ABCESUL PULMONAR

Dr C Baicus

www.baicus.ro

De retinut

- Infectii respiratorii + risc inalt de aspiratie; debut insidios
- Dg: Rx, CT.
- Ampicilina sulbactam, clindamicina iv; +vancomicina sau linezolid in caz de stafilocooc Meti-rezistent.
- Nosocomial: + antipseudomonas
- Cel putin 3 saptamani sau pana la rezolutia completa
- Nonresponderi, cancer, hemoragie: chirurgie
- Mortalitate=10%, > la imunocompromisi

definitie

- Infectie pulmonara cu necroza de parenchim
  $\Rightarrow$ puroi

  – pneumonie necrotizanta
  – gangrena pulmonara

clasificare

- acut/cronic - 1 luna

- primar/secundar - conditii asociate
  - aspiratie, pacienti anterior sanatosi
  - neoplasm, imunodepresie

etiologie

- Infectii necrotizante
  - bacterii piogene (staph aur, klebsiella, anaerobi, nocardia)
  - mycobacterii
  - fungi (coccidioides, histoplasma)
  - paraziti (entamoeba hystolitica)

etiologie

- Infarct cavitar
  - tromboembolie
  - embolie septica (staph aur, candida)
  - vasculita (Wegener)
- Neo cavitar
  - carcinom bronhogenic
  - limfom, metastaze
- Altele
  - chist infectat

fiziopatologie

I. Sepsis periodontal (gingivita)

II. Predispozitie la aspiratie - constienta compromisa:

- alcoolism
- medicamente (somnifere, anestezie generala)
- disfagie (b. neurologice - reflex glotic alterat/ b. esofagiene)

III. Pneumonie de aspiratie -anaerobi prezenti in crevasele gingivale

fiziopatologie

- crevasa gingivala → inoculare → cai aeriene inf.
- clinostatism
- pneumonie de aspiratie
  - (segmente superioare lobi inferiori
  - segmente posterioare lobi superiori)
- 7-14 zile: necroza tisulara - nivel hidroaeric

Necroza → abces pulmonar

→ empiem

fistula bronhopleurala

extensie directa a infectiei

Sdr. Lemiérre

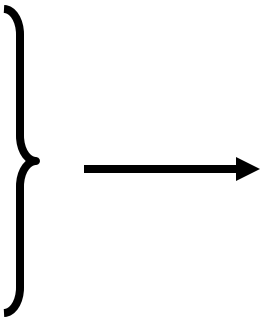
Faringe (abces amigdalian/periamigdalian - *Fusobacterium necrophorum*) →

fuzare gat anterior → teaca carotidiana →

tromboflebita jugulara interna →

emboli septici pulmonari

- Utilizatori droguri i.v.
- Catetere infectate
- Tromboflebite septice



→ endocardita tricuspidiana (*Staph. Aur.*) →

→ emboli septici pulmonari bilateral

Bacteriology of Lung Abscess†

Organisms	Number of cases (percent)
Total cases	
Aerobic bacteria only	10 (11)
Anaerobes only	43 (46)
Mixed aerobes and anaerobes	40 (43)
Predominant isolates	
Aerobes	
Staphylococcus aureus	13 (4)*
Escherichia coli	9 (0)
Klebsiella pneumoniae	7 (3)
Pseudomonas aeruginosa	7 (1)
Streptococcus pneumoniae	6 (1)
Anaerobes	
Peptostreptococcus	40 (12)
Fusobacterium nucleatum	34 (5)
Prevotella (black-pigmented)	32 (1)

† Adapted from Bartlett, JG. Chest 1987; 91:901.

Manifestari clinice

- Infectie anaeroba : debut insidios
  - astenie
  - febra (fara frisoane)
  - tuse, expectoratie (putrida, gust acru)
  - semne generale: scadere ponderala + anemie
  - istoric: constienta abolita sau alti factori de risc aspiratie + gingivita
  - pleurezie (25%)
  - infiltrat + nivel hidroaeric

Manifestari clinice

- Alte bacterii: manifestari zgomotoase
  - pneumonia ii aduce la medic
  - abcesul apare in evolutie
  - excp. fungi, *Nocardia*, micobacterii

Dg ≠

Differential Diagnosis of Radiographic Cavitary Lung Lesions

Necrotizing infections

- Anaerobic bacteria
- Other bacteria
  - Staphylococcus aureus, Enterobacteriaceae, Pseudomonas aeruginosa, Legionella, Haemophilus influenzae type B, Nocardia, Actinomyces
- Mycobacteria
  - M. tuberculosis, M. avium, M. kansasii
- Fungi
  - Aspergillus, Coccioides, Histoplasma, Blastomyces, Cryptococcus, Mucor, Pneumocystis carinii

Non-infectious diseases

- Bland embolism with infarction
- Vasculitis
- Neoplasm
- Pulmonary sequestration
- Bullae or cysts with air fluid level
- Bronchiectasis
- Empyema with air fluid level

dg

- Prezentare tipica (simpt. insidioasa - febra, tuse, transpiratii nocturne>2 sapt.)
- Context sugestiv pt. aspiratie
- Rx, CT: cavitate intr-un segment decliv

  $\rightarrow$ anaerobi

- sputa putrida
- empiem

Figure 4-7 Aspiration, right and left lower lobes. An area of opacification in the right lower lobe is fluffy and confluent with indistinct margins characteristic of airspace disease (closed black arrow). To a much lesser extent, there is a similar density in the left lower lobe (closed white arrow). The bibasilar distribution of this disease should raise the suspicion of aspiration as an etiologic factor. This patient had a recent stroke and aspiration was demonstrated on a video swallowing study.

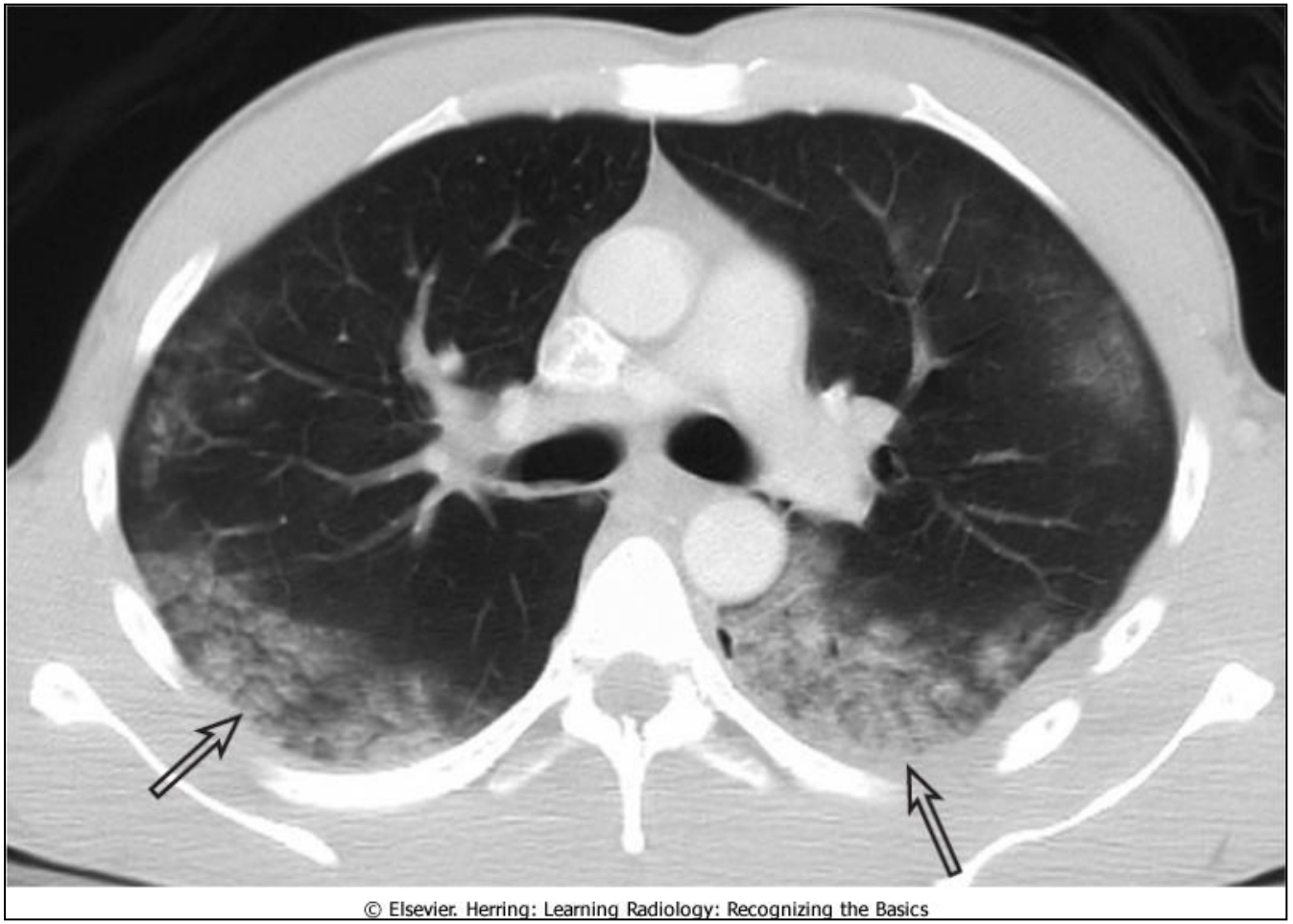
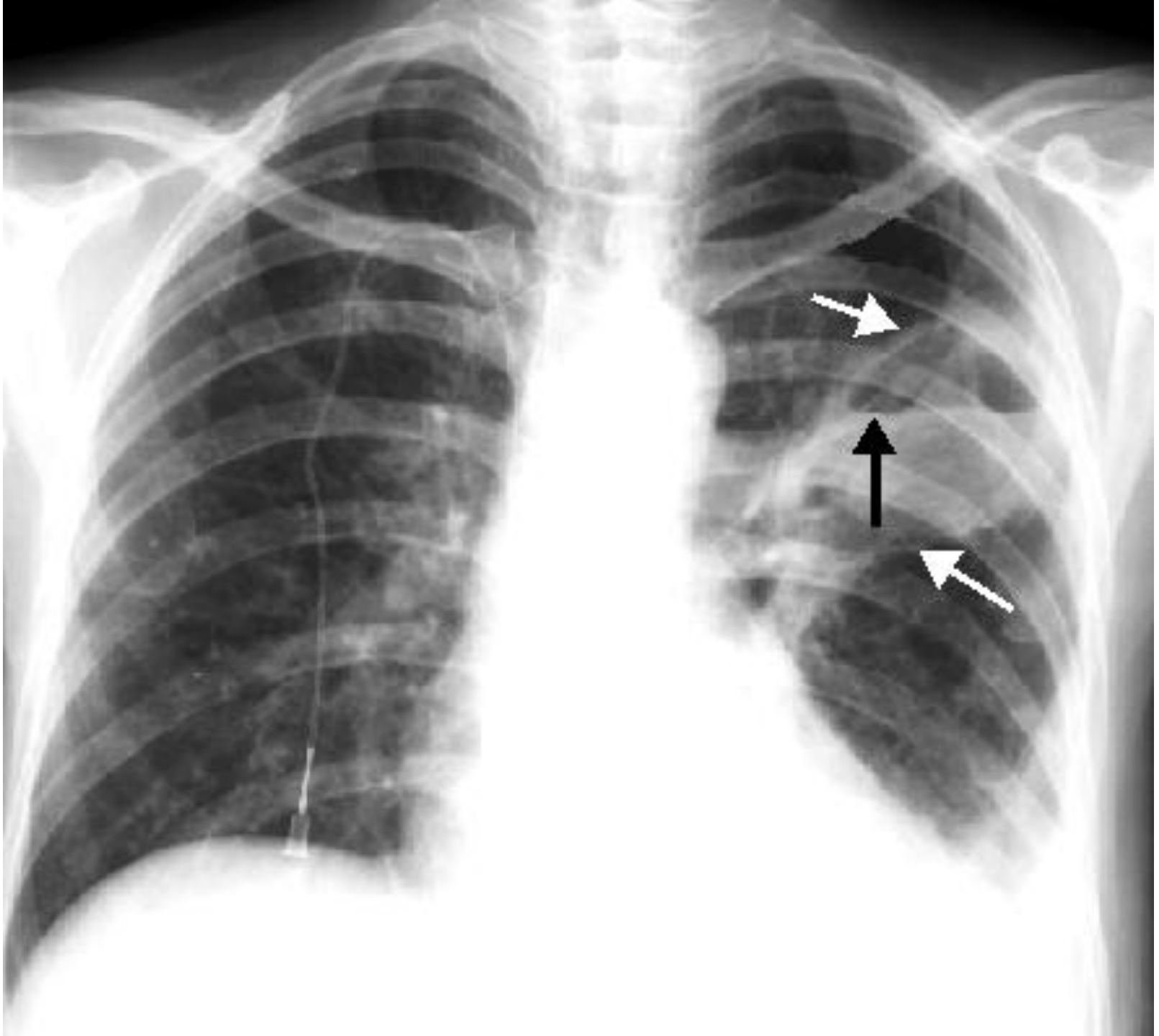
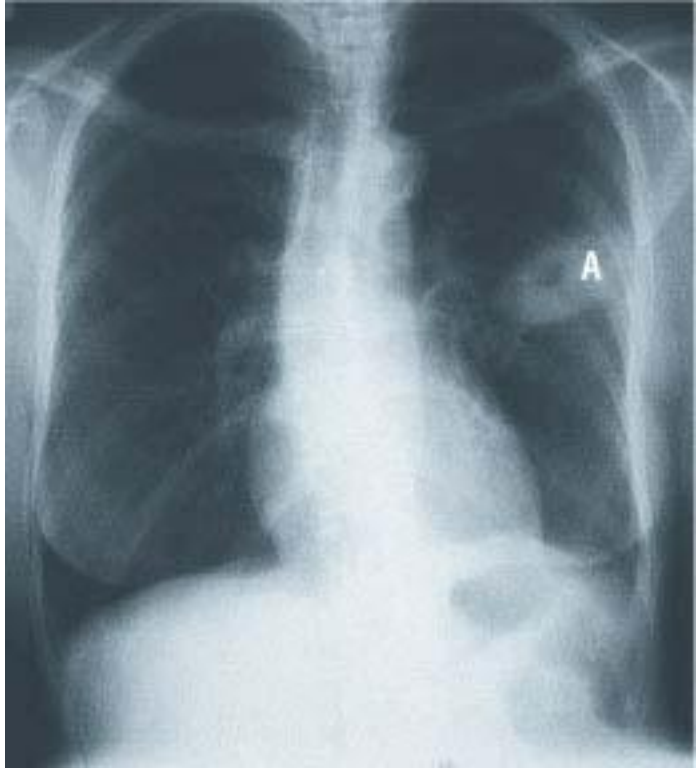


Figure 8-10 Aspiration, both lower lobes. Single, axial CT image of the chest demonstrates bilateral lower lobe airspace disease in a patient who had aspirated (open black arrows). Aspiration usually affects the most dependent portions of the lung. In the upright position, the lower lobes are affected; in the recumbent position, aspiration affects the superior segments of the lower lobes and the posterior portions of the upper lobes. Aspiration of water or neutralized gastric acid will usually clear in 24 to 48 hours, depending on the volume aspirated.

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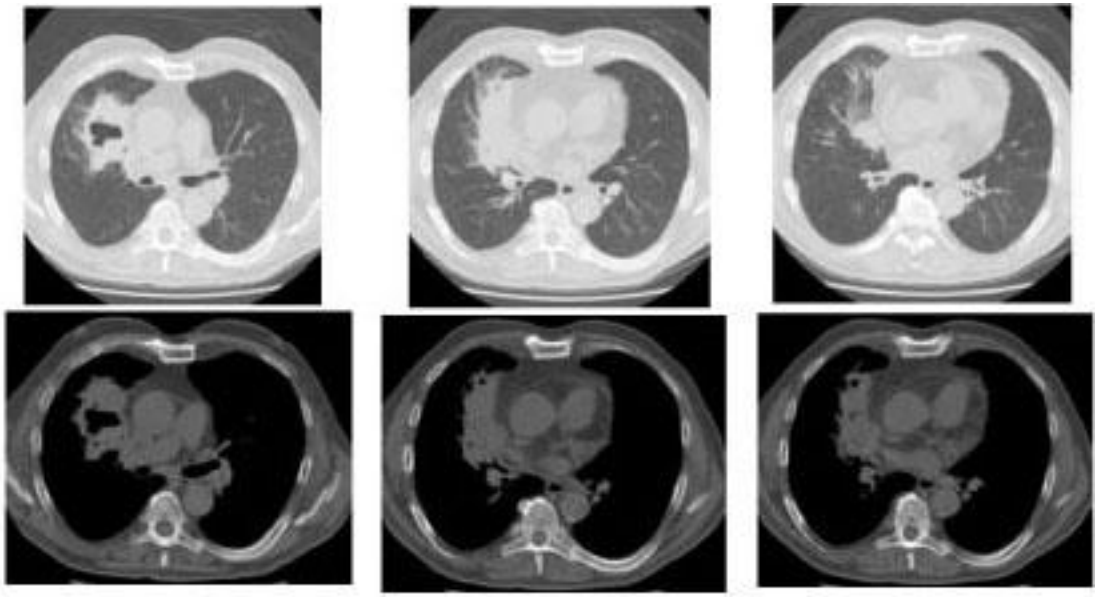

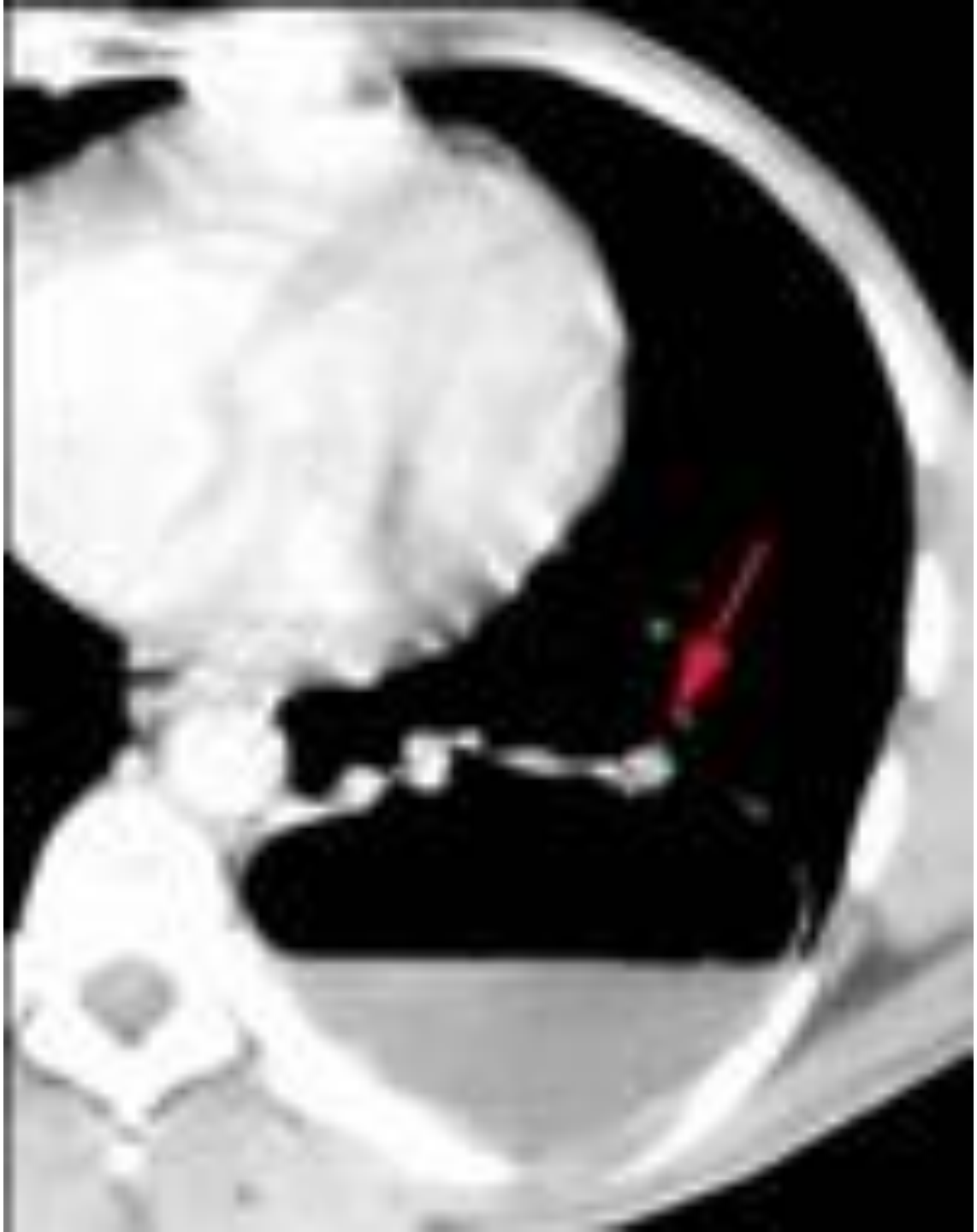

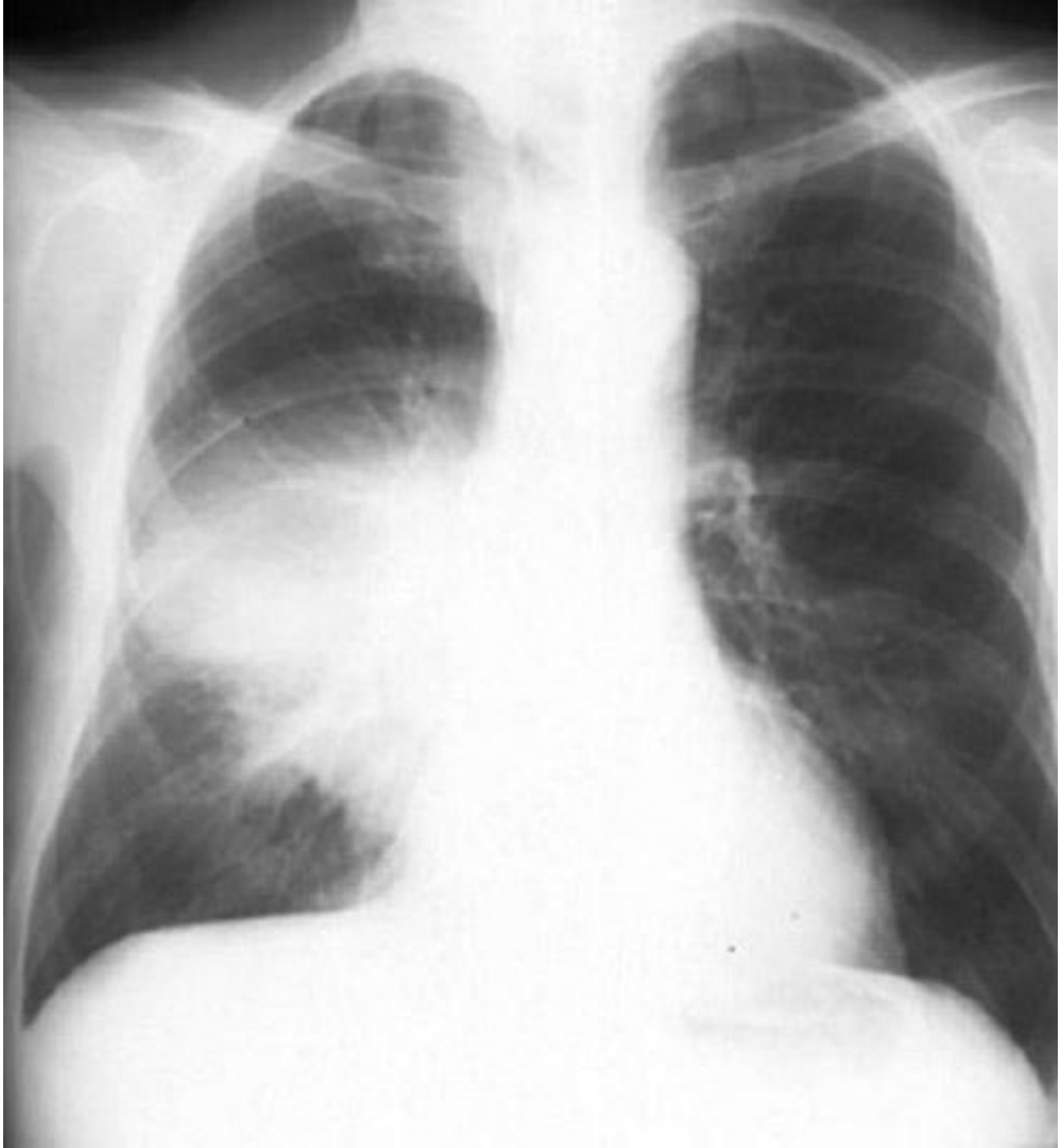

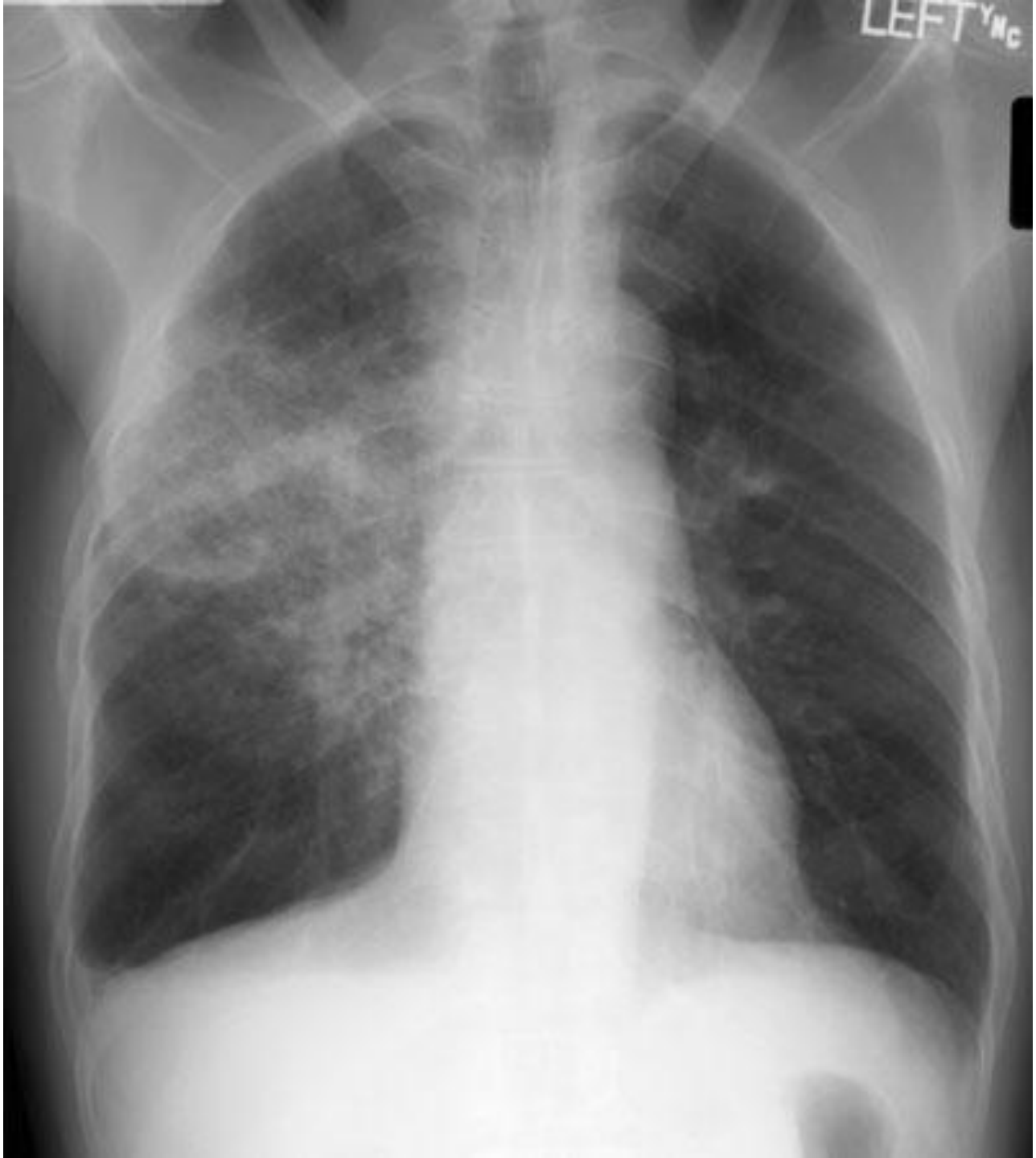
LEFT

- Izolarea bacteriilor anaerobe: dificila
  - specimenele din tractul respirator superior sunt contaminate de flora oro-faringiana
    - » sputa, aspirate bronhoscopie
  - aspirate transtraheale
  - aspirate transtoracice
  - lichid pleural
  - hemoculturi (rar + anaerobi)
  - (aspirat bronhoscopic (perie)
  - lavaj bronhoalveolar)

dg

- Prezentare mai putin clasica
  - excludere TBC

- corp strain aspirat
- neo pulmonar
- stenoza bronsica

  → bronhoscopie

tratament

- Istoria naturala (era preantibiotica):
  - 1/3 deces
  - 1/3 vindecat
  - 1/3 boli cronice debilitante (abces recurent, empiem cronic, bronsiectazii etc.)

2114 cazuri, J Thorac Surg 1936

tratament

- clindamicina > penicilina (penicilinaza)
- metronidazol + penicilina
- beta lactam + inh. betalactamaza

  (ac. clavulanic, sulbactam)
- carbapenem (imipenem, meropenem)

tratament

- *Staph aur*:
  - oxacilina, meticilina
  - cefalosporina I
  - vancomicina

- bacili Gramm-
  - aminoglicozide
  - cefalosporine II-IV

Tratament - durata

- Controversata
- 3 sapt. - 6 sapt.
- Pana la disparitia abcesului (2-4 l)

Tratament chirurgical

- neoplasm
- hemoragie importanta
- obstructie bronsica
- refractar la tratament
  - obstructie br
  - >6cm
  - gramm- (*P aeruginosa)*
  - evolutie> 6 sapt. inainte de prezentare

lobectomie, pneumectomie

Risc operator

- Drenaj
  - percutan
  - **endoscopic**

Raspuns asteptat

- Imbunatatirea subiectiva a starii generale
- scaderea febrei 3-4 zile

- disparitia febrei 7-14 zile

nu raspunde:

  - obstructie br, neoplasm, corp strain
  - microb neacoperit cu antibiotic
  - cavitate>6 cm, empiem (drenaj)
  - cauza neinfectioasa (neoplasm, vasculita)
  - febra medicamentoasa

prognostic

- Depinde de afectiunea subjacenta (imunitate, neoplasm etc.)
- Depinde de microb (*Staph aur*, *Pseudomonas*, *Klebsiella)*

Figure 14-13 Infected bulla. Large bulla contains some fluid (closed white arrow) and some air (open white arrow). Bullae normally contain air but can become partially or completely fluid-filled if they become infected or there is hemorrhage into them.

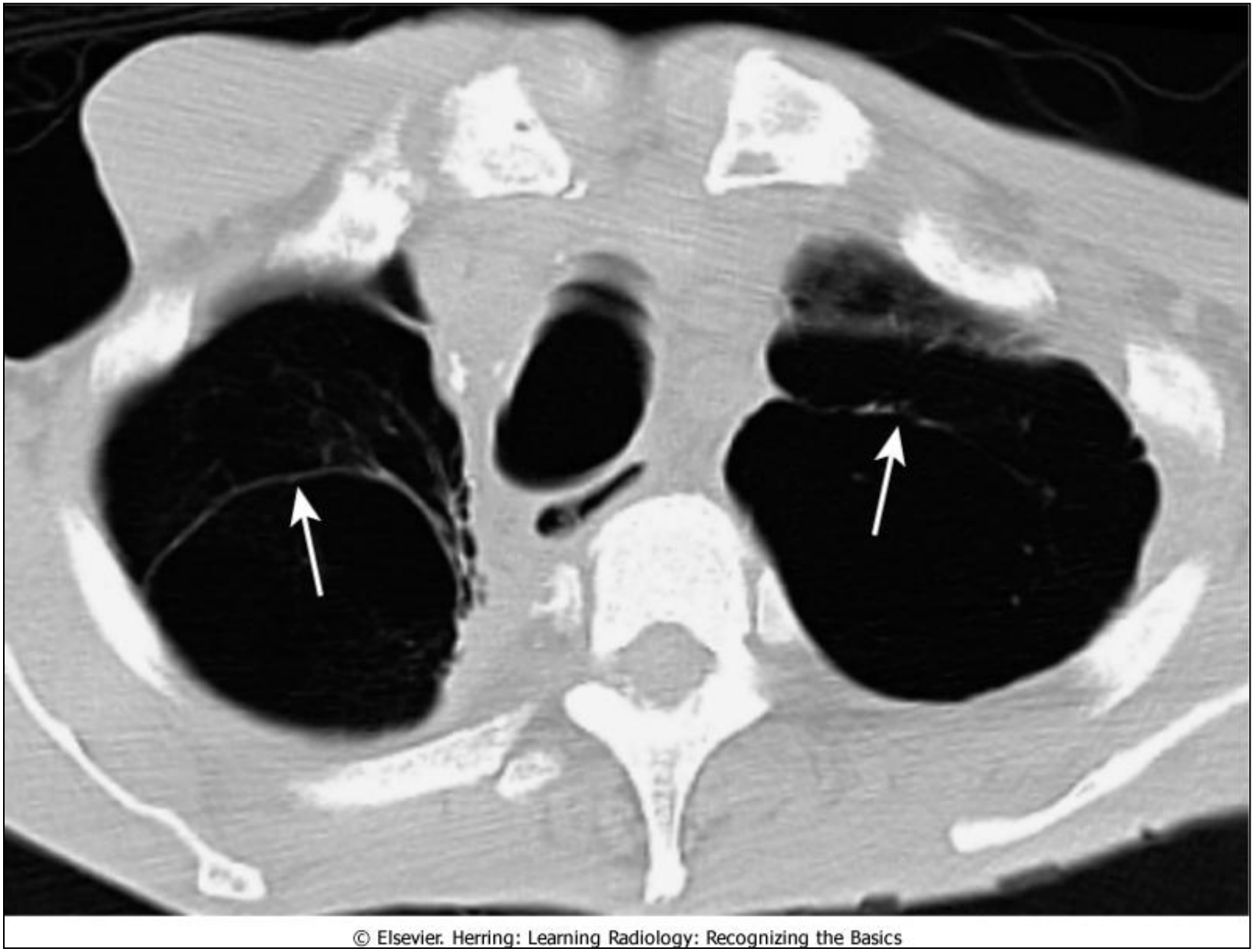

Figure 14-14 Bullous disease. Bullae measure larger than 1 cm. They have a very thin wall (1 mm) (closed white arrows) that is often only partially visible on conventional radiography. Characteristically, they contain no blood vessels but there may be septa that appear to traverse the bullae. On conventional radiographs their presence is often inferred by a localized paucity of lung markings (see Fig. 9-5).

Figure 14-16 Cavitary bronchogenic carcinoma. There is a thick-walled cavitary lesion in the right upper lobe (open white arrow). The inner margin of the cavity is nodular and irregular (closed black arrow). There is pneumonia surrounding a portion of the mass (closed white arrow). This was a squamous cell carcinoma of the lung.

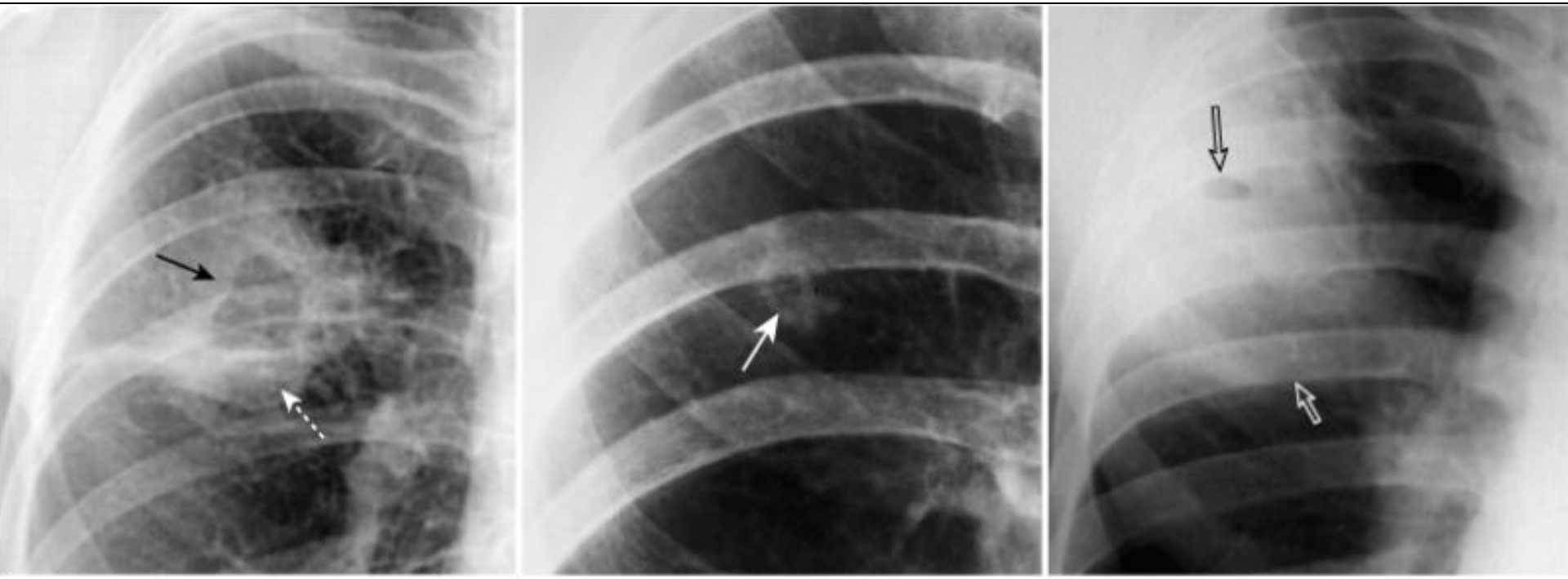

Figure 13-20 Cavitary lesions of the lung. Three of the most common cavitary lesions of the lung can frequently be differentiated from each other by noting the thickness of the wall of the cavity and the smoothness or nodularity of its inner margin. A, A cavitary squamous cell bronchogenic carcinoma with a thick wall (dotted white arrow) and a nodular inner margin (closed black arrow); B, upper lobe tuberculosis has a thin-walled cavity with a smooth inner margin (closed white arrow); C, a staphylococcal lung abscess demonstrating a characteristic markedly thickened wall (open white arrow) and a small but smooth inner margin (open black arrow).

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BRONSIECTAZIILE

De retinut

1. Tuse zilnica productiva
2. Dg: CT cu rezolutie inalta
3. In caz de obstructie/ heperreactivitate bronsica: tratament cu bronhodilatatoare inhalatorii
4. La pacientii cu exacerbari: antibiotice active pe *Haemophilus influenzae* si *Staphylococcus aureus*.

DEFINITIE

- Dilatatii ale bronsiilor
  - patologice, ireversibile
  - distructia peretelui bronsic
  - copii/adulti
  - datorita infectiei acute/ cronice
  - focale / difuze

Cauze

Distributie	Categorie	Cauza
Focala	Obstructie	corp strain, tumora, litiaza bronsica, compresie peribronsica
	Postinfectioasa	**bacterii, TBC, virusuri**
Difuza	Congenitala/genetica	Fibroza chistica, dischinezie cilara primitiva, deficit de alpha1-antitripsina, traheobronhomegalie, deficit de cartilaj, sdr. Marfan
	Infectie cronica	Mycobacterium avium-intracellulare , micoze bronhopulmonare alergice (ex. Aspergillus)
	Imunodeficienta	Hipogamaglobulinemie, HIV
	Inhalatie/aspiratie toxica	clor, boala de reflux gastroesofagian
	B reumatice	Artrita reumatoida, LES, sdr. Sjogren, policondrita recidivanta
	Diverse	Colopatie inflamatorie, sdr. Young

fiziopatologie

Colonizare/infectie bacteriana recurrenta →

activarea mediatorilor inflamatiei (elastaza, colagenaza) →

distrugerea peretelui bronsic →

proliferarea arteriala + malformatii arteriovenoase → **hemoptizii**

prevenire

- Renuntarea la fumat
- Vaccinare antigripala & antipneumococica

Dg clinic

- Tuse cronica zilnica, productiva (purulenta)
  - Toti adultii cu bronsiectazii
  - 30% au hemoptizii
  - Copii: 75% au tuse cu expectoratie, 25% hemoptizie, 50% obstructie br (dispnee)
- Ubeori: ronflante, crackles-uri, degete hipocratice

Dg paraclinic

- RX: ingrosare a peretilor bronsici
- Sn= 13% - 40%, Sp= 95%.
- Spirometria: evaluarea unor afectiuni subjacente
- CT rezolutie inalta: gold standard
- Diametru bronsic marit (bronhia>artera = inel cu pecete)
- Exacerbari: culturi sputa daca nu apare ameliorare dupa antibioterapia empirica

Abordarea pacientului

- Pacient cu tuse cronica, productiva:
  - De exclus intai BRGE, astmul, picurare postnazala (postnasal drip).
- Apoi: CT rezolutie inalta.
- Odata dg pus (bronsiectazii), de cautat cauza

tratament

- Exacerbari: atb active pe *Haemophilus influenzae*, *Staphylococcus aureus* si *Pseudomonas*.
- Obstructie bronsica/hiperreactivitate: bronhodilatatoare inhalatorii.
- Fizioterapie toracica.
- Bronsiectazii localizate: bronhoscopie / chirurgie.

Tratament de fond

- Bronhodilatatoare.
- Mucolitice? (bromhexin, ACC).
- ATB t lung: reduc vol si purulenta sputei; nu modifica exacerbarile sau evol naturala a bolii.

Trat. exacerbarilor

- ATB pt 2 saptamani
- Active contra *Haemophilus influenzae* si *Staphylococcus aureus*.
- Fibroza chistica sau ATB recent: risc pt infectie cu *Pseudomonas aeruginosa*.
- Raspuns initial inadecvat: culturi sputa, tratament mai lung.

Trat chirurgical

- Simptome severe, fara raspuns la tratament, afectare locala.
- Bronsiectazii focale dat obstructiei bronsice: bronhoscopie, chirurgie.

reabilitare

- Antrenarea mm inspiratori pt a creste capacitatea de efort.
- Pacientii ce nu pot expectora adecvat: fizioterapie toracica (percutie, vibratie, drenaj postural).

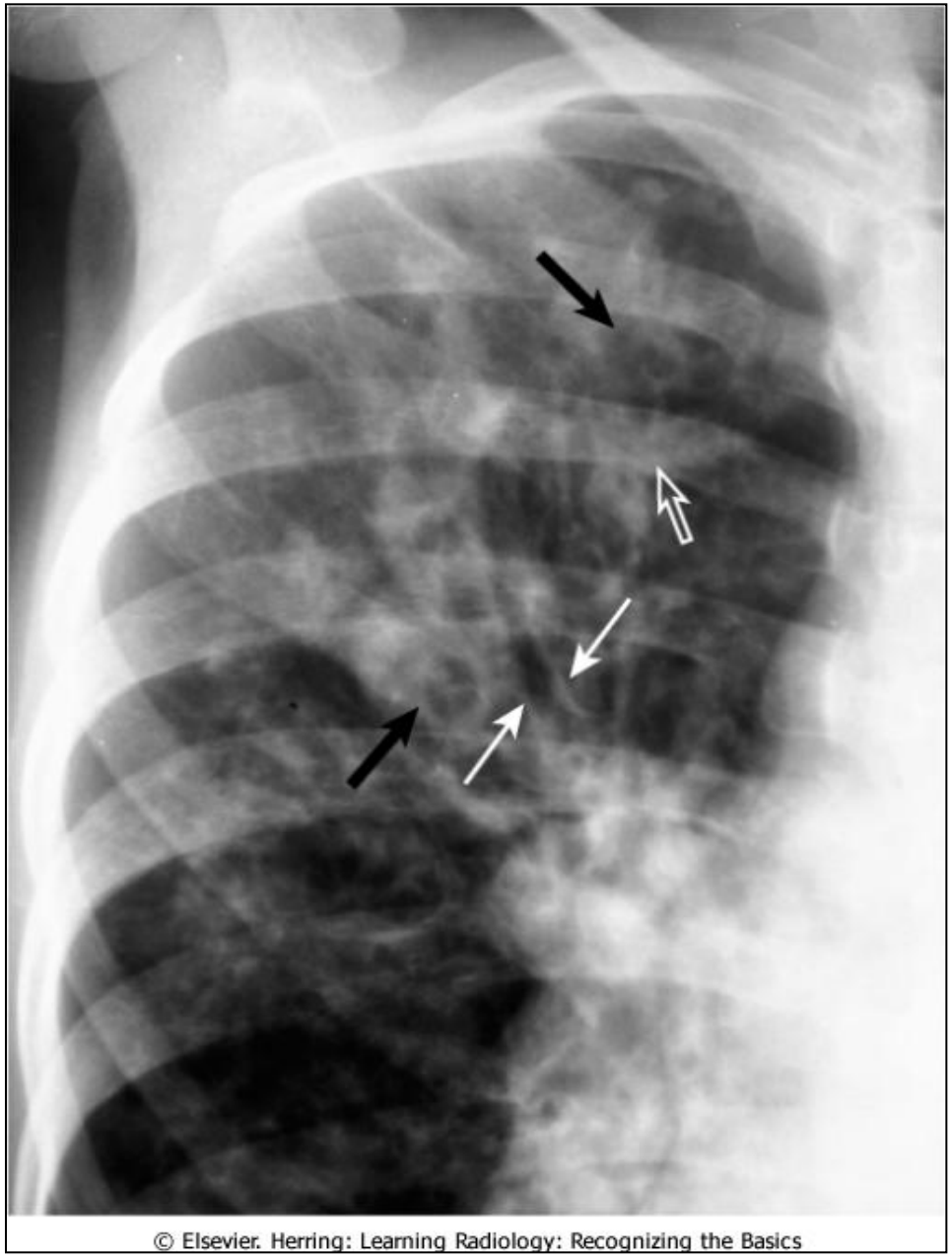

Figure 14-17 Bronchiectasis in cystic fibrosis. Conventional radiographs may demonstrate parallel line opacities called tram-tracks due to thickened walls of dilated bronchi (closed white arrows), cystic lesions as large as 2 cm in diameter due to cystic bronchiectasis (closed black arrows), and tubular densities from fluid-filled bronchi (open white arrow). Bilateral upper lobe bronchiectasis in children is highly suggestive of cystic fibrosis.

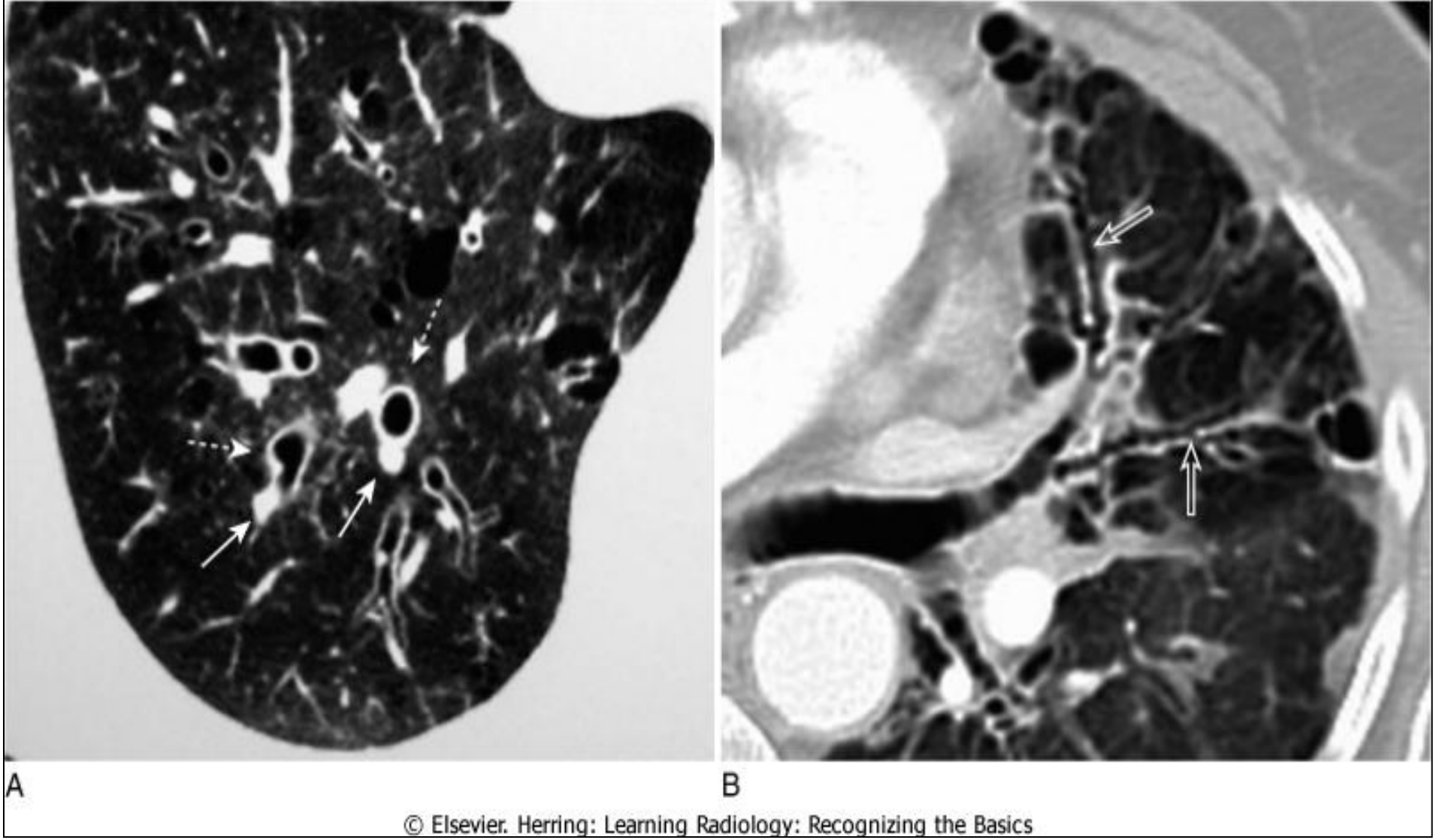

Figure 14-18 Bronchiectasis. HRCT is the study of choice in diagnosing bronchiectasis. The hallmark lesion is the signet ring sign, seen in this patient with bronchiectasis (A) in which the bronchus with a thickened wall (dotted white arrows) becomes larger than its associated pulmonary artery (closed white arrows), which is the opposite of the normal relationship between the two. The bronchus may also show tram-tracking, thickened walls, and a failure to taper normally (B) (open white arrows).

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