

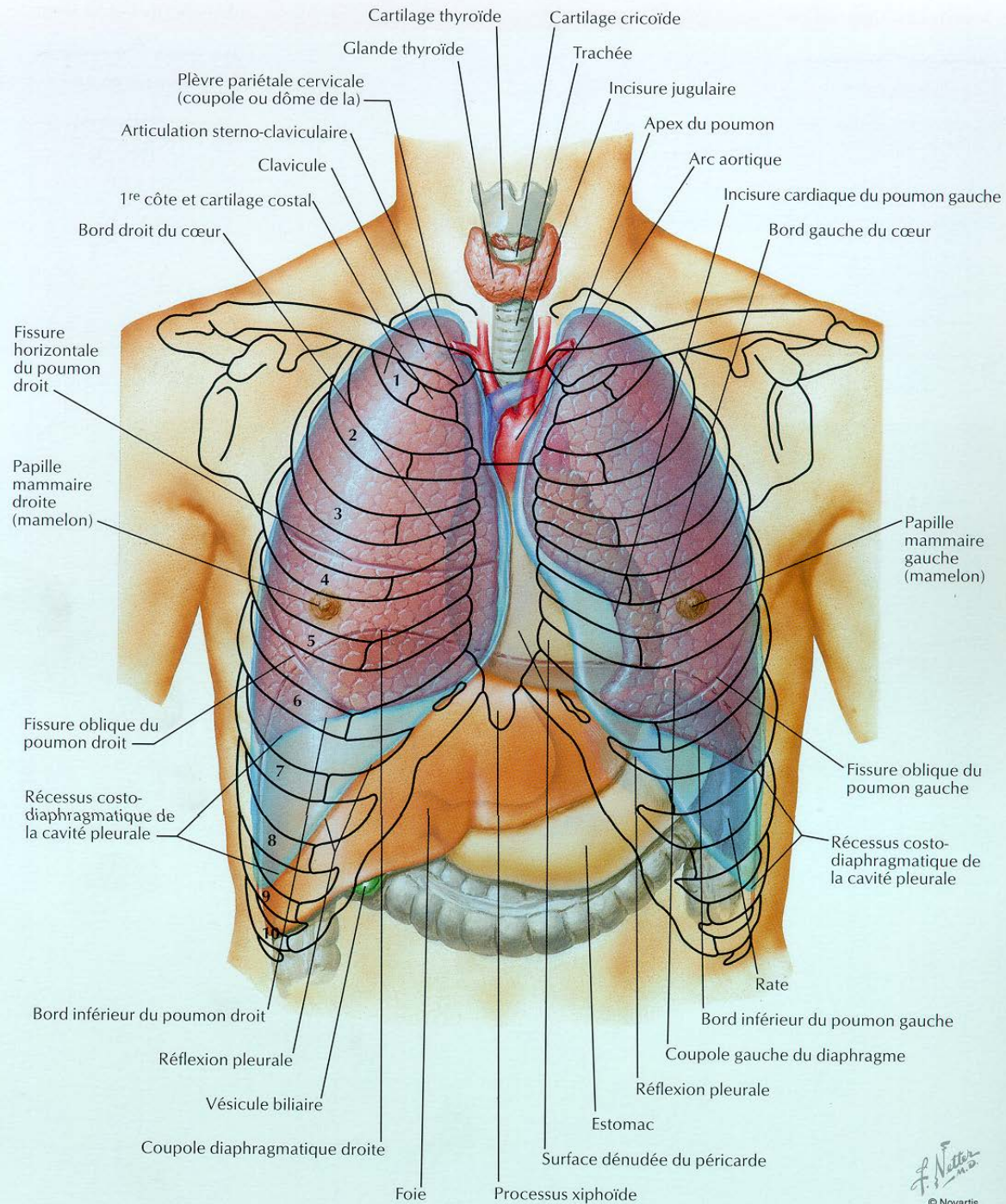
Corrélations radio-cliniques

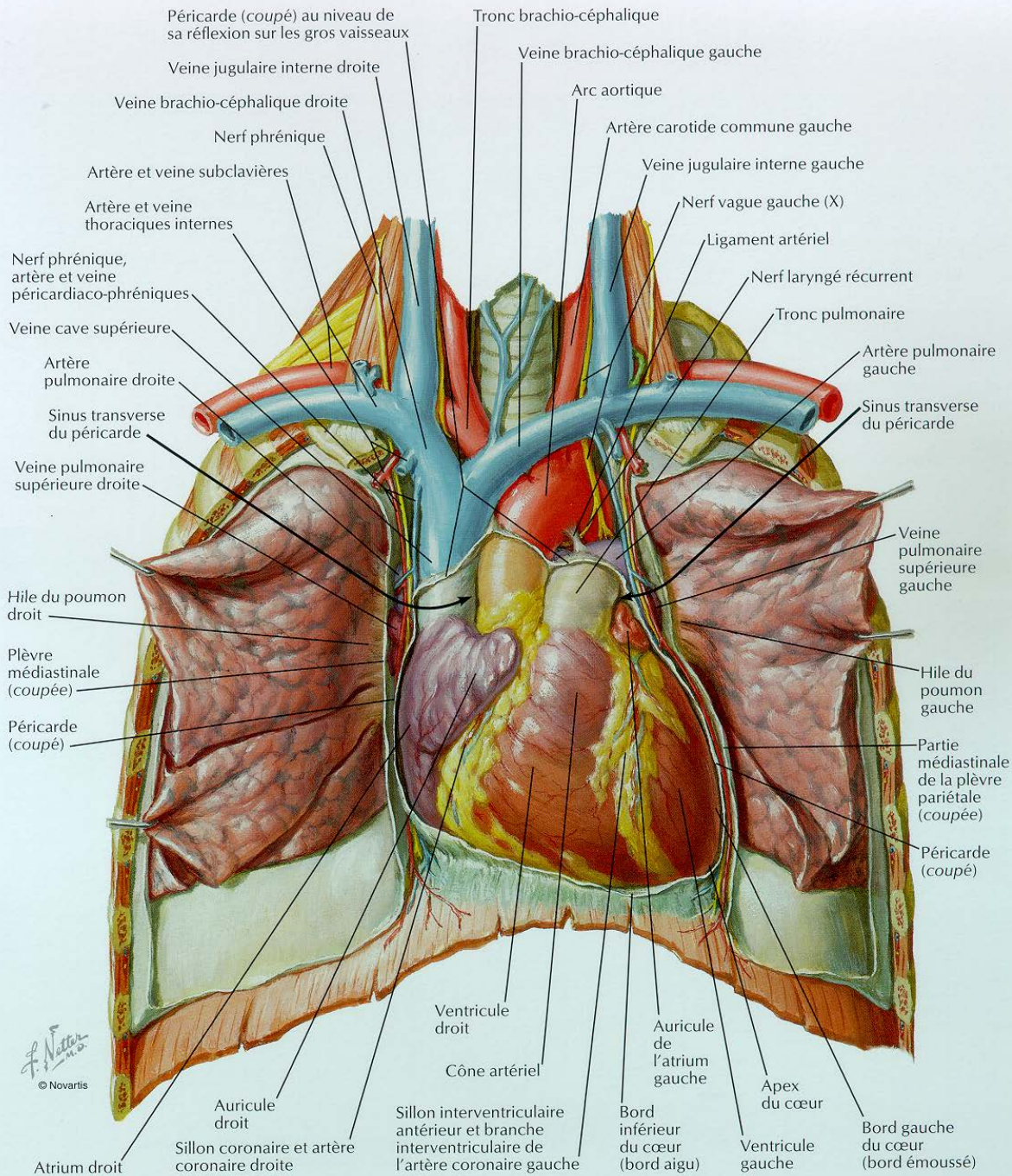
Cours destiné aux manipulateurs en radiologie

Dr Emmanuel Coche

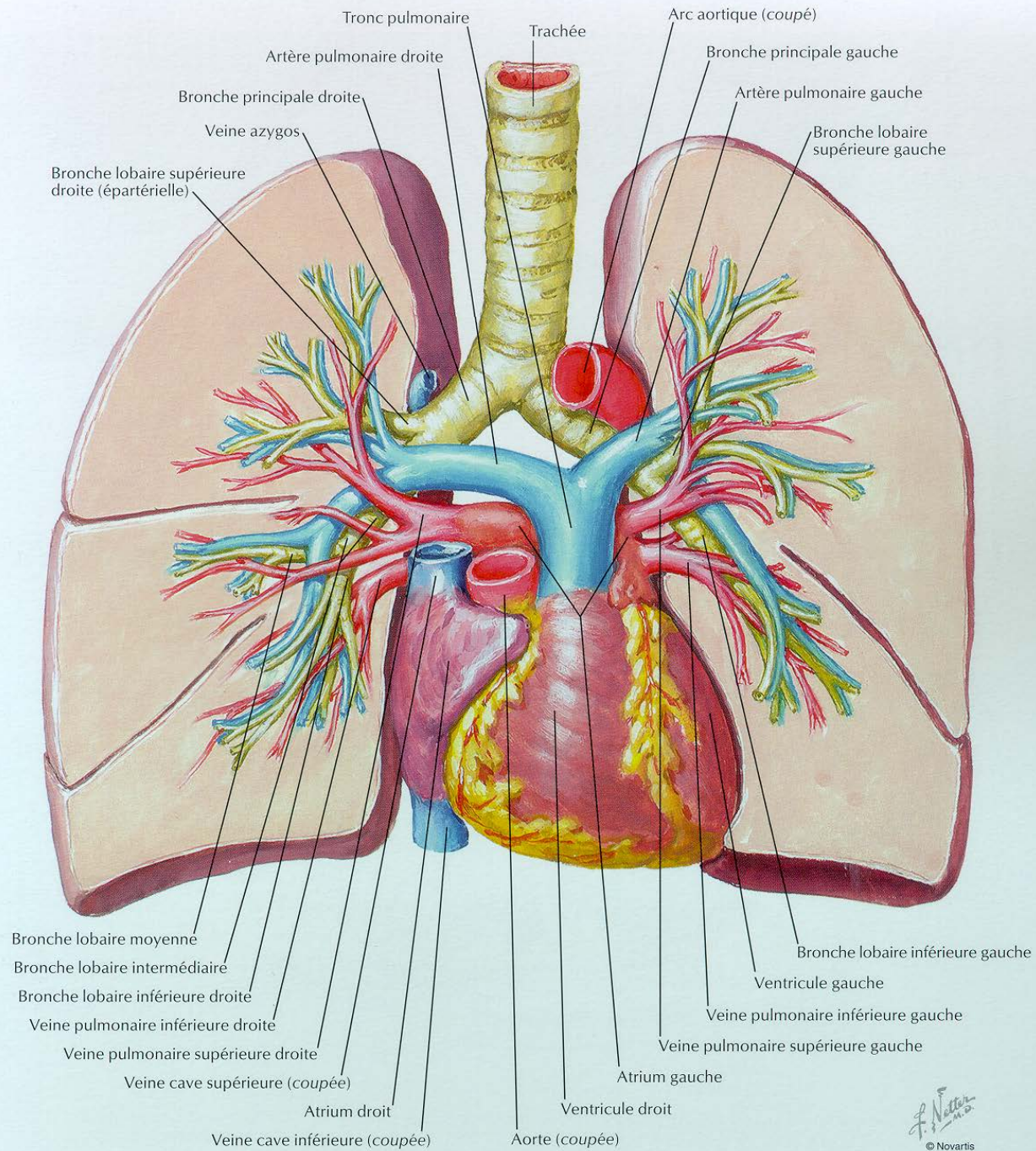
Département d'imagerie médicale

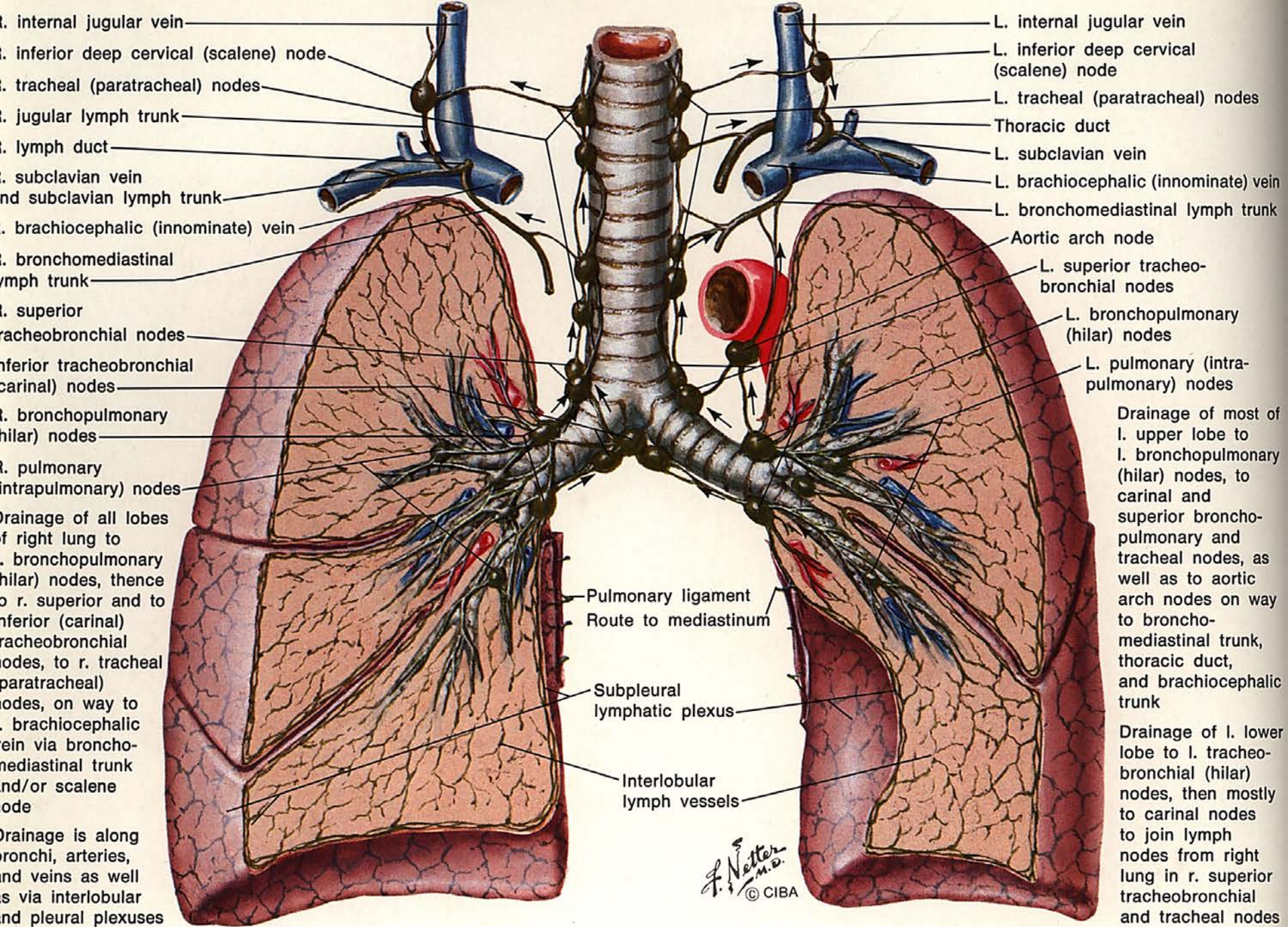
8 octobre 2021





F. Netter
 M.D.
 © Novartis





. internal jugular vein
 . inferior deep cervical (scalene) node
 . tracheal (paratracheal) nodes
 . jugular lymph trunk
 . lymph duct
 . subclavian vein
 and subclavian lymph trunk
 . brachiocephalic (innominate) vein
 . bronchomediastinal lymph trunk
 . superior tracheobronchial nodes
 . inferior tracheobronchial (carinal) nodes
 . bronchopulmonary (hilar) nodes
 . pulmonary (intrapulmonary) nodes
 Drainage of all lobes of right lung to r. bronchopulmonary (hilar) nodes, thence to r. superior and to inferior (carinal) tracheobronchial nodes, to r. tracheal (paratracheal) nodes, on way to r. brachiocephalic vein via bronchomediastinal trunk and/or scalene node
 Drainage is along bronchi, arteries, and veins as well as via interlobular and pleural plexuses

L. internal jugular vein
 L. inferior deep cervical (scalene) node
 L. tracheal (paratracheal) nodes
 Thoracic duct
 L. subclavian vein
 L. brachiocephalic (innominate) vein
 L. bronchomediastinal lymph trunk
 Aortic arch node
 L. superior tracheobronchial nodes
 L. bronchopulmonary (hilar) nodes
 L. pulmonary (intrapulmonary) nodes

Drainage of most of l. upper lobe to l. bronchopulmonary (hilar) nodes, to carinal and superior bronchopulmonary and tracheal nodes, as well as to aortic arch nodes on way to bronchomediastinal trunk, thoracic duct, and brachiocephalic trunk

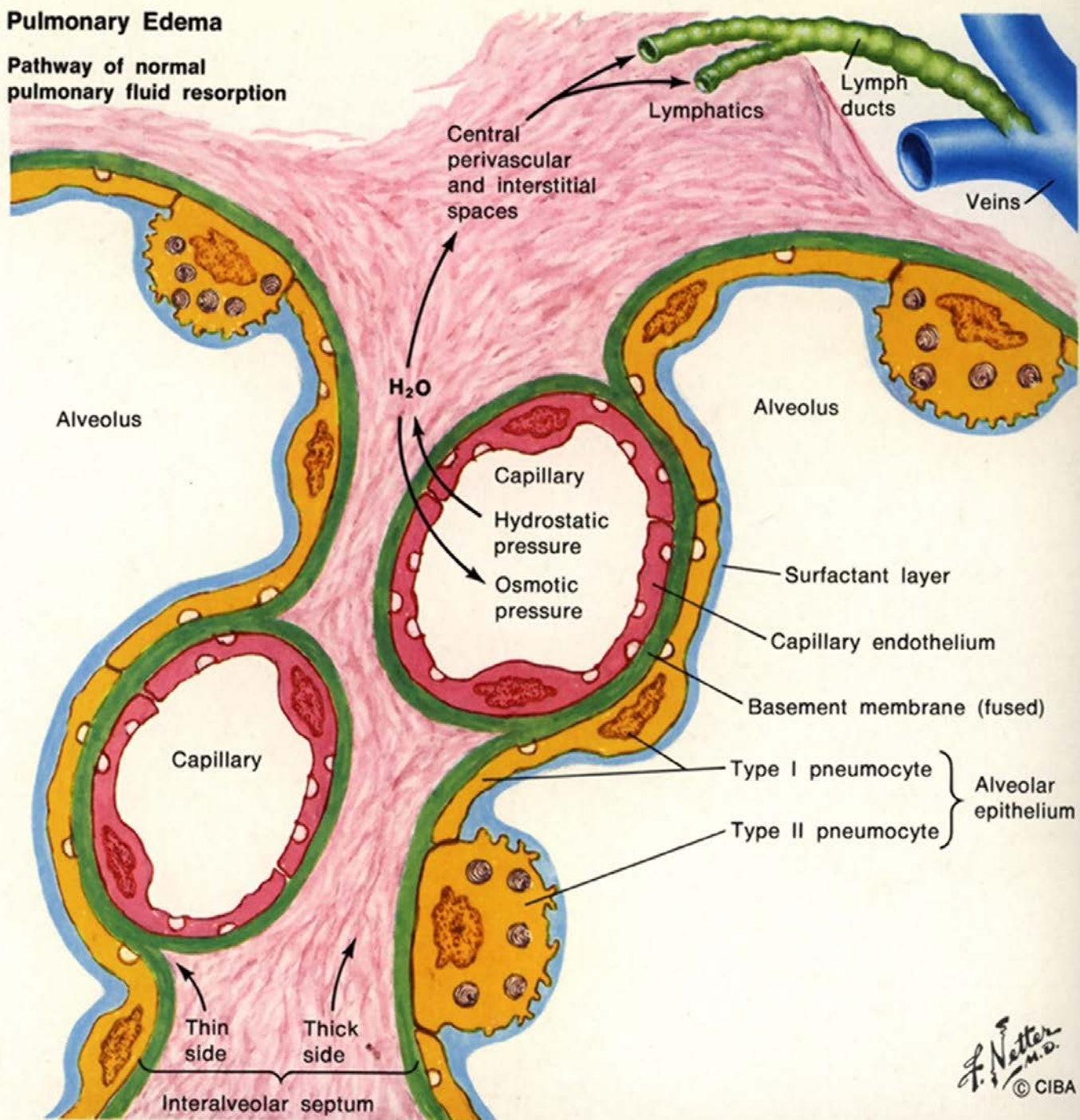
Drainage of l. lower lobe to l. tracheobronchial (hilar) nodes, then mostly to carinal nodes to join lymph nodes from right lung in r. superior tracheobronchial and tracheal nodes

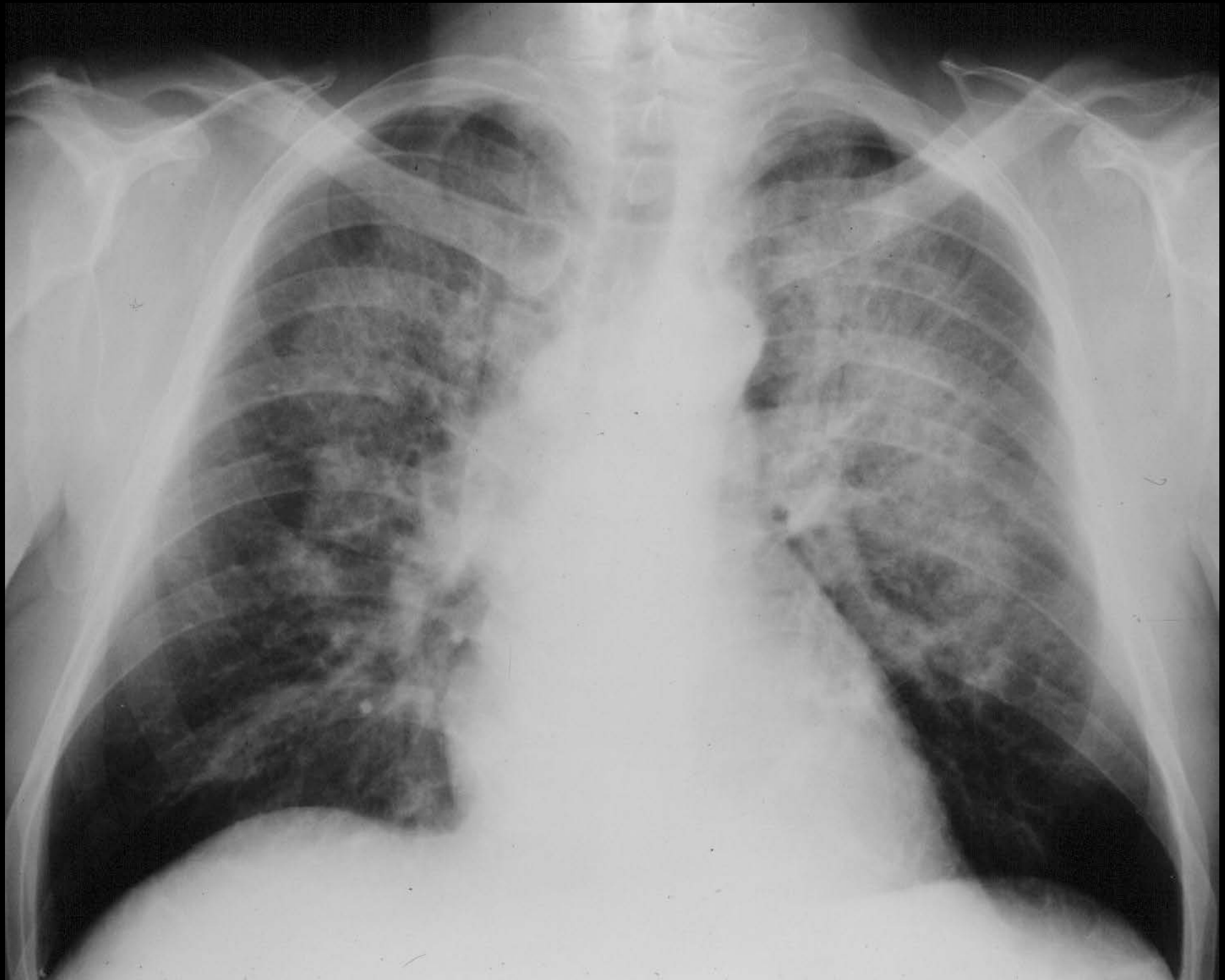
Pulmonary ligament
 Route to mediastinum
 Subpleural lymphatic plexus
 Interlobular lymph vessels

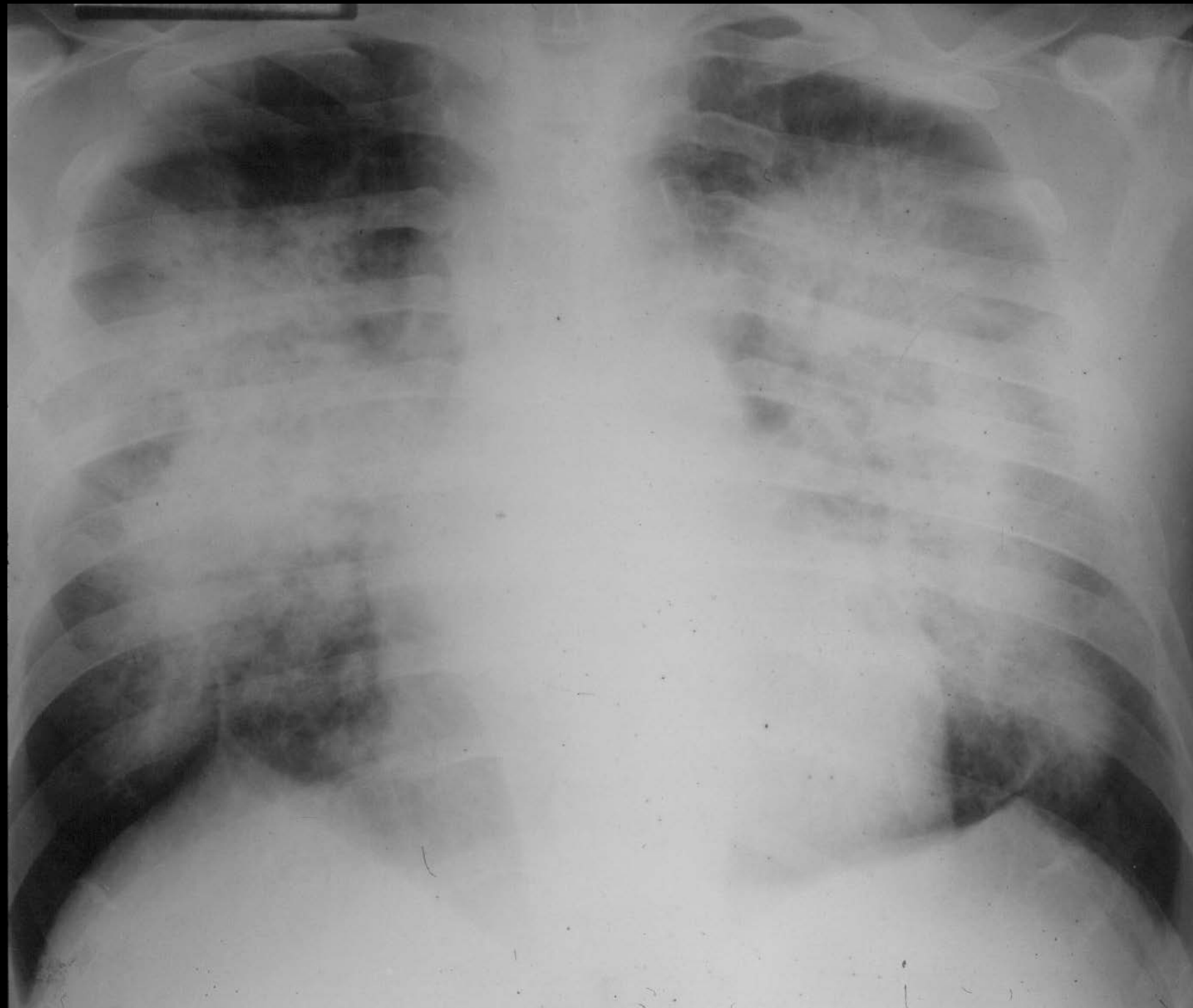
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Pulmonary Edema

Pathway of normal pulmonary fluid resorption







BPCO

Maladies des petites voies aériennes

Asthme

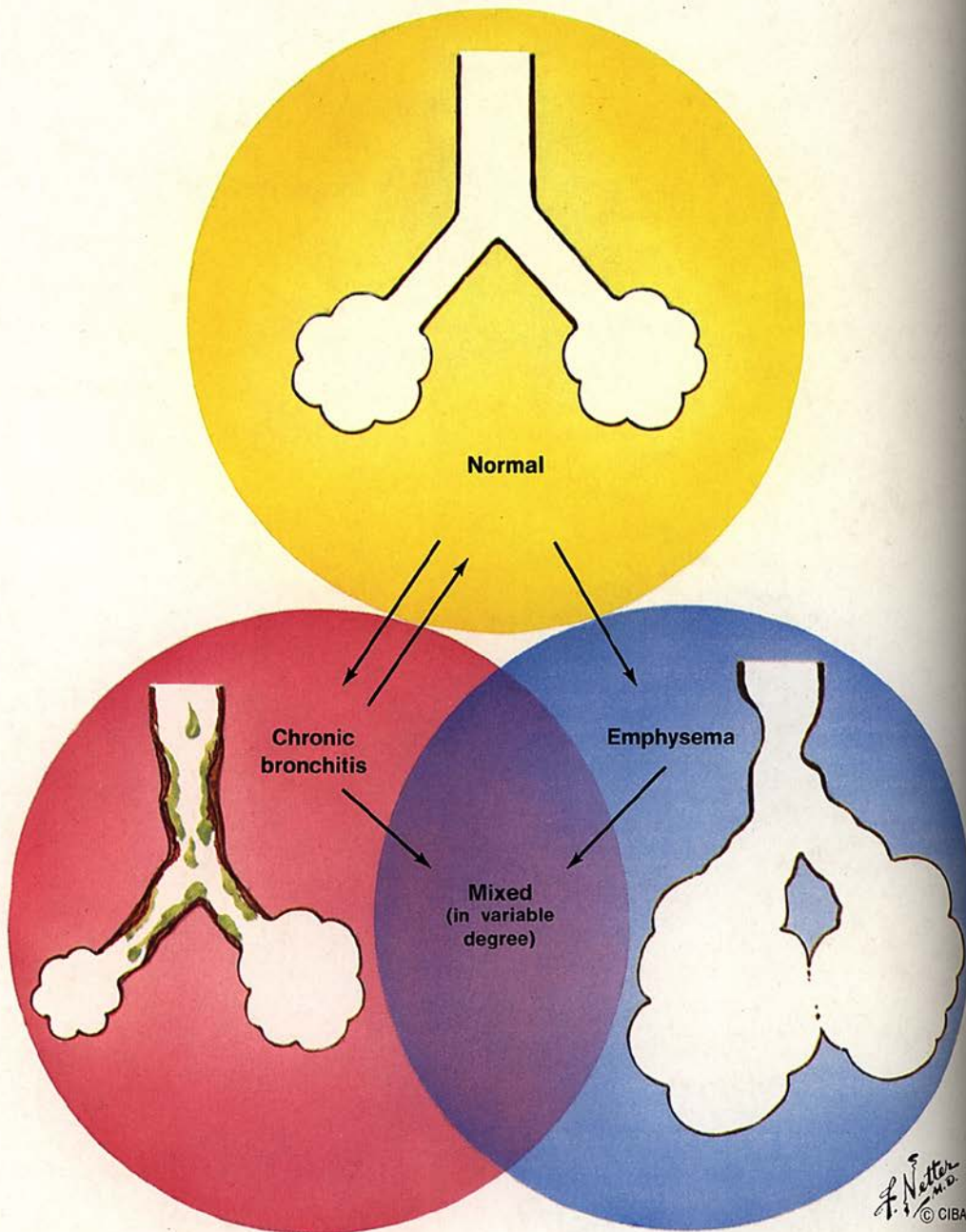
Emphysème

Bronchiectasies

Bronchiolite oblitérante

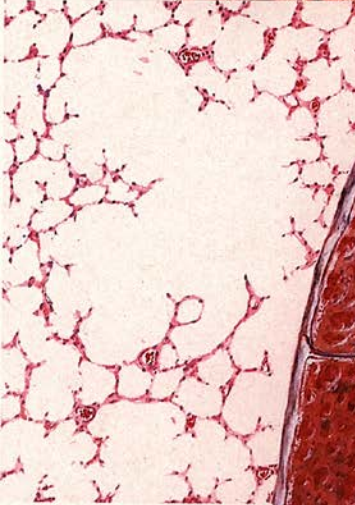
Chronic Obstructive Pulmonary Disease
Interrelationship of chronic bronchitis and emphysema

Chronic Obstructive Pulmonary Disease

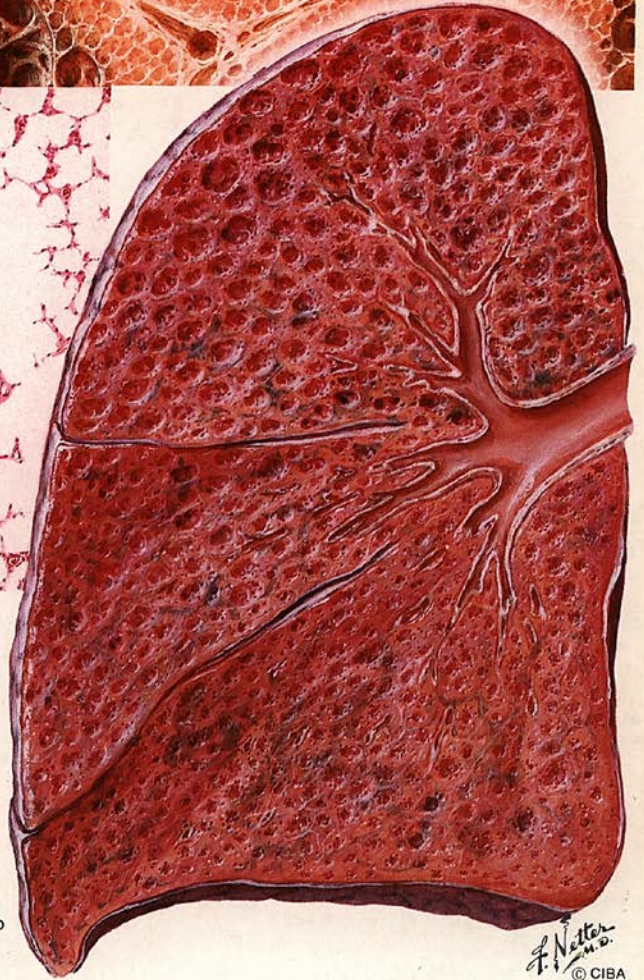


**Centriacinar
(Centrilobular)
Emphysema**

Magnified section.
Distended, inter-
communicating,
saclike spaces
in central area
of acini



Microscopic section.
Distention of airspaces
with rupture of
alveolar walls



Gross specimen.
Involvement tends to
be most marked in
upper part of lung

Définition:

Augmentation anormale des espaces aériens distaux en aval des bronchioles terminales

Causes:

cigarettes, déficit enzymatiques.....

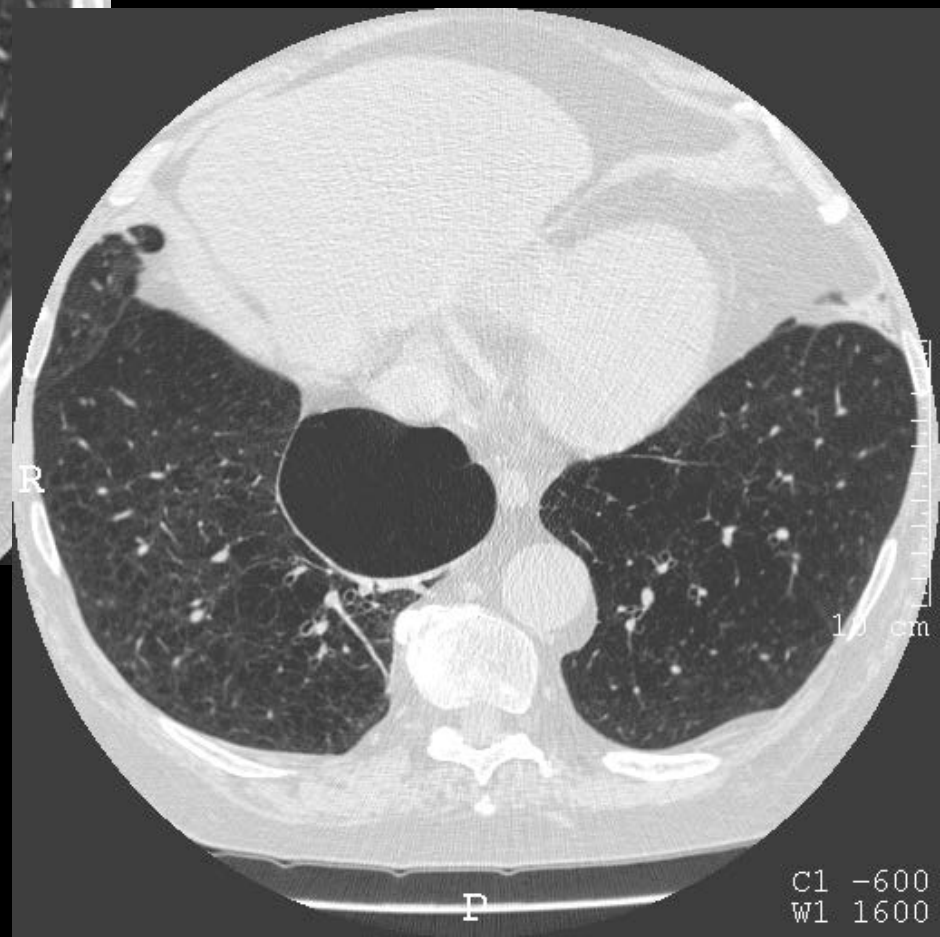
Rx:

- Hypertransparence des poumons
- Applatissage des coupoles
- Bulles
- Hypovascularisation, HTAP

CT:

Bulles, effilement vasculaire...

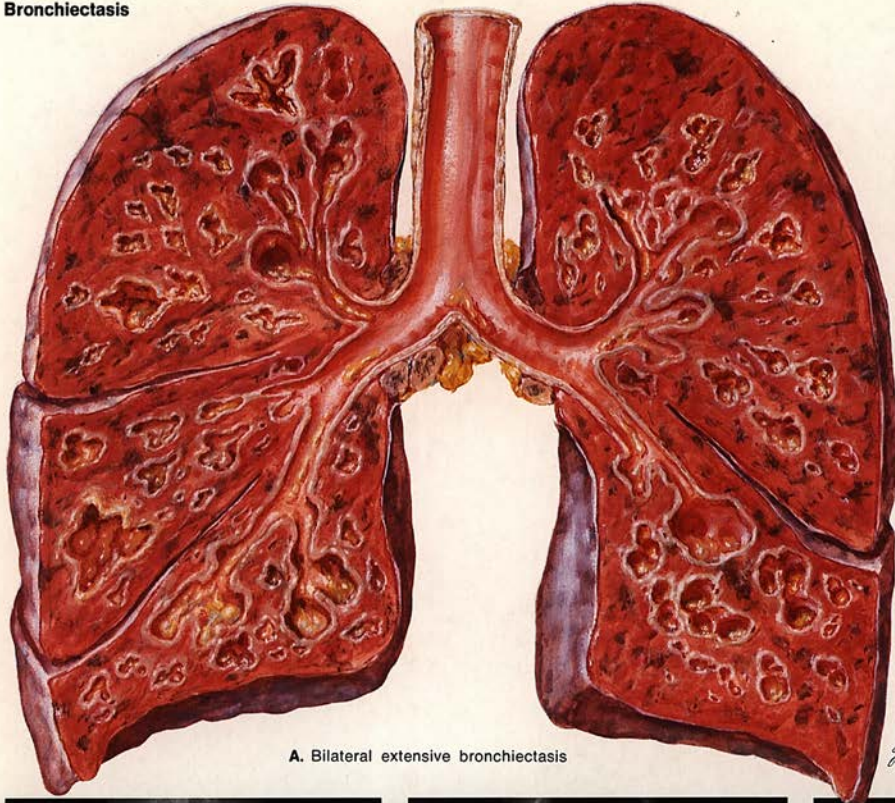








Bronchiectasis

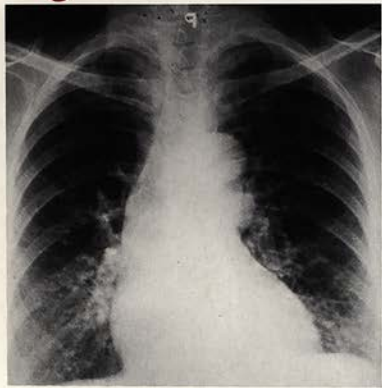


A. Bilateral extensive bronchiectasis



B. Profuse mucopurulent sputum, foul-smelling, settling into layers characteristic of severe bronchiectasis

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C. PA x-ray film. Peribronchial fibrosis in both lung bases



D. Same case as "C": left bronchogram reveals cystic bronchial dilatation



E. Another patient: bronchogram showing less marked bronchial dilatation, mostly in right lung

Définition:

Dilatation irréversible des bronches

Causes:

déficits congénitaux, mucoviscidose, tbc....

Rx:

Images en rail

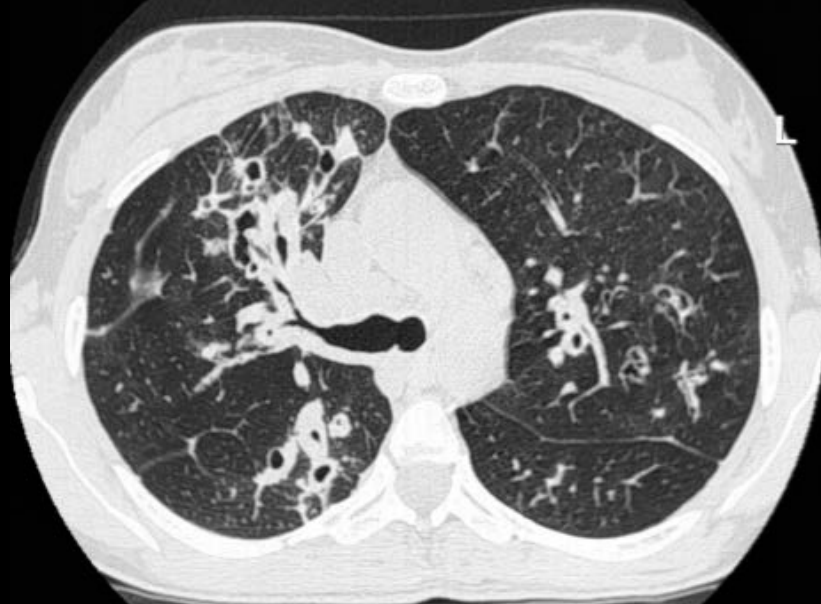
Impactions mucoïdes

CT:

Devient la méthode de référence



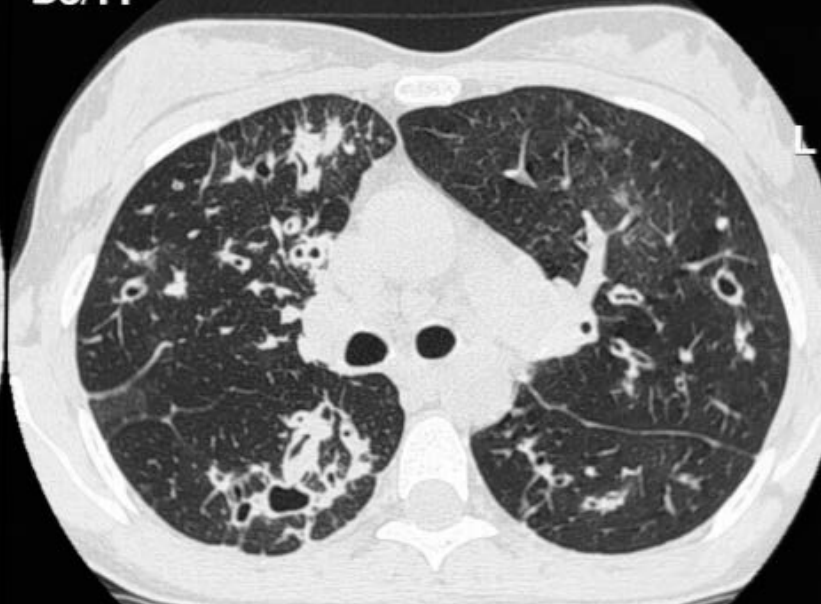
D3/10



Pos -80.0

1600 / -600

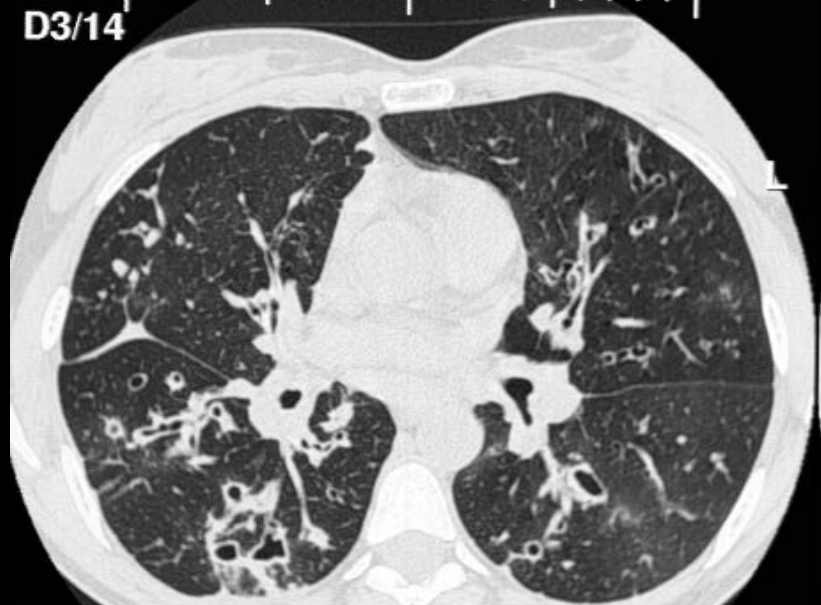
D3/11



Pos -90.0

1600 / -600

D3/14



Pos -120.0

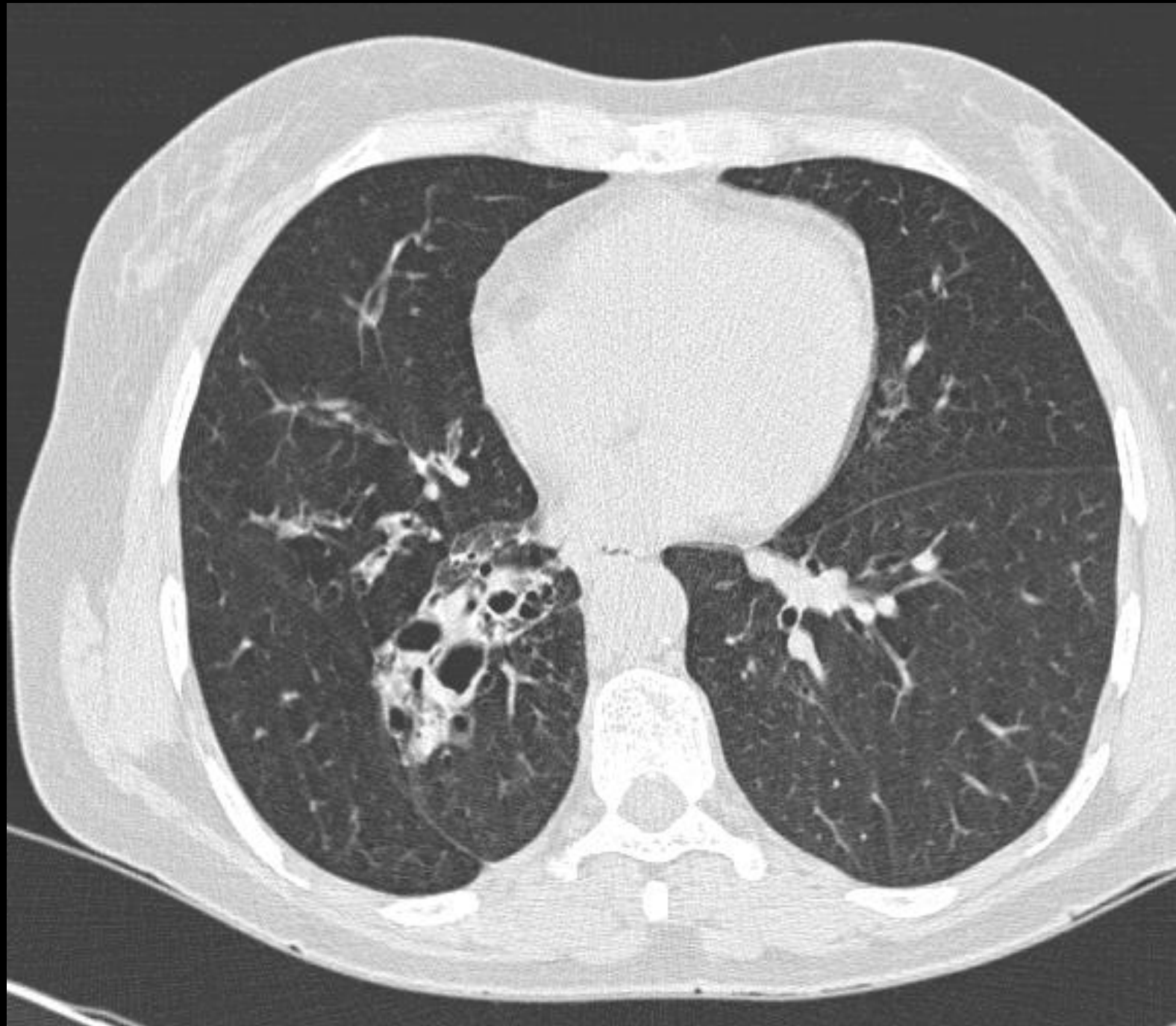
1600 / -600

D3/15



Pos -130.0

1600 / -600

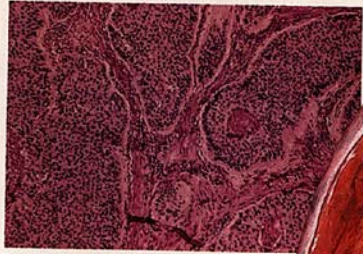


Cancer bronchique

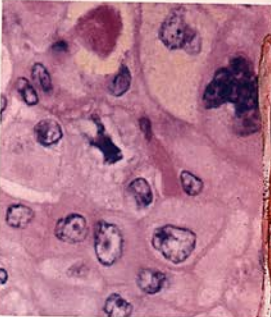
Qqs chiffres pour la Belgique:

- Cancer le plus fréquent chez l'homme (24%)
- Incidence brute : 89/100 000 habitants
- Pic d'incidence: 70-80 ans
- 6708 décès en 1995

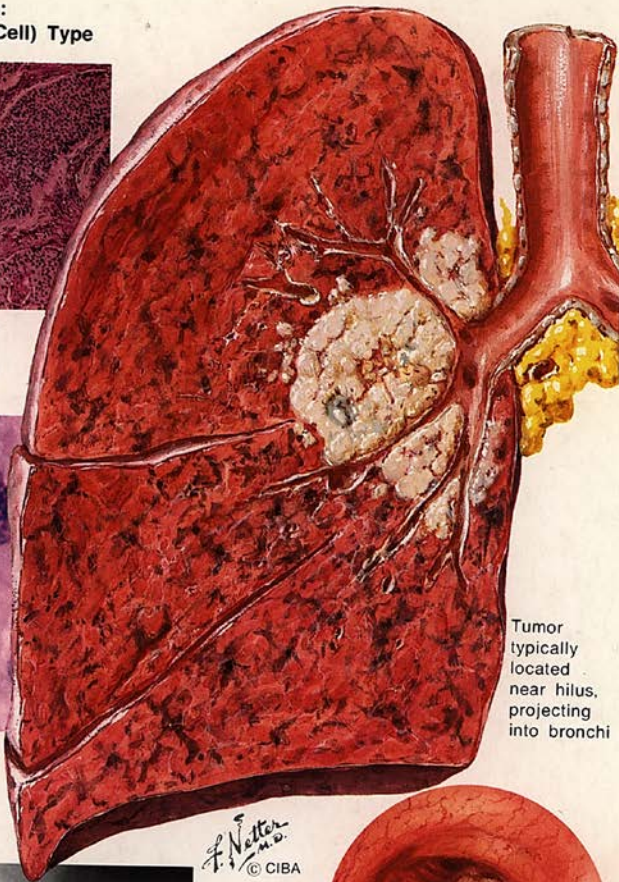
**Bronchogenic Carcinoma:
Epidermoid (Squamous Cell) Type**



Low power (H and E): nests of tumor cells separated by fibrous bands. Keratin (horn) pearls present

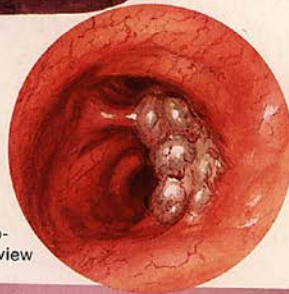


High power; nuclear pleomorphism and individual cell keratinization (pink)

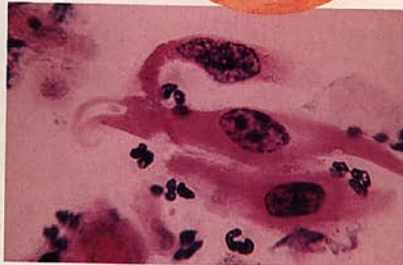


Tumor typically located near hilus, projecting into bronchi

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Bronchoscopic view



Cytologic smear from sputum or bronchoscopic scraping. Cells with dark nuclei and cytoplasm strongly pink because of keratin

Définition:

Prolifération anarchique des cellules du parenchyme pulmonaire

Causes:

cigarettes, toxiques

Rx:

Masse

Adénopathies

Epanchement pleural

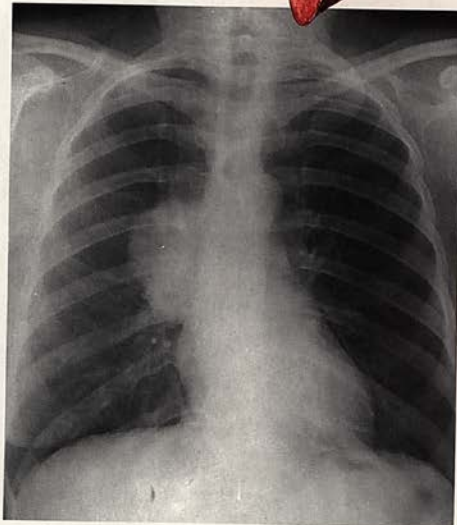
Lyse costale.....

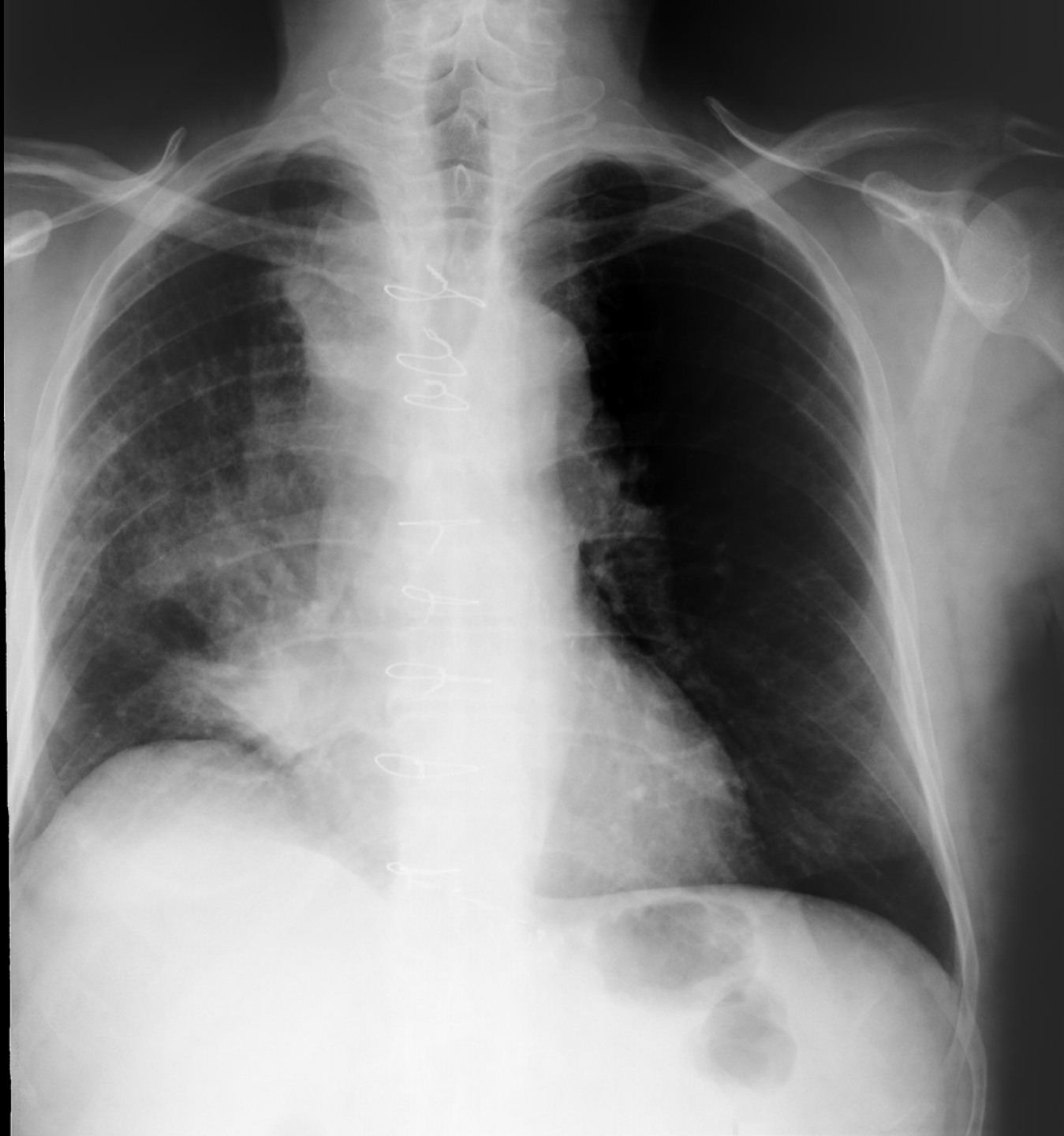
CT:

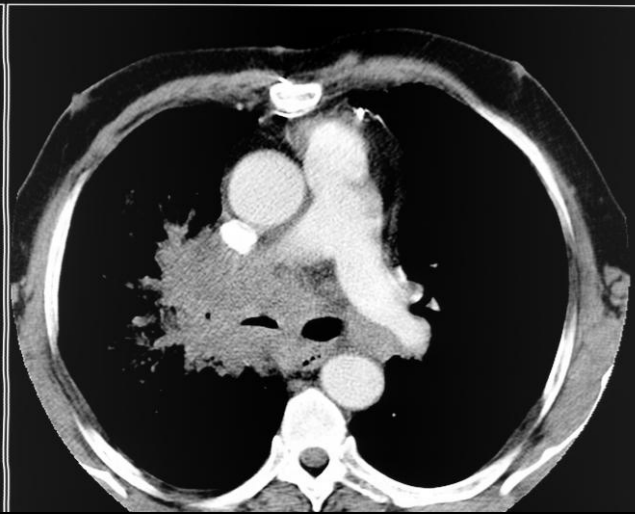
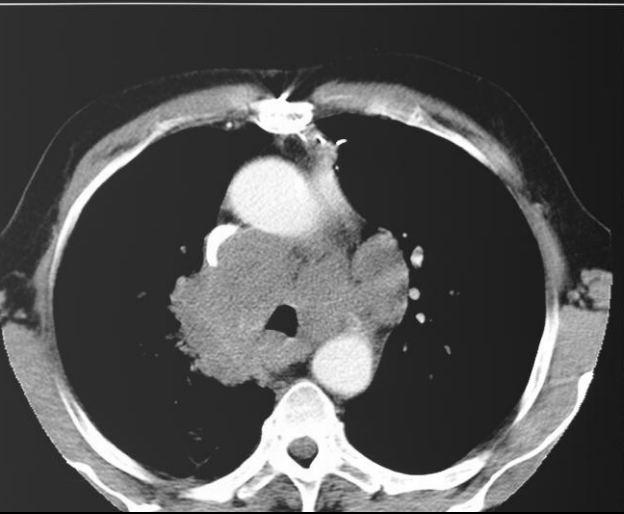
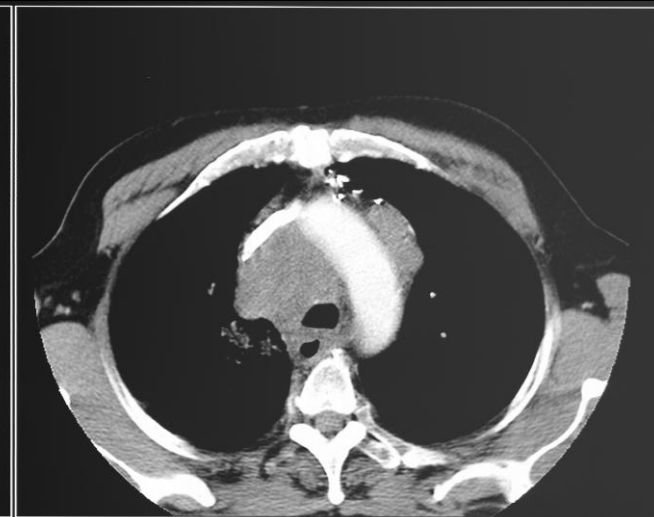
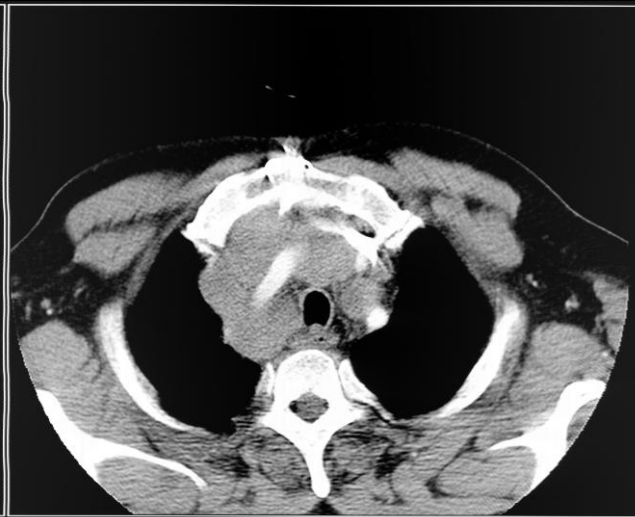
Précise le bilan d'extension

PTT

Apport récent du PET scan

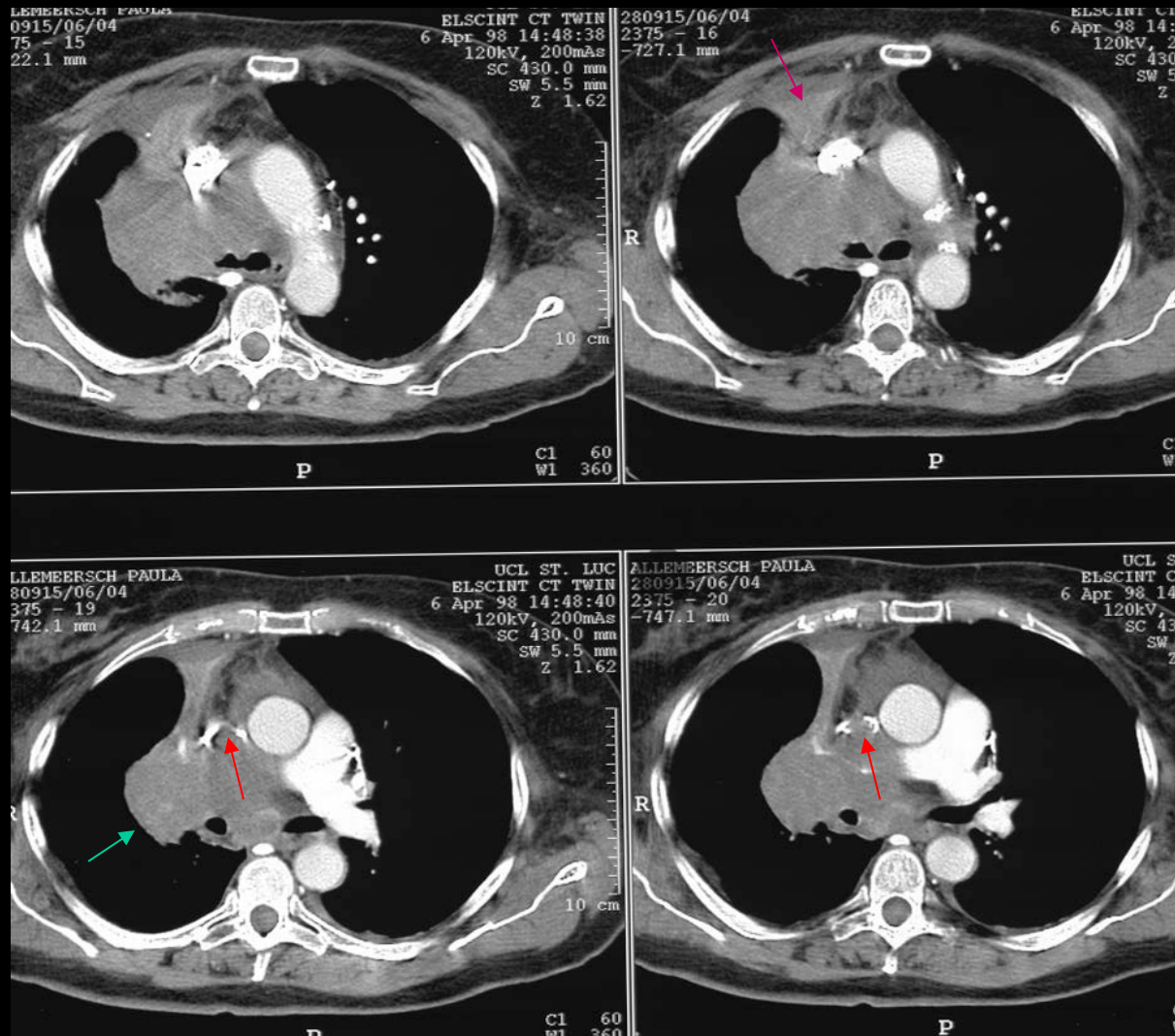






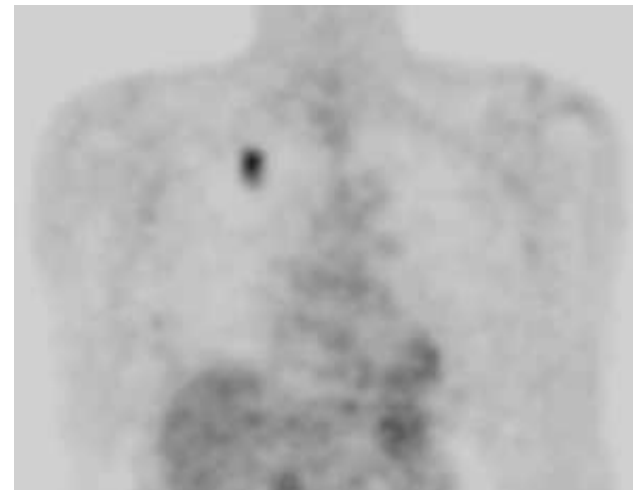
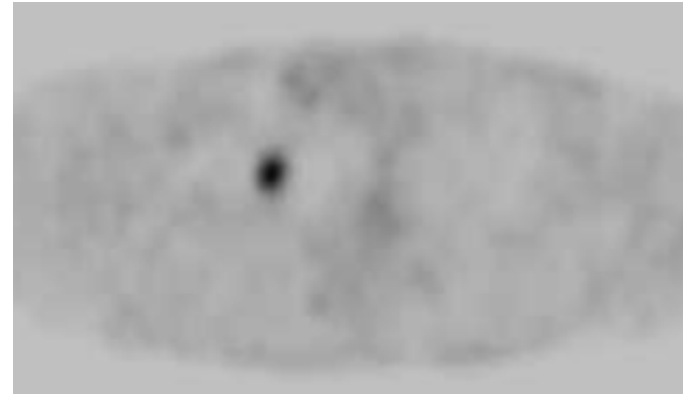
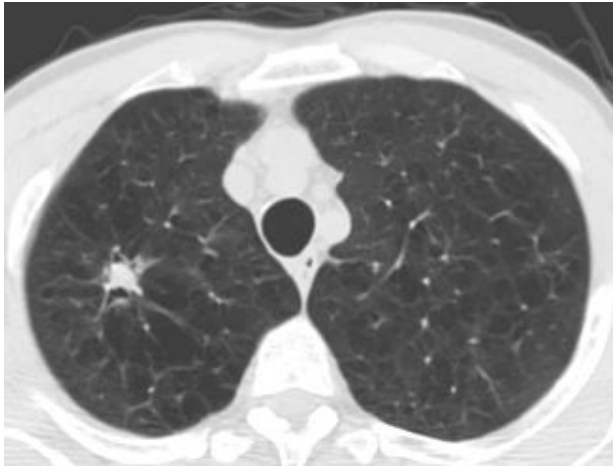


Femme de 70 ans admise pour syndrome veine cave supérieure. La radiographie thoracique montre une densification systématisée du lobe supérieur droit sans bronchogramme aérique (↓) compatible avec une atélectasie complète du lobe supérieur . Notez la présence d'une voussure en regard de la partie inférieure de l'atélectasie à mettre en rapport avec la présence d'une masse (↓) (signe de Golden). Masse supraaortique gauche ne silhouettant pas le bouton aortique (↓)

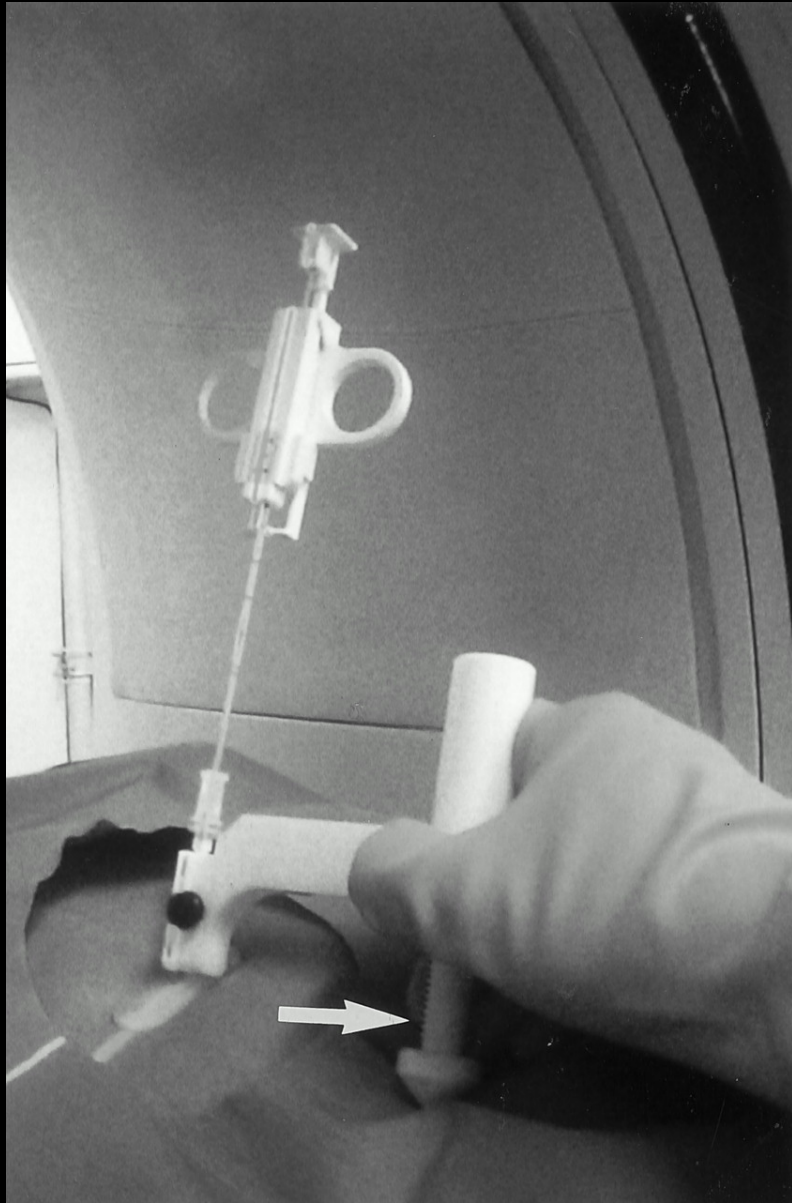


Le CT scanner effectué avec injection intraveineuse de produit de contraste montre une atélectasie complète du lobe supérieur droit (↘) associée à une masse hilare homolatérale (↙). Il existe un amas ganglionnaire médiastinal comprimant la veine cave supérieure (↘)

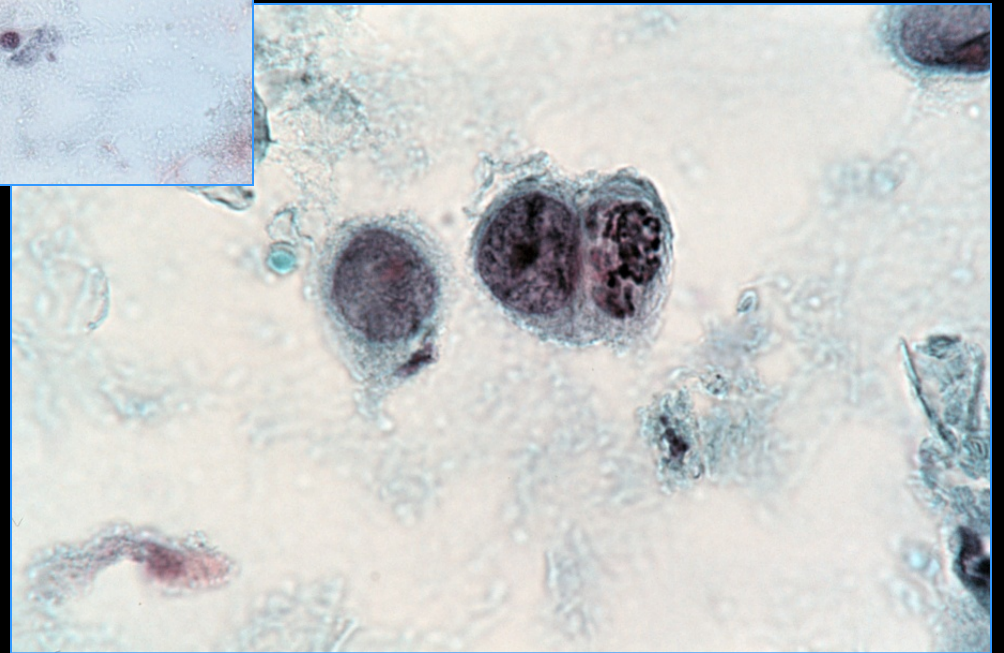
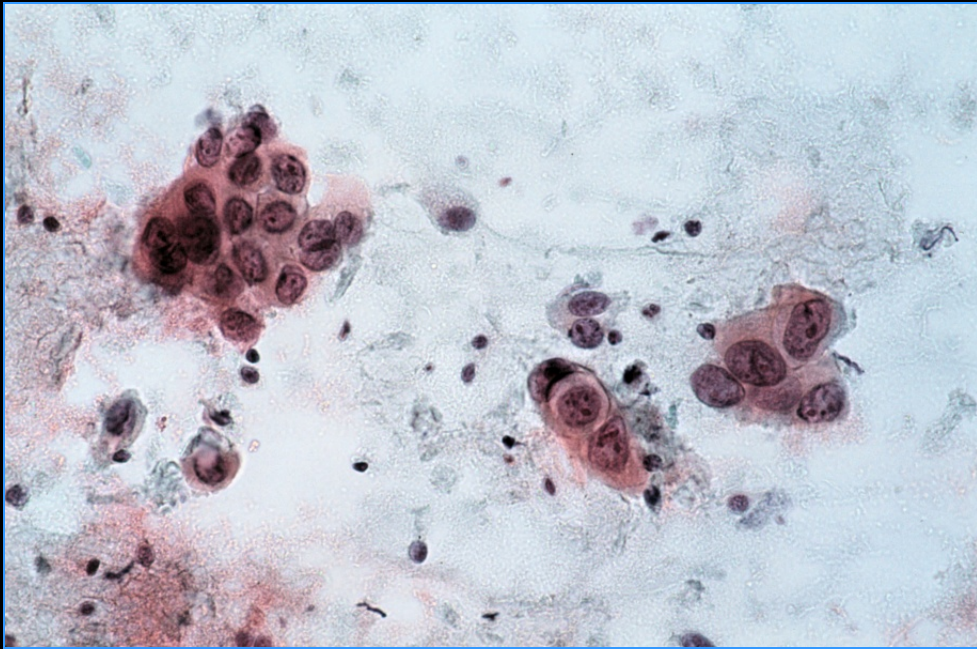
Etude fonctionnelle du nodule au PET scan
avec co-registation (médecine nucléaire)



Sensibilité: 95% spécificité: 81 %



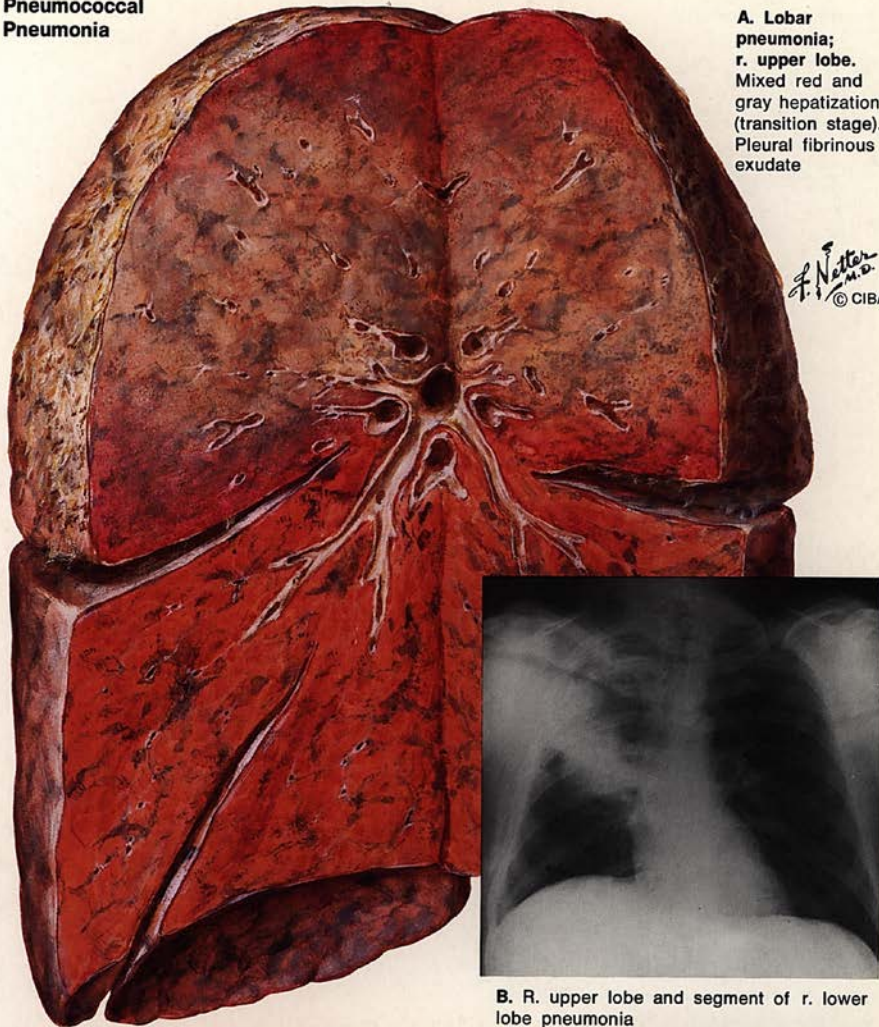
Analyse cytologique (Anatomo-pathologie)



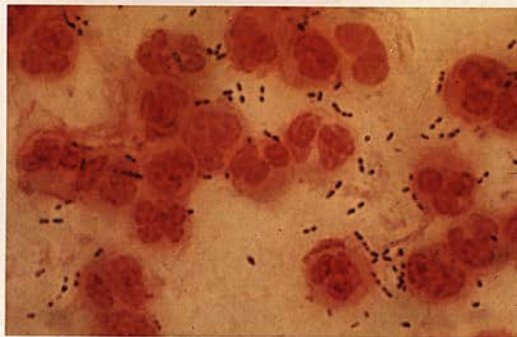
**Pneumococcal
Pneumonia**

**A. Lobar
pneumonia;
r. upper lobe.**
Mixed red and
gray hepatization
(transition stage).
Pleural fibrinous
exudate

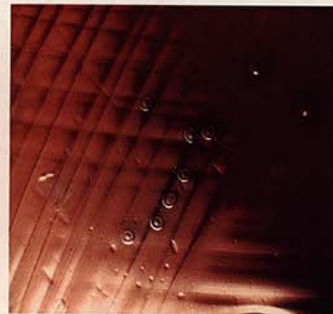
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B. R. upper lobe and segment of r. lower lobe pneumonia



C. Purulent sputum with pneumococci (Gram's stain)



D. Colonies of pneumococci growing on agar plate

Définition:

Infection du parenchyme pulmonaire

Causes:

bactérie, virus, germes opportunistes

Rx:

Syndrome alvéolaire

Densification parenchymateuse

Bronchogramme aérique

Epanchement pleural

CT:

Pas d'indication sauf pour détecter complications ou cause sous-jacente



Sc2/9a
St.w. 00:43



Position -70.0

8

400 / 35

Sc2/10a
St.w. 00:44



Position -80.0

9

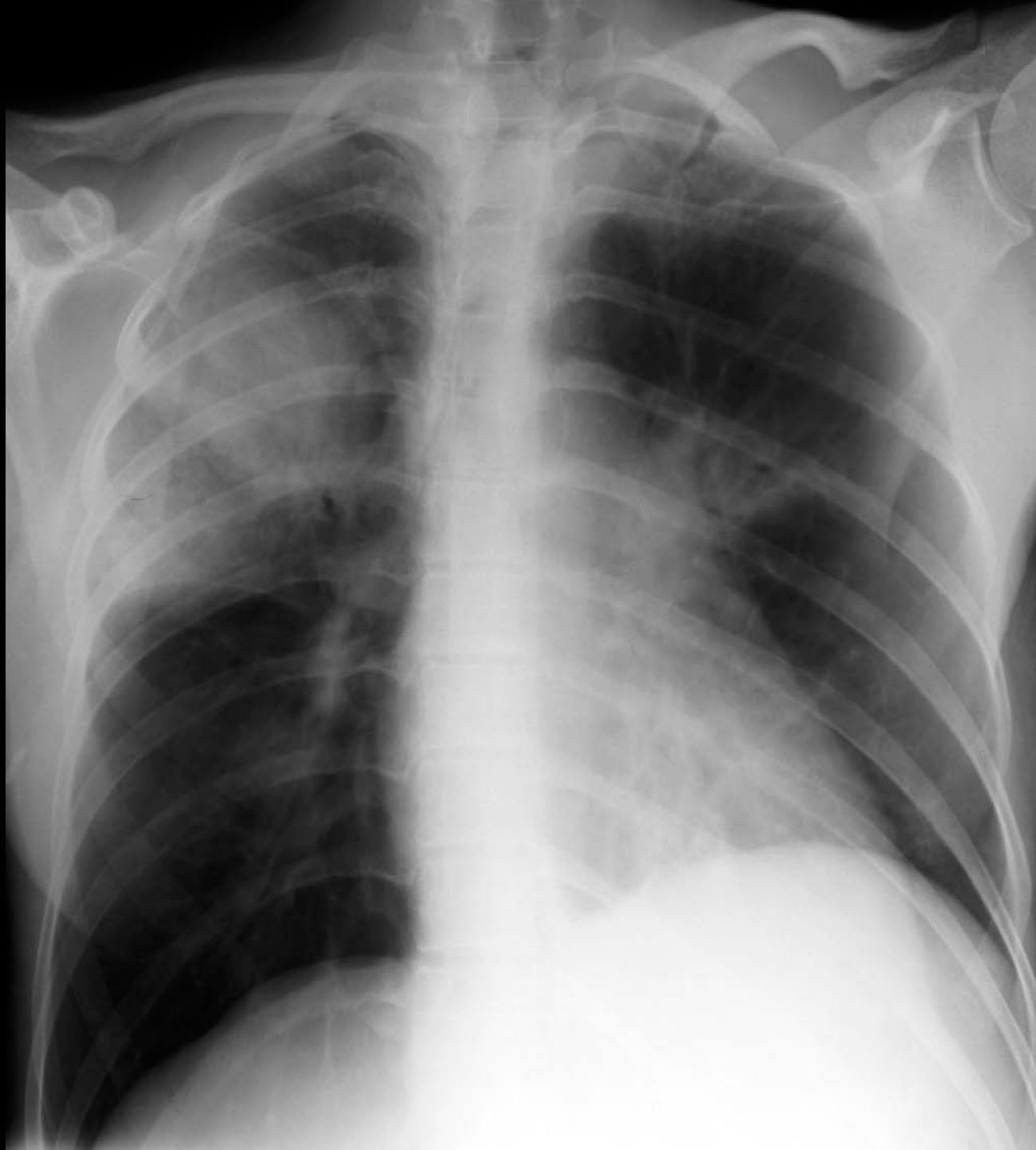
400 / 35

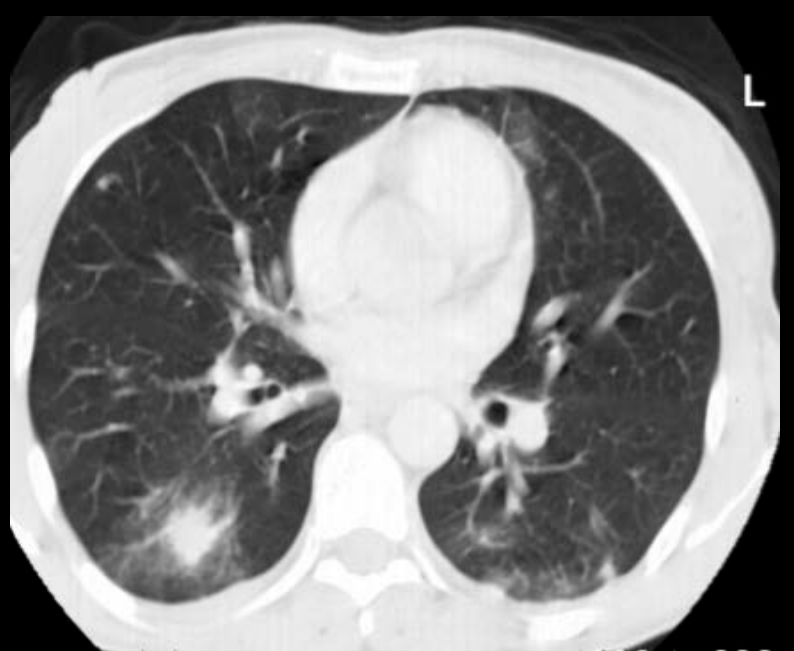
Sc2/13a
St.w. 00:47



Sc2/14a
St.w. 00:48

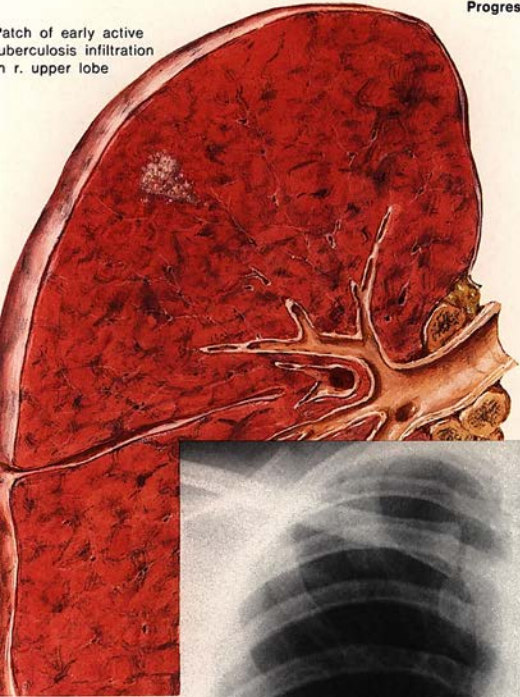




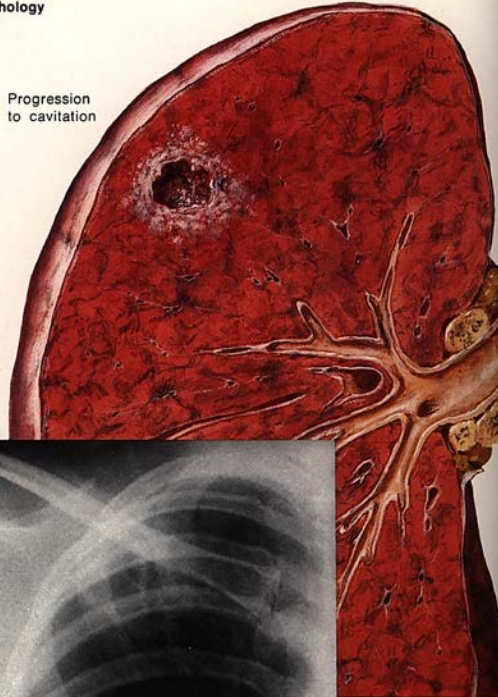


Pulmonary Tuberculosis
Progressive pathology

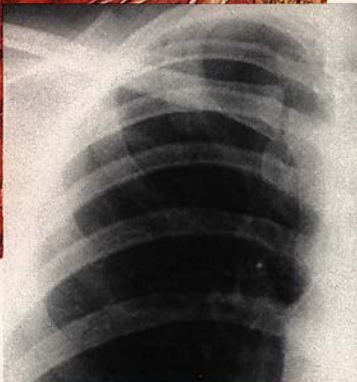
Patch of early active tuberculosis infiltration in r. upper lobe



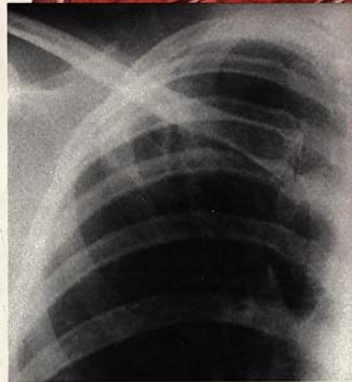
Progression to cavitation



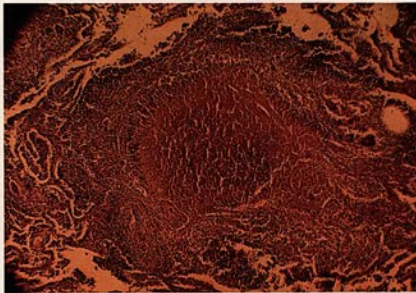
X-ray film showing early small lesion in lateral portion of 3rd posterior (1st anterior) inter-space; easily missed



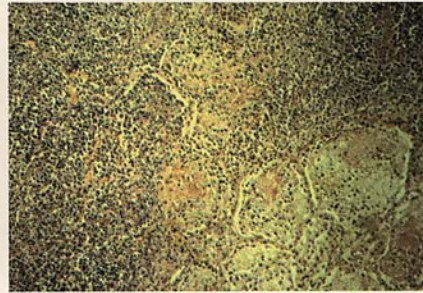
Same patient, 4 months later; progression of lesion with cavitation



Histologic section of tubercle beginning to caseate



Caseous pneumonia which may closely simulate any other bacterial pneumonia



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Définition:

Infection pulmonaire par le bacille de Koch

Causes:

contamination aérienne, immunodépression

Rx:

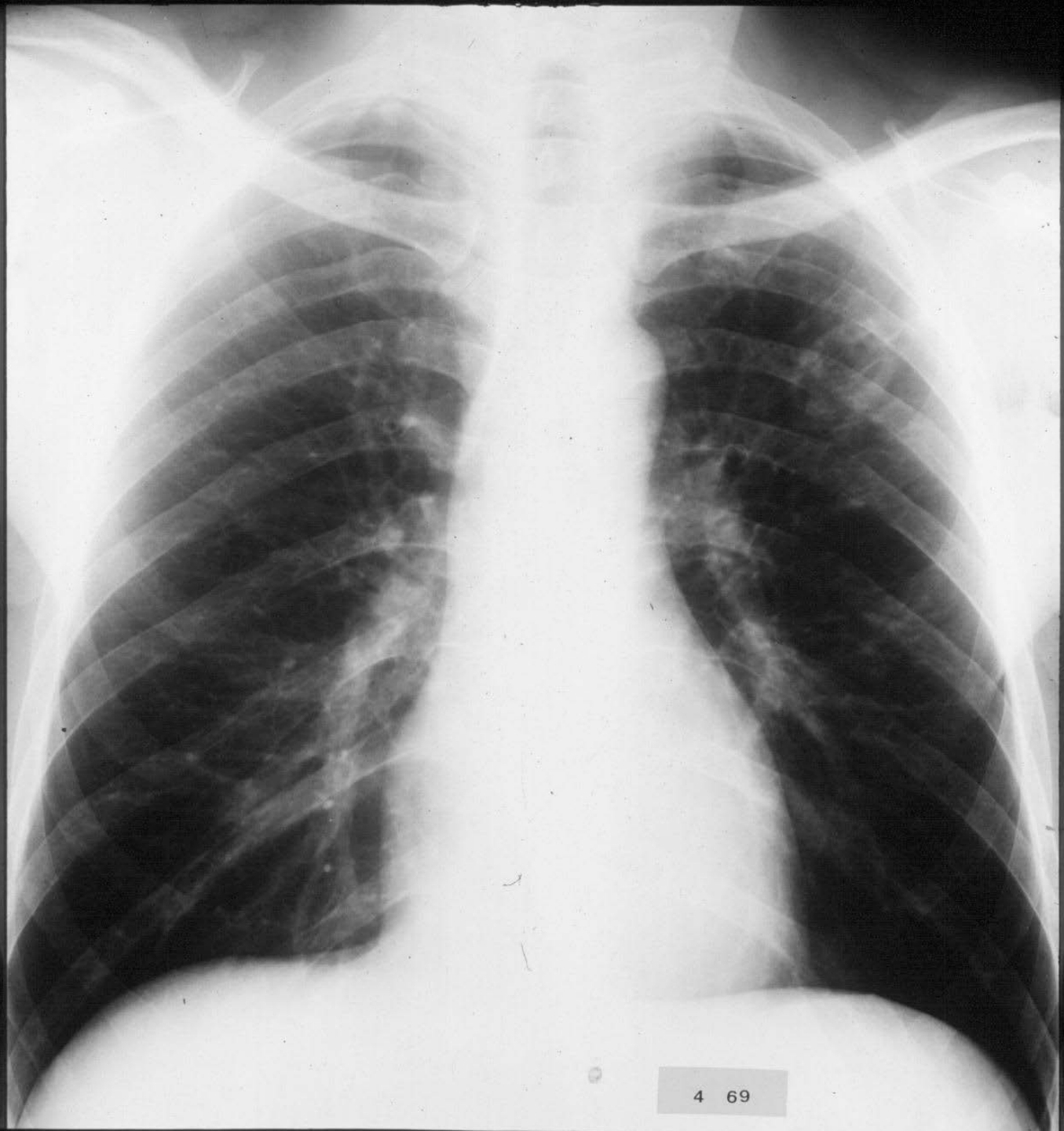
Aspect polymorphe
Nodules, fibrose; calcifications, caverne

CT:

Caverne

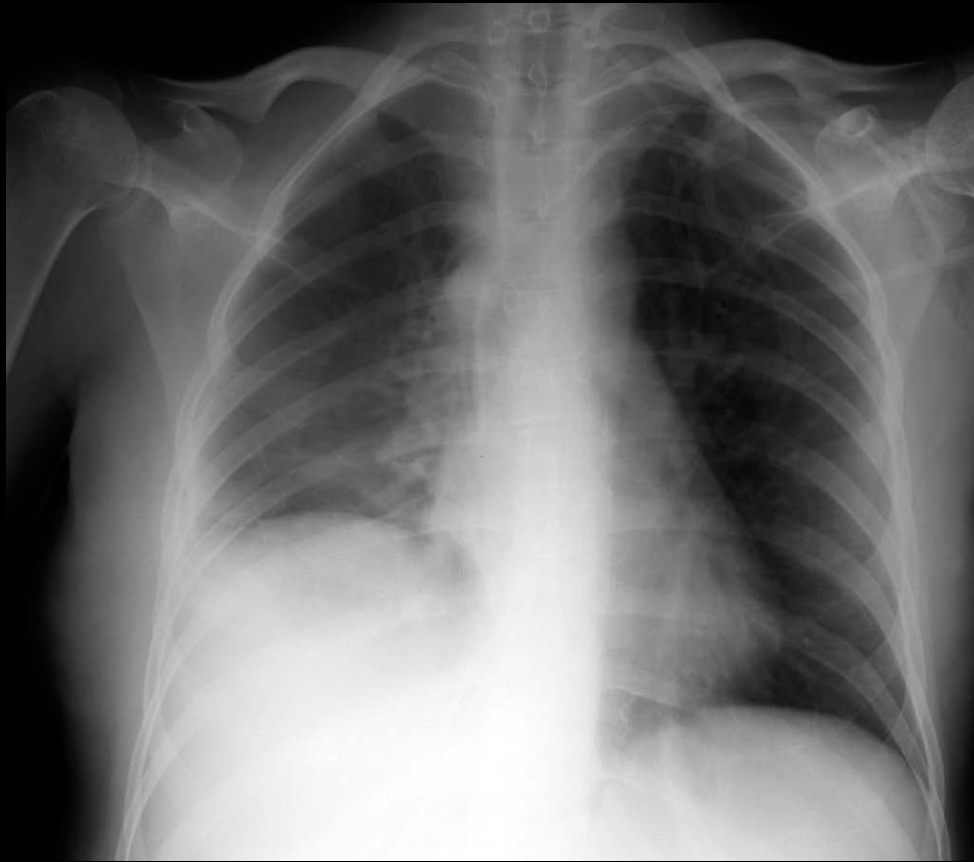
Images de dissémination aérienne (tree in bud)

Adénopathies



4 69





Dame de 28 ans ayant une maladie de Crohn, se présentant pour température. La radiographie thoracique de face montre une surélévation de la coupole diaphragmatique droite et une augmentation de densité de la base thoracique droite.

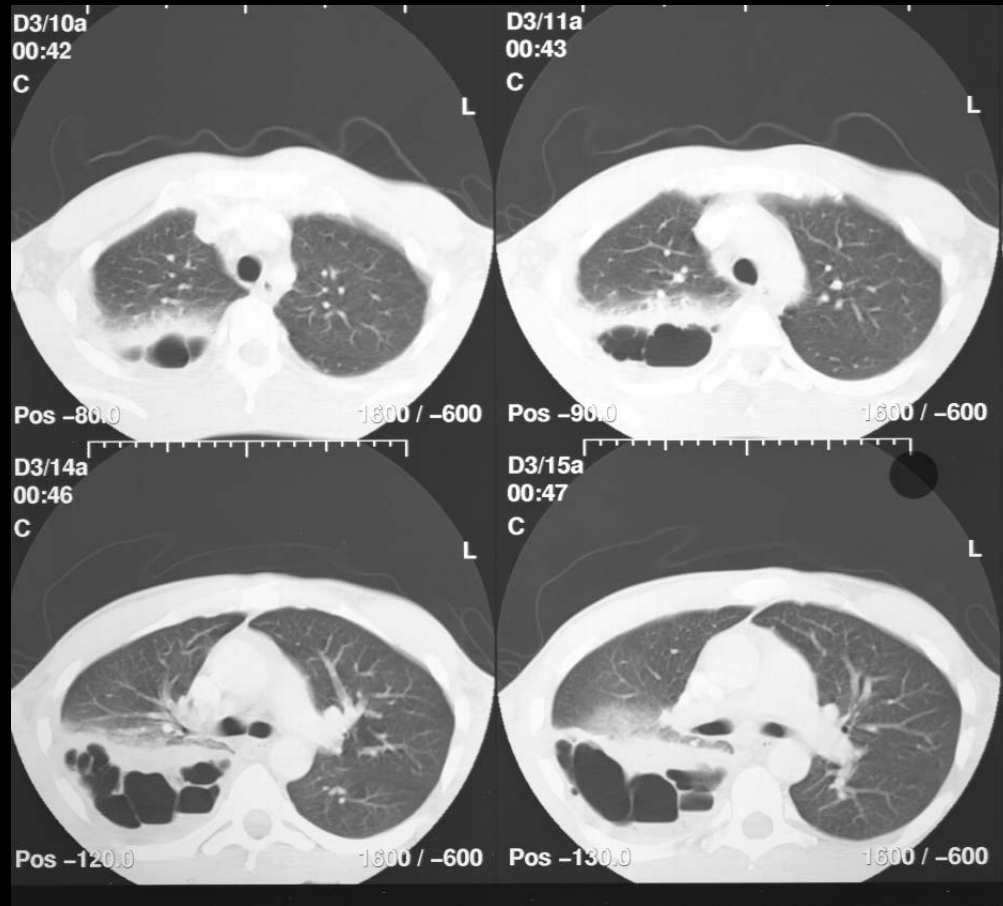


Le CT scanner effectuée en acquisition spiralee avec injection intraveineuse de produit de contraste montre un épanchement pleural enkysté (↓). On visualise également une hypertrophie de la graisse extrapleurale (↓) ainsi qu'un rehaussement intense de la plèvre. Ces signe sont observé notamment en cas d'empyème (diagnostic confirmé chez cette patiente par drainage chirurgical).



Homme de 34 ans admis pour température.

La radiographie du thorax montre une augmentation de densité du poumon droit associé à de multiples niveaux hydro-aériques compatible avec un hydropneumothorax



Le CT scanner effectué selon le mode spiralé confirme la nature pleurale de l'anomalie. De multiples logettes sont individualisées au sein de la cavité pleurale. Aucune fistule broncho-pleurale n'a pu être mise en évidence. Le diagnostic retenu est celui d'un pyopneumothorax



INS

This is a black and white chest X-ray showing the thoracic cavity. The lungs are well-expanded, and the diaphragm is at a normal level. The rib cage and spine are visible. A small white circle is present in the lower-left area of the image.



EXP

This is a black and white chest X-ray showing the thoracic cavity. The lungs are contracted, and the diaphragm is elevated compared to the inspiratory view. The rib cage and spine are visible. A small white circle is present in the lower-left area of the image.

INSP

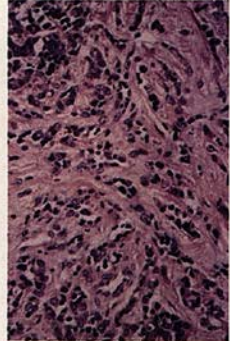
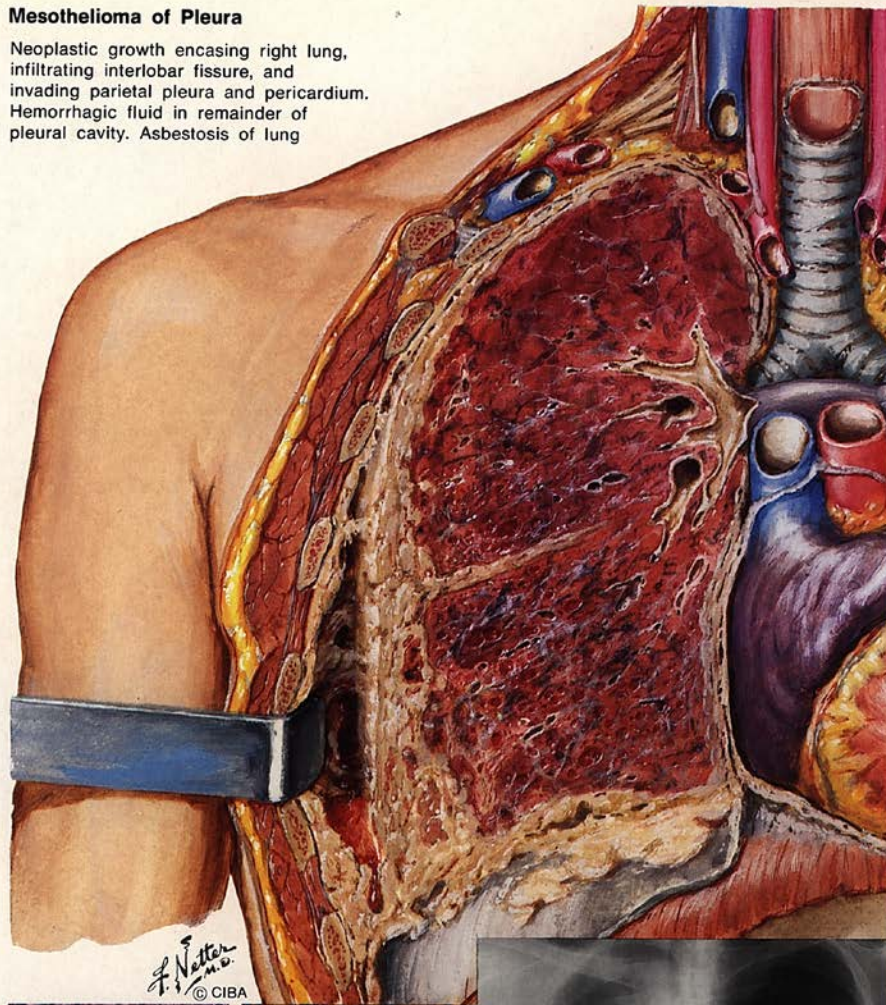
12 78

EXP

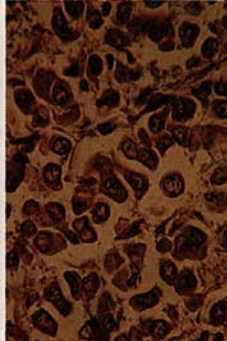
12 78

Mesothelioma of Pleura

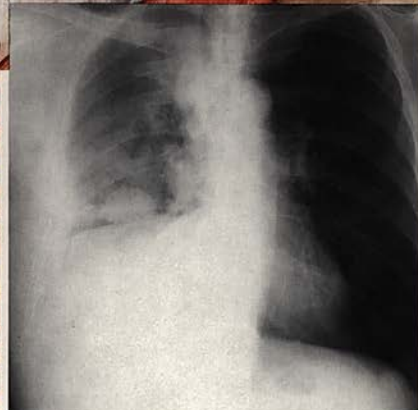
Neoplastic growth encasing right lung, infiltrating interlobar fissure, and invading parietal pleura and pericardium. Hemorrhagic fluid in remainder of pleural cavity. Asbestosis of lung



Fibrosarcomatous type of tumor



Epithelial cell type of tumor



Mottled shadow over r. lung area with effusion. In advanced cases, lung may be totally obscured

Définition:

Tumeur primitive de la plèvre

Causes:

exposition à l'asbeste, idiopathique

Rx:

Epanchement pleural

Rétraction de l'hémithorax

CT:

Epaississement circonférentiel de la plèvre

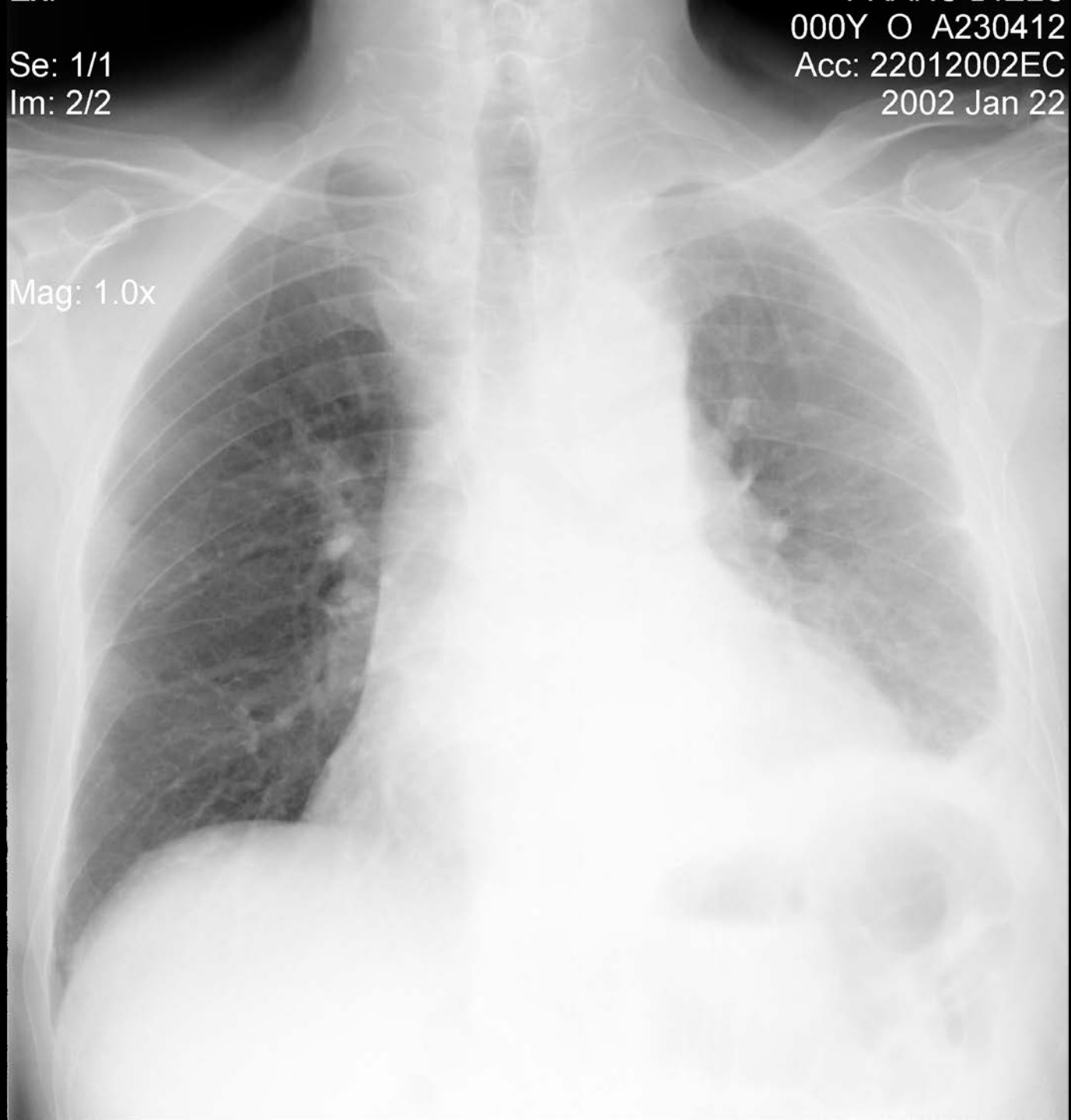
Masses pleurales

Effectue le bilan d'extension

Se: 1/1
Im: 2/2

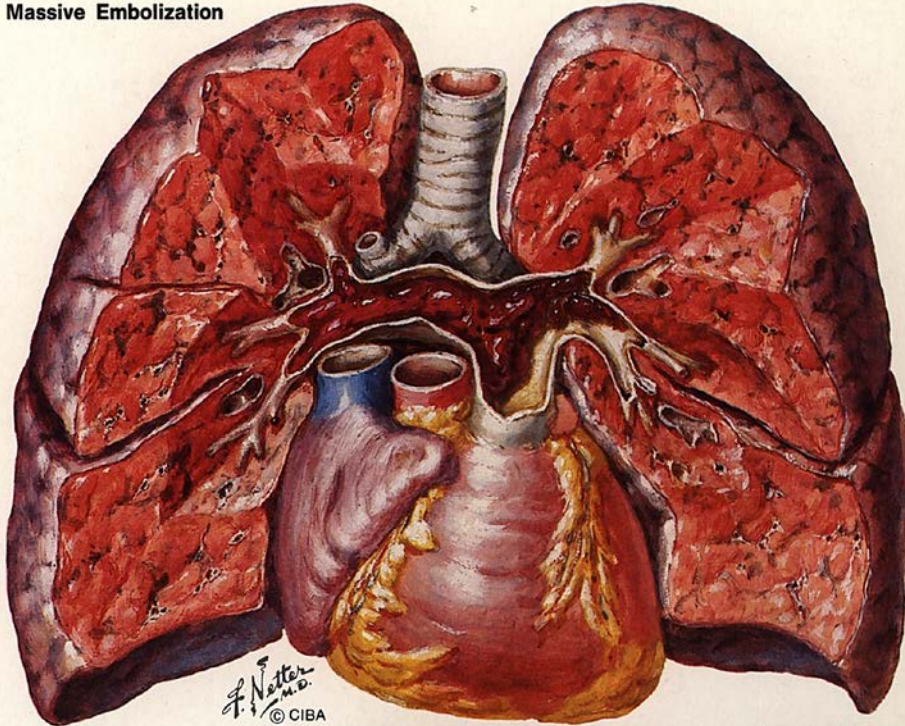
000Y O A230412
Acc: 22012002EC
2002 Jan 22

Mag: 1.0x





Massive Embolization



Définition:

Migration d'un caillot dans la circulation artérielle pulmonaire

Causes:

Thrombose veineuse (phlébite)

Rx:

Peu discriminante

Infarctus pulmonaire, élargissement artériel, épanchement pleural

CT:

Devient la méthode de référence

Visualisation directe du caillot

