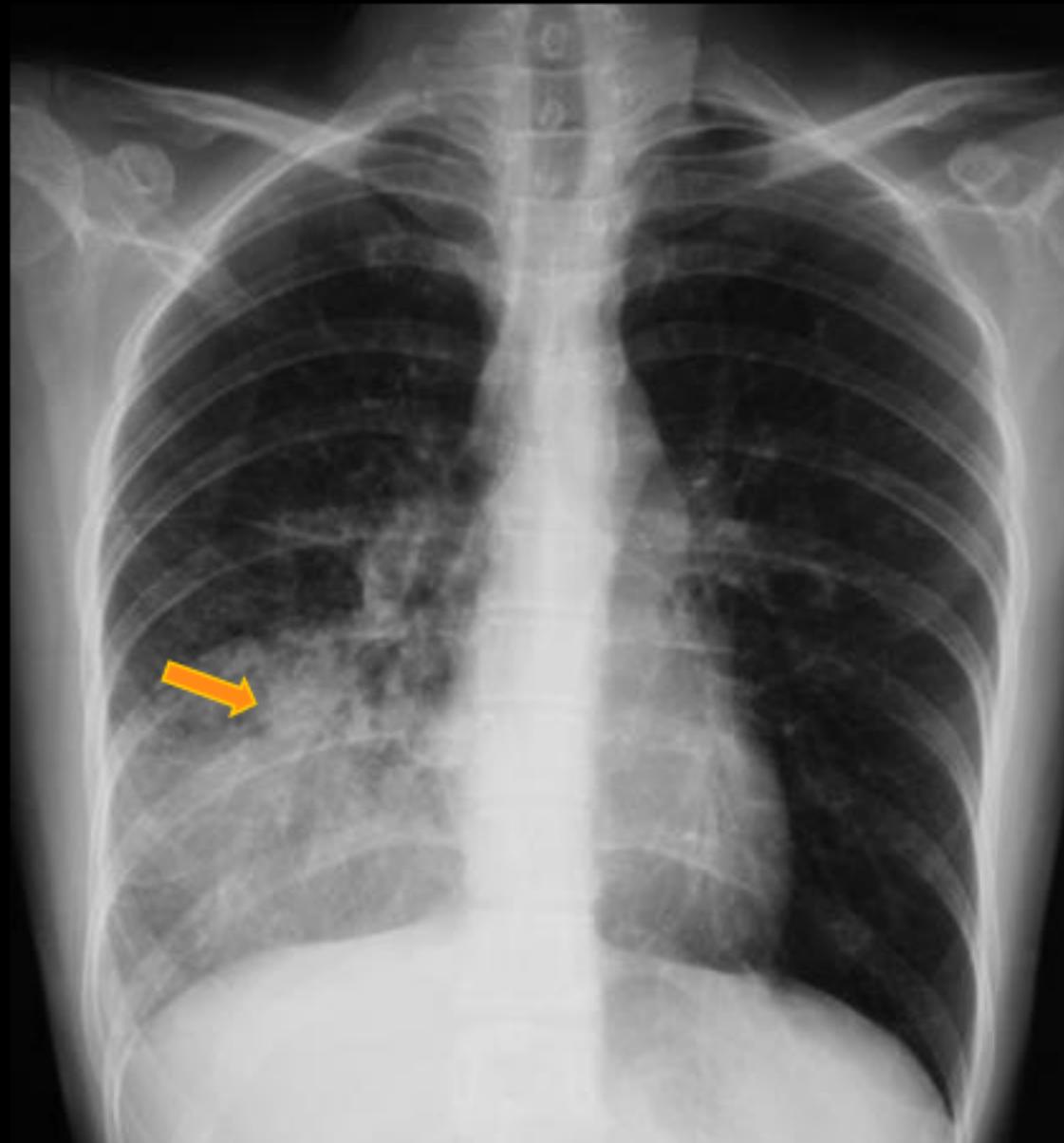


淡片状影



实变

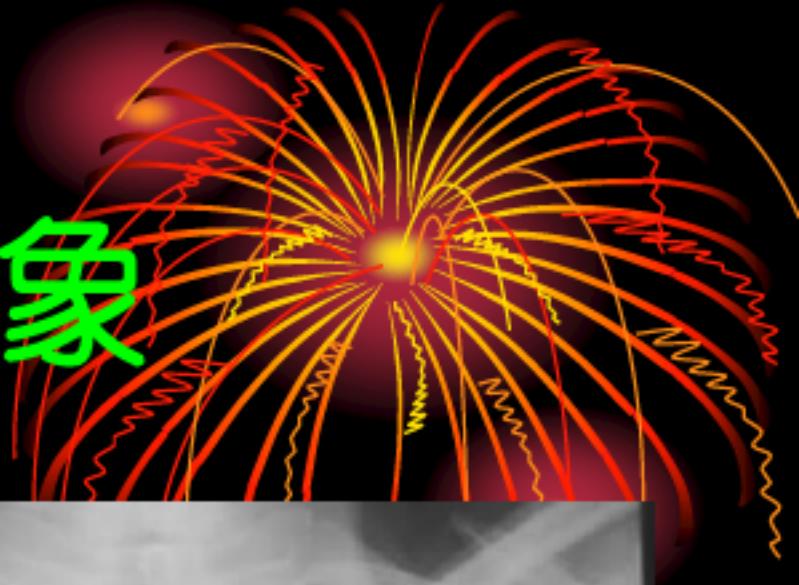
# 渗出性病变——基本征象



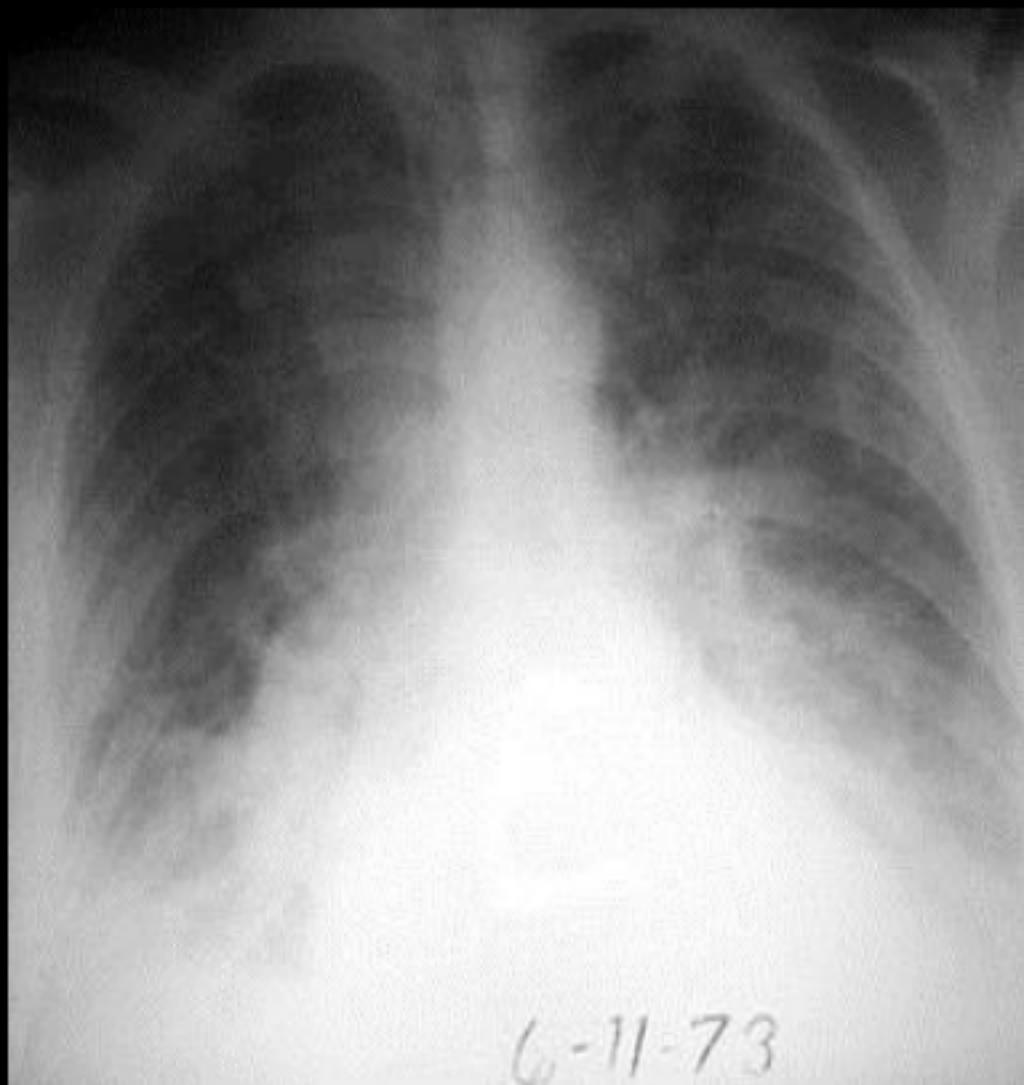
支气管充气征



干酪性肺炎  
(虫蚀样空洞)



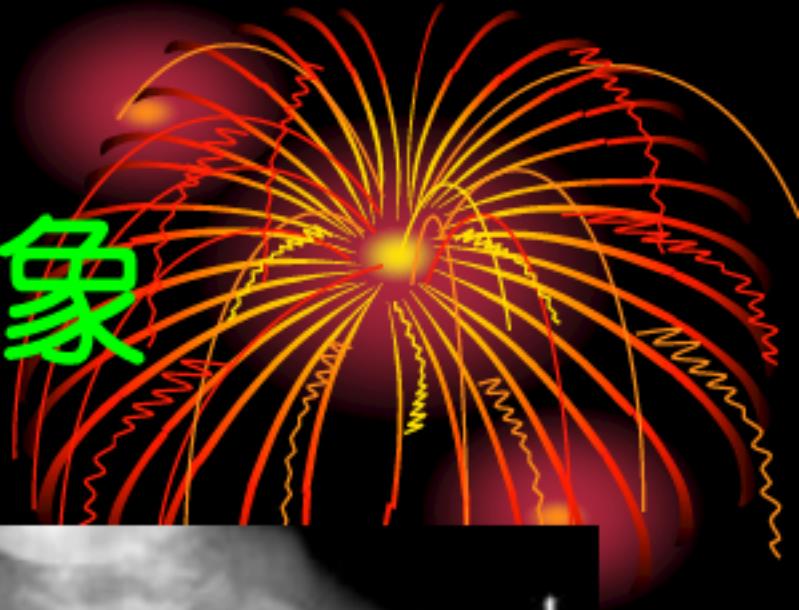
# 渗出性病变——基本征象



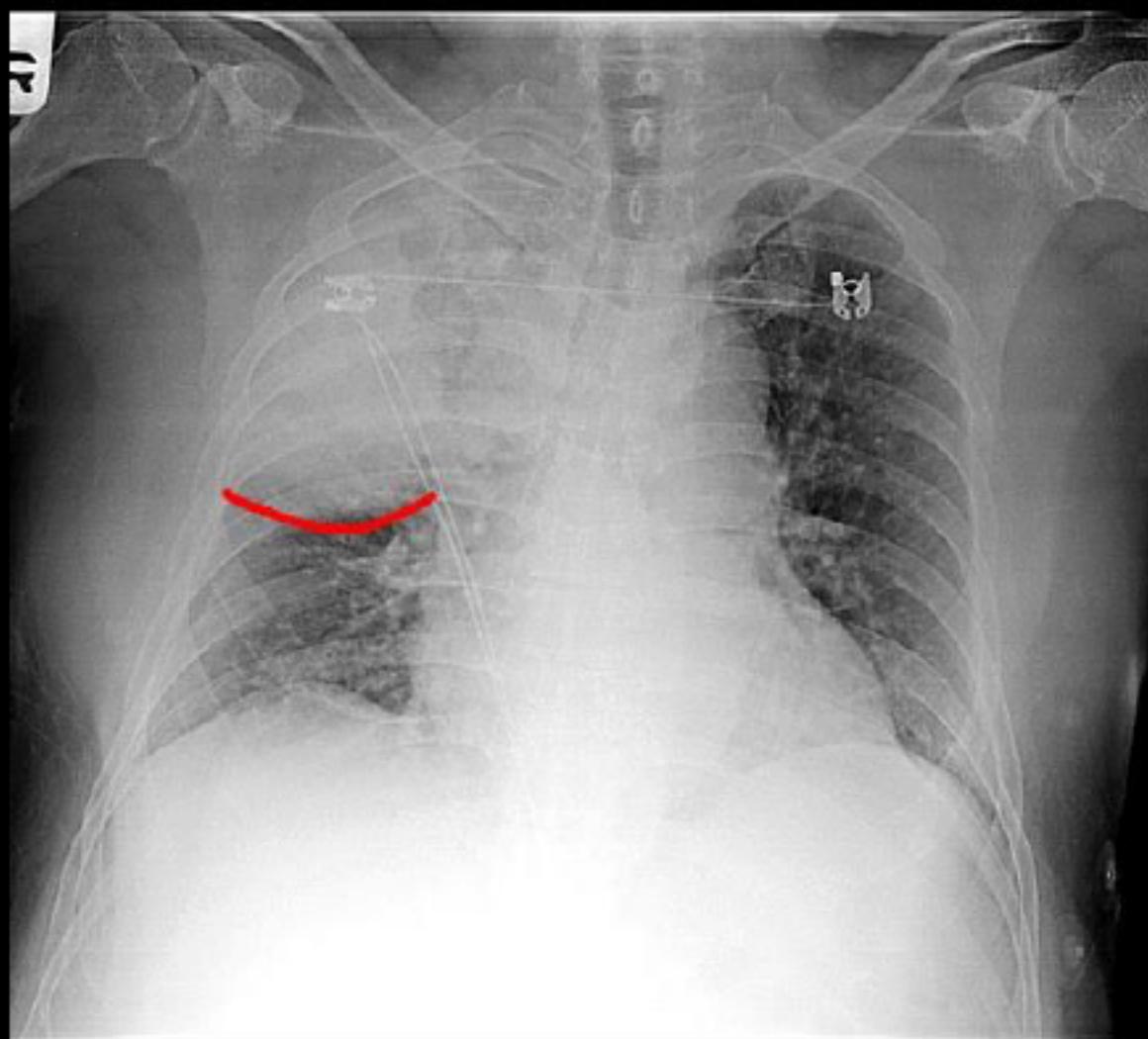
蝴蝶征



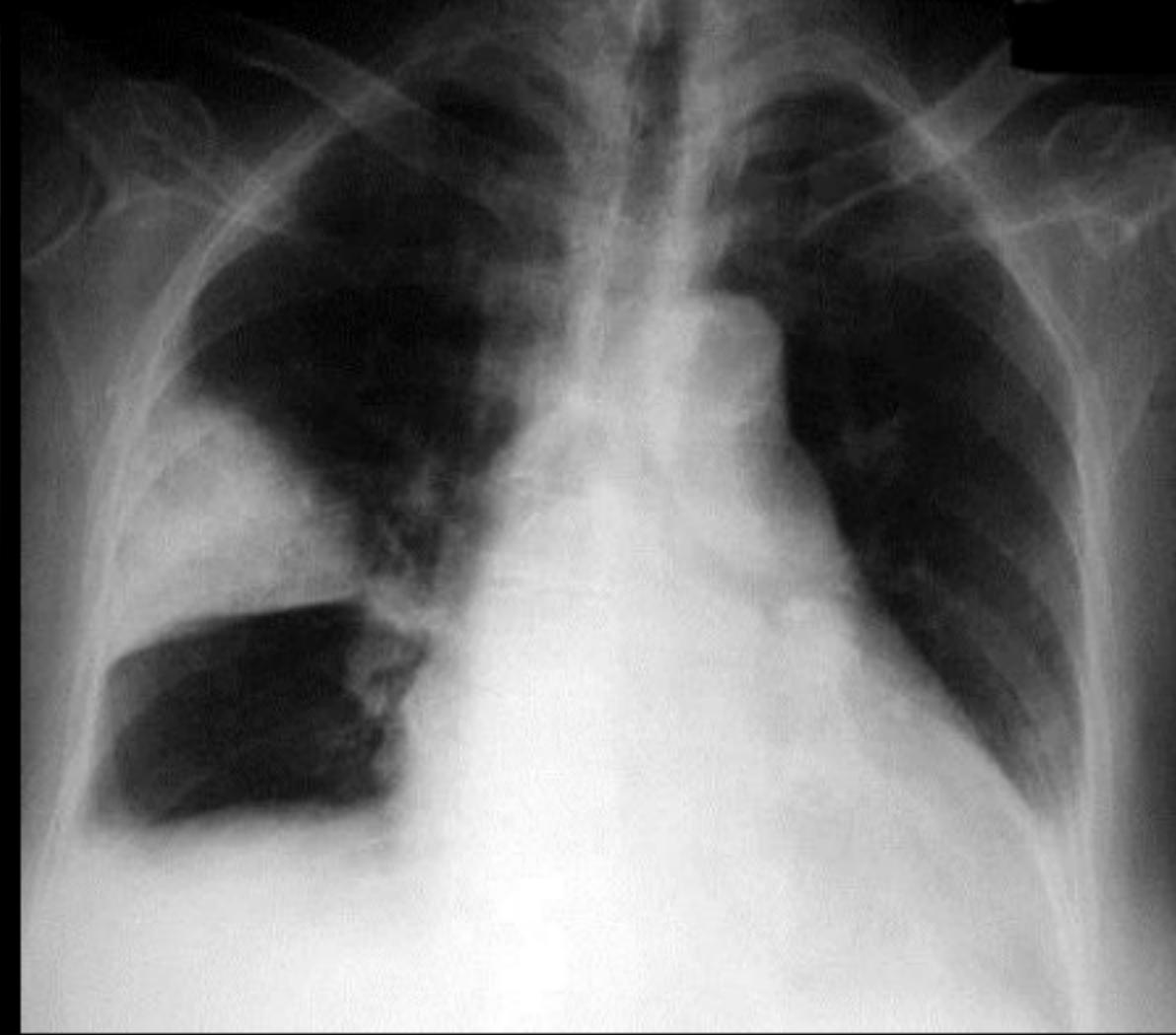
反肺水肿征



# 渗出性病变——基本征象



水平裂下坠

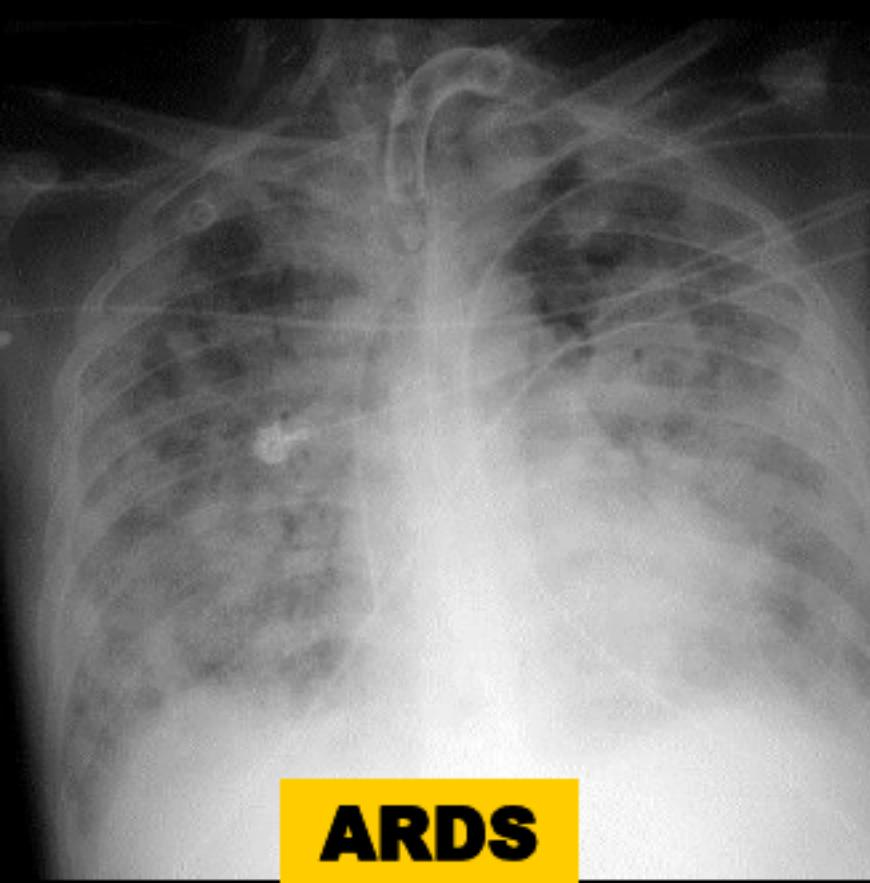


楔形影

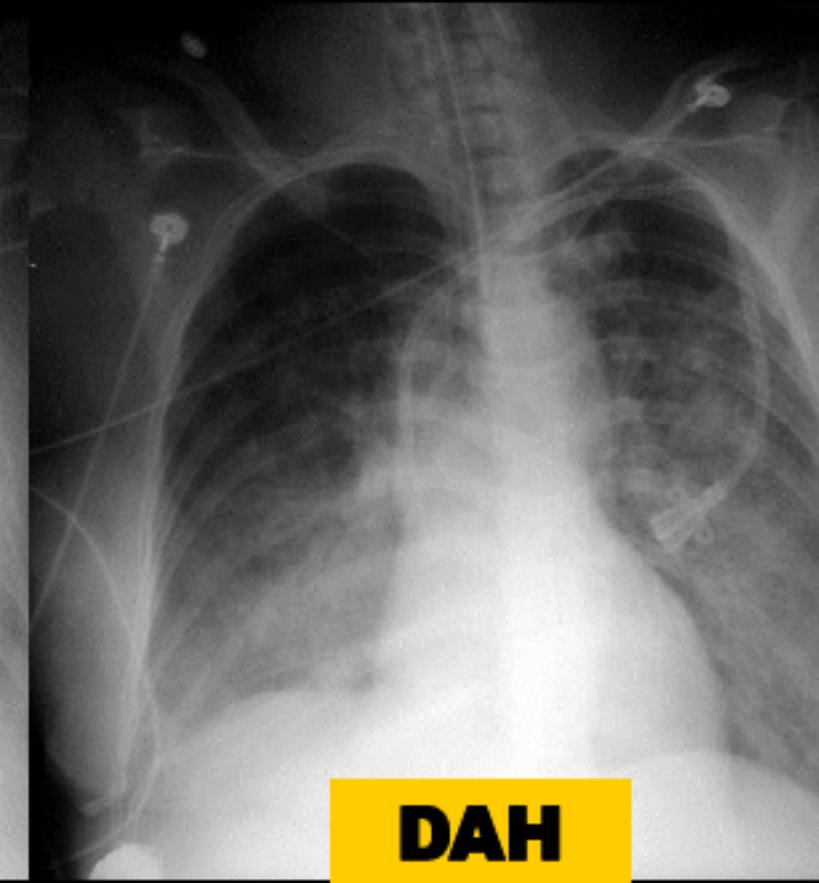
# 渗出性病变——临床病理意义

肺泡中有病理物质填充

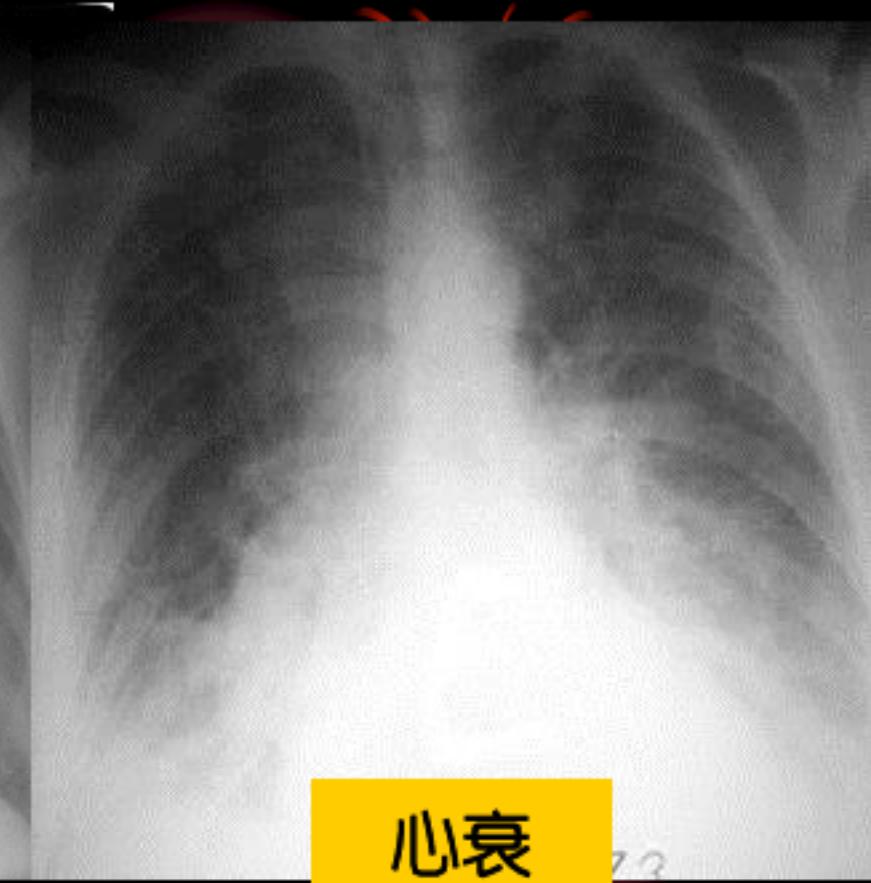
- **感染**: 感染症状, 按叶段分布, 抗感染1~2周有吸收。
- **干酪样物质**: 结核中毒症状, 上肺分布, 多形、播散、钙化、牵拉, 抗结核数周可有吸收。
- **水肿**: 心衰/水负荷↑, 内带/重力区分布, 心影扩大, 可伴胸水, 利尿后1~2天有吸收。
- **ARDS**: 诱因, 顽固低氧血症, 广泛/重力区分布, 预后差。
- **出血**: 咯血、贫血, 非叶段分布, 肺泡含铁血黄素细胞(+), 数日可吸收。
- **肿瘤**: 消耗症状, 逐渐增长(肺癌按月计)。
- **蛋白**: 非叶段分布, 牛奶样灌洗液, PAS(+)



**ARDS**



**DAH**



**心衰**



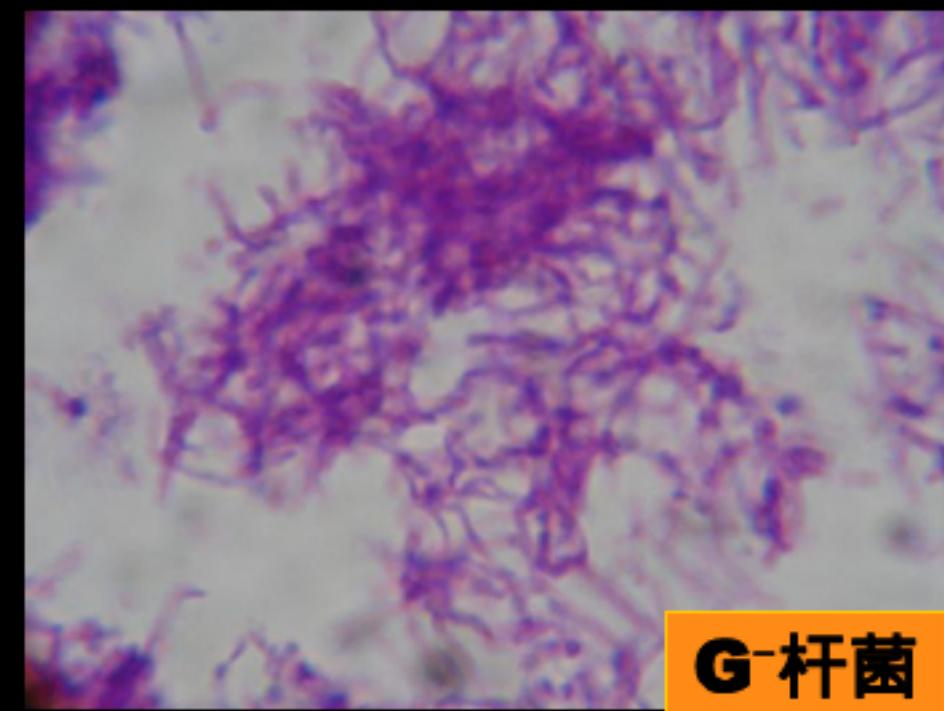
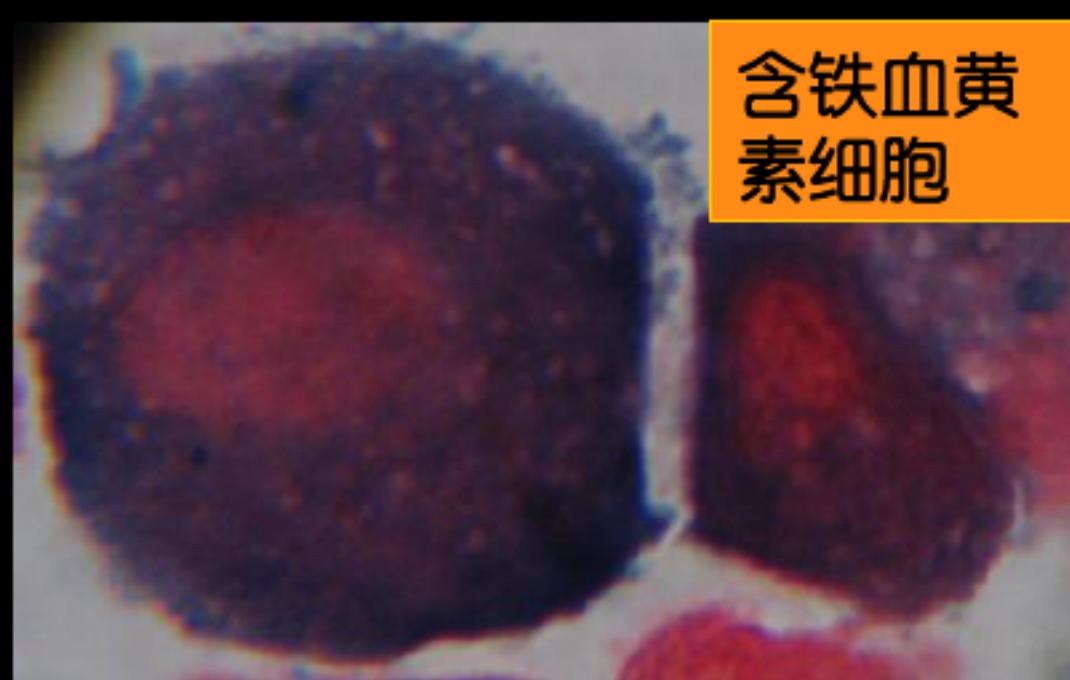
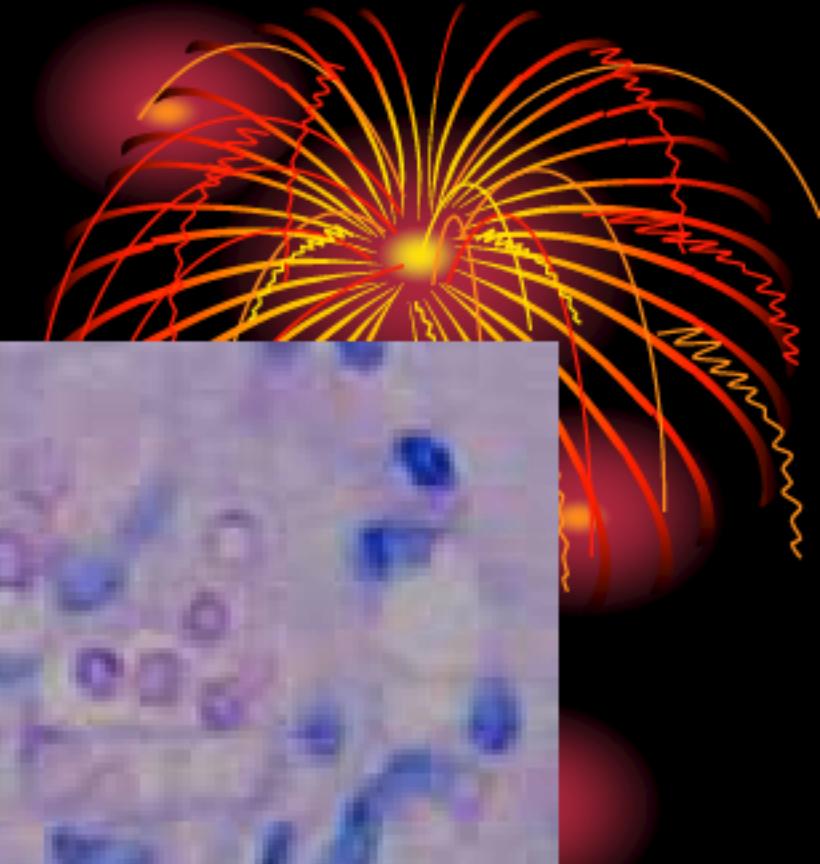
**肺炎**



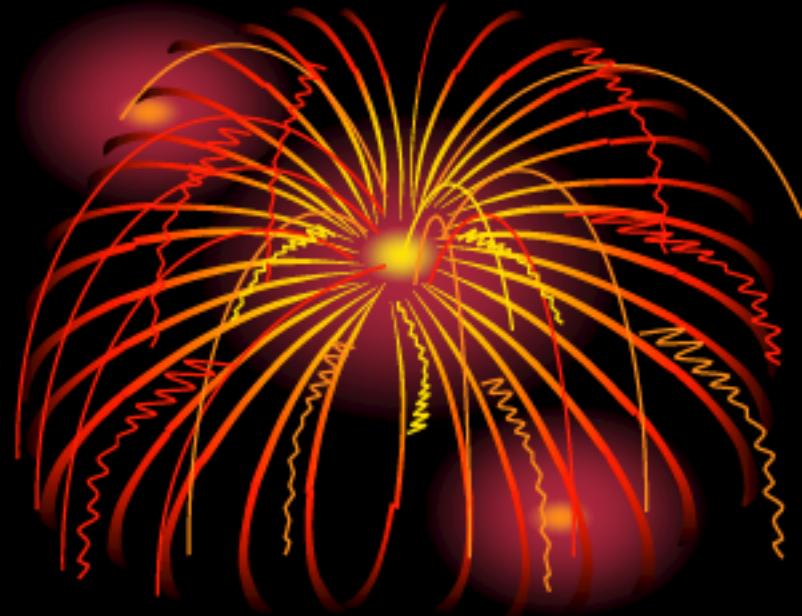
**肺泡癌**



**PAP**

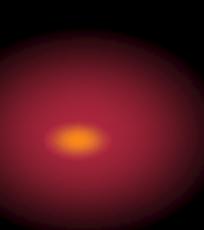
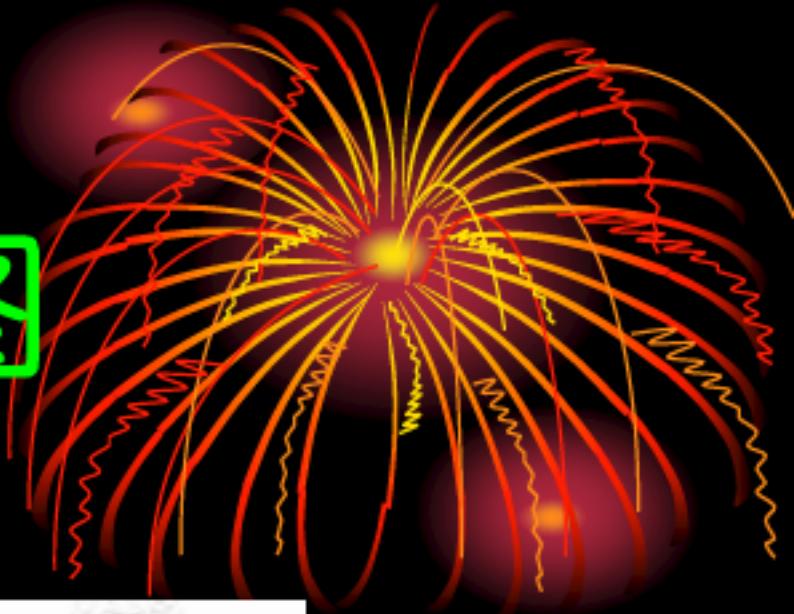
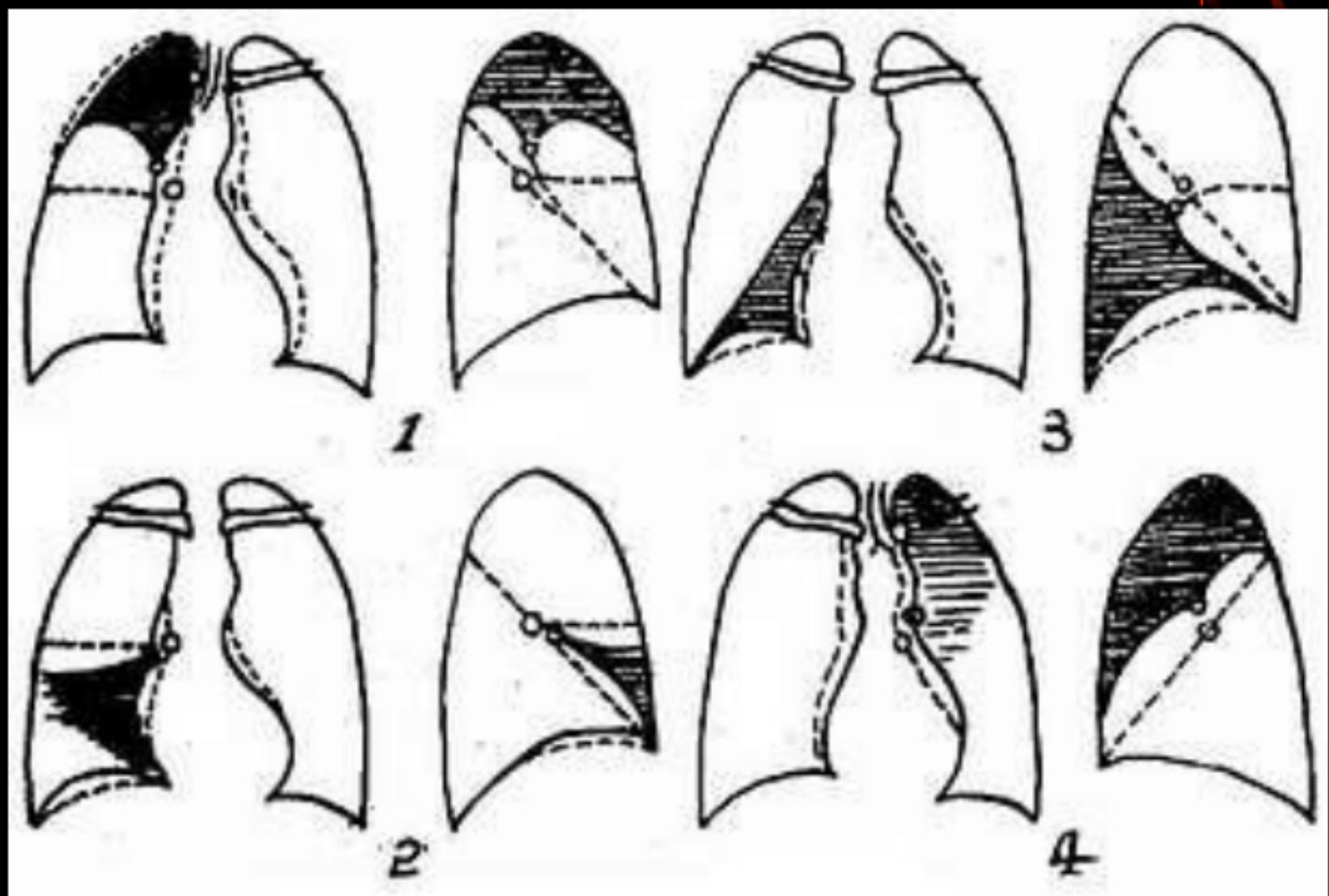


# 肺不张——基本征象

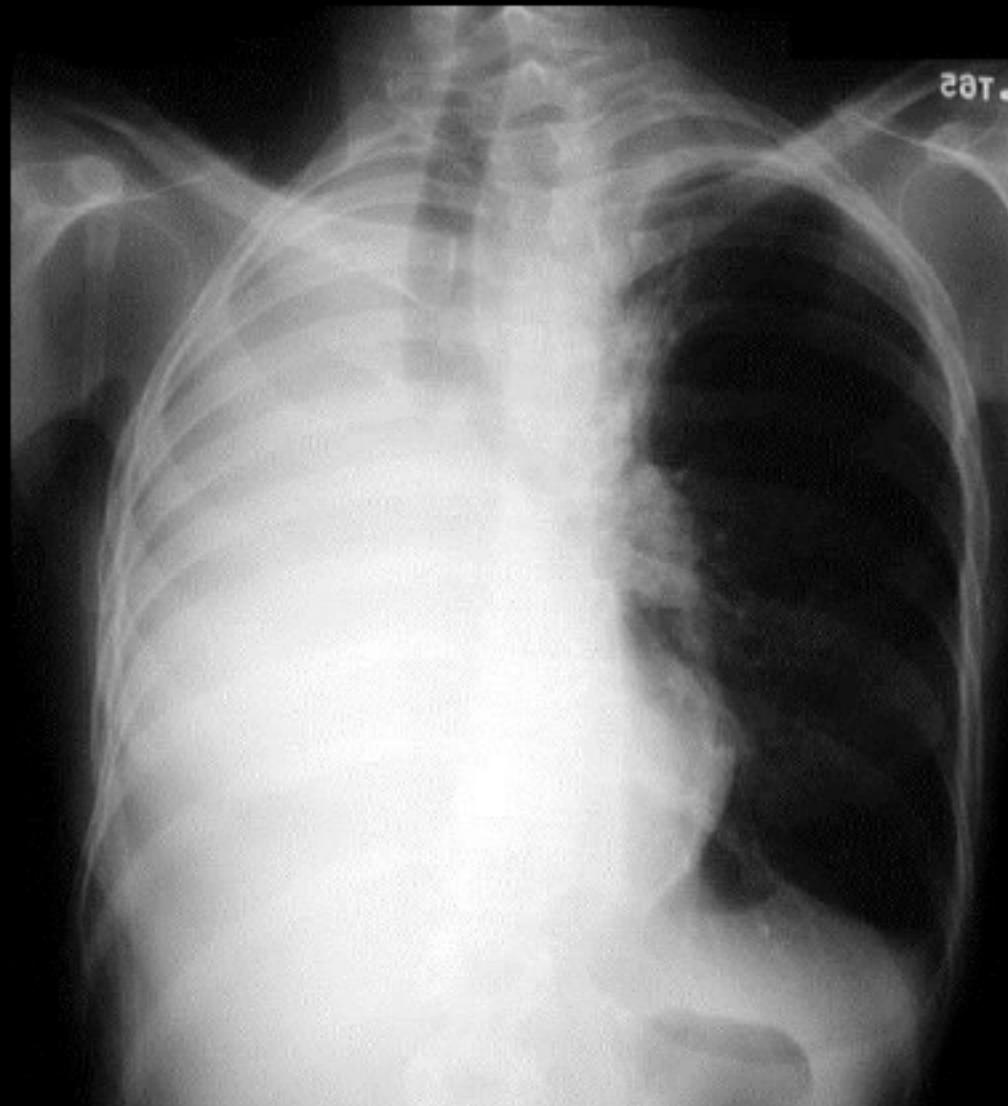


- 直接征象：不张的肺体积缩小、密度均匀增高，可呈基底向外、尖端指向肺门的三角形致密影。
- 间接征象：气管、纵隔、肺裂、肺门、横膈移位  
胸廓塌陷、肋间隙变窄  
健肺代偿性肺气肿

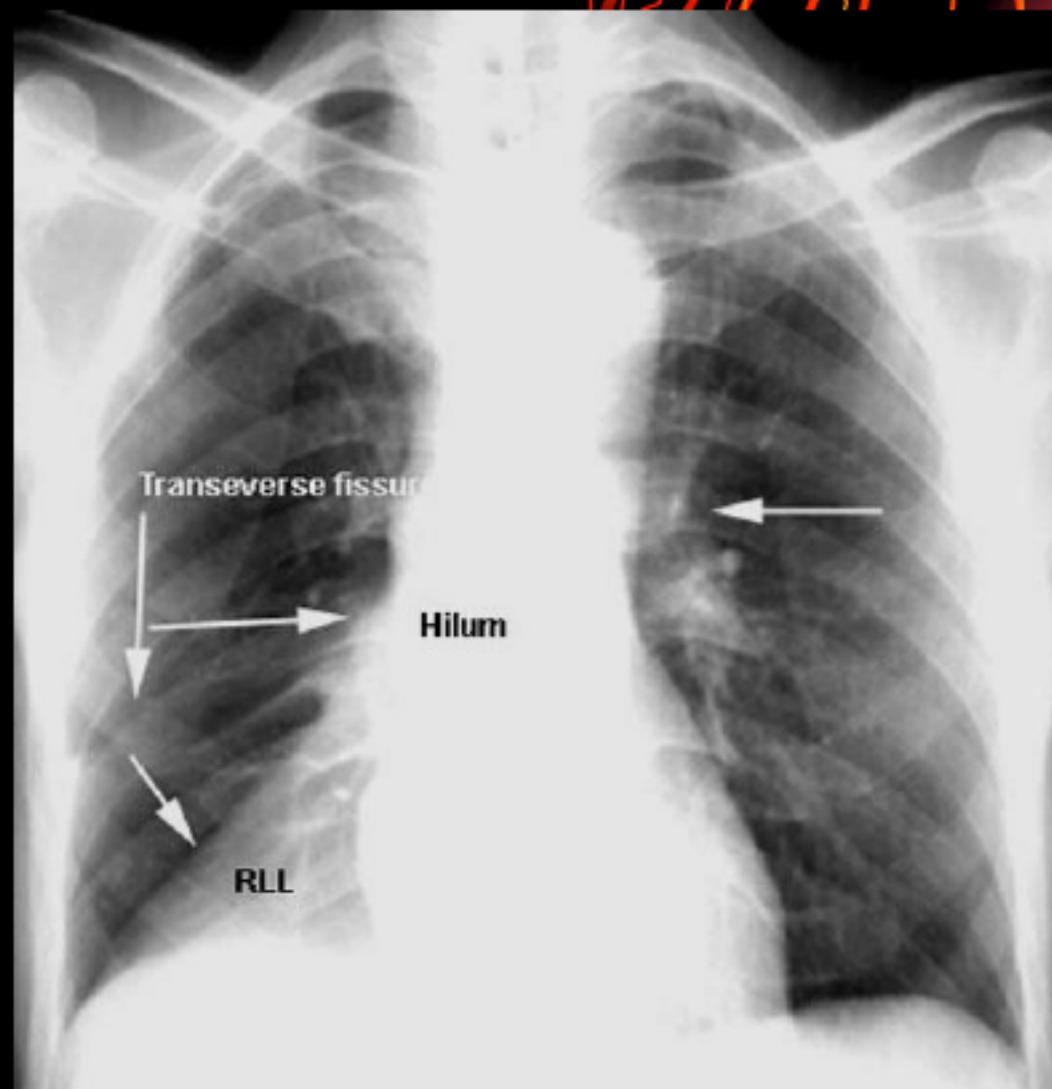
# 肺叶不张示意图



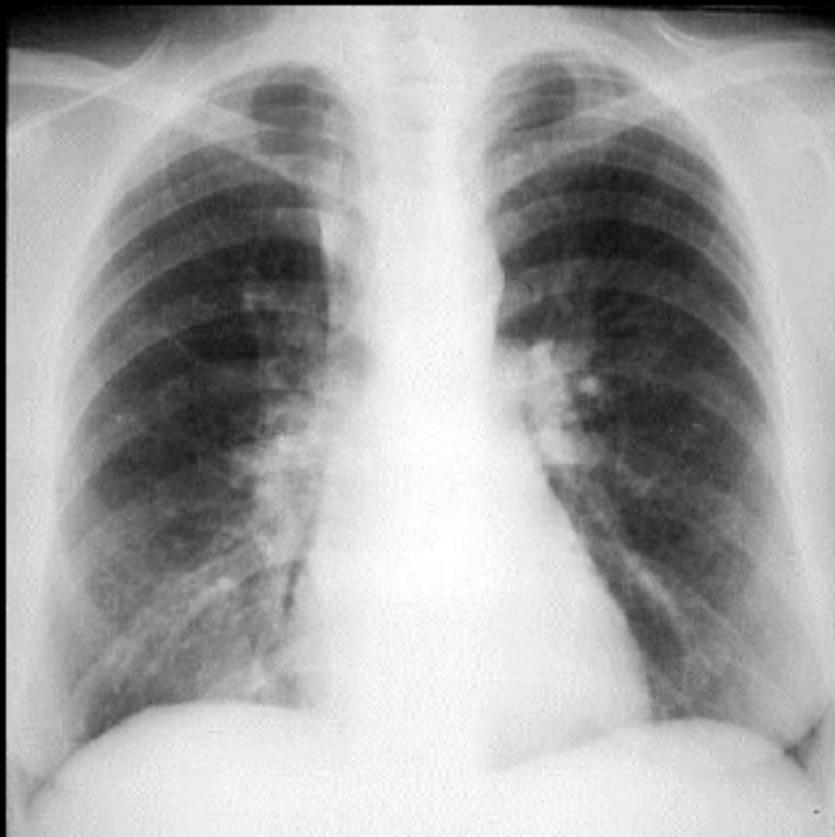
# 肺不张——基本征象



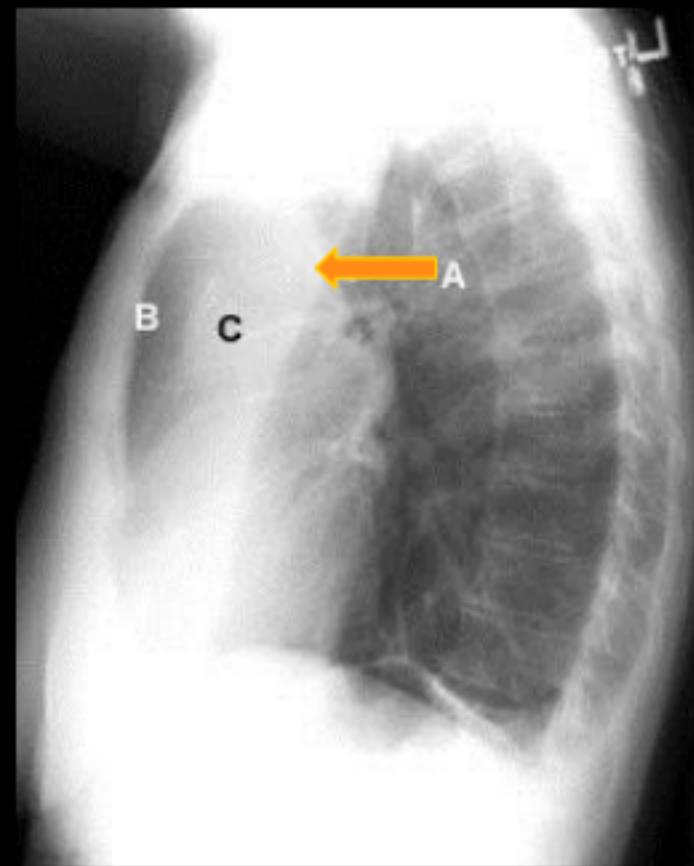
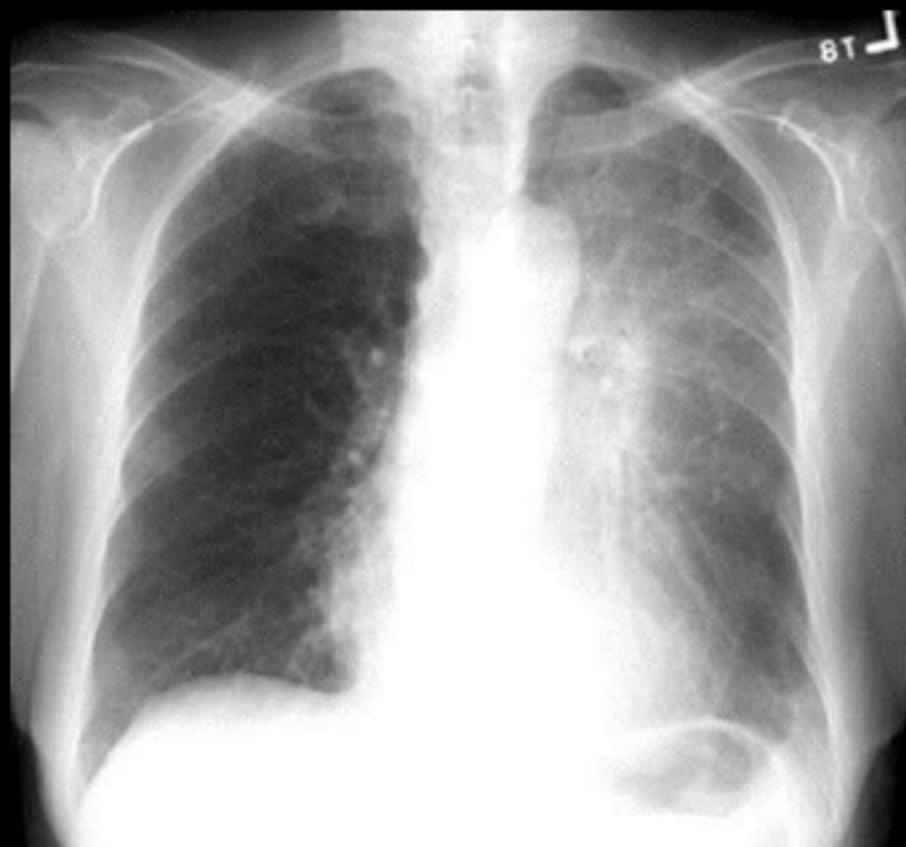
右肺不张



右下叶不张

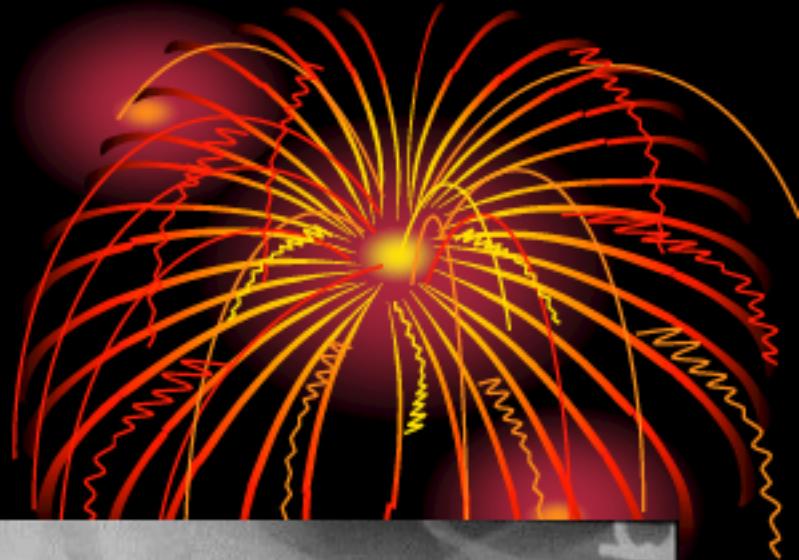


右中叶不张

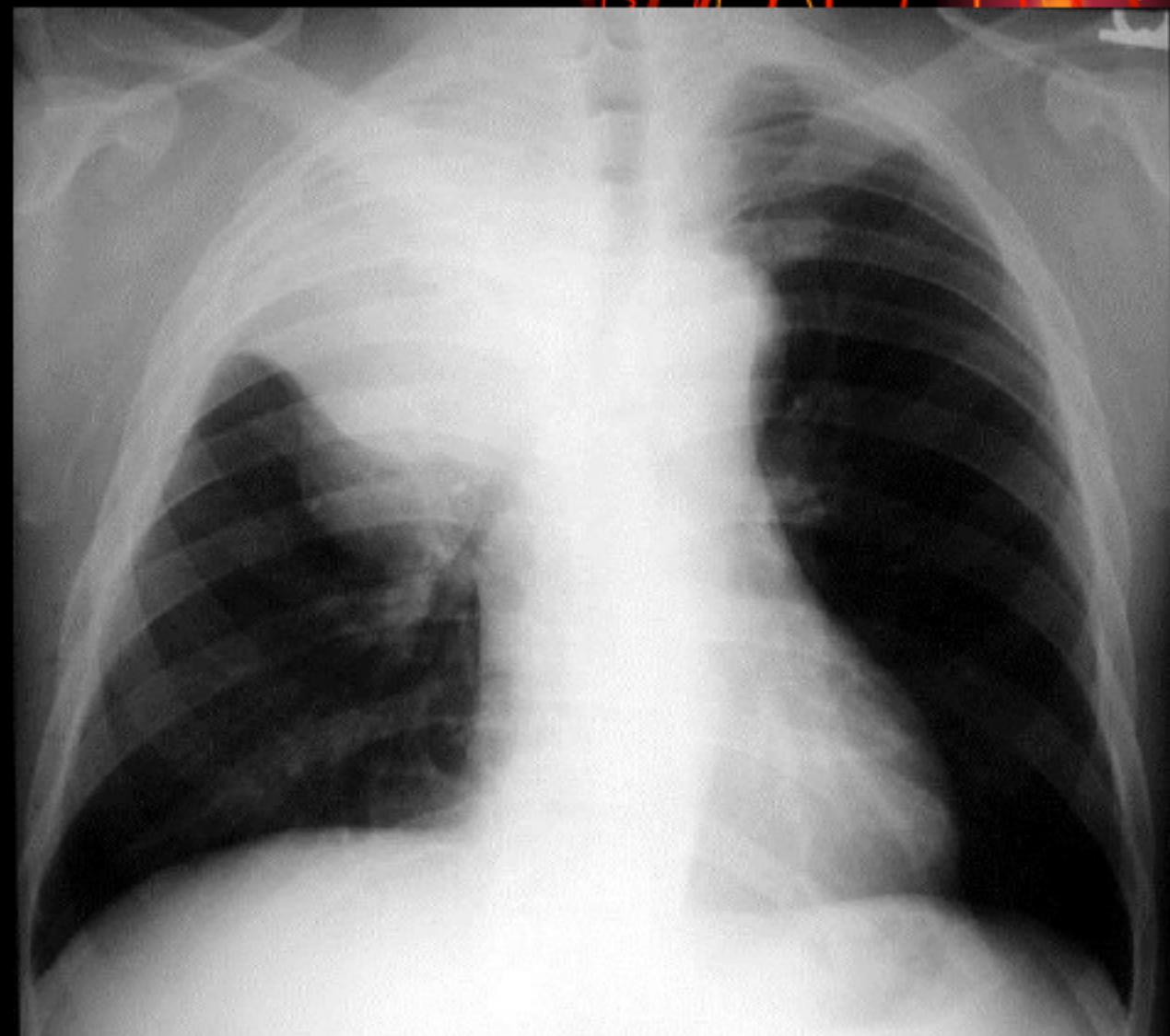


左上叶不张

# 肺不张——基本征象

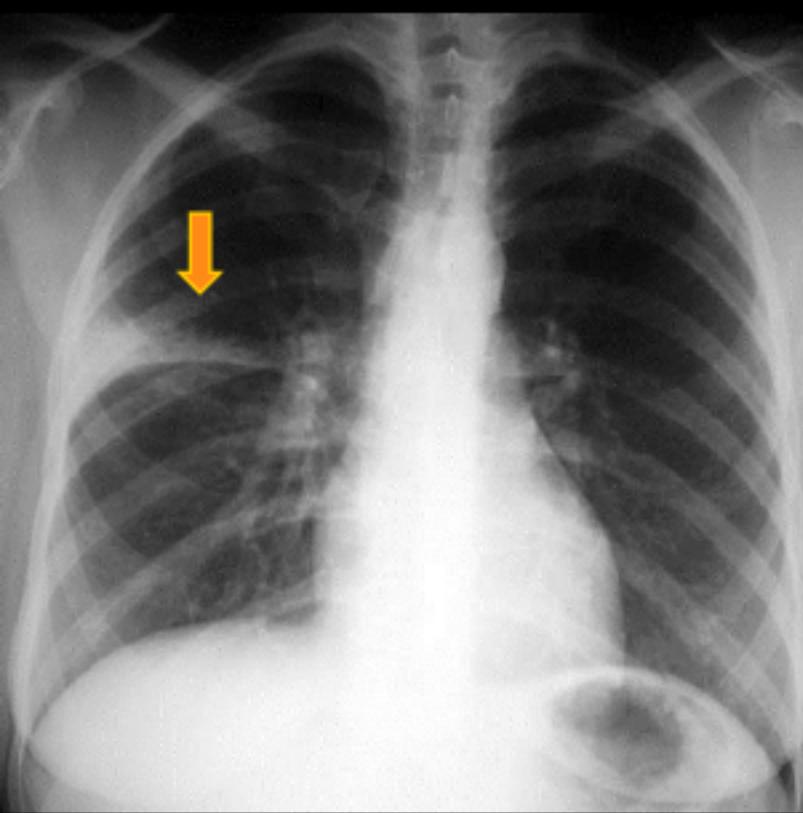
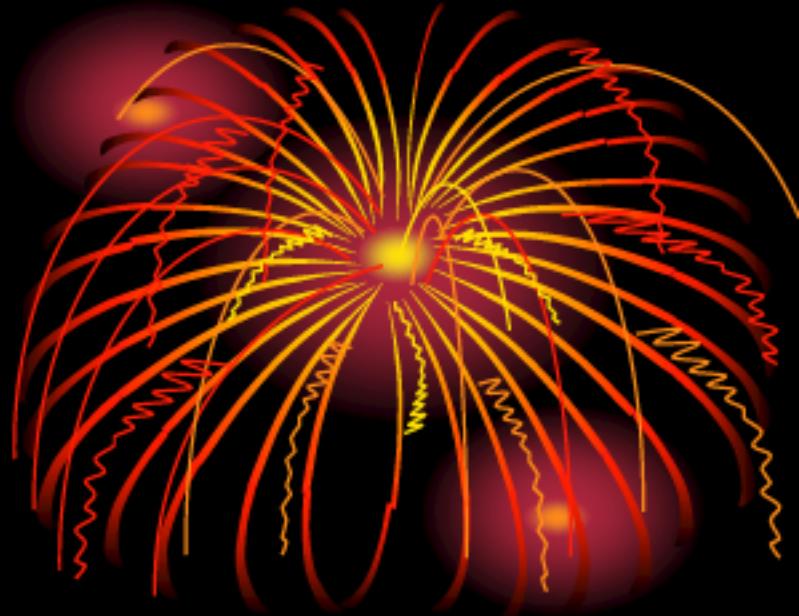


左下叶不张 (心后影)

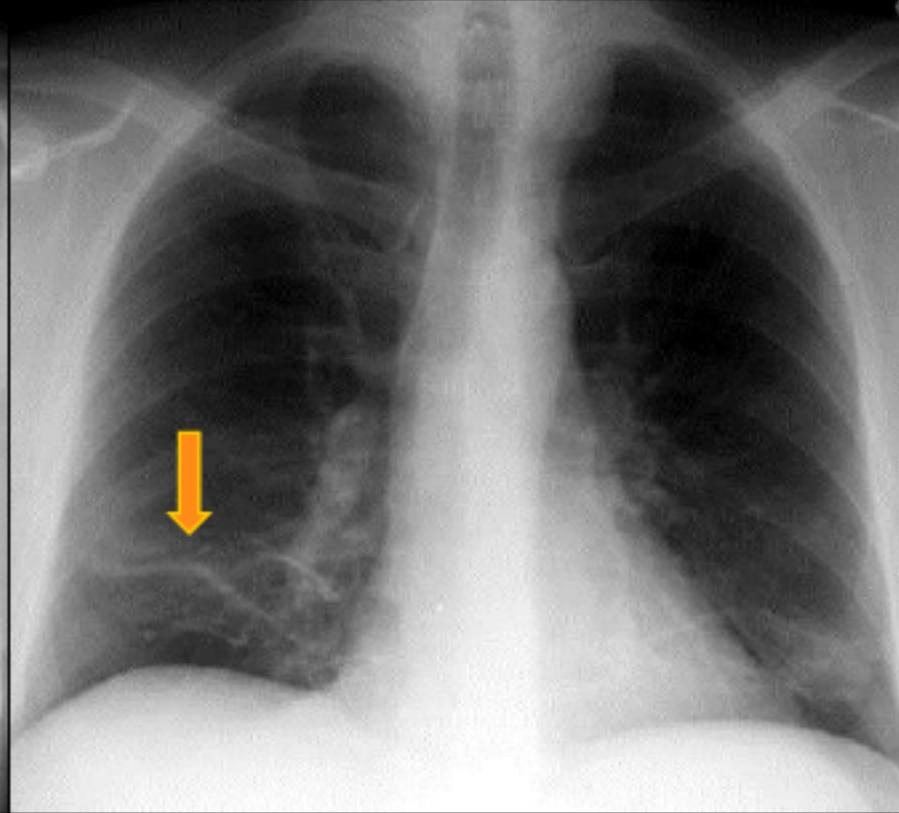


横S征 (肺门影)

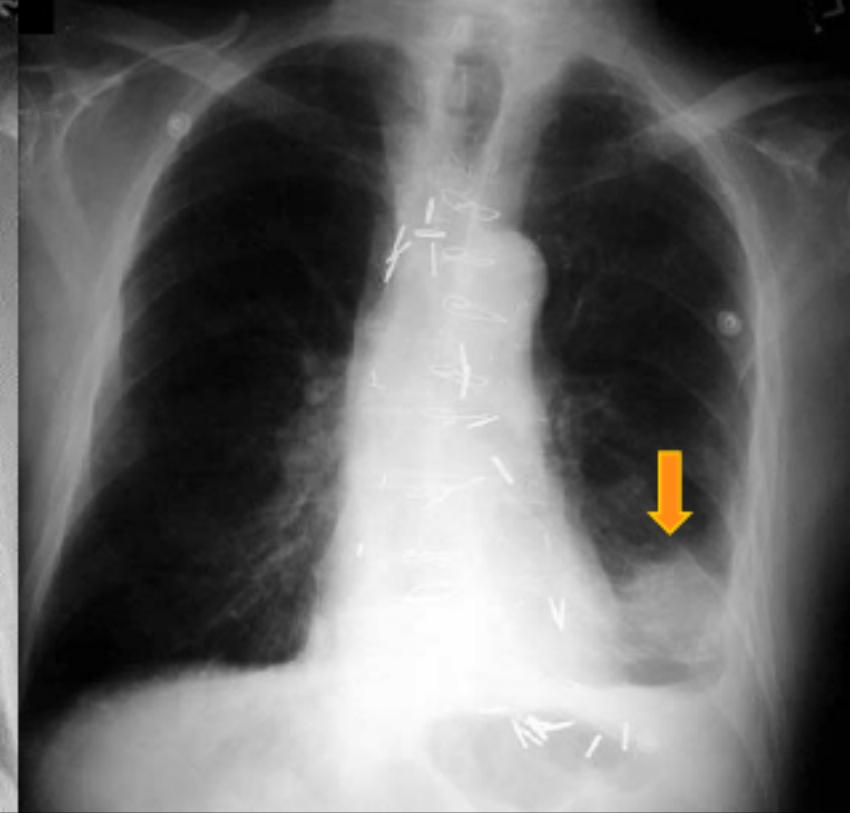
# 肺段、亚段不张



亚段肺不张

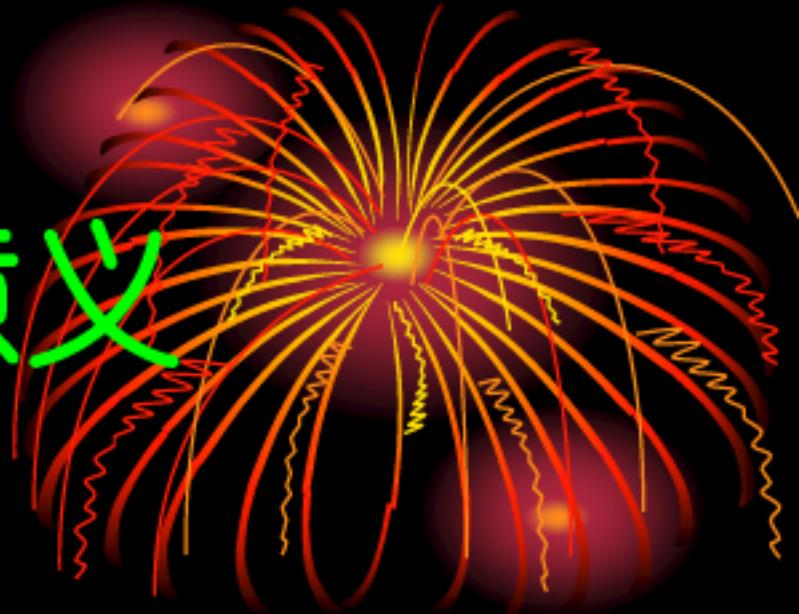


亚段肺不张



盘状肺不张

# 肺不张——临床病理意义



按病因和发病机制分类

- **阻塞性肺不张**: 气管阻塞,  
完全阻塞时肺泡内气体18~24h可被吸收
- **被动性肺不张**: 气胸、胸腔积液压迫;  
疼痛、神经病变→胸廓运动↓
- **粘连性肺不张**: 肺泡表面活性物质减少, 如ARDS
- **瘢痕性肺不张**: 瘢痕收缩→肺含气量↓

# 肺内病变——线



- 组成结构：支气管、血管、淋巴管、肺间质
- 影像表现：线、条索、网格、囊
- 基本病变
  - 支气管扩张：“双轨征”、“指套征”
  - 慢性纤维空洞性肺结核：“垂柳征”
  - 肺水肿：Kerley线
  - 间质性肺炎：网格影、磨玻璃影
  - 肺纤维化：胸膜下分布网格影
  - 肺大疱：薄壁囊

# 线状影——基本征象

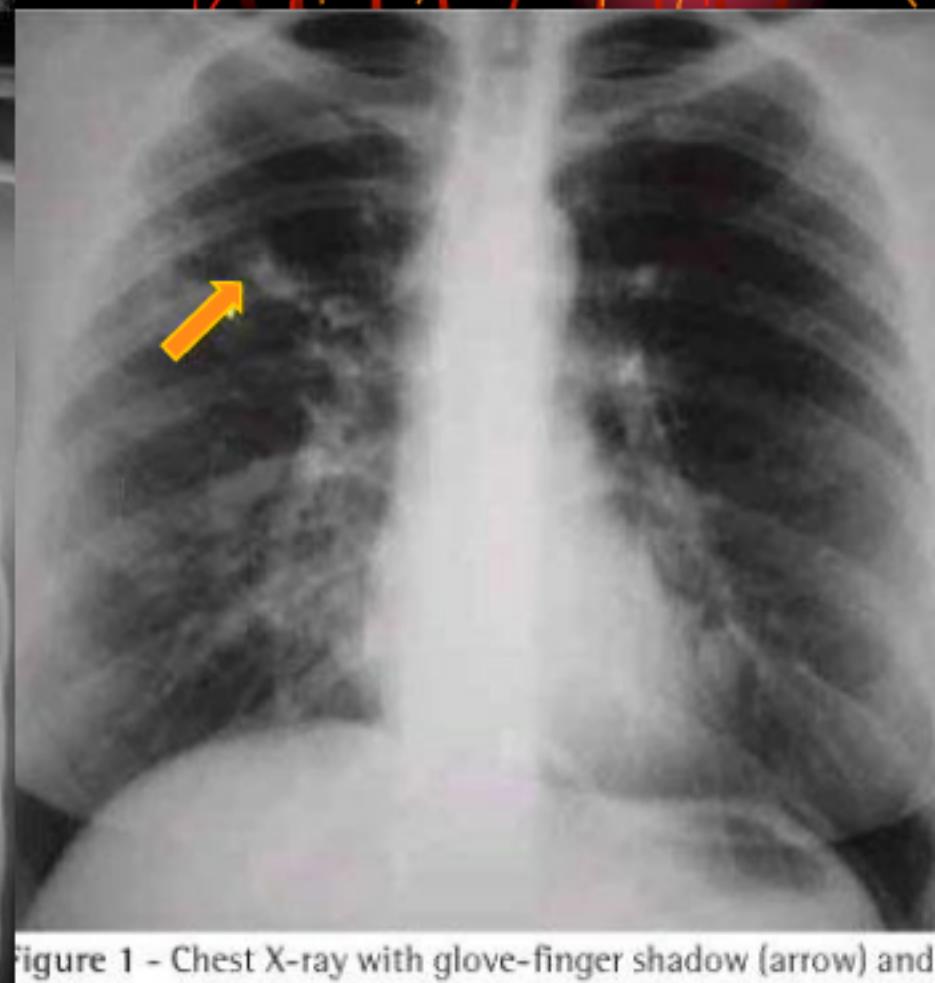
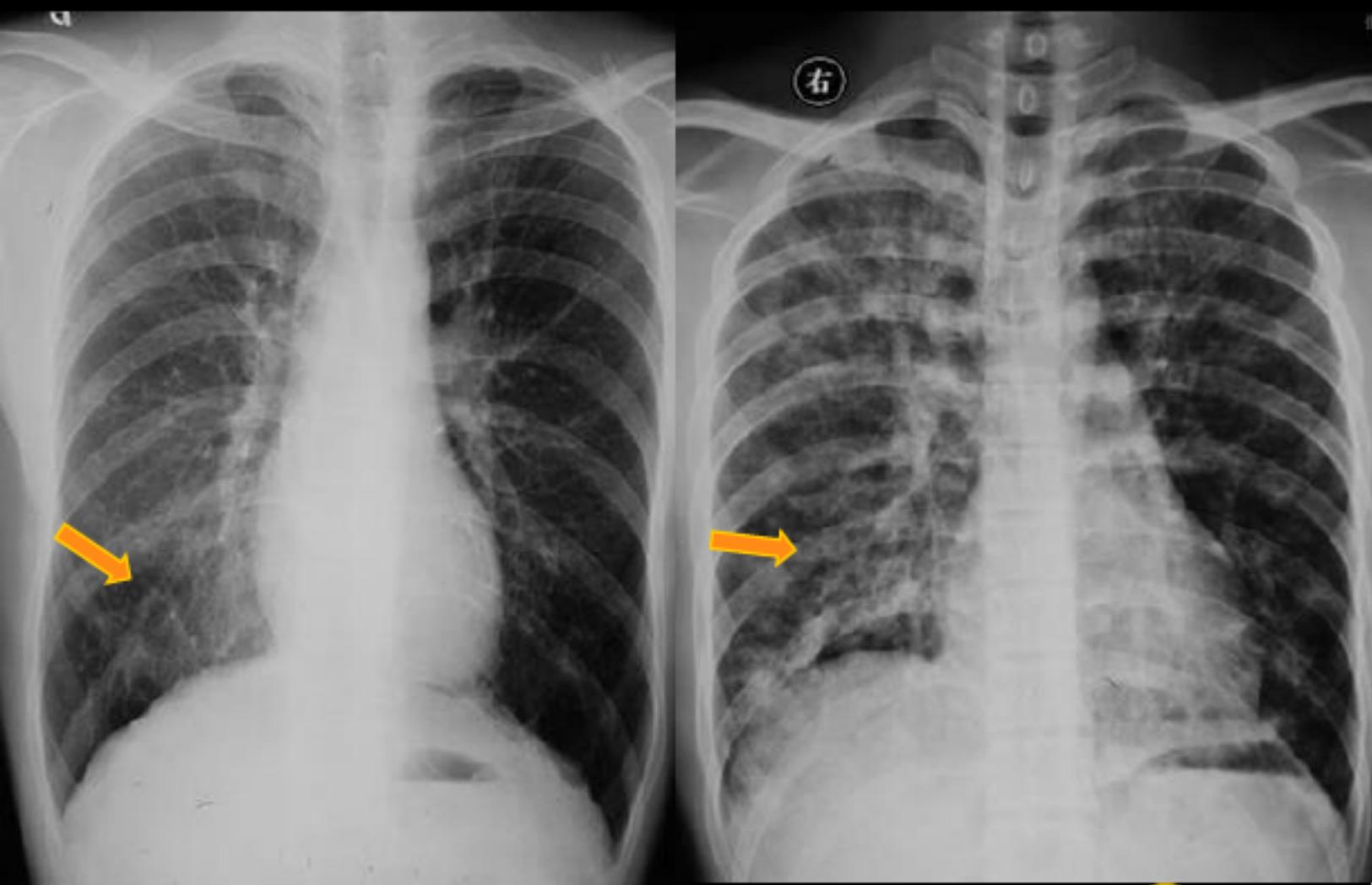
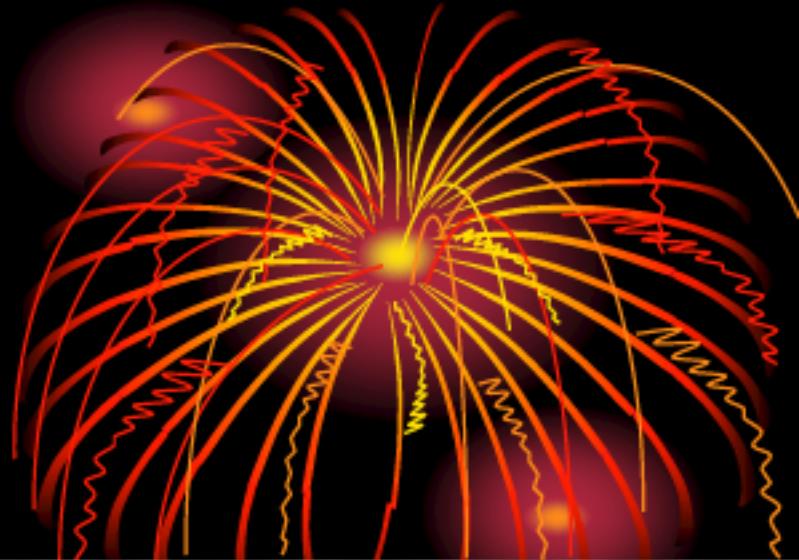


Figure 1 - Chest X-ray with glove-finger shadow (arrow) and  
nodular opacities in the right middle third



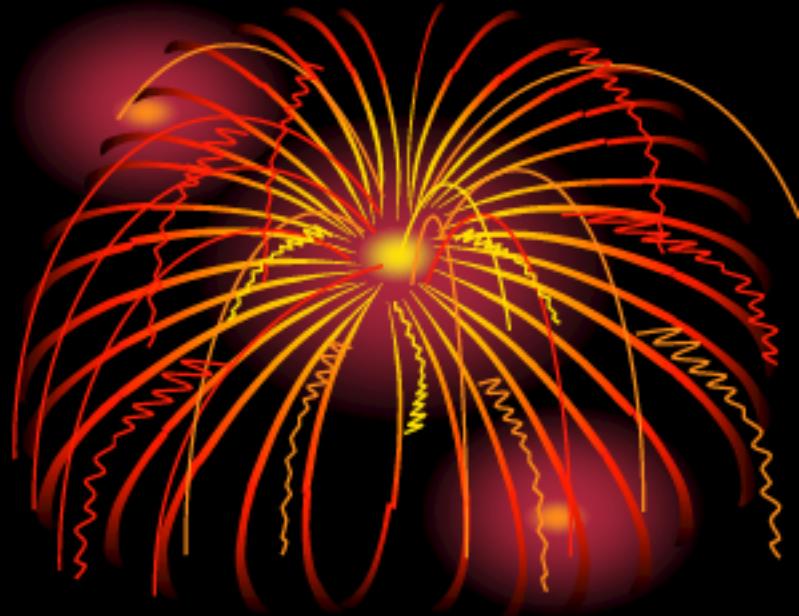
支气管扩张



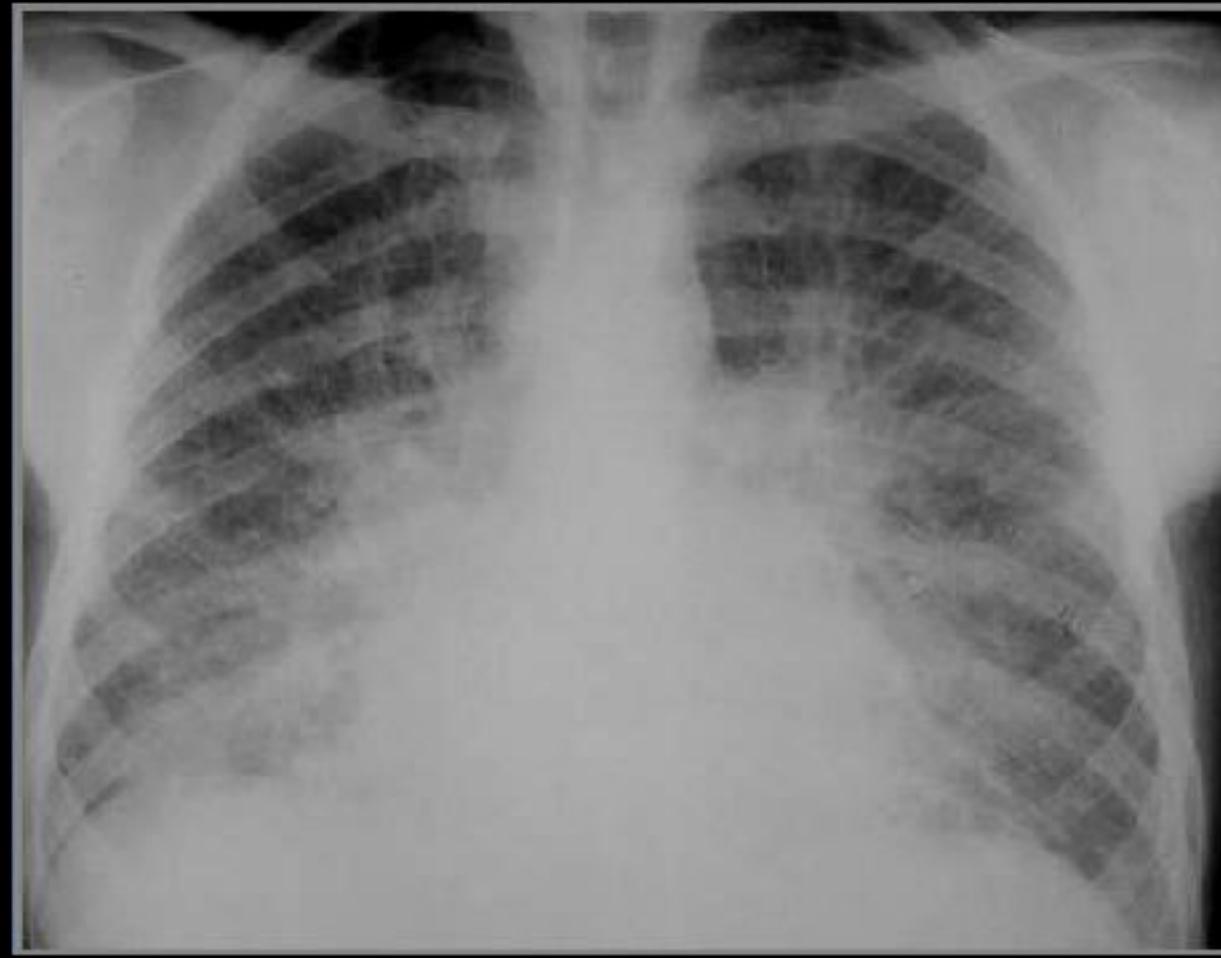
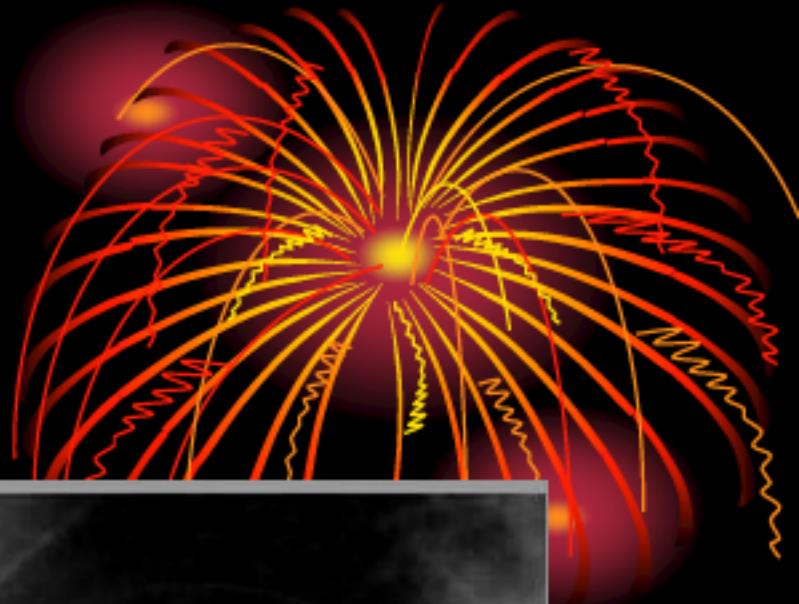
# 线状影——基本征象



慢性纤维空洞型  
肺结核



# 线状影——基本征象



- A: Long wavy lines in upper and mid lung field
- B: 2-3 cm long pleural based in bases perpendicular to lateral chest
- C: Fine reticular lines

# 线状影——基本征象

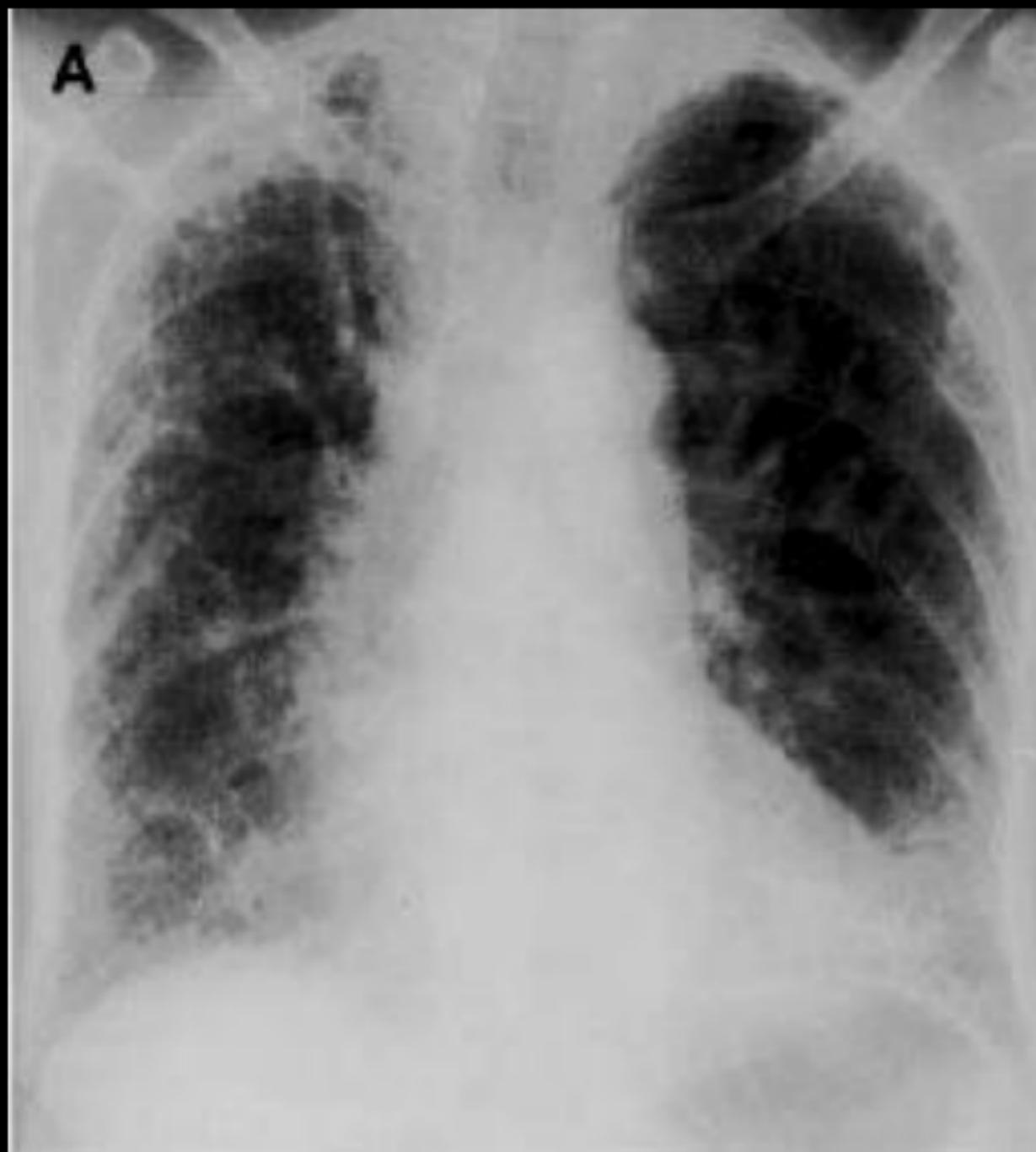


病毒性肺炎



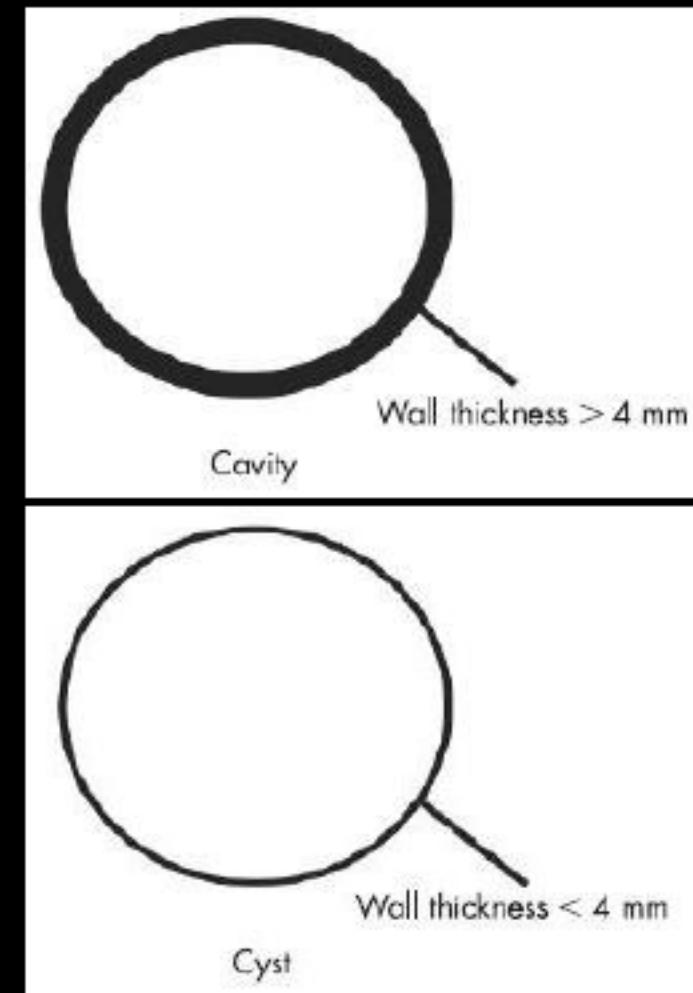
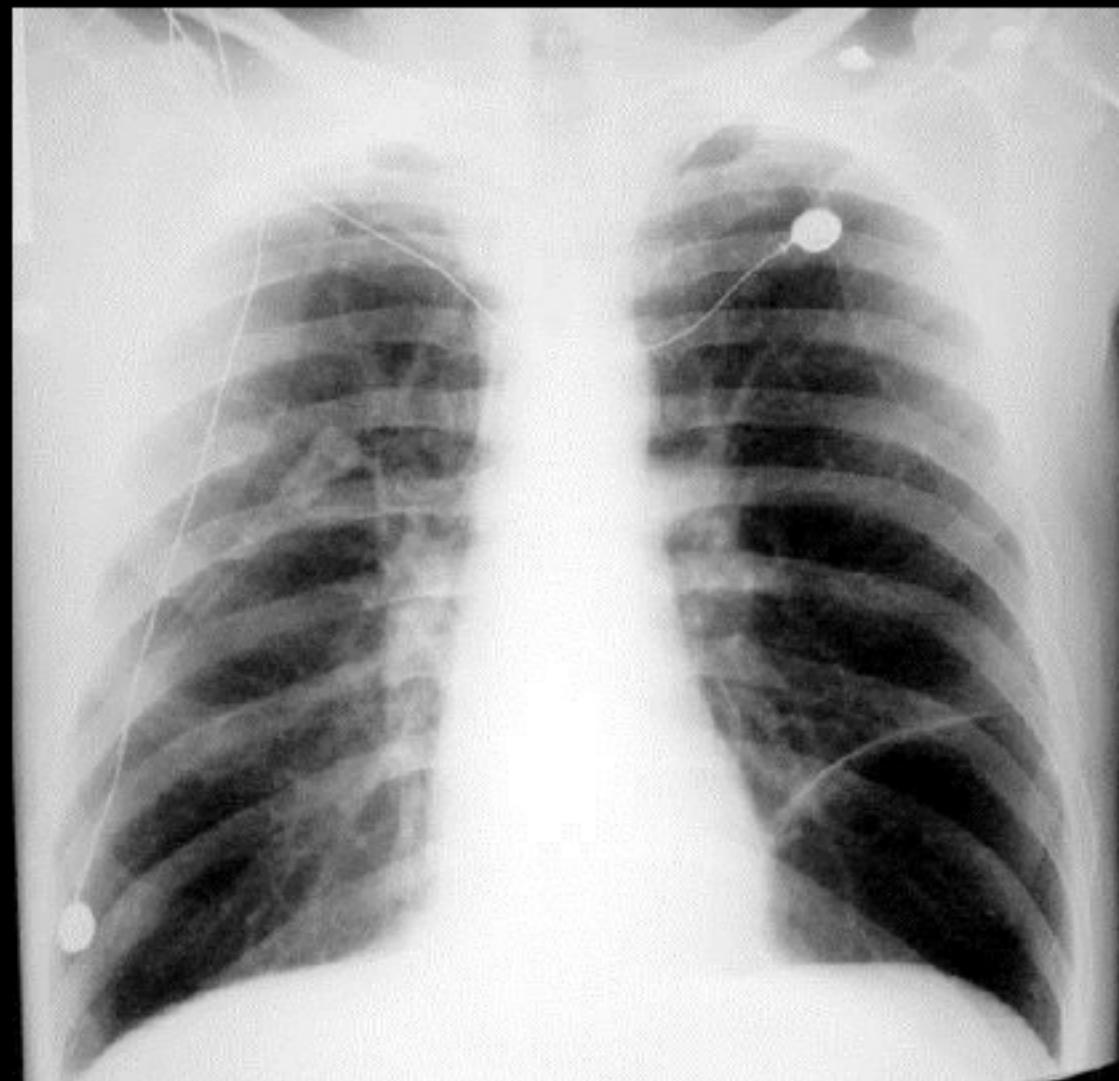
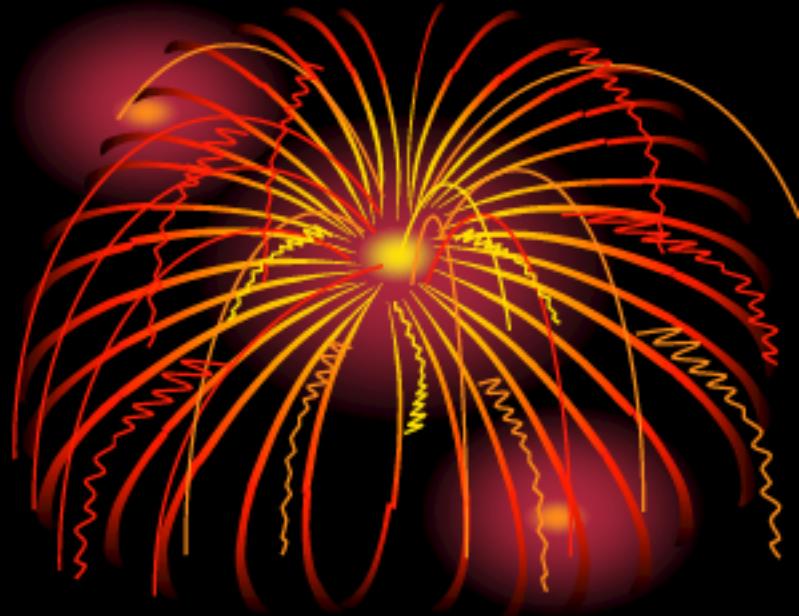
癌性淋巴管炎

# 线状影——基本征象



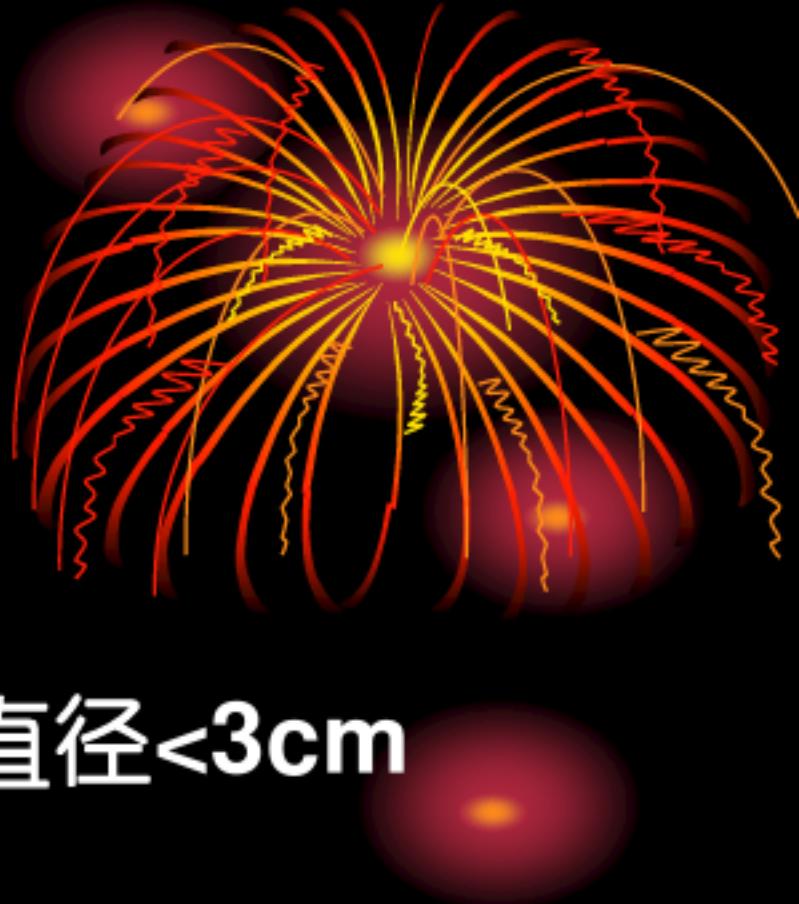
肺纤维化

# 线状影——基本征象



肺大泡

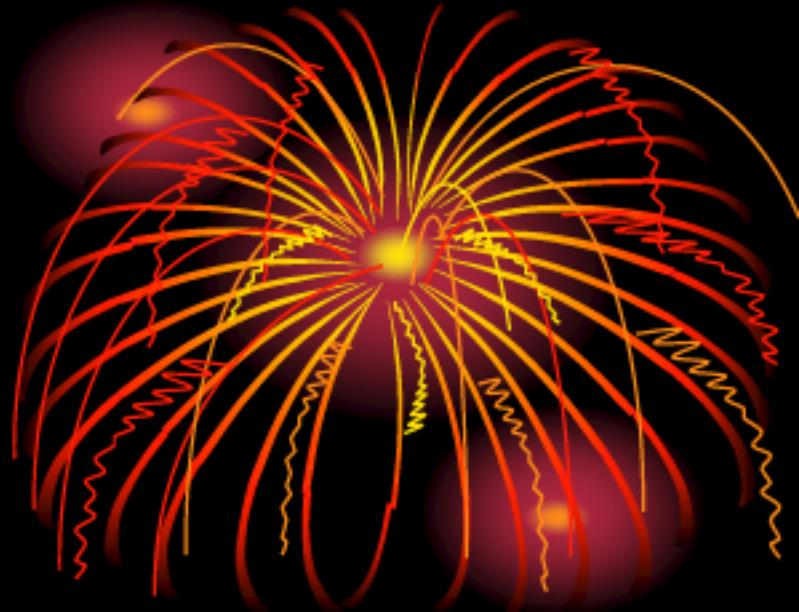
# 肺内病变——点



- 肿块：直径 $>3\text{cm}$ 的类圆形
- 结节：周围有正常肺组织包绕的直径 $<3\text{cm}$ 类圆形影。

- 小结节：结节直径 $<1\text{cm}$
- 粟粒性结节：难以计数的直径在 $1\sim 3\text{mm}$ 的微小结节
- 肿块：可见于肿瘤、结核、真菌、血管炎、炎症
- 结节：可见于肿瘤、结核、过敏性肺炎、DPB、矽肺、结节病等。

# 孤立结节、肿块



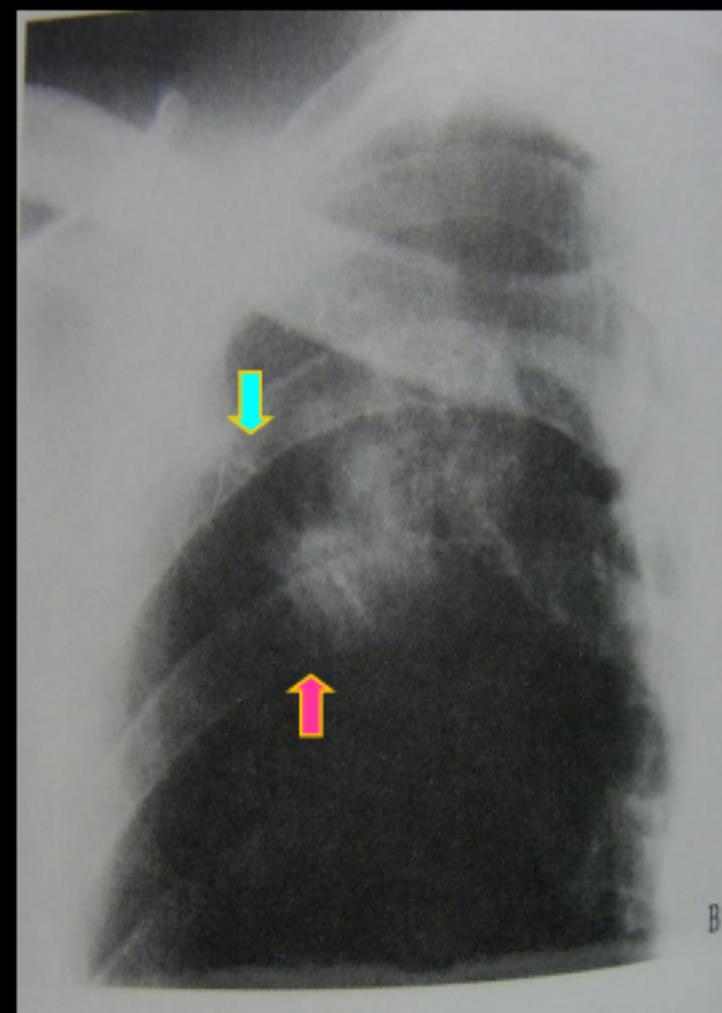
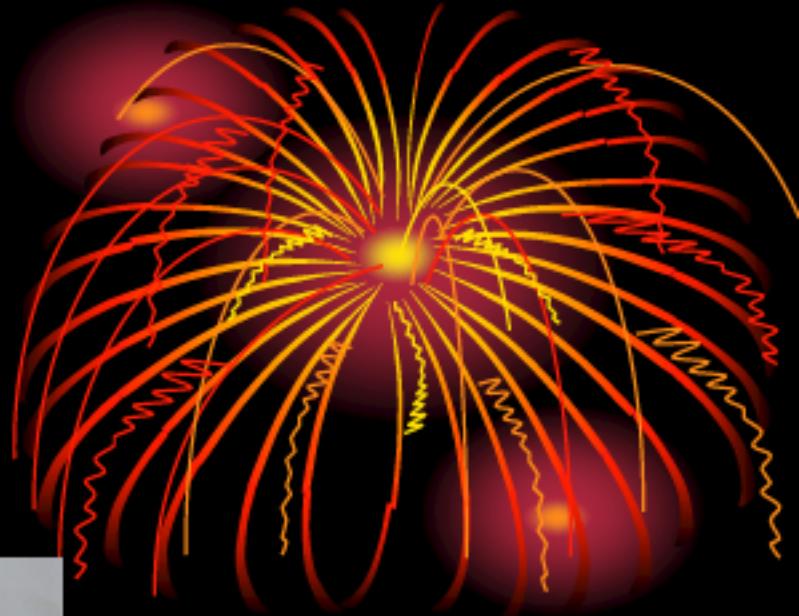
□ 提示恶性的征象：

分叶、毛刺、密度不均、胸膜凹陷、血管聚集

□ 提示良性的征象：

边缘光滑、密度均匀、钙化灶、卫星灶

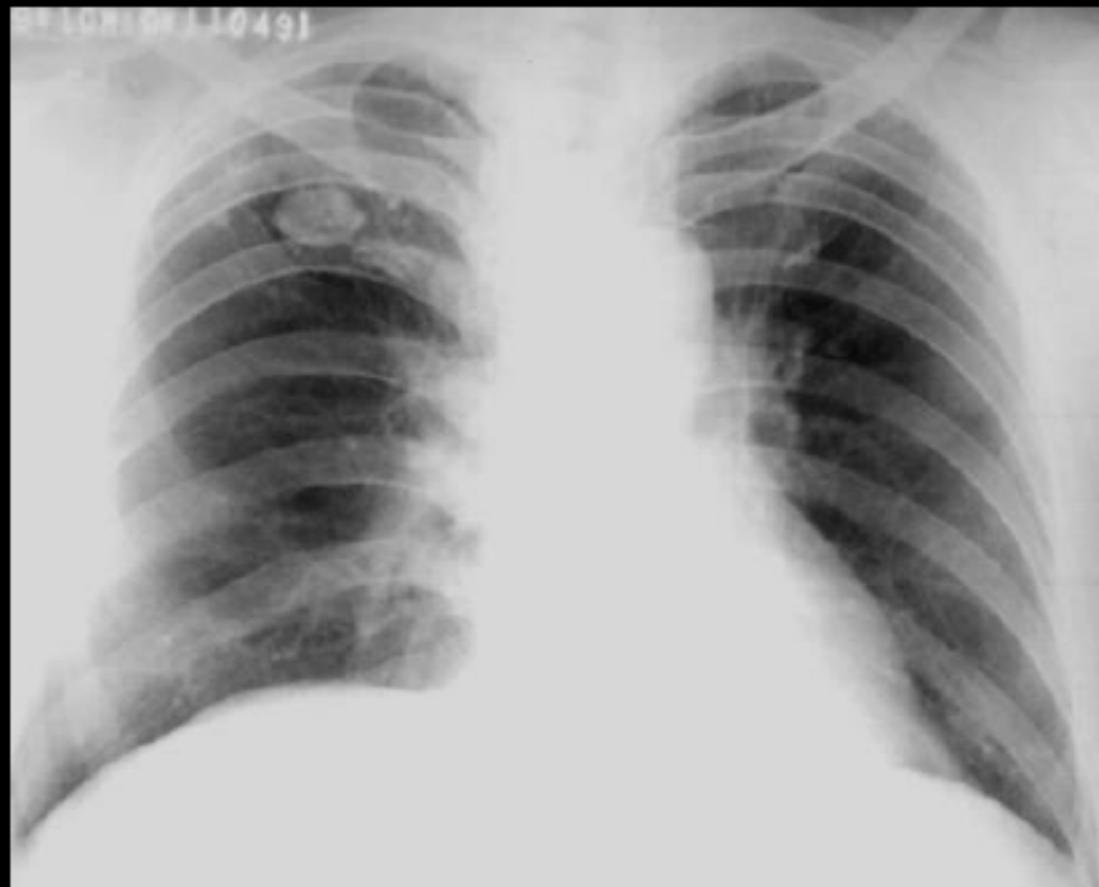
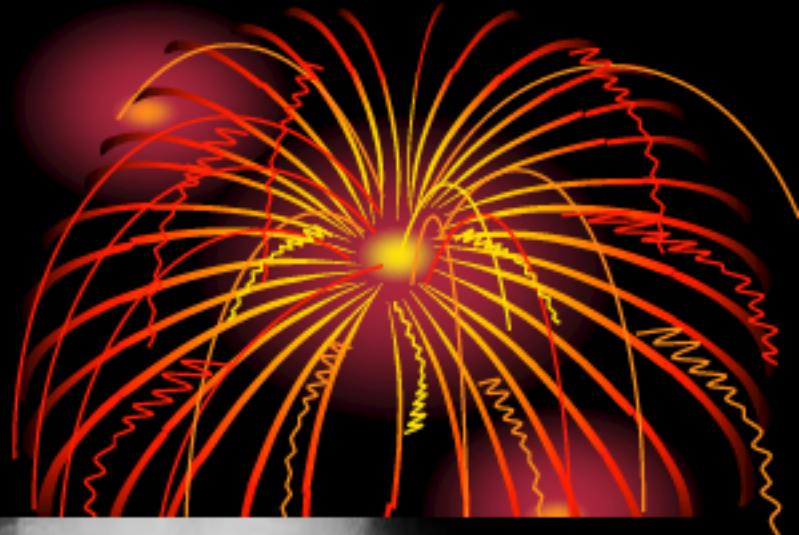
# 孤立结节、肿块



- ← 分叶征
- ↑ 毛刺征
- ↓ 胸膜尾征

肺癌

# 孤立结节、肿块

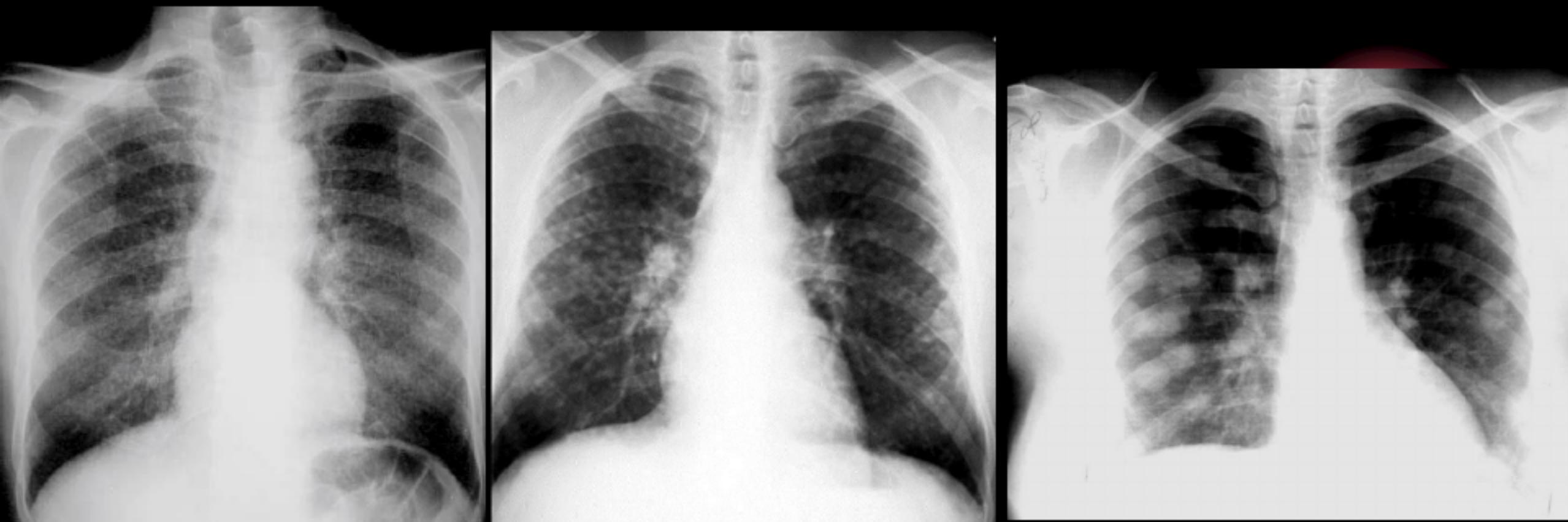
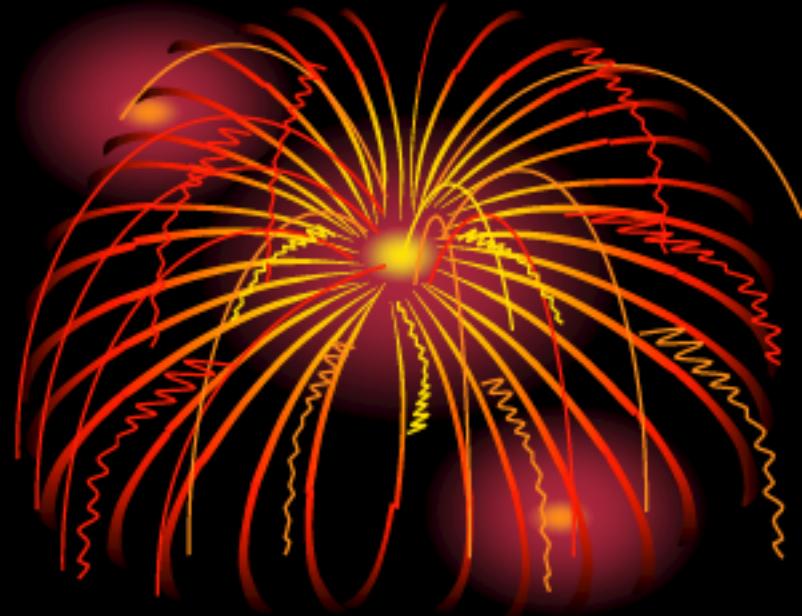


结核球



错构瘤  
“爆米花”样钙化

# 多发结节

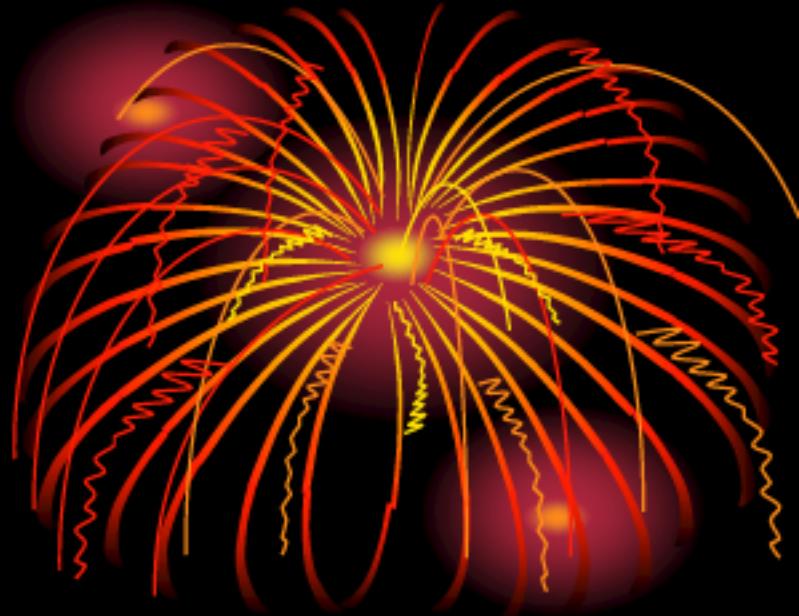


粟粒性肺结核

结节病

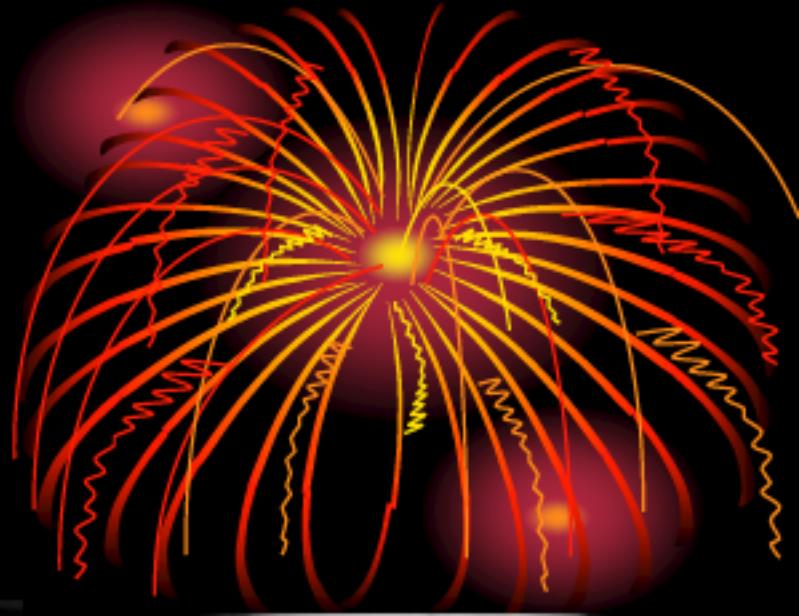
转移瘤

# 肺内病变——空洞



- 薄壁空洞：境界清晰、内壁光滑，常见于结核
- 厚壁空洞：壁厚>3mm，边境欠清，内壁凹凸不平，常见于
  - 肺脓肿（多有液平）
  - 肺癌（内壁呈结节状）
  - 也可见于结核（多无液平）

# 空洞——基本征象



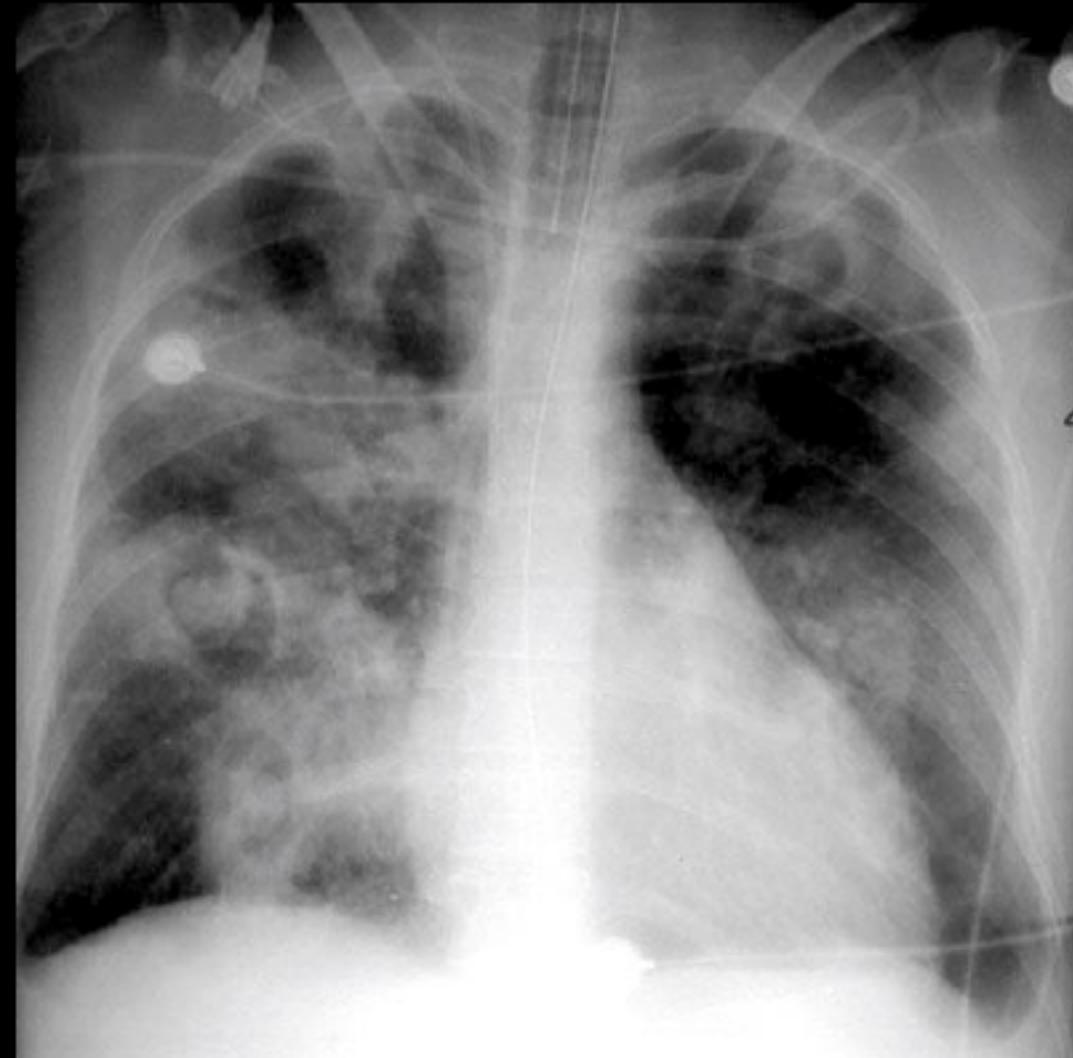
肺结核



肺脓肿



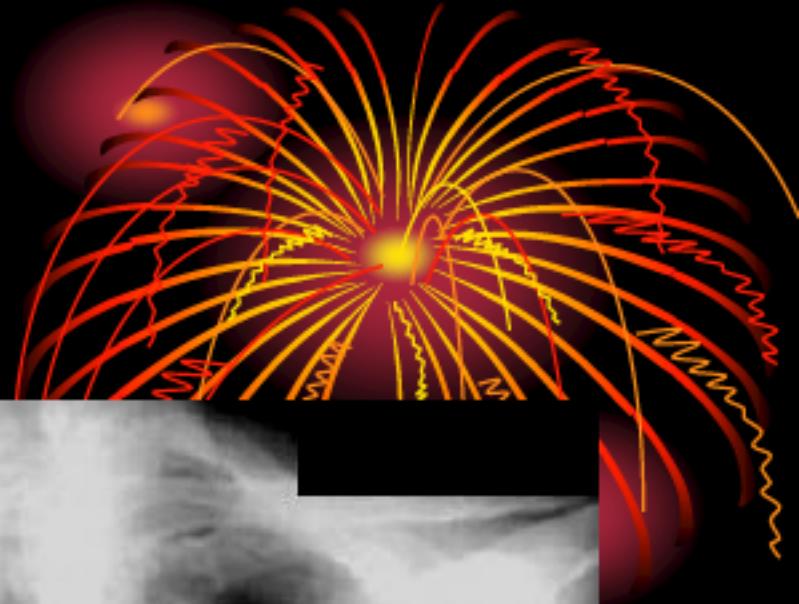
肺癌



“空气半月征”  
见于肺曲霉菌病



“钟乳石征”  
多见于肿瘤



# 胸部病变基本X-ray表现

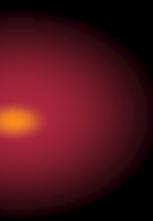


- 肺内病变
  - 肺容积改变
  - 透亮度改变
- 胸膜病变
- 纵隔病变
- 骨骼、软组织病变

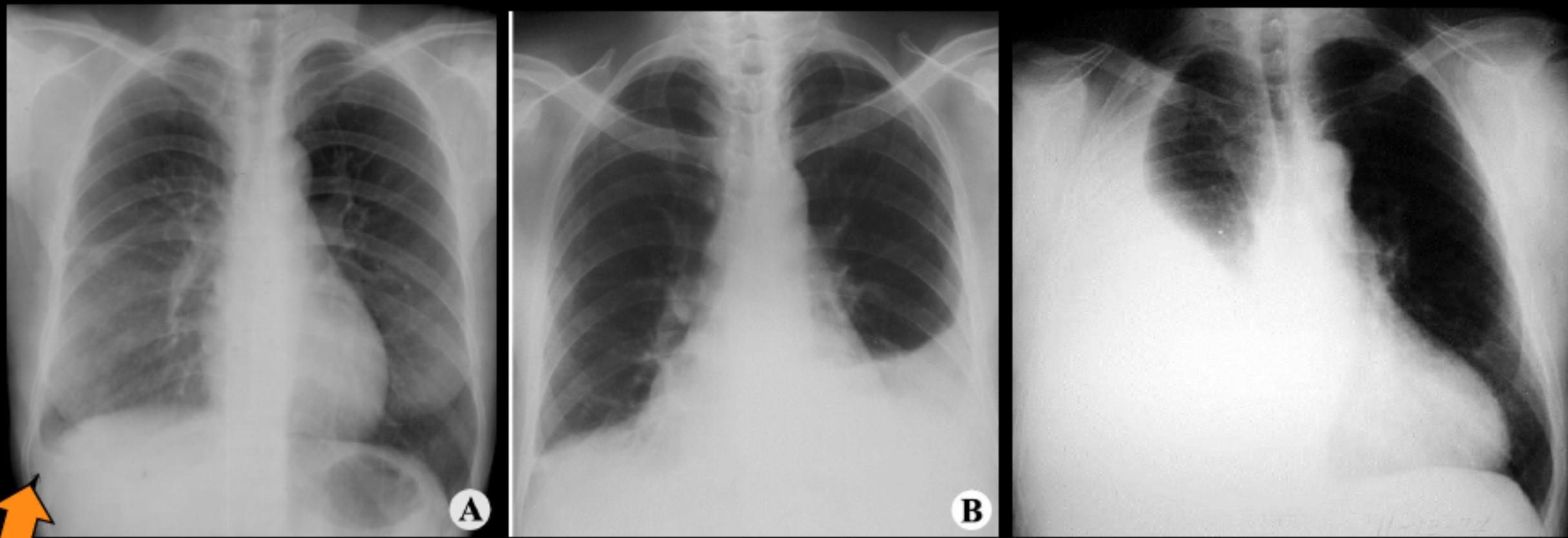
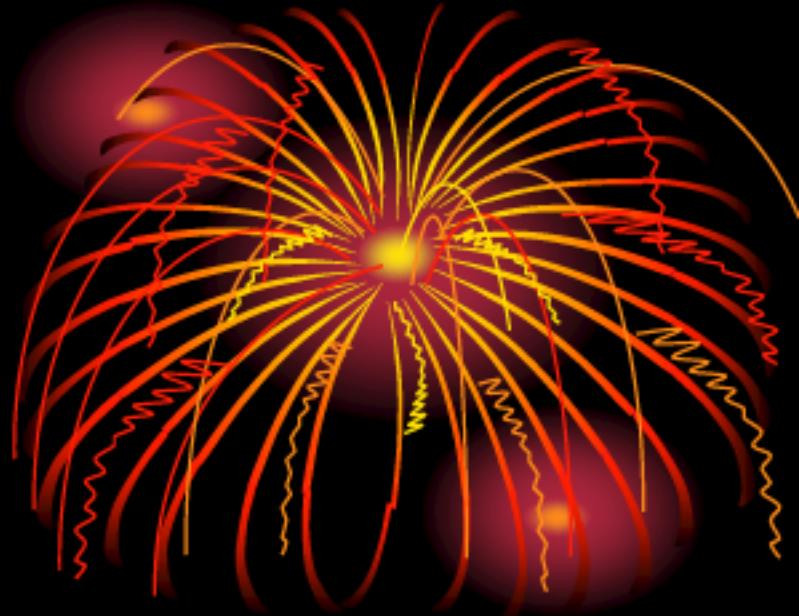
# 胸膜病变

## 基本征象

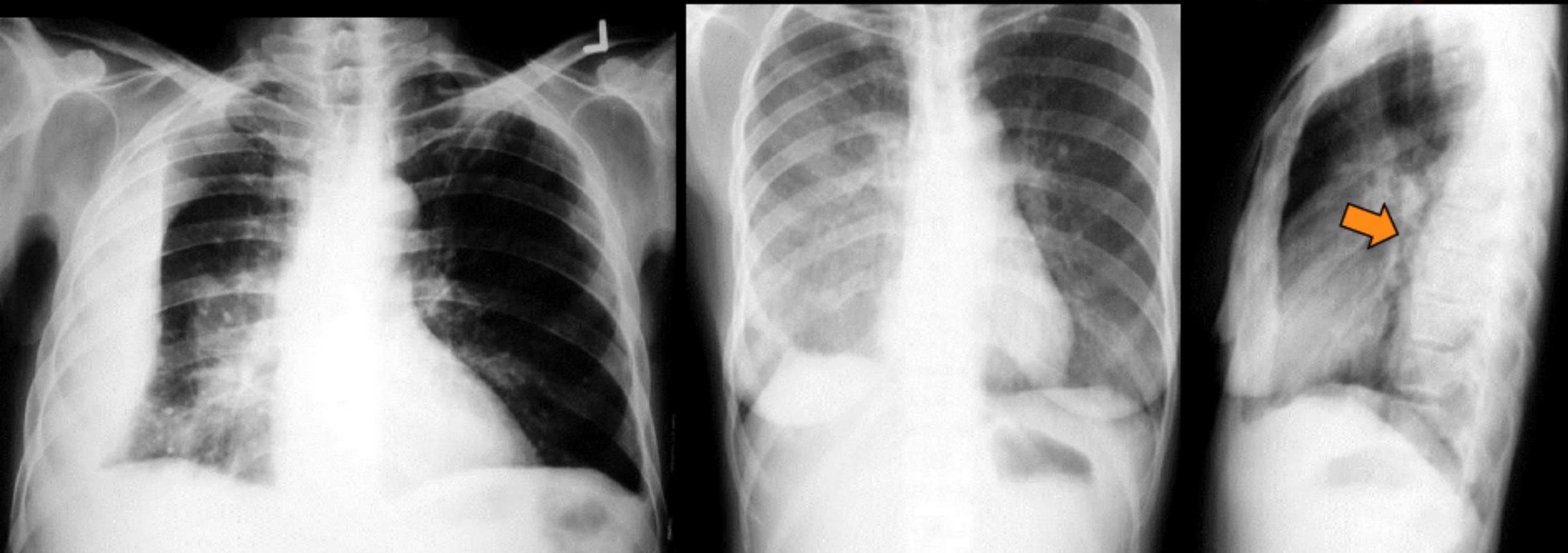
- 胸腔积液：密度均匀致密影，上缘呈外高内低弧线，受重力和体位影响，纵隔向健侧移位。
- 气胸、液气胸：可见气胸线，无肺纹理透亮带，液气胸可见气液平。
- 胸膜增厚、钙化：肋膈角变钝，膈顶不规整，沿胸廓内缘带状致密影，可见患侧胸廓塌陷、肋间隙变窄、纵隔向患侧移位。
- 胸膜肿物：边界清晰半圆形，圆心在胸外。



# 胸腔积液

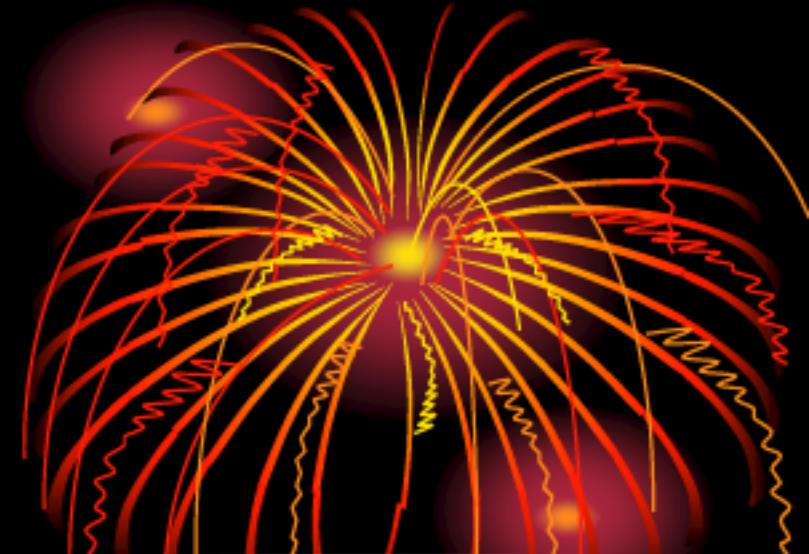


# 胸腔积液

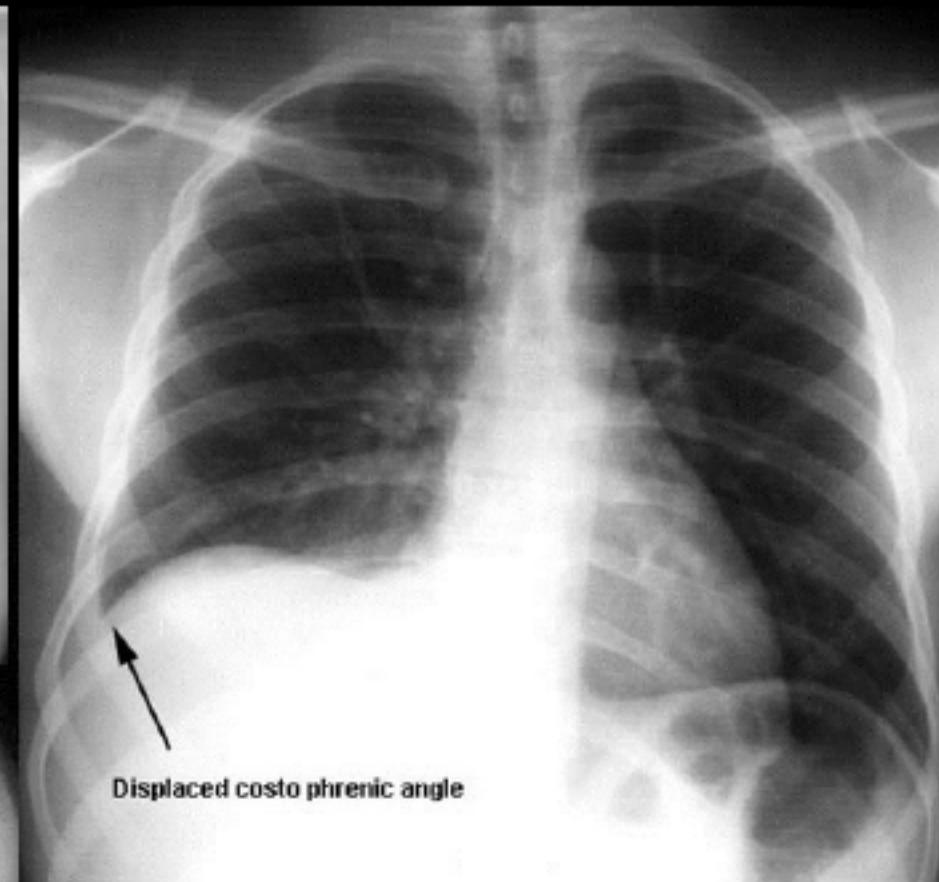


包裹性胸腔积液

# 胸腔积液



叶间裂积液

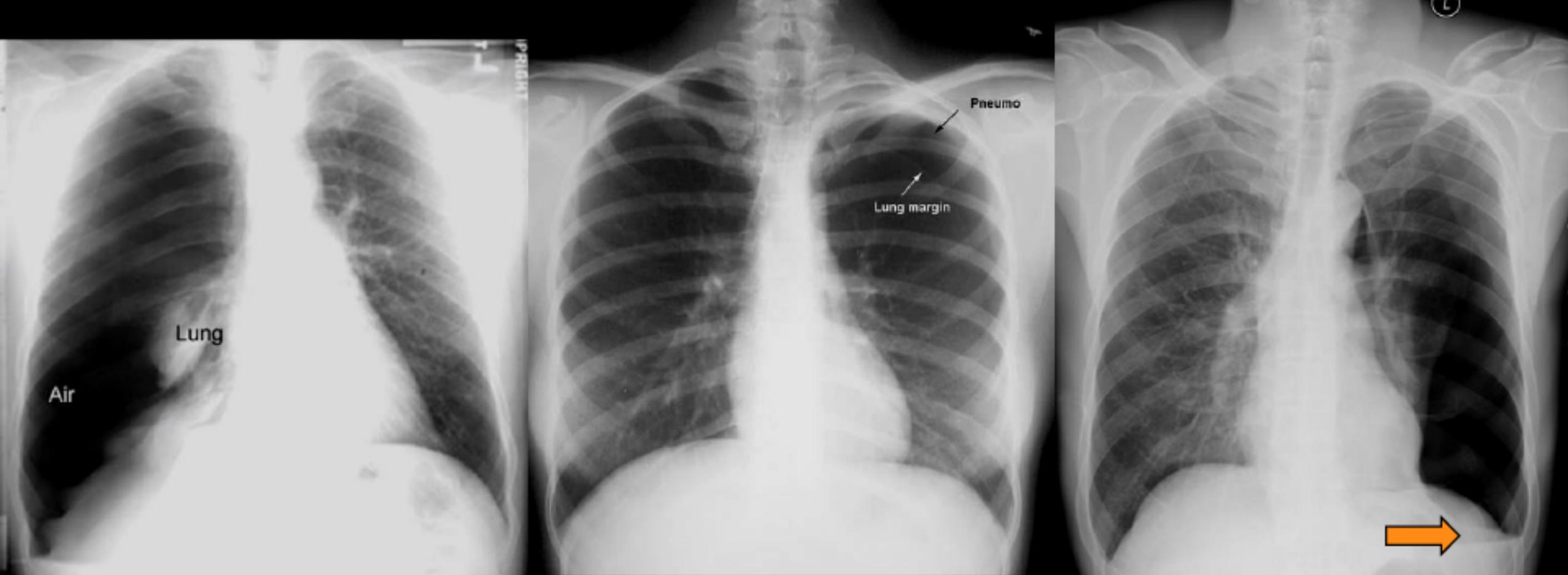


膈下积液



胸腔积液伴  
阻塞性肺不张

# 气胸、液气胸

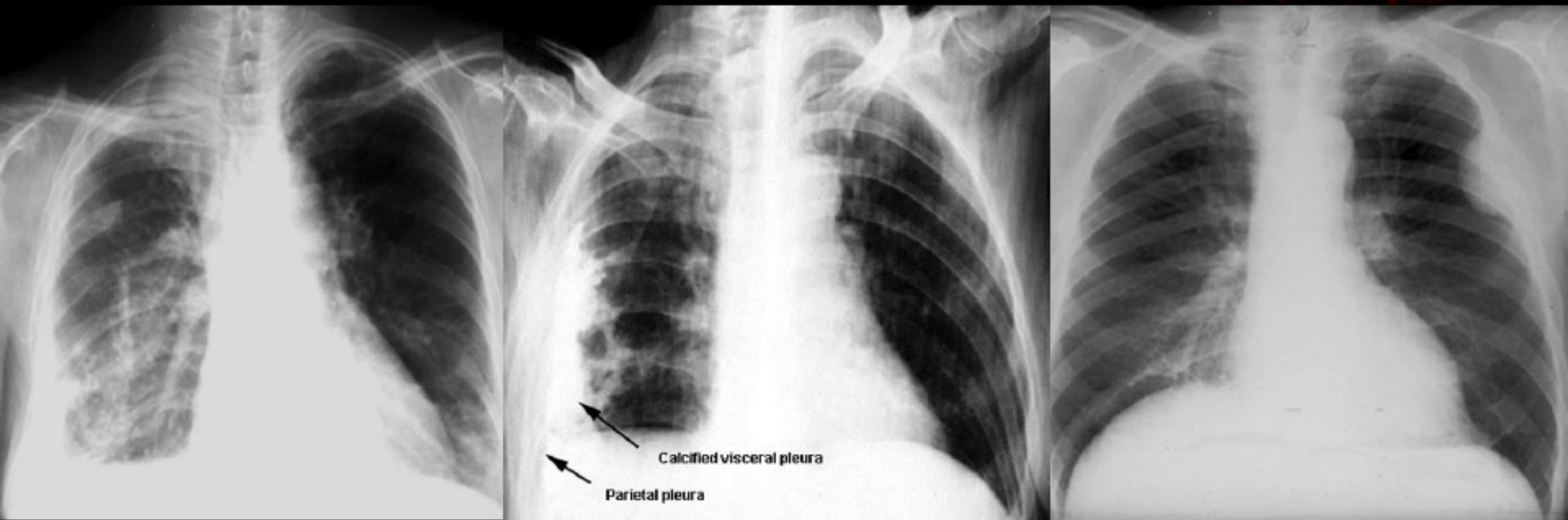
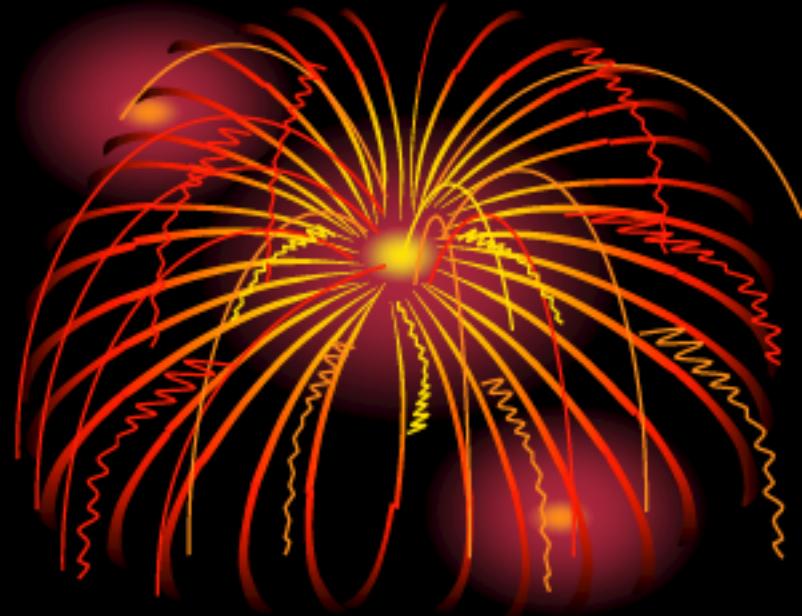


气胸

气胸

液气胸

# 胸膜增厚、胸膜肿物



胸膜增厚

胸膜钙化

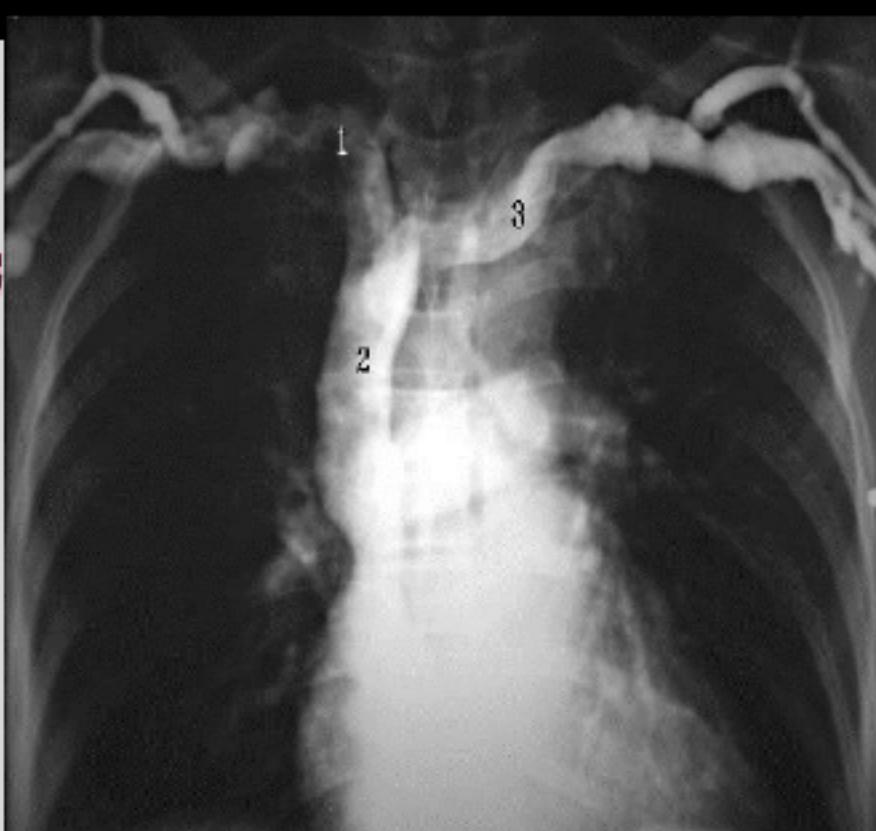
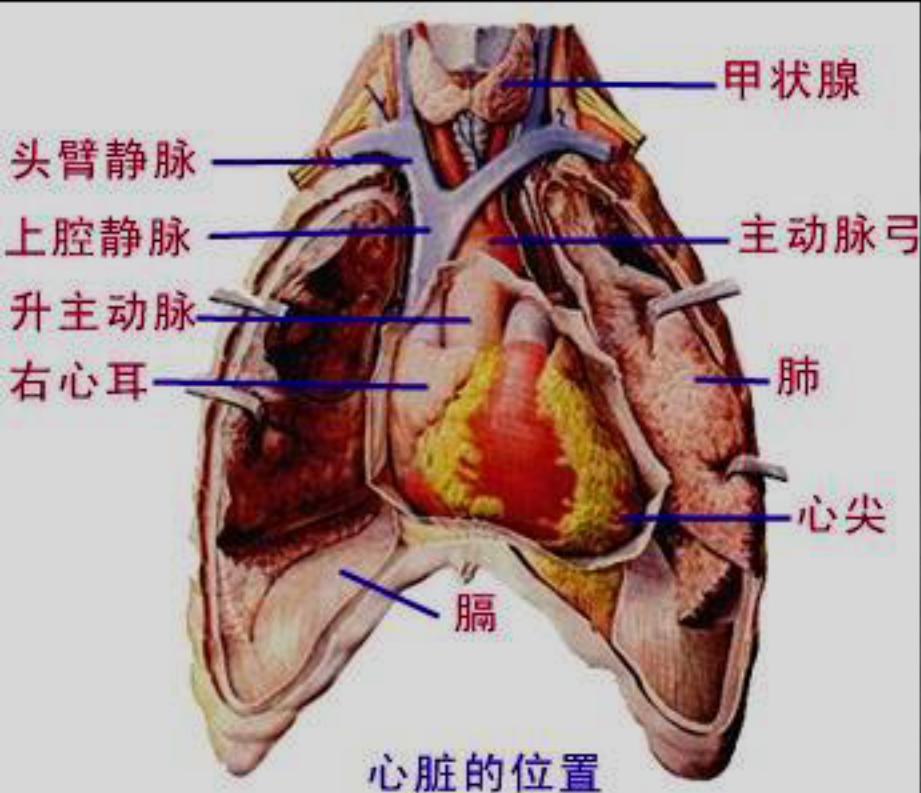
胸膜肿物

# 胸部病变基本X-ray表现

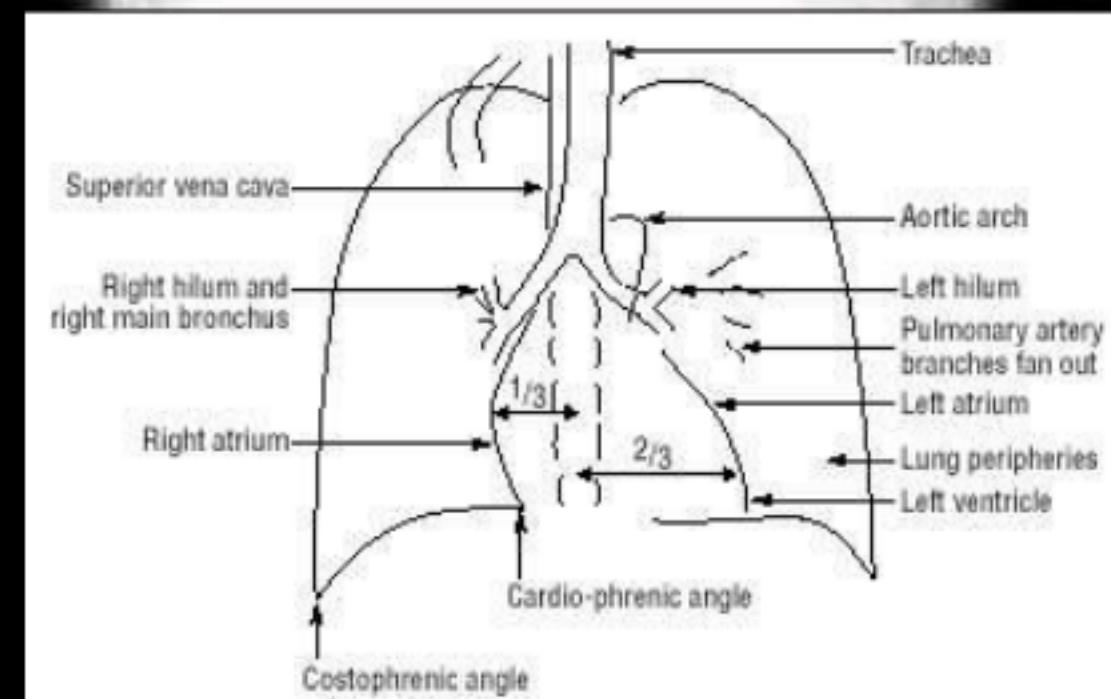
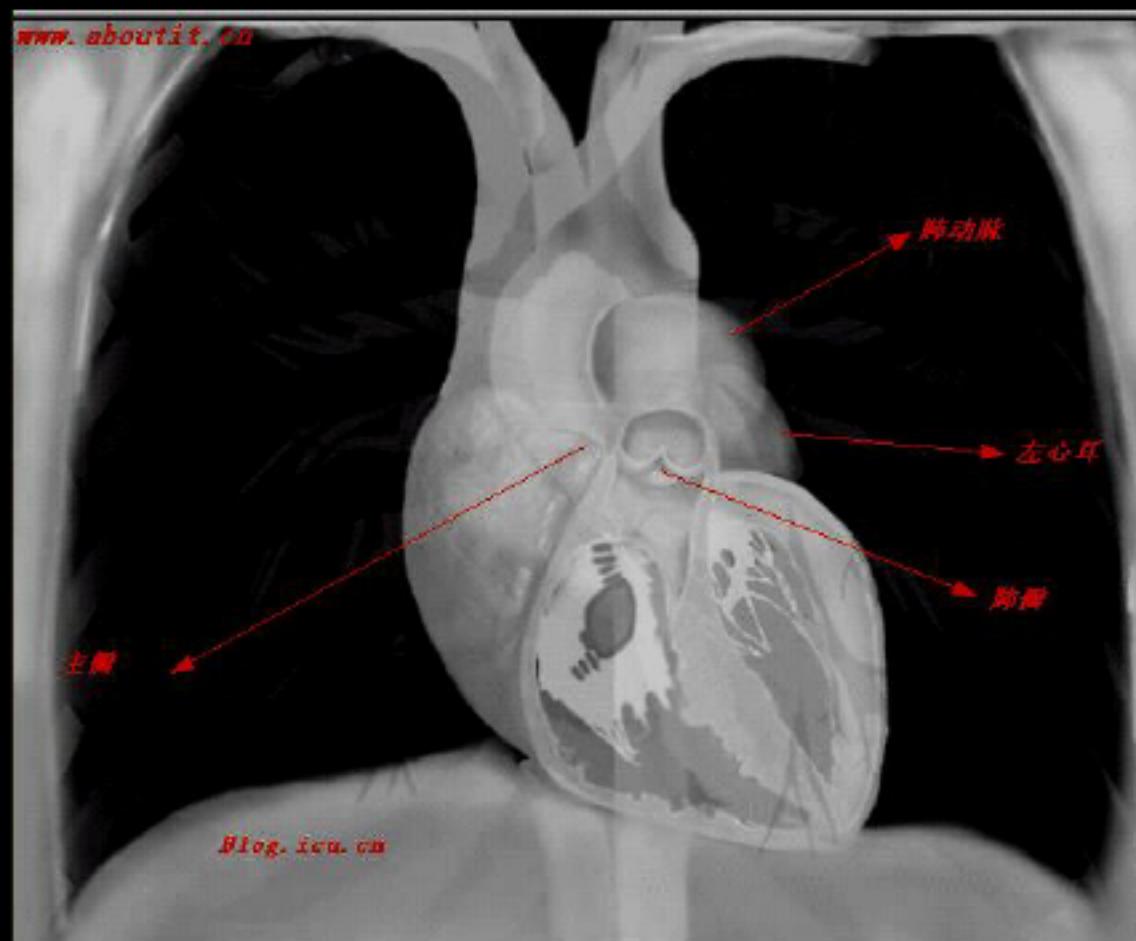
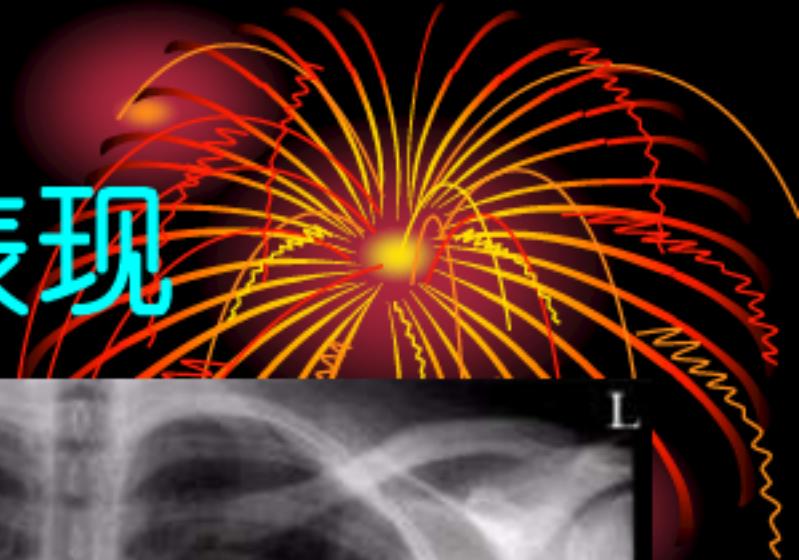


- 肺内病变
  - 肺容积改变
  - 透亮度改变
- 胸膜病变
- 纵隔、肺门病变
- 骨骼、软组织病变

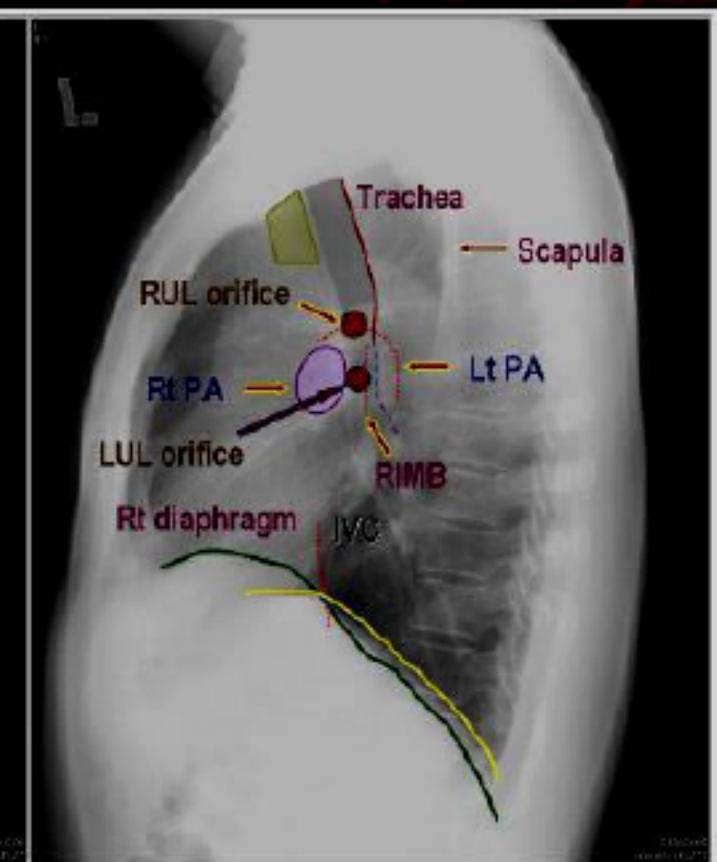
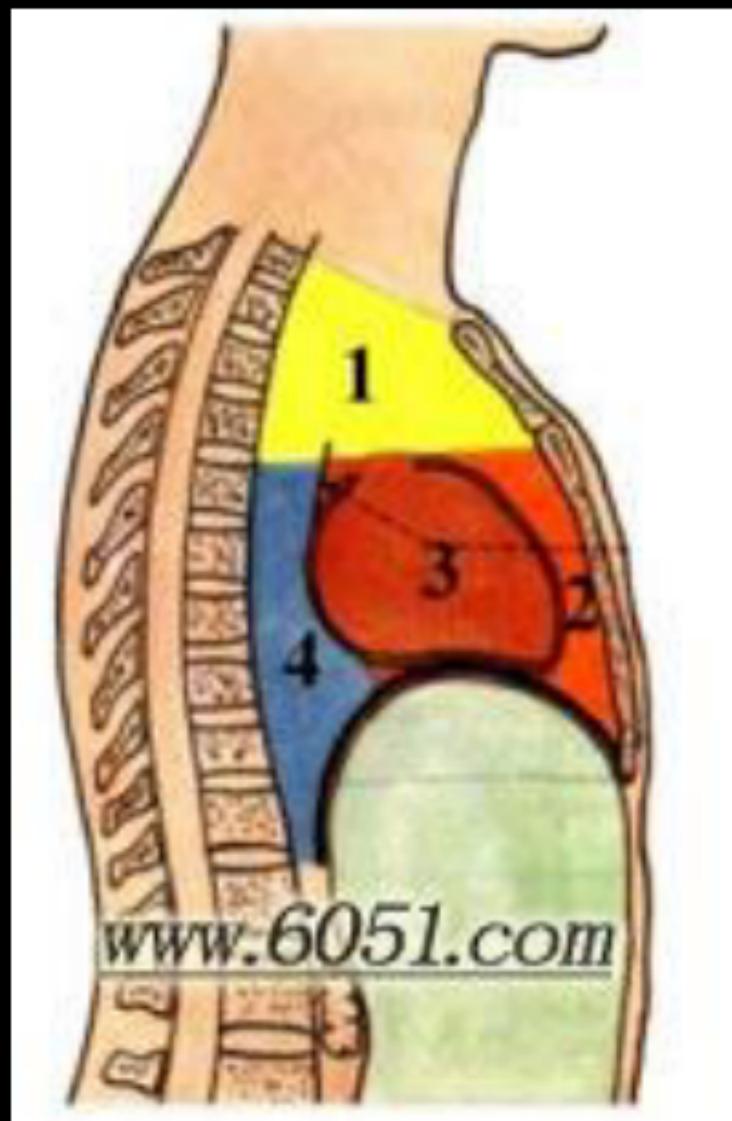
# 正常纵隔结构在X-ray的表现



# 正常纵隔结构在X-ray的表现



# 正常纵隔结构在X-ray的表现

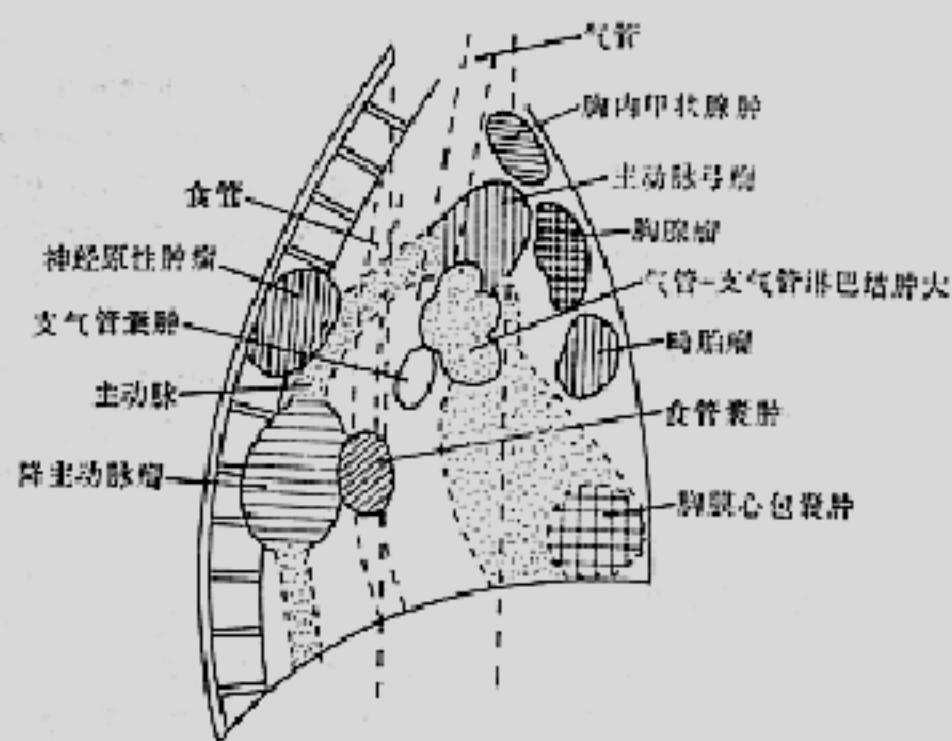


{ 上纵隔

下纵隔（心包为界）

{ 前纵隔  
中纵隔  
后纵隔

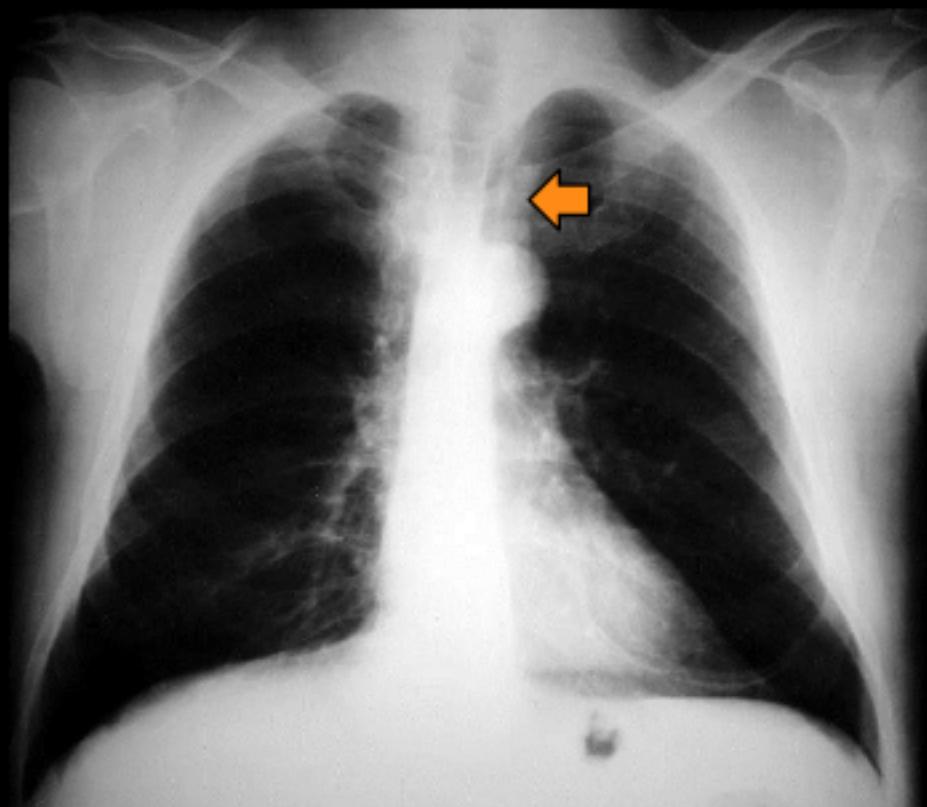
# 纵隔肿瘤的好发部位



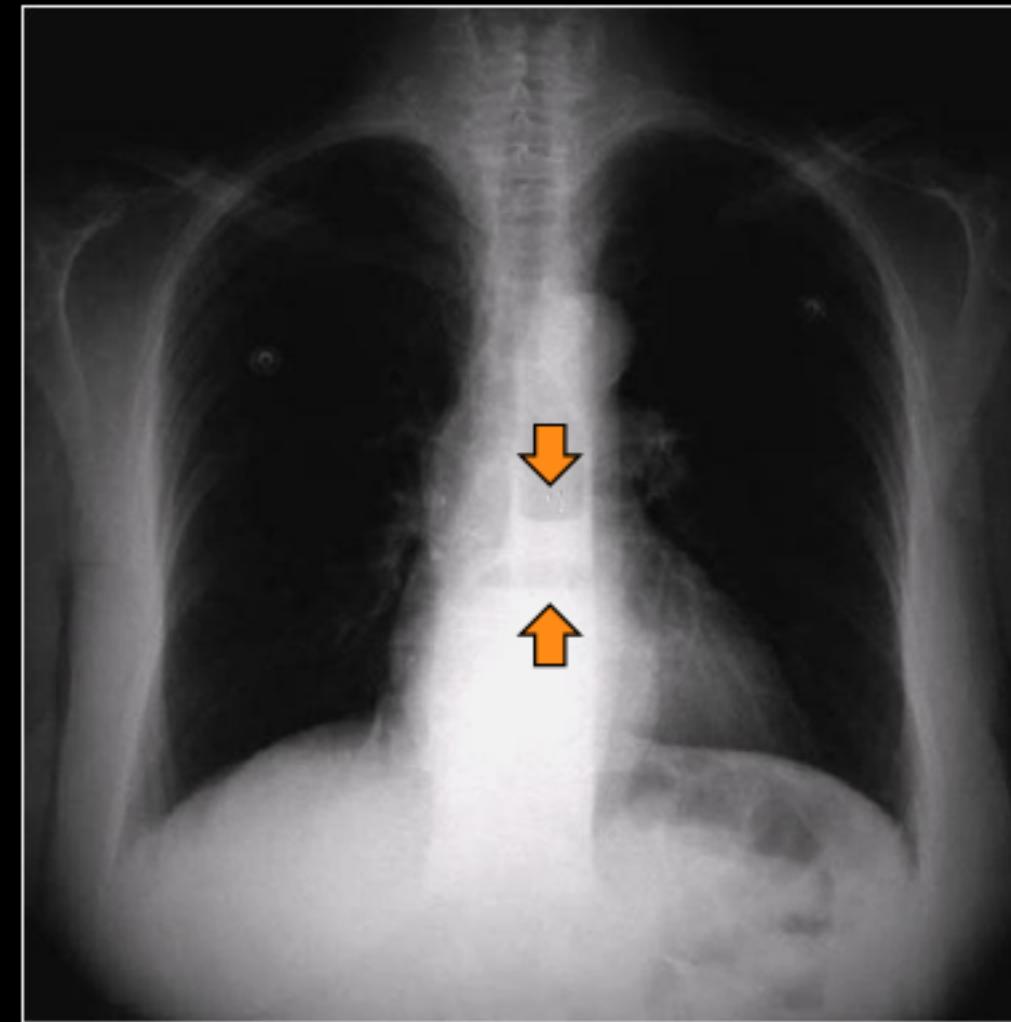
上纵隔	前纵隔	中纵隔	后纵隔
胸腺瘤 淋巴瘤	胸腺瘤 畸胎瘤	纤维肉瘤	神经源性肿瘤
胸内甲状腺肿	淋巴管瘤	支气管囊肿	肠源性肿瘤
甲状旁腺腺瘤	血管瘤	淋巴瘤	嗜铬细胞瘤
	脂肪瘤	间皮瘤	胸导管囊肿
	纤维瘤		
	纤维肉瘤		

# 纵隔病变

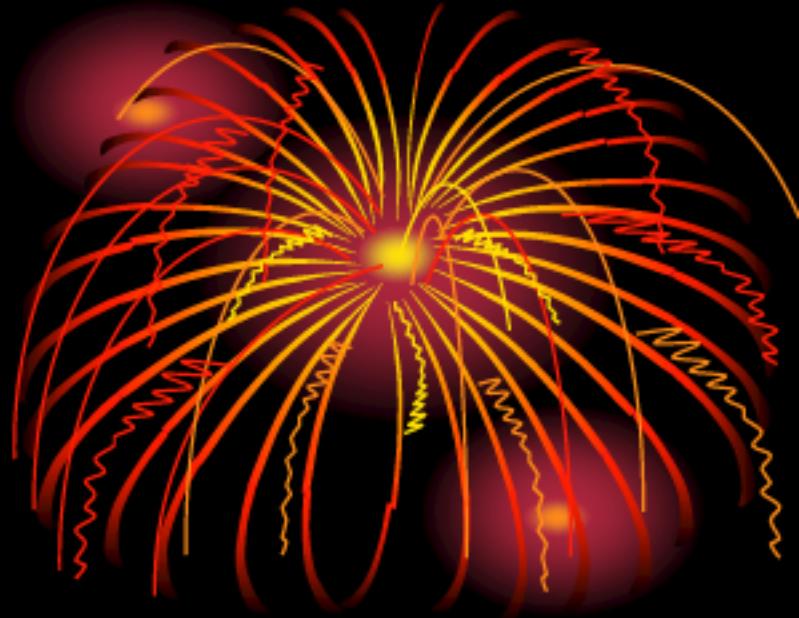
- 密度异常
- 轮廓异常



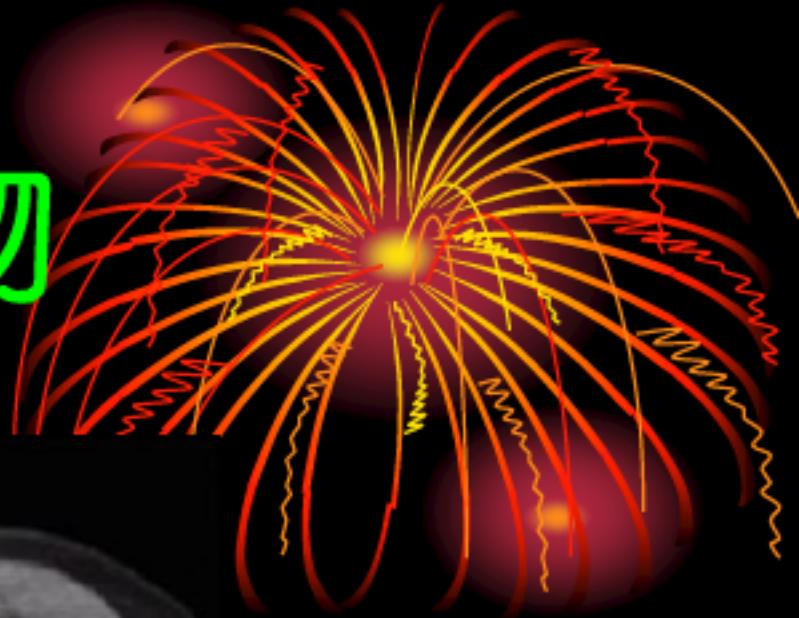
纵隔气肿



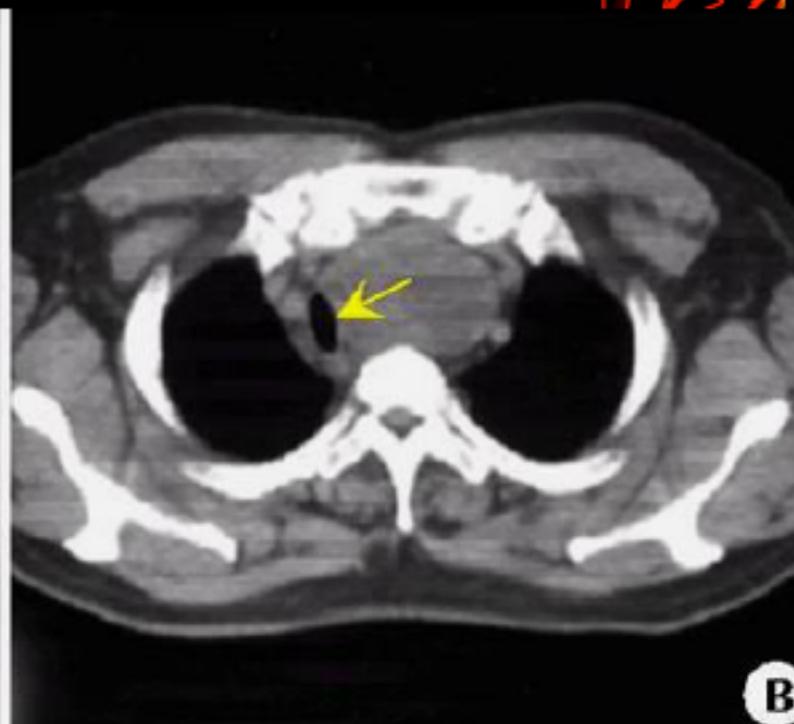
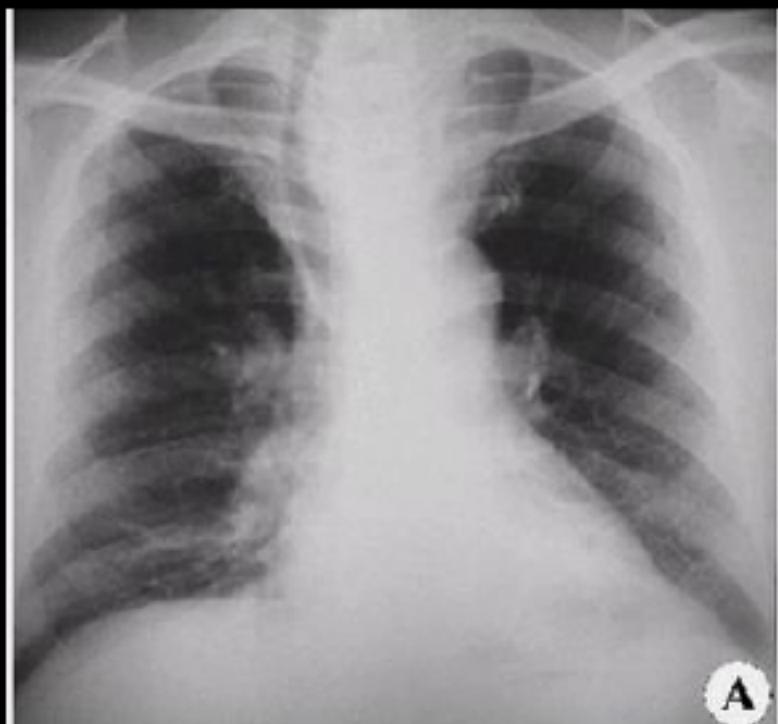
食道裂孔疝



# 轮廓异常——纵隔肿物



上纵隔

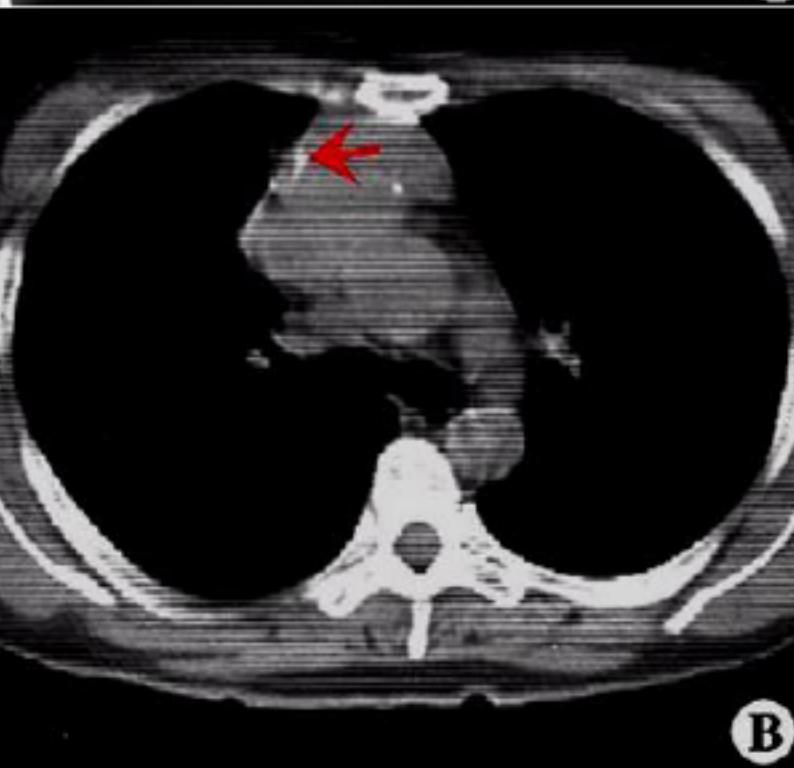
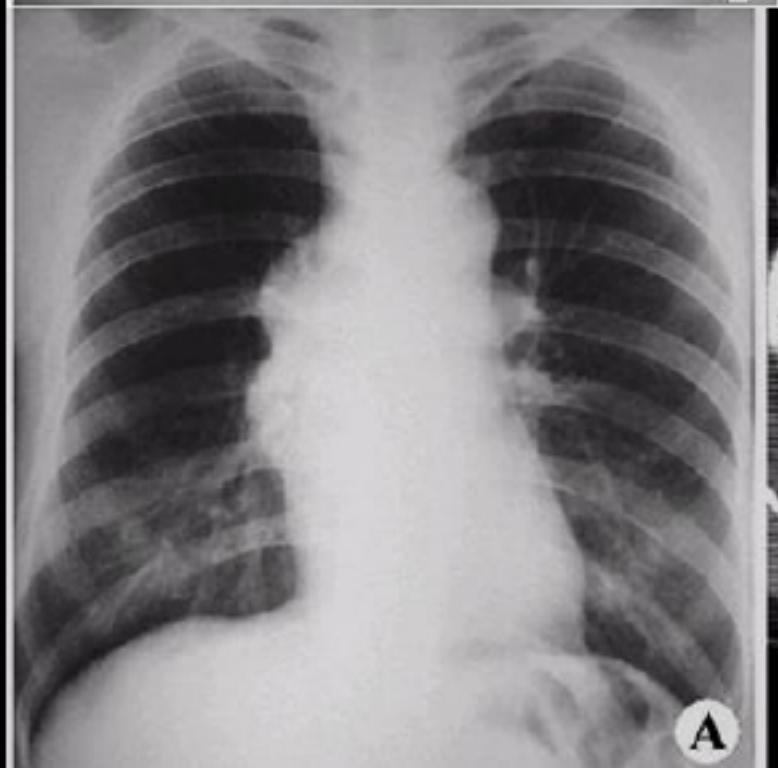


A

B

胸骨后甲状腺

前纵隔



A

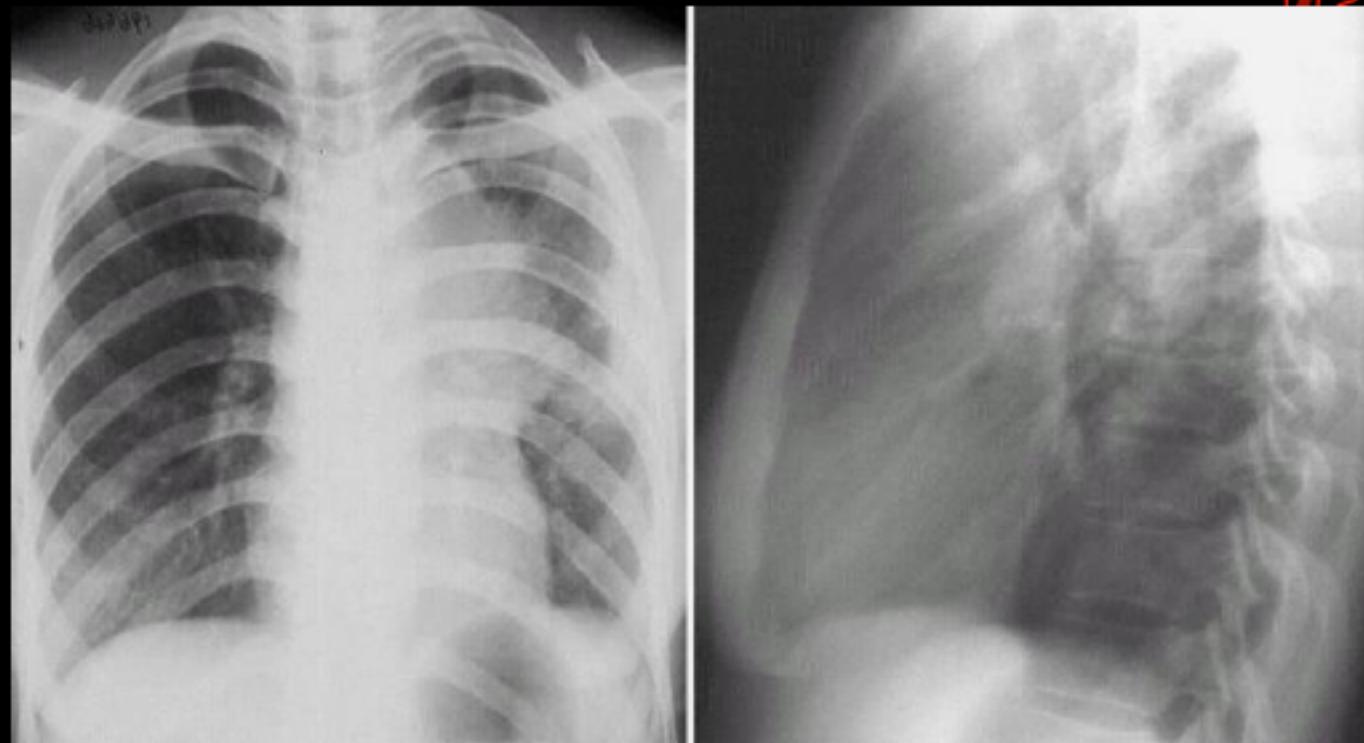
B

胸腺瘤

# 轮廓异常——纵隔肿物

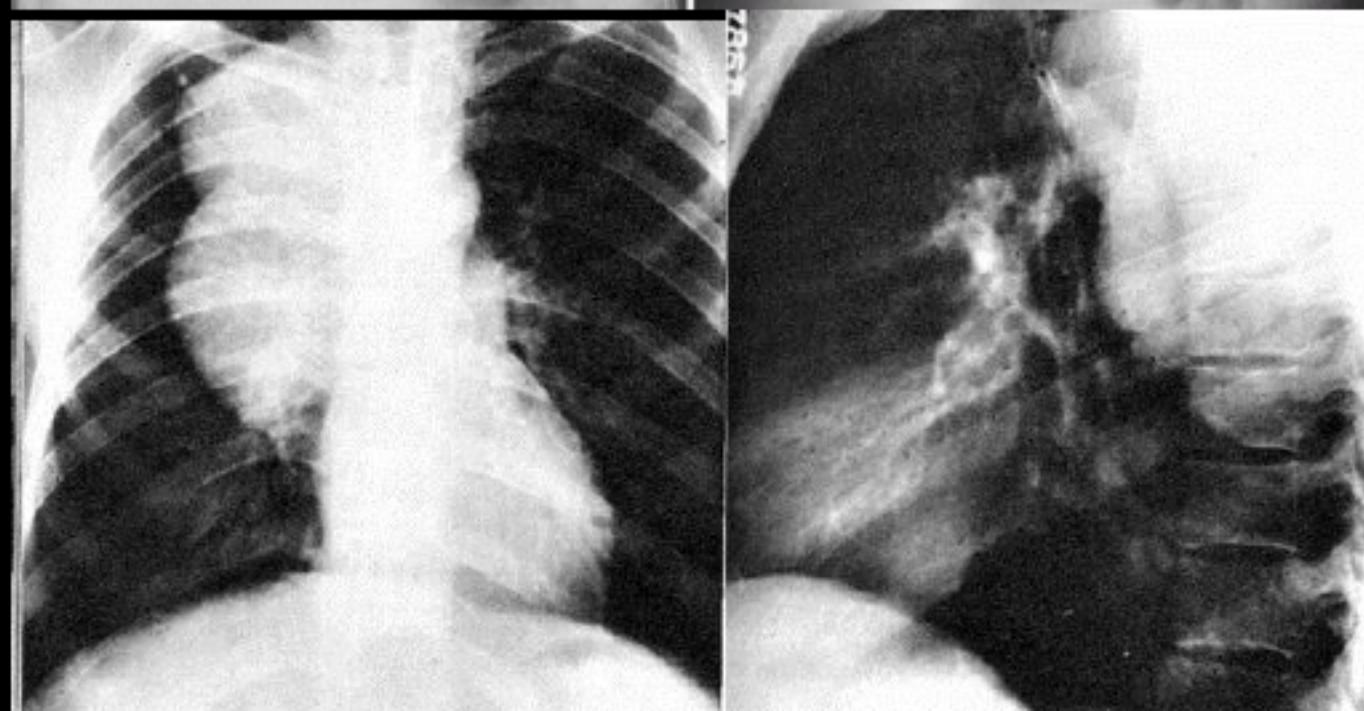


中纵隔



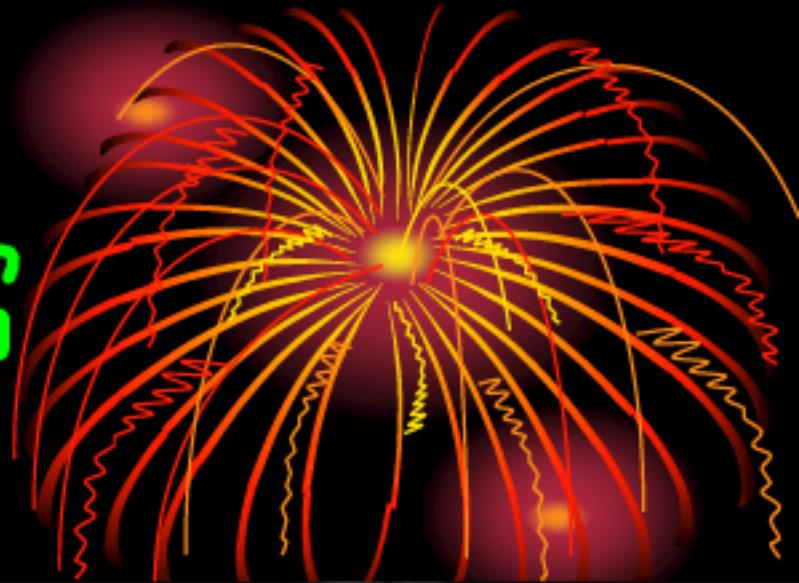
淋巴瘤

后纵隔



神经鞘瘤

# 轮廓异常——心影异常

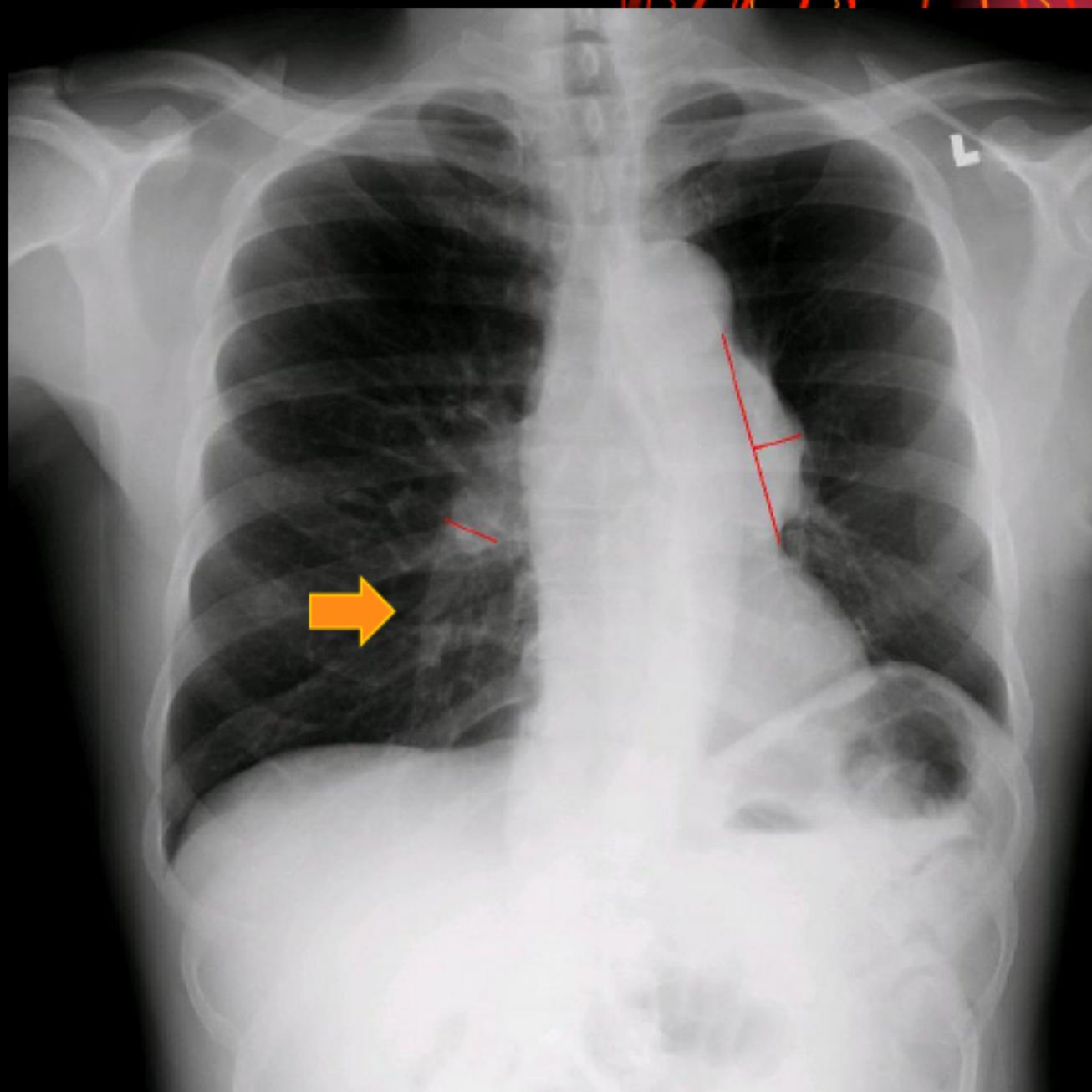
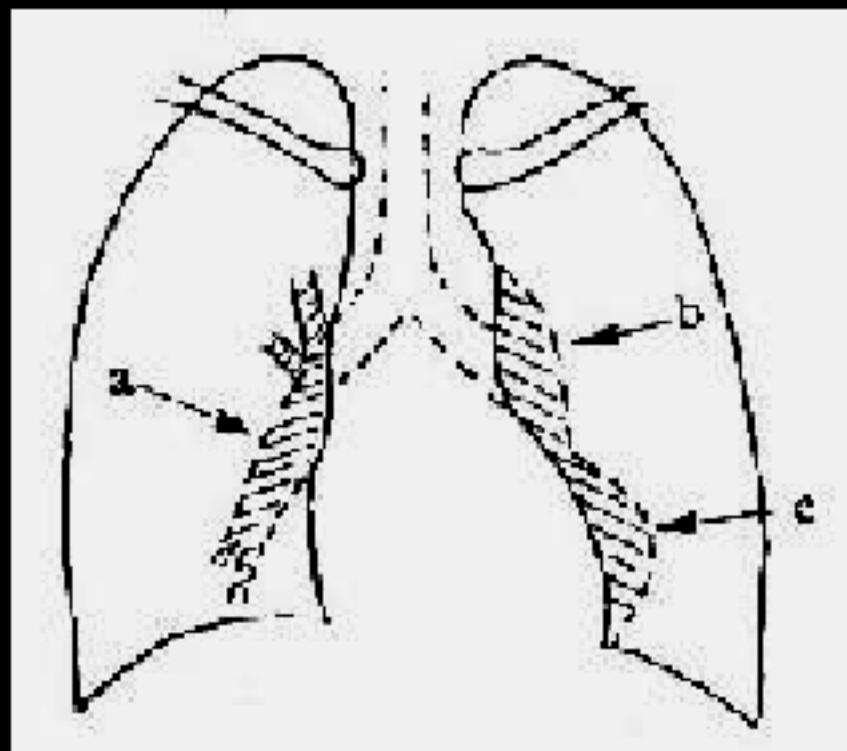
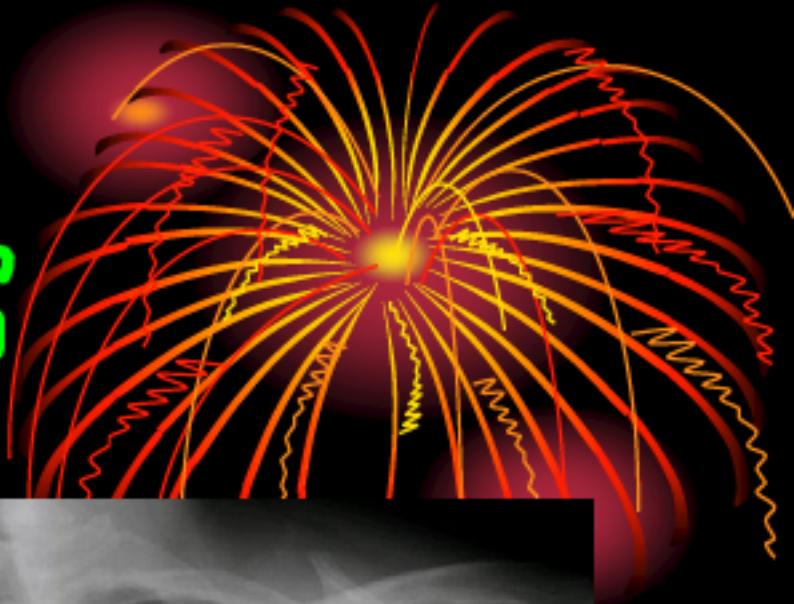


主动脉型心  
“靴型心”

二尖瓣型心  
“梨型心”

“烧瓶心”

# 轮廓异常——心影异常

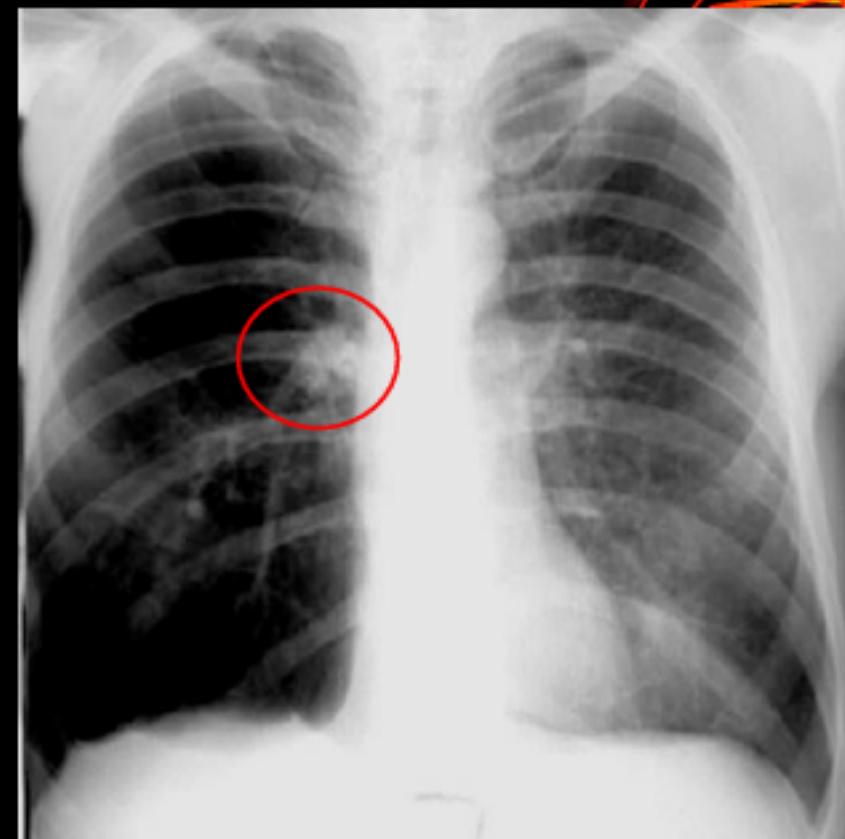


肺心病  
肺动脉高压

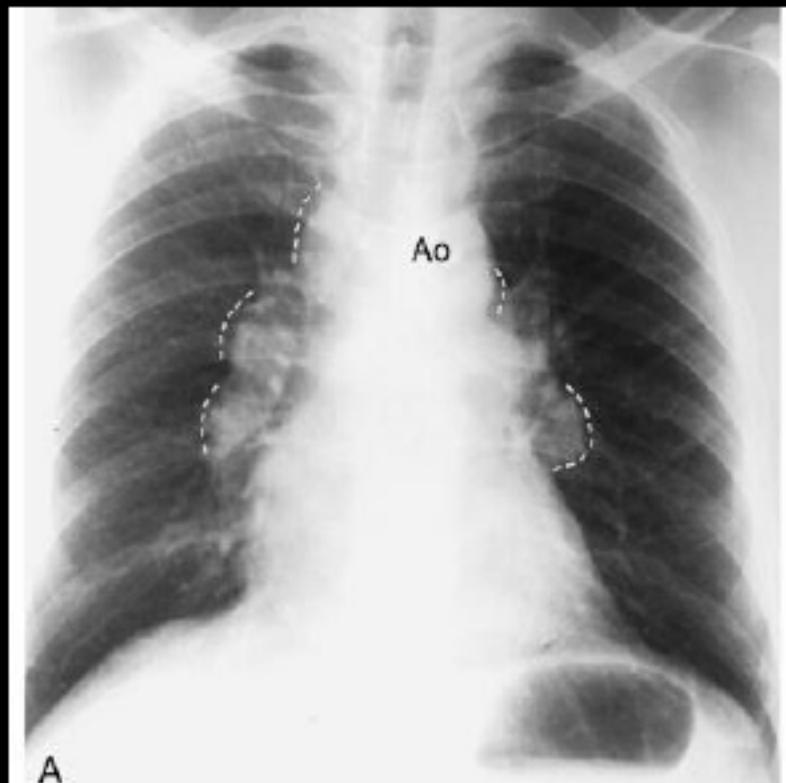
# 肺门病变

口位置异常

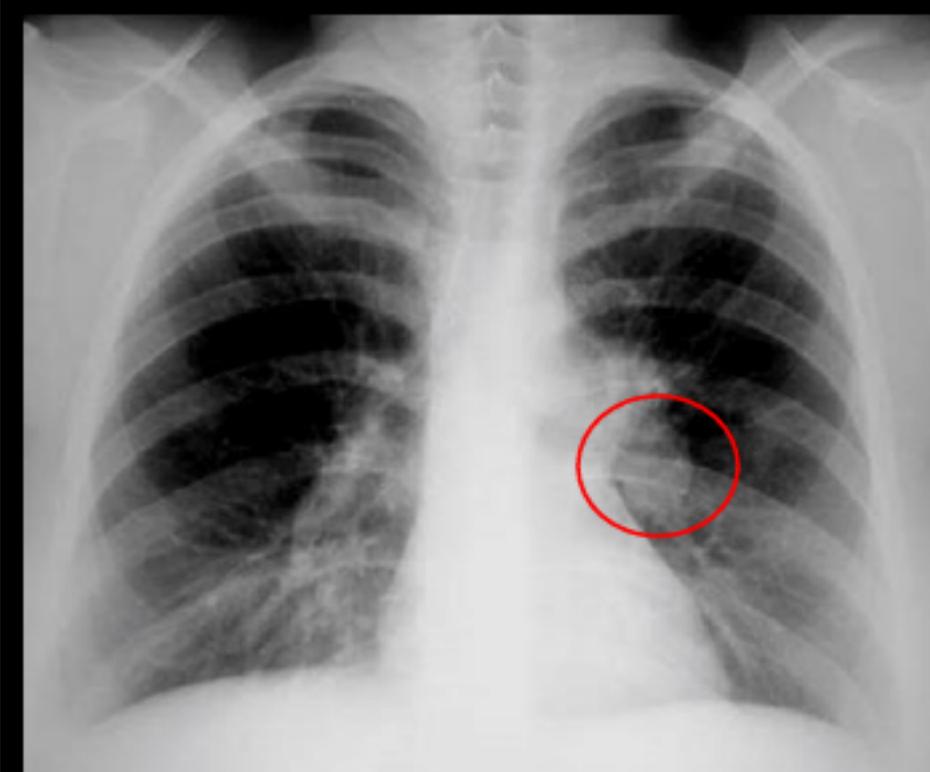
口大小异常



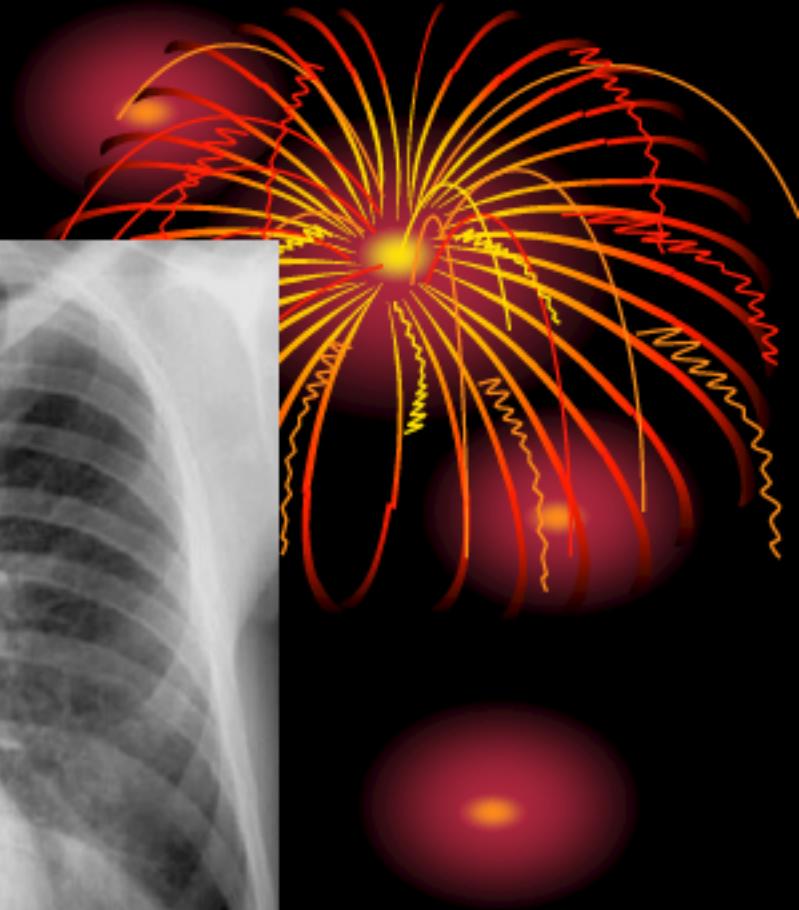
右上叶切除



结节病



左肺门  
肿物

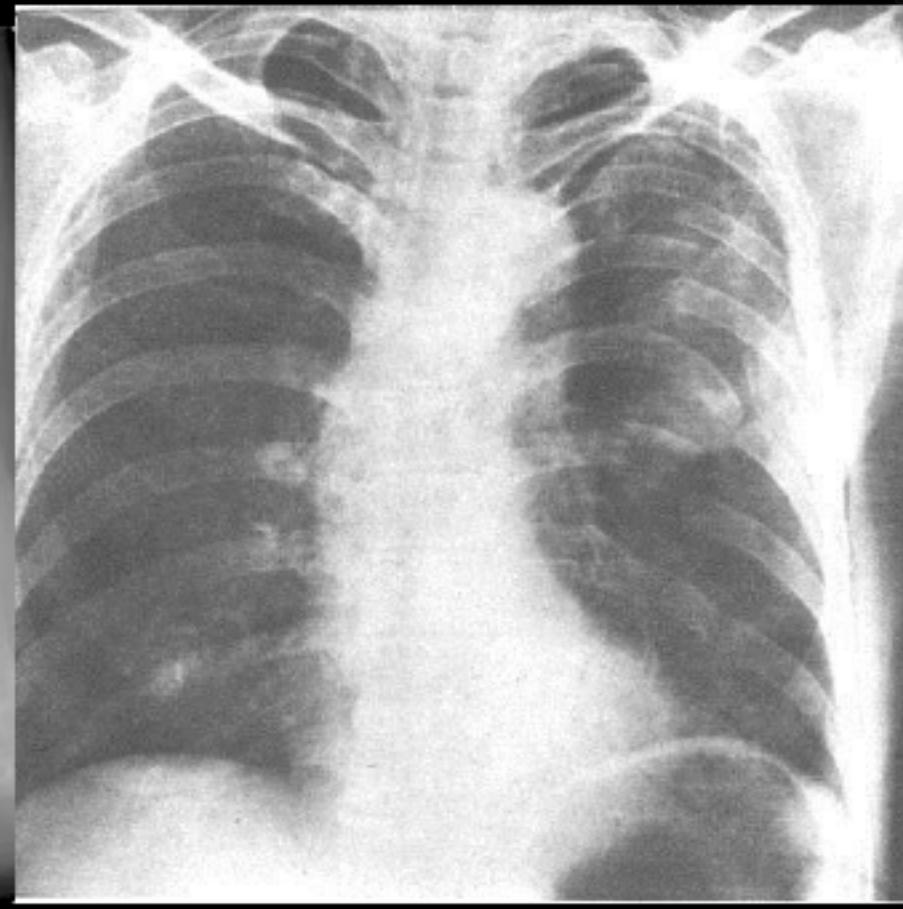


# 胸部病变基本X-ray表现

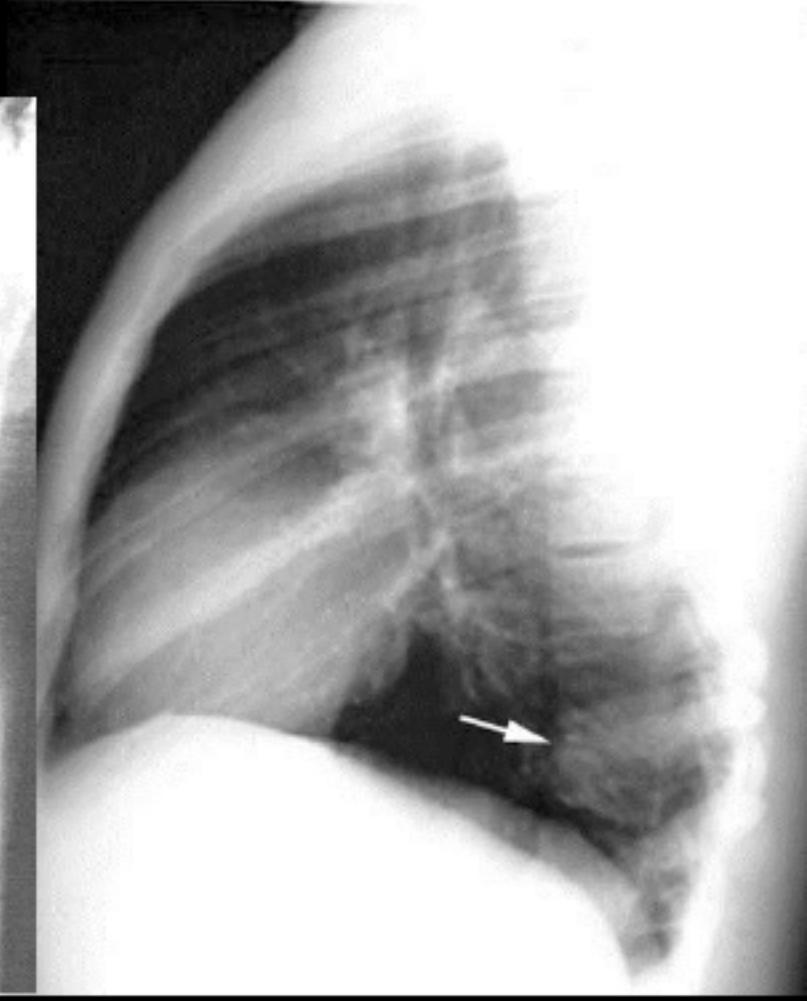


- 肺内病变
  - 肺容积改变
  - 透亮度改变
- 胸膜病变
- 纵隔、肺门病变
- 骨骼、软组织病变

# 骨骼、软组织病变



肋骨骨折



脊椎压缩性骨折



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