

# 胸腔影像學概論

## Chest imaging

### 【胸部X光片Ⅱ】

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# 學習目標

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- 胸部X光的基本判讀
- 瞭解放射線學所產生的**sign**
- 經由各種**sign**來判斷可能產生的各種病變

# Reference

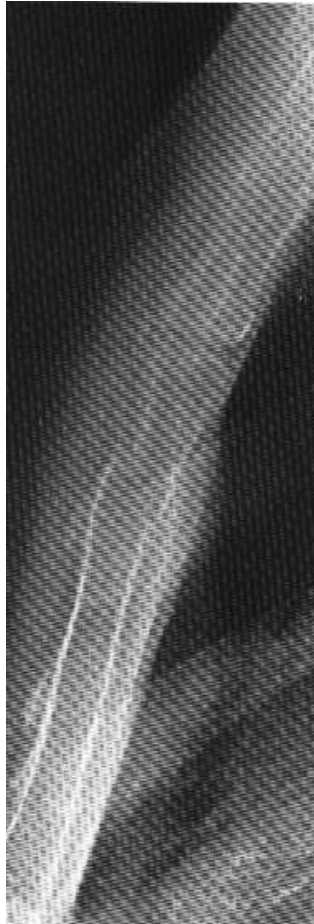
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骨骼結構，包含鎖骨、上肢、肩關節

## Sternal Fracture

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# 實質化Consolidation:肺泡中的空氣， 被液體、細胞或兩者所取代

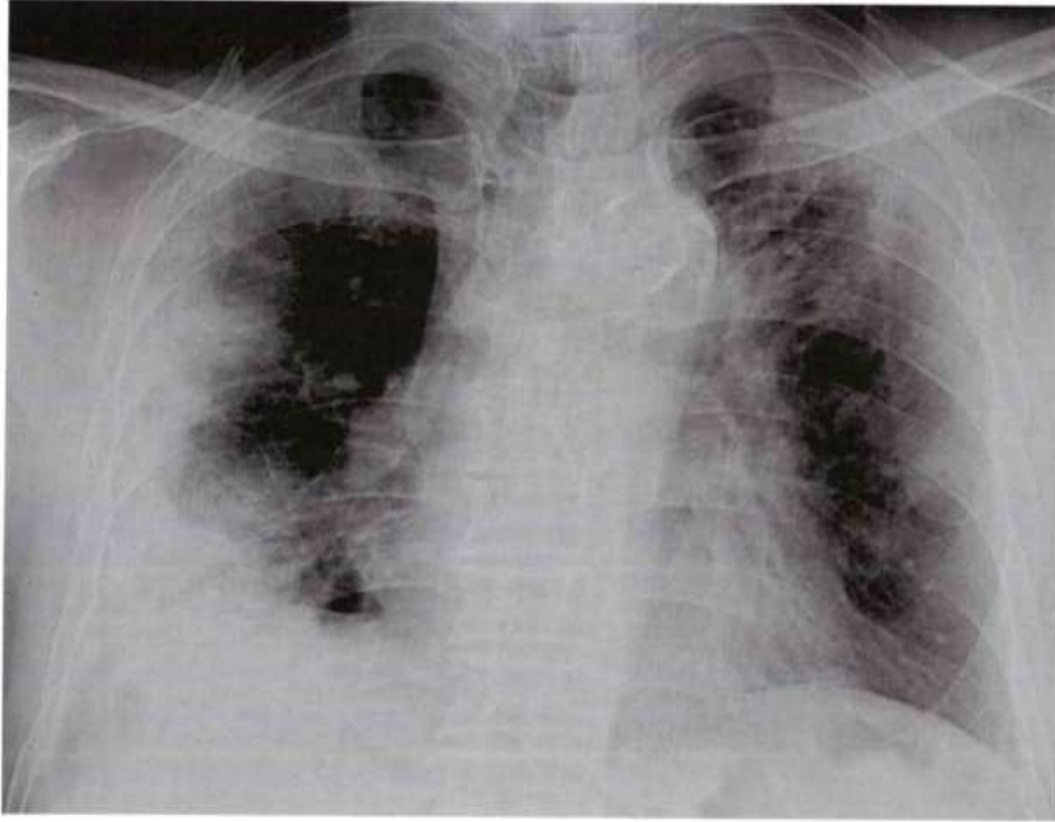


Fig 7-14 Eosinophilic pneumonia 肺泡型病變分佈於兩側肺之周邊區

# Interstitial Change : Linear pattern Reticular-nodular pattern

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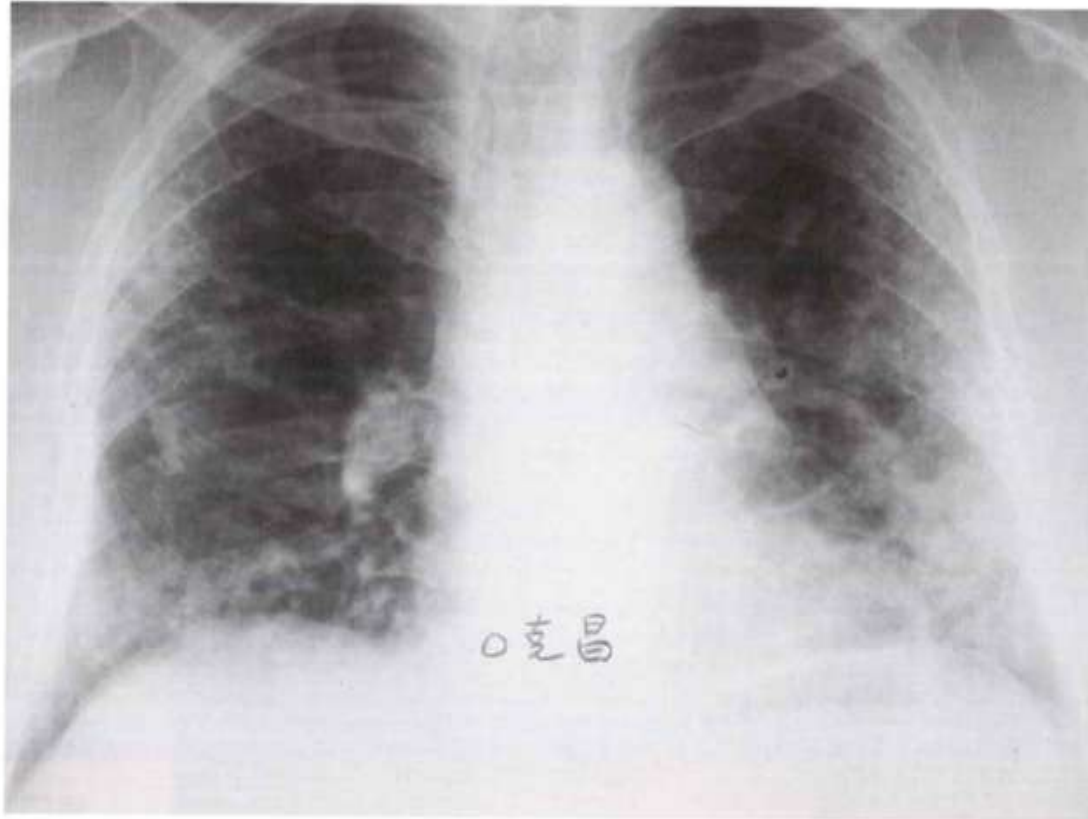


Fig 7-15 Sjögren's. syndrome/c ILD 間質型病變分佈於兩側肺之周邊區

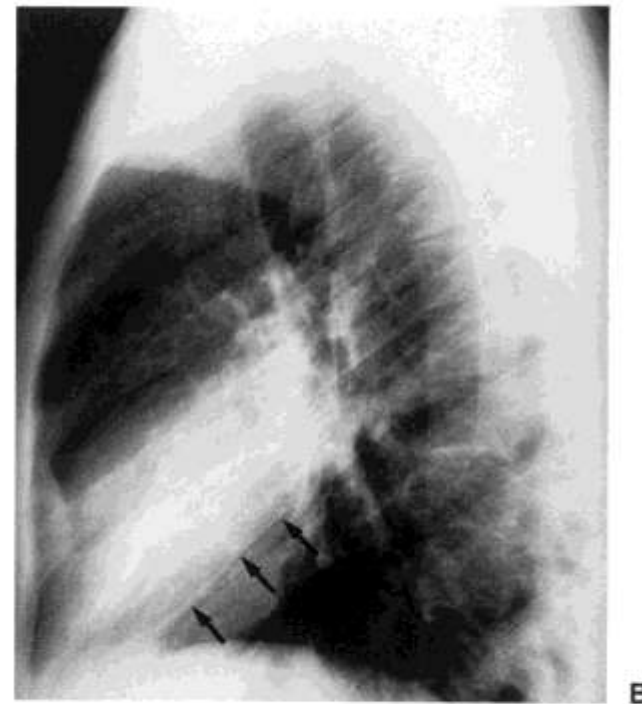
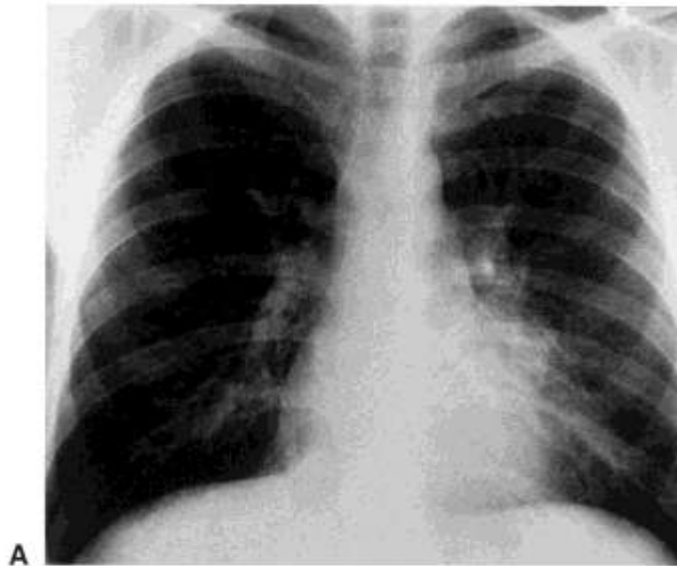
# Silhouette Sign

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- 主要是用來確定病灶的位置，  
當肺塌陷或實變的部份與心臟或橫膈接攘，  
則交接處邊緣變得模糊不易區分，  
我們可利用接攘器官的位置來判定病灶的位置

# Silhouette Sign - Lingular Pneumonia

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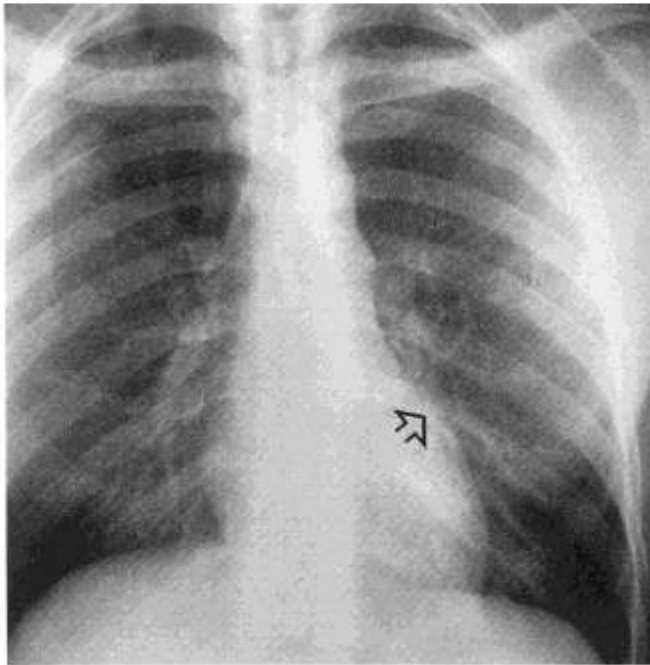




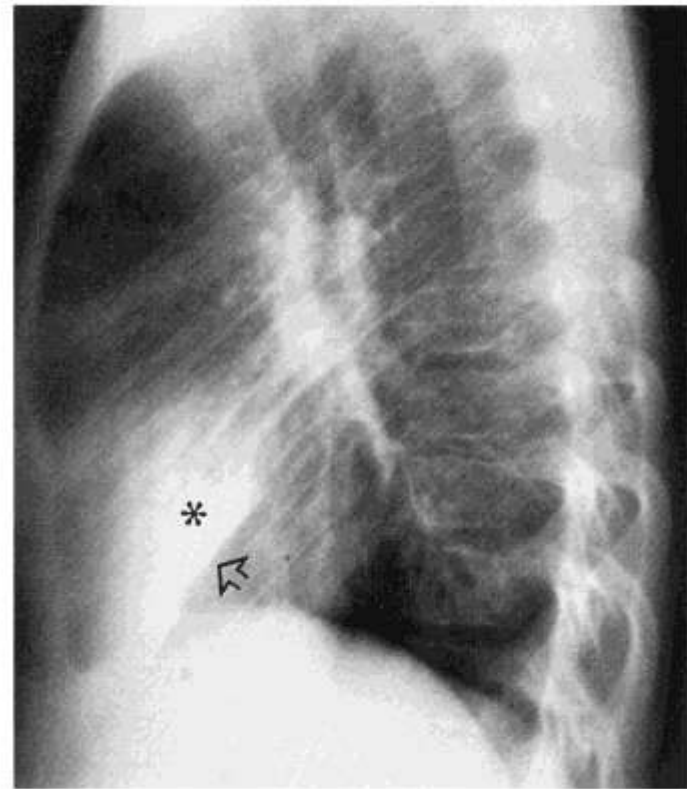
# Silhouette Sign

## - Subtle Lingular Pneumonia

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A

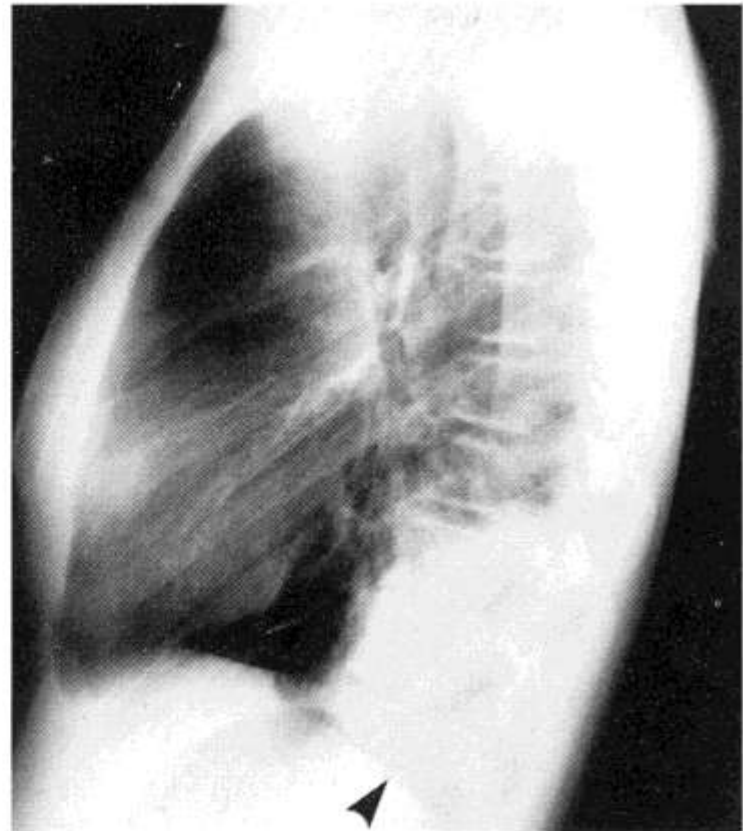
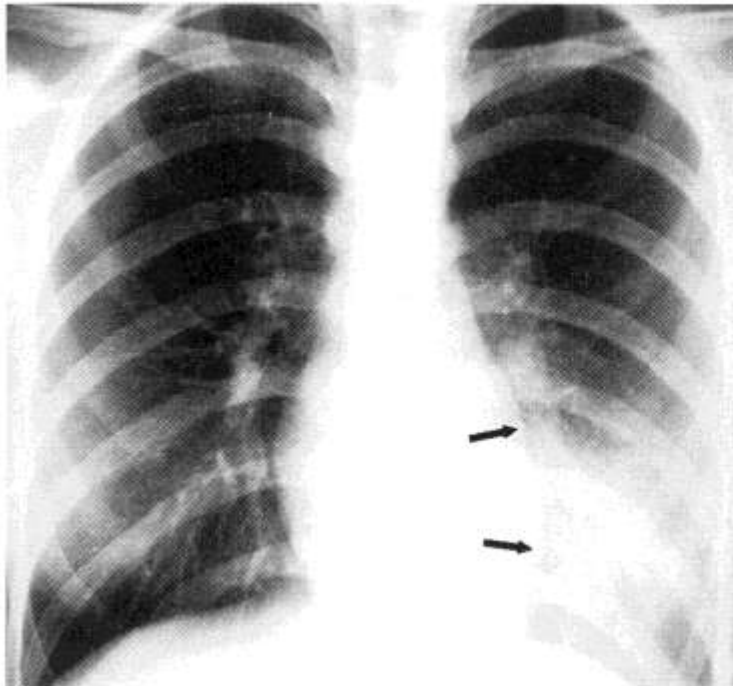


B

# Silhouette Sign

## - L't lower lobe Pneumonia

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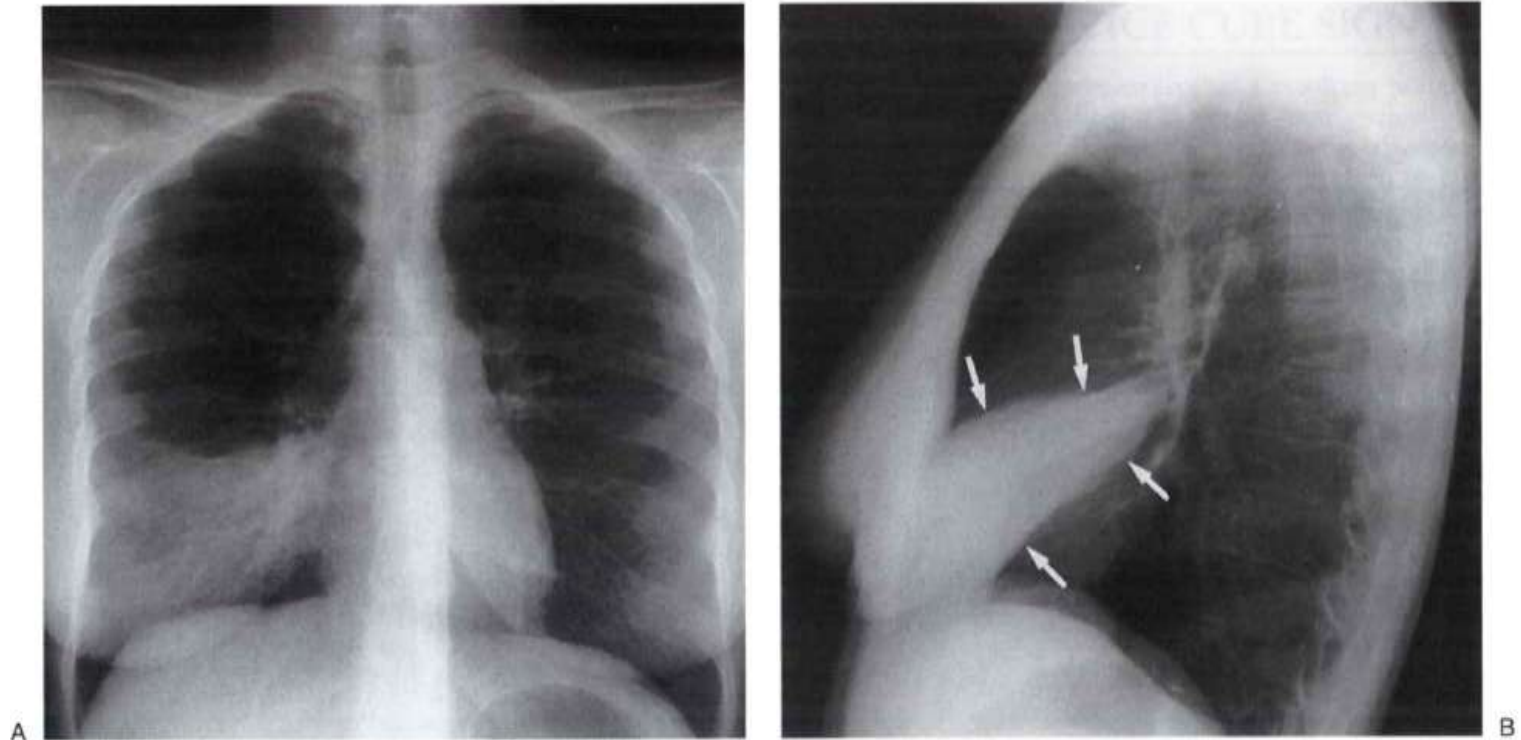


A,B

# Silhouette Sign

## - R't middle pneumonia

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**FIGURE 2-18. Silhouette sign.** A: PA chest radiograph of a patient with pneumococcal pneumonia shows opacification of the right lower lung, which partially obscures the right heart border (the silhouette sign), indicating a process involving the right middle lobe. B: Lateral view shows a triangular opacity over the heart (*arrows*), confirming a right middle lobe process.

# Silhouette Sign

## - Lingular Pneumonia

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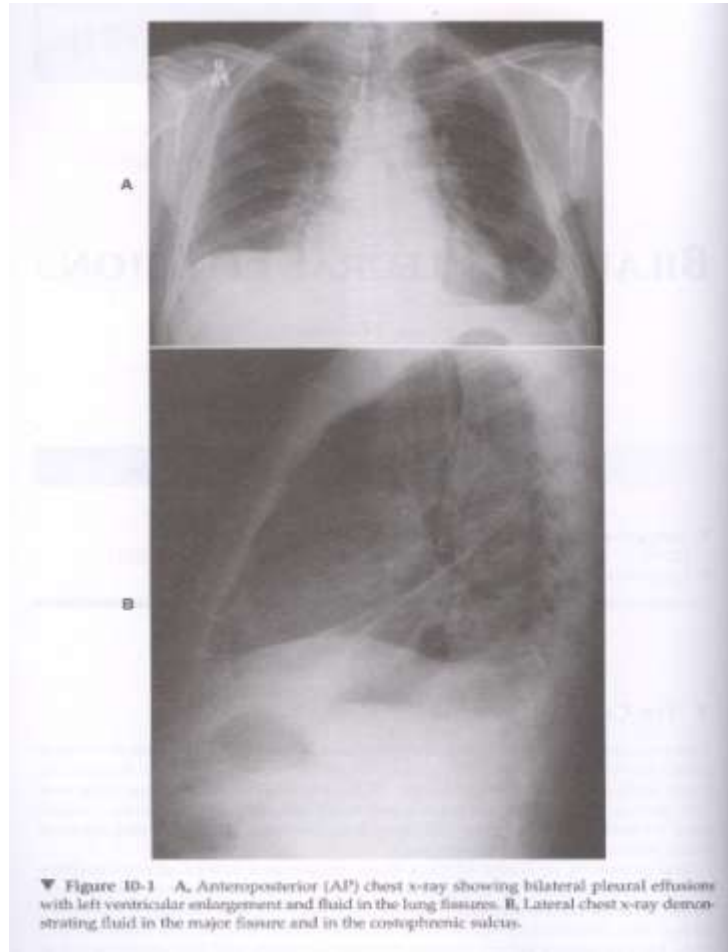
# Posterior costophrenic sulcus

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- **300 c.c space in this sulcus**
- **Pleural effusion can not found in PA view**
- **Detected from lateral view**

# Posterior costophrenic sulcus (pleural effusion)

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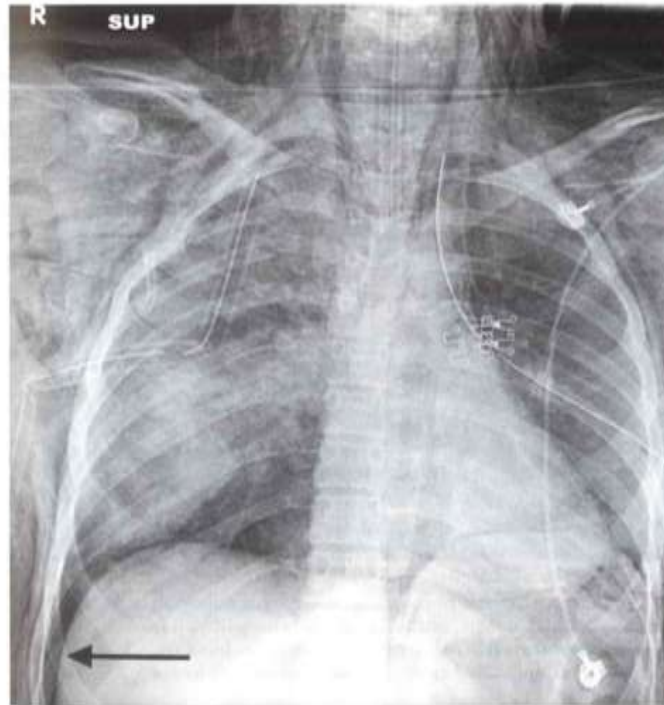
# Deep Sulcus Sign

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- **Pneumothorax in supine position**
- **Air expands the costophrenic sulcus in involved site**

# Deep Sulcus Sign pneumothorax in lying down position

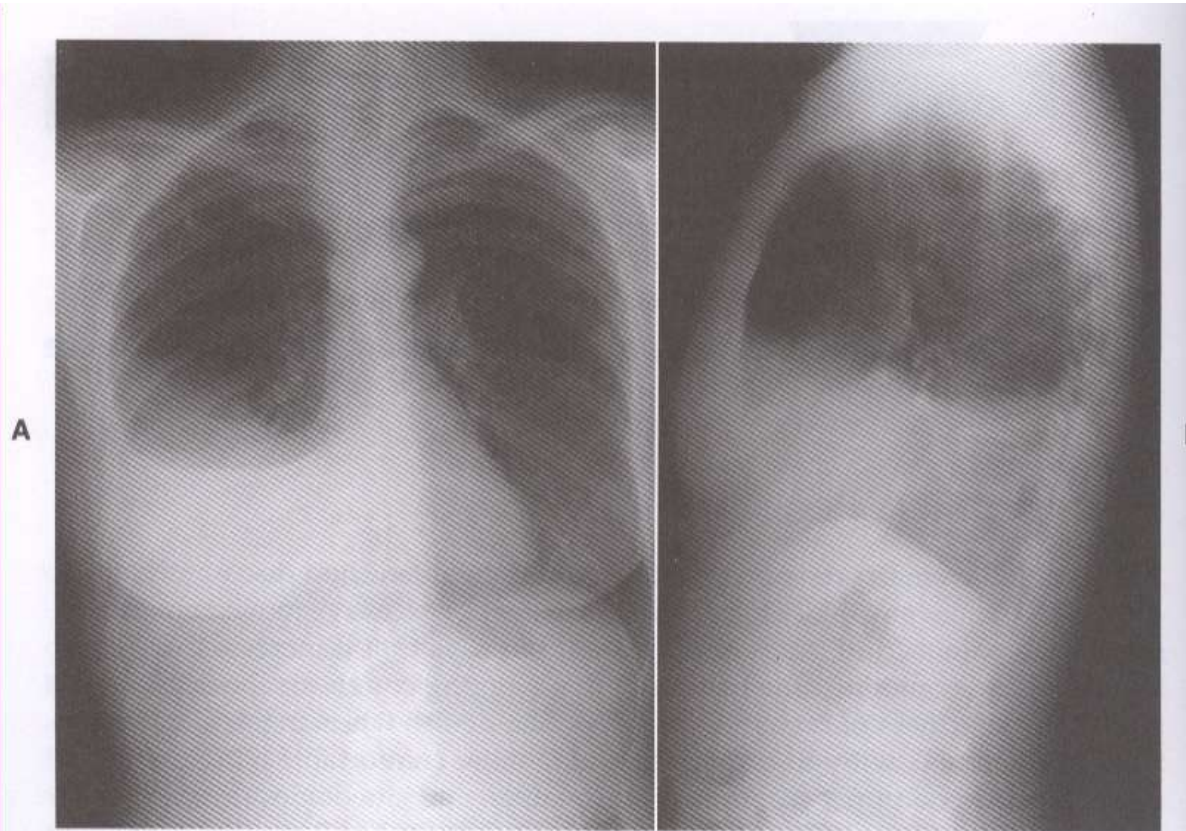
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**FIGURE 2-7. Deep sulcus sign.** AP supine chest radiograph of a patient involved in chest trauma shows a right basilar pneumothorax (*arrow*), which expands the costophrenic sulcus, creating a tonguelike extension of air that continues inferiorly along the right lateral chest wall. Note bilateral lung contusion, pneumomediastinum, and bilateral subcutaneous emphysema.



# Meniscus sign 肋膜積水



▼ Figure 11-1 A, Anteroposterior (AP) chest x-ray of right-sided pleural effusion. B, Lateral chest x-ray of right-sided pleural effusion.

# Reverse S (golden S) sign

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- 因肺門腫塊造成右上肺葉塌陷，形成倒S狀，90%以上為惡性。

# Reverse S (golden S) sign

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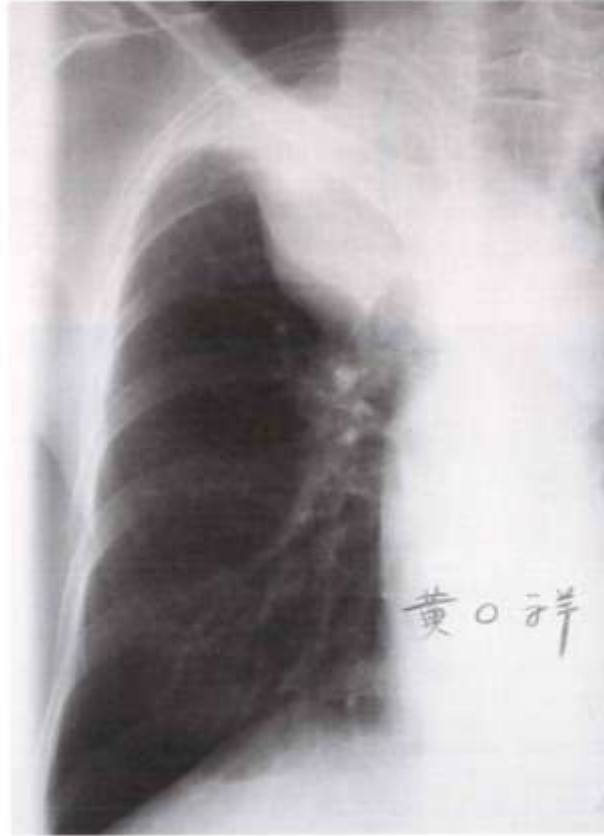


Fig 8-5 Lung ca. RUL, minor fissure 上移但腫瘤將上移的 fissure 之內側部份往下壓，呈 reverse S shape

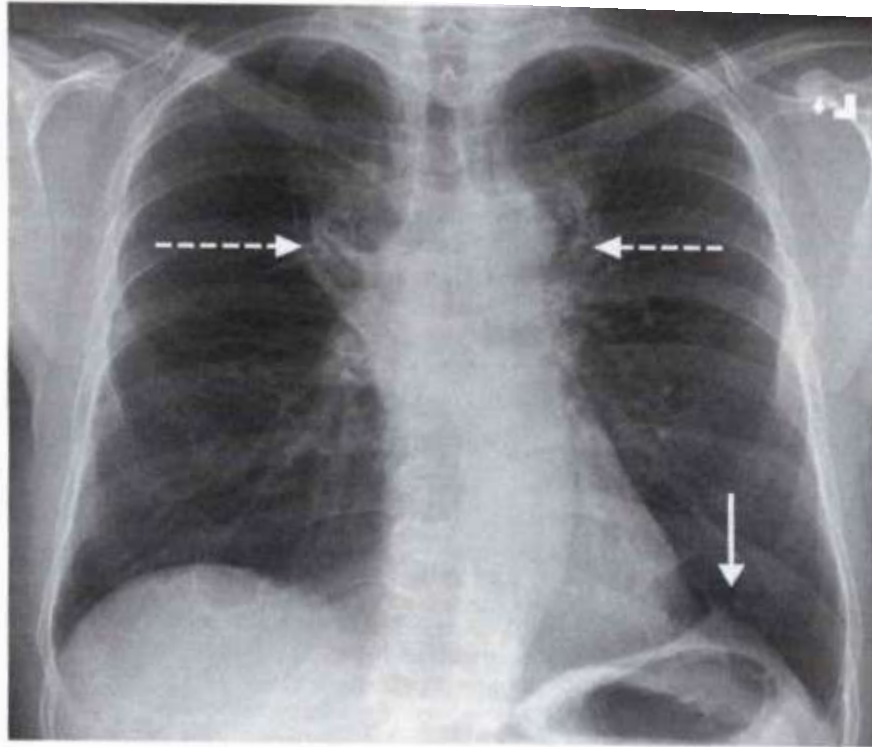
# Juxtaphrenic peak sign

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- **lose of upper lobe volume**
- **Tenting of involved hemidiaphragm**

# Juxtaphrenic peak sign

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**FIGURE 2-14. Juxtaphrenic peak sign.** PA chest radiograph of a man treated with mediastinal radiation shows paramediastinal radiation fibrosis (*dashed arrows*) and upward retraction of both hila. There is tenting of the left hemidiaphragm (*solid arrow*), indicating a loss of left upper lobe volume, seen as the juxtaphrenic peak sign.

# Thoracoabdominal Sign

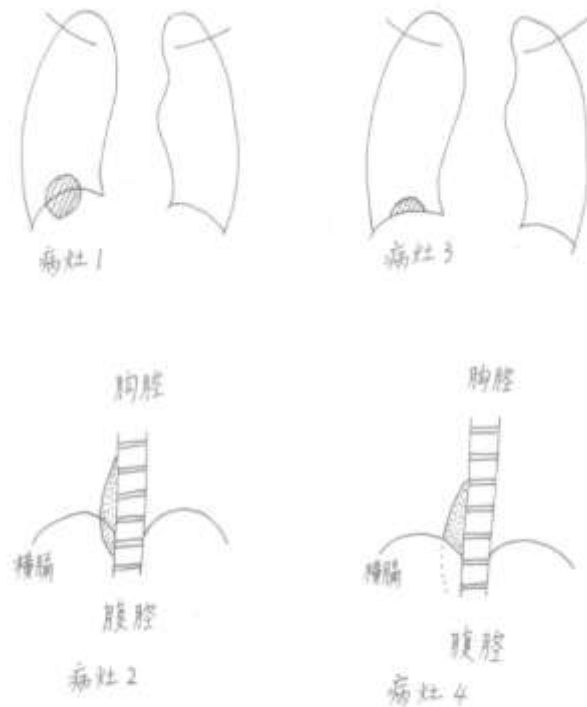


Fig 6-7 Thoracoabdominal sign

# Cervicothoracic sign

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- 肺外形類似錐體形狀，前低後高，胸鎖關節形成胸廓入口的前緣，故X光投影上高於鎖骨者表示位置在肺尖或後縱膈。

# Cervicothoracic sign

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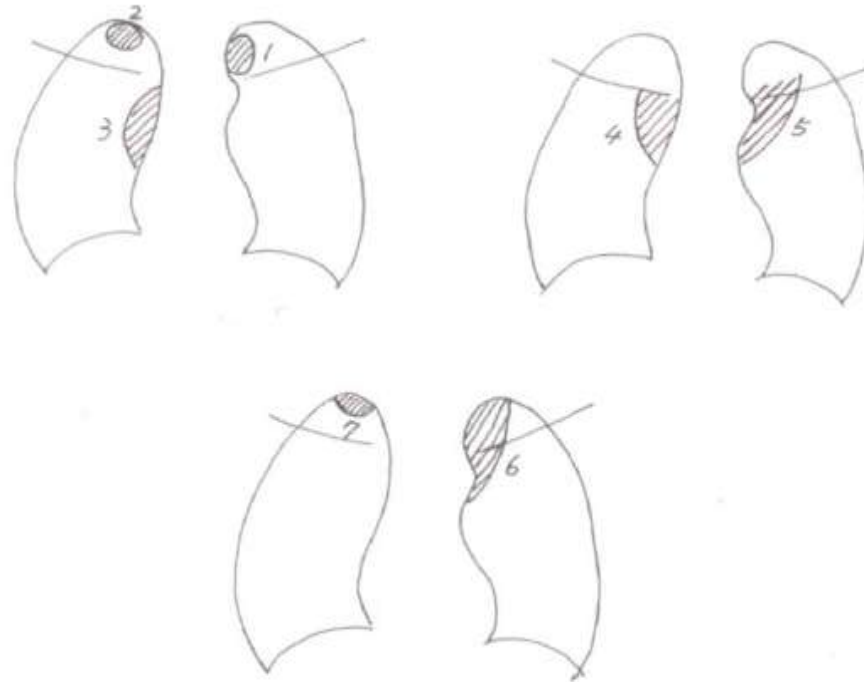


Fig 6-8 Cervicothoracic sign



# Cervicothoracic sign



Fig 6-9 Intrathoracic goiter, 右侧 mediastinal lesion 之 cephalic border 至 clavicle 即消失, 表示此病灶應位於 anterior mediastinum

# Cervicothoracic sign

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# Cervicothoracic sign

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# Hilum overlay sign

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- **98%**正常人的左、右肺動脈第一個分支點（**most medial bifurcation**），位於心臟的邊緣或稍外側，只有**2%**的正常人，此分支點位於心臟邊緣內側且距心臟邊緣**1cm**以上，故當我們看到一個“像”心臟的陰影，而其肺動脈第一個分支點在心臟邊緣內側，且距心臟邊緣**1cm**以上時，該“像”心臟的陰影應不是心臟，稱之為**Hilum overlay sign**。

# Hilum overlaying sign

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- 如果看到心臟的外緣很大，  
而左肺門與X光上認定的心臟左緣超過1cm的  
距離就必須考慮有前縱膈腔腫瘤的可能。

# Hilum overlaying sign

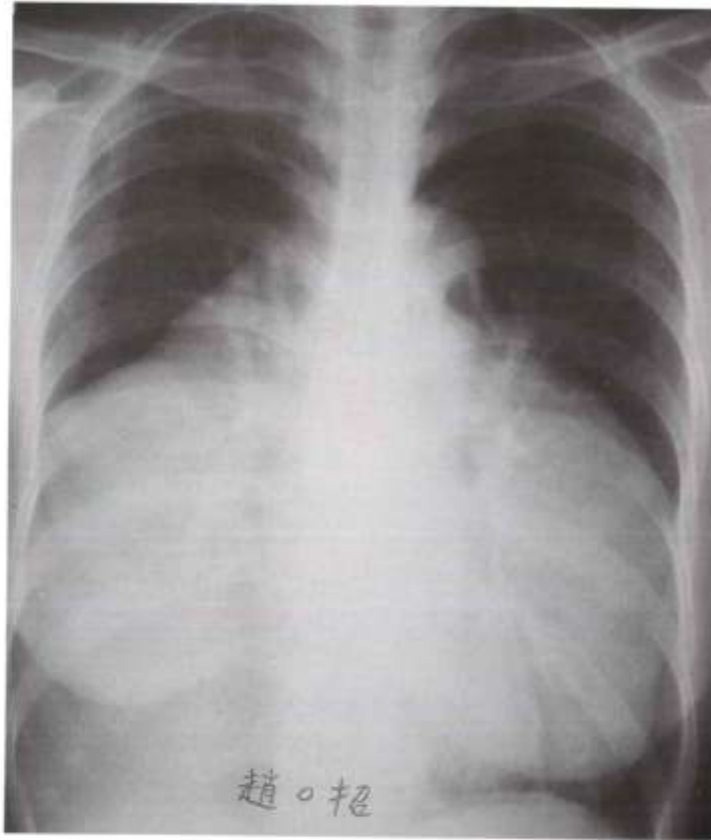


Fig 6-10A Teratoma, 看似巨大的心臟之陰影，但左右兩側肺門距離此像心臟陰影的外緣相當遠，根據 hilum overlay sign 可知此陰影乃非真正的心臟，而是縱膈病灶

# Hilum overlaying sign

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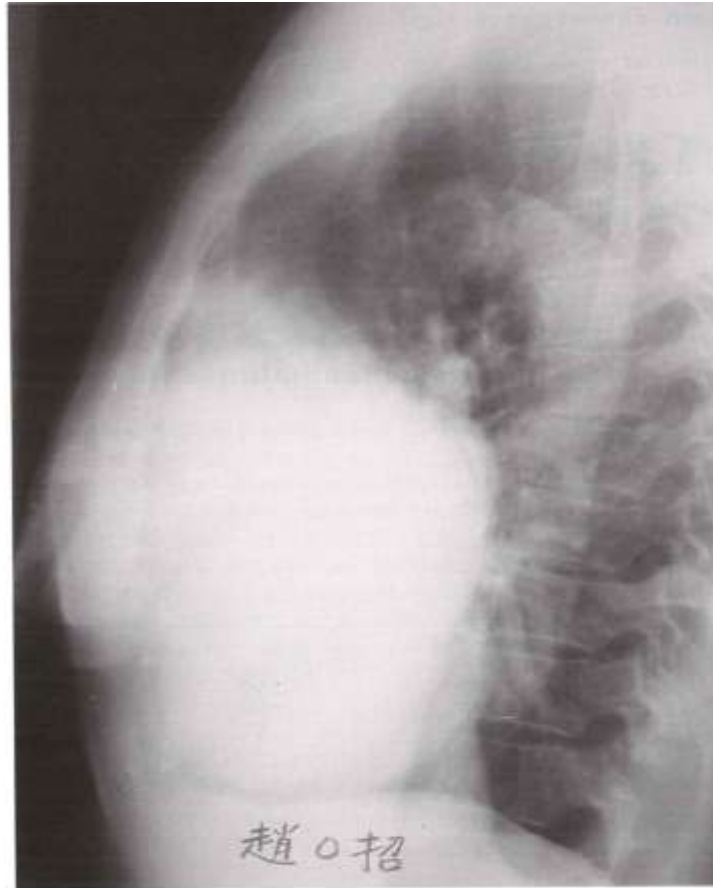


Fig 6-10B 側面照證實此陰影乃前縱膈病灶

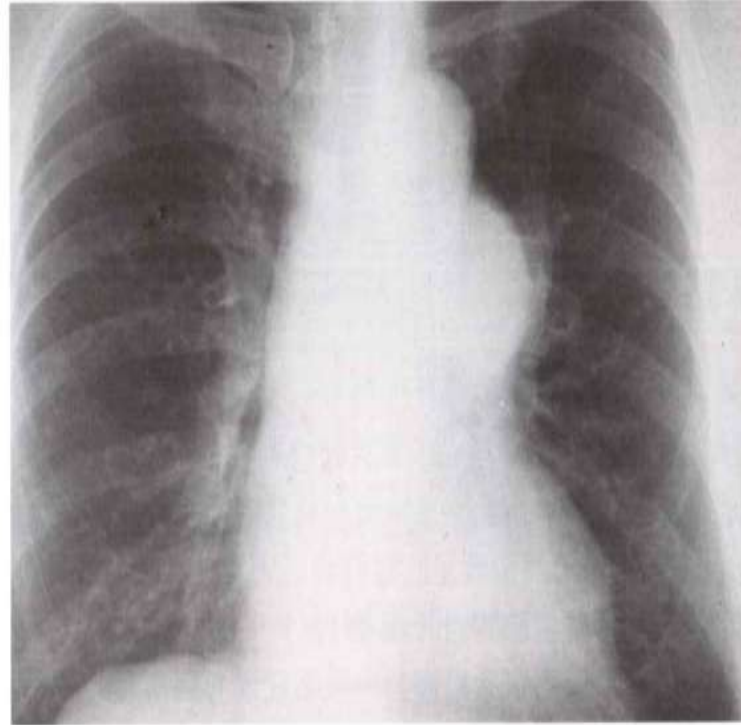
# Hilum convergence sign

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- 腫大的肺動脈有時酷似腫瘤，  
血管匯聚於此處表示此腫瘤為血管性結。



# Hilum convergence sign



✓  
Fig 13-9 Pulmonary valve stenosis with poststenotic dilatation of pulmonary artery ,

左側 pulmonary artery 明顯變大，但上葉及下葉的肺動脈之分支點  
仍在此膨大的左肺動脈之邊緣(Hilum convergence sign)

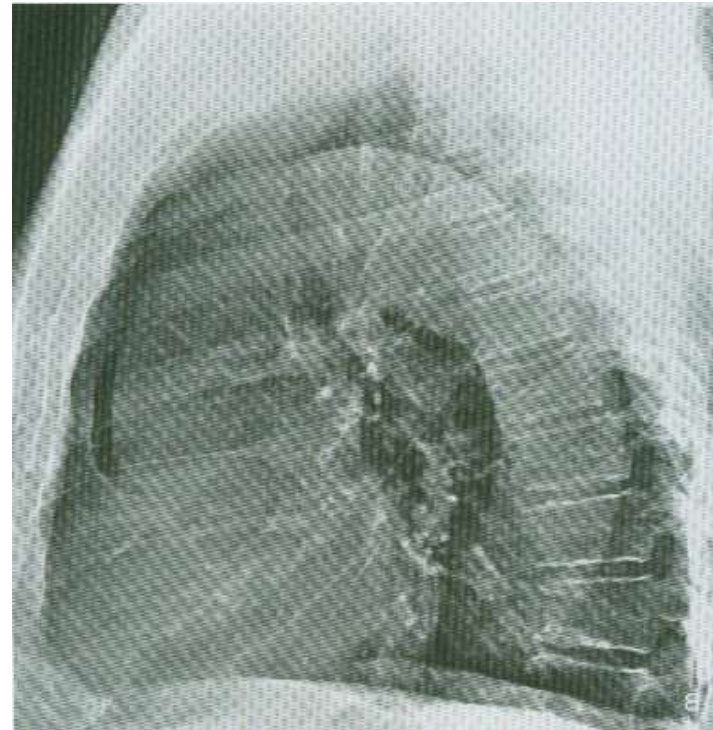
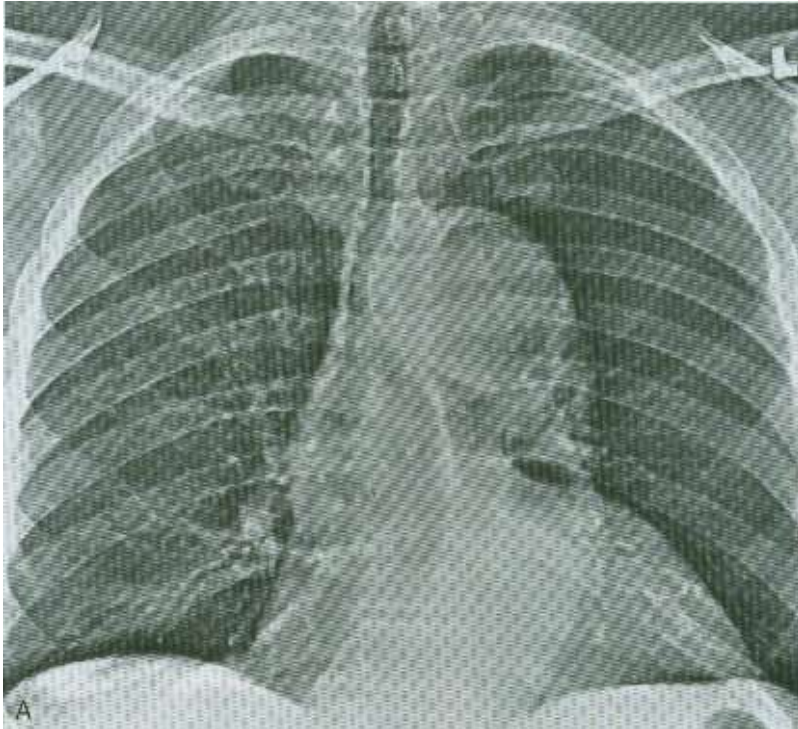
# Thoracic Aortic Aneurysm

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# Thoracic Aortic Aneurysm

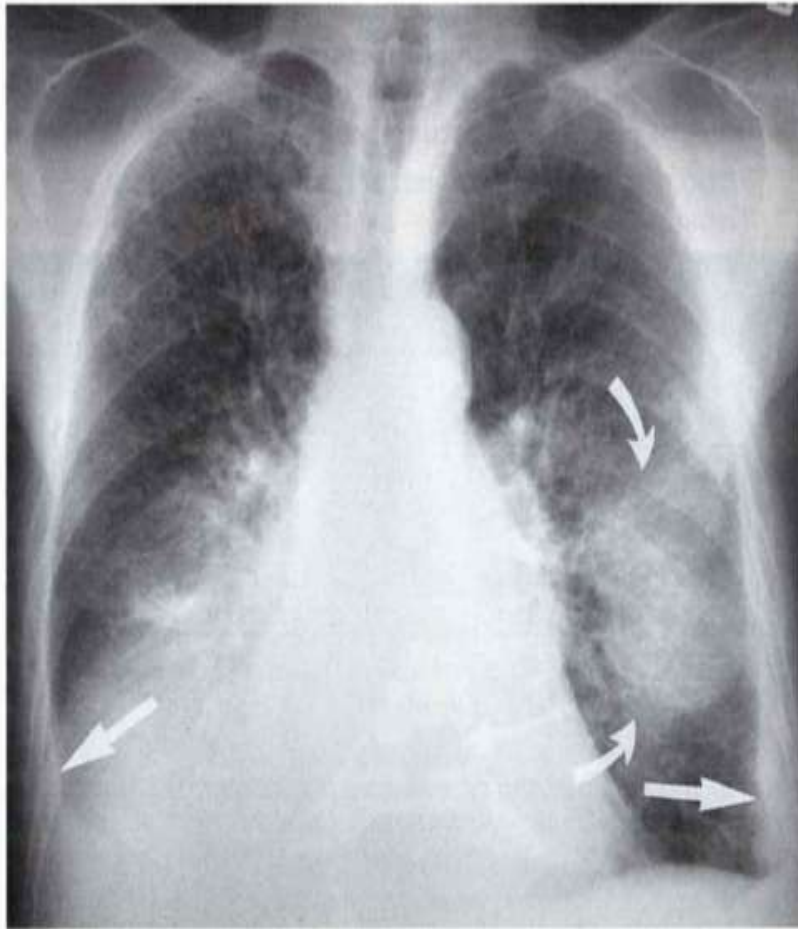
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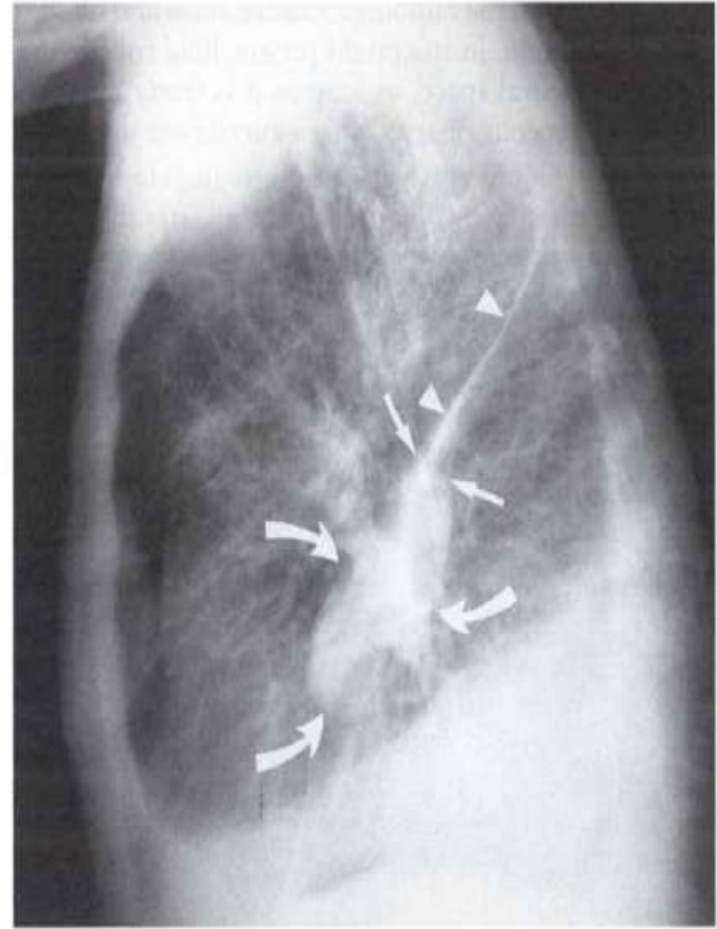
# Incomplete border sign

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- 肋膜外或胸壁之腫塊  
在投影上形成不完全的邊緣影像。



A



B

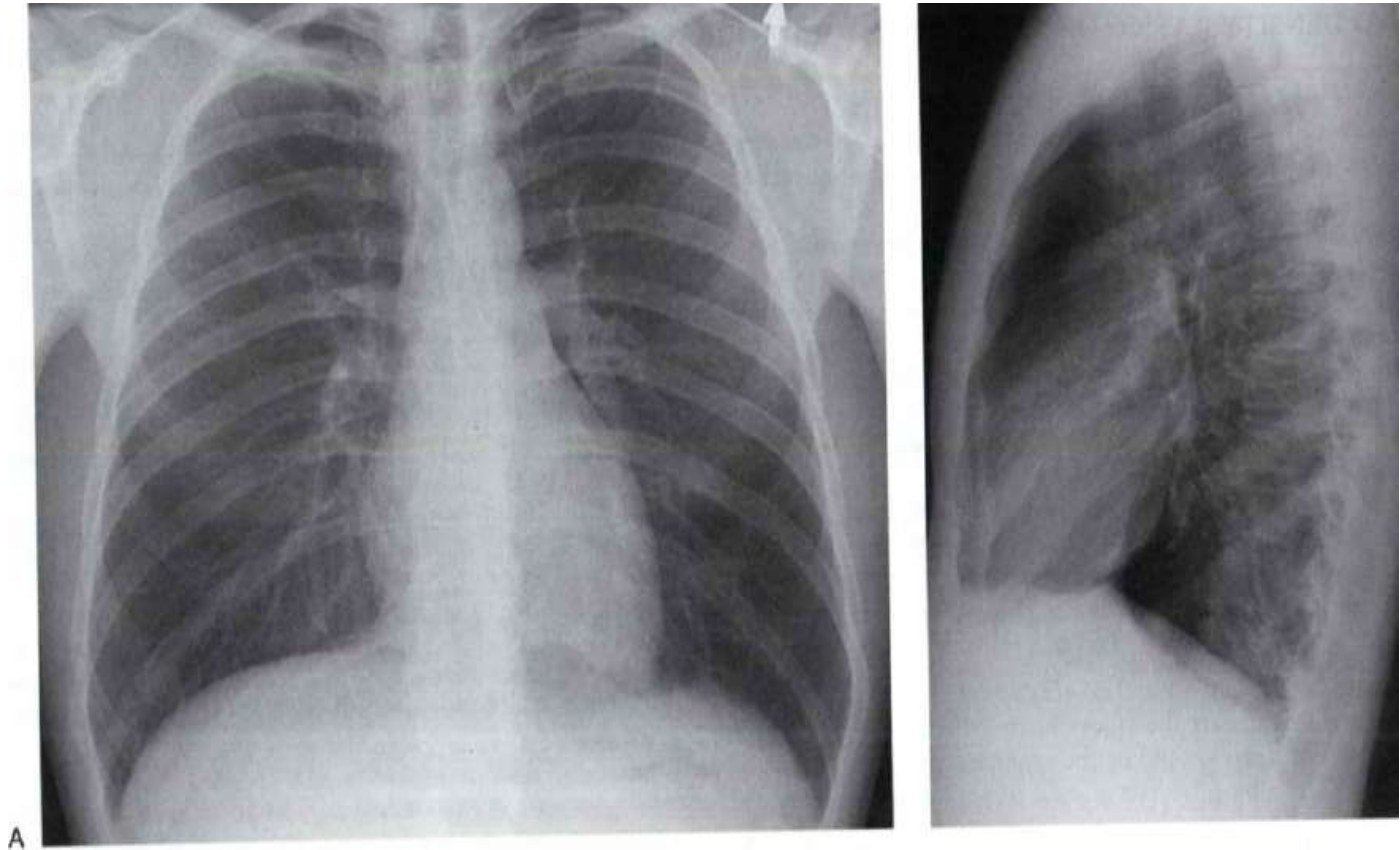
**FIGURE 9-7. Pulmonary edema and pleural fluid pseudotumor.** A: PA chest radiograph shows enlargement of the cardiac silhouette, interstitial pulmonary edema, and displacement of the inferolateral lungs from the chest wall and diaphragm by pleural effusion (*straight arrows*). There is a hazy “mass” in the left middle and lower hemithorax (*curved arrows*). B: Lateral chest radiograph shows that the “mass” or “pseudotumor” (*curved arrows*) blends in with the left major fissure (*straight arrows*); this is characteristic of pleural fluid within the fissure. The superior aspect of the left major fissure is thickened as a result of pleural fluid and subpleural edema (*arrowheads*).

# Anterior bronchus sign

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- 前支氣管壁之厚度若超過5mm則與肺水腫、發炎或腫瘤浸潤有關，可做為治療後疾病復發與否的根據。

# Anterior bronchus sign



A

FIGURE 1-2. Normal PA (A) and lateral (B) chest radiographs, showing the structures numbered and labeled in Figure 1-1.

# Air crescent sign

- 腫塊中有一放射性透亮之半月形陰影，鑑別診斷有 **echinococcal cyst**，空洞內之黴菌球、肺膿瘍、肺內血腫塊、良性或惡性之肺腫瘤、肉芽腫病、**Rasmussen's**動脈瘤等。

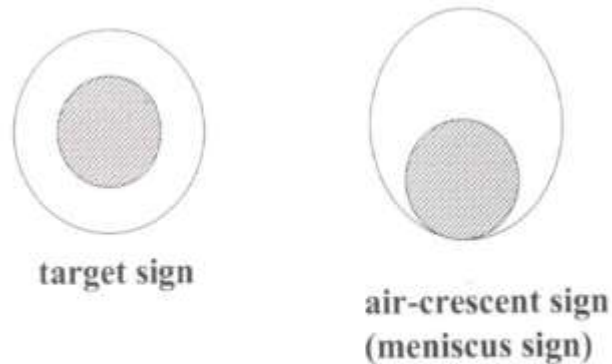


Fig 8-9a Air-crescent sign (右); Target sign (左)



# Air crescent sign (Pulmonary Mycetoma)

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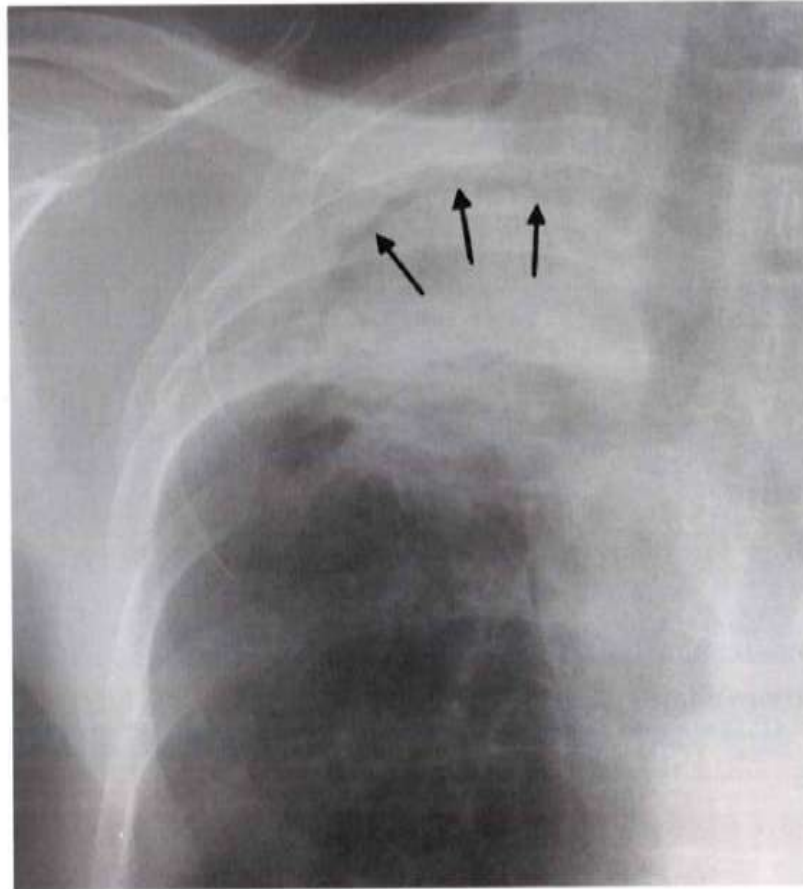
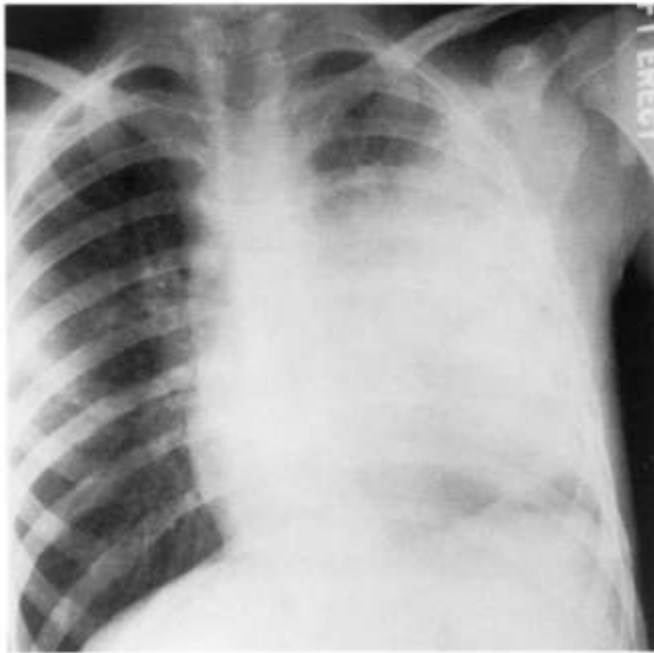
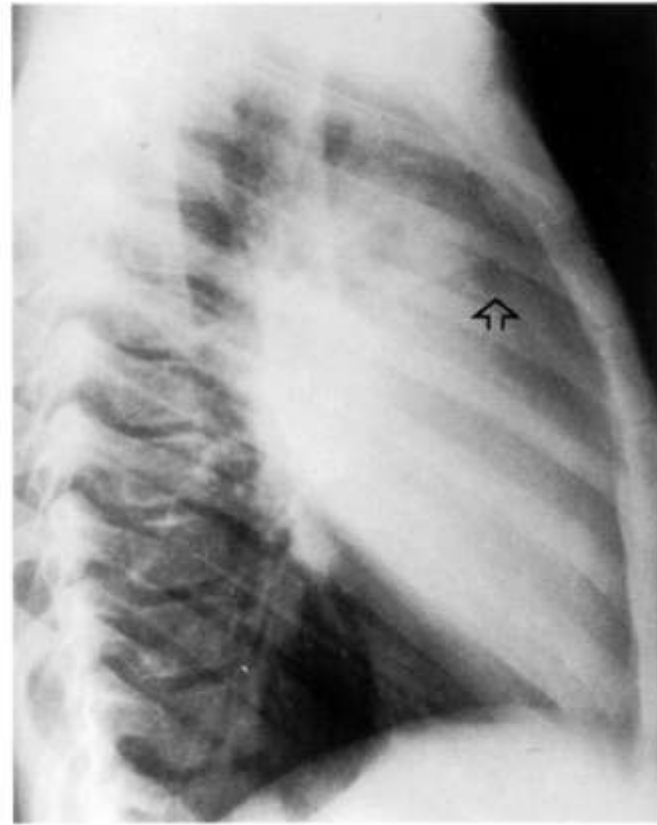


Fig 8-9b Pulmonary mycetoma(→)air crescent

# Air Fluid Level (Abscess ) Staphylococci Pneumonia



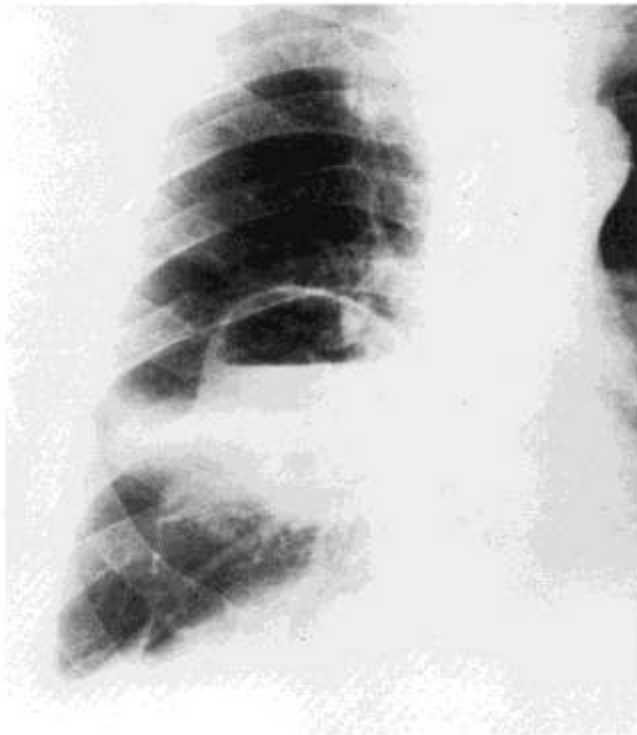
A



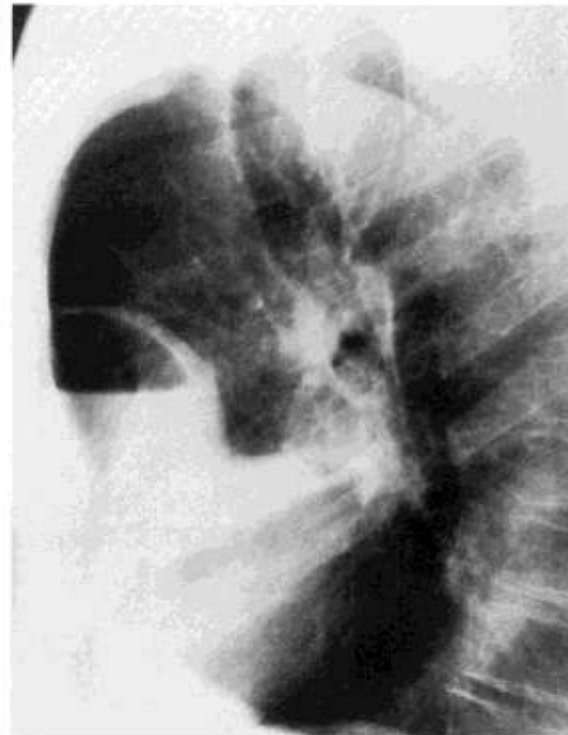
B

# Air Fluid Level (Abscess ) Bronchopleural fistula

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A



B

# Summary

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- 放射線學上的sign代表意義判讀