Pnömotoraks

Akif Turna

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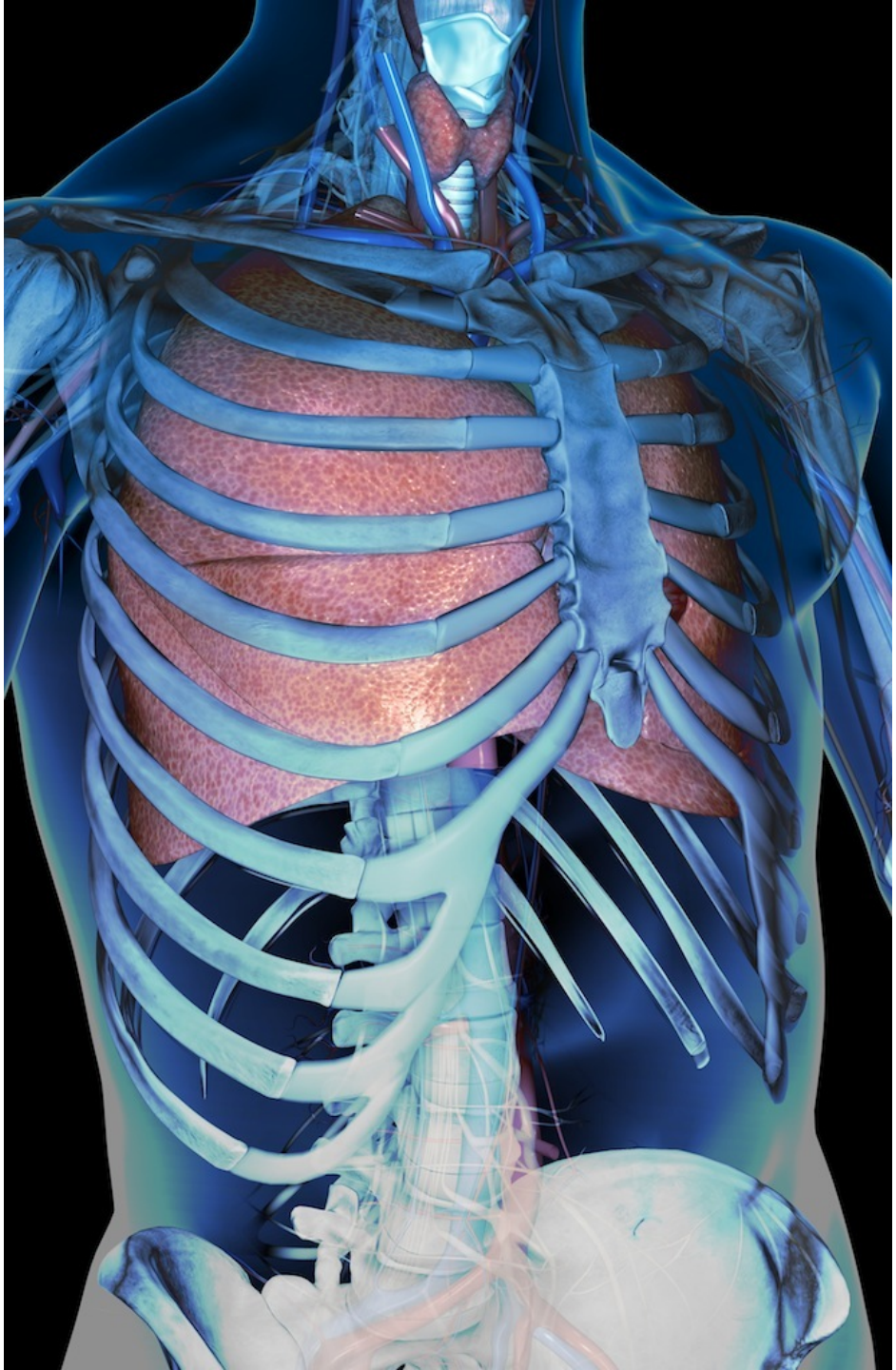
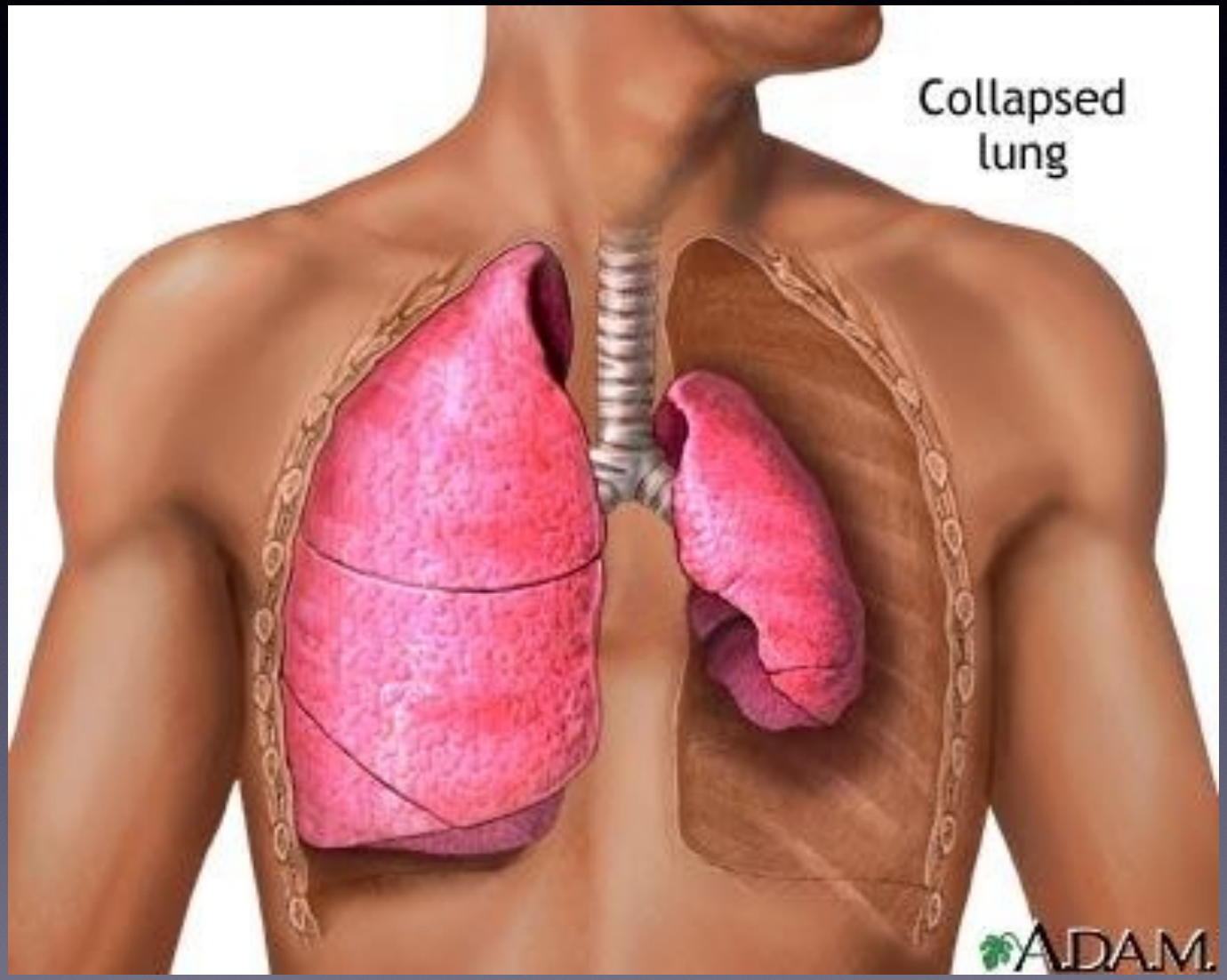
www.goguscerrahisi.org

Sunum Sırası

- Pnömotoraksın tanımı ve sınıflandırılması
- Tedavi (Konservatif ve Cerrahi tedavi)
- Bilateral senkron pnömotoraks
- Pnömomediastinum



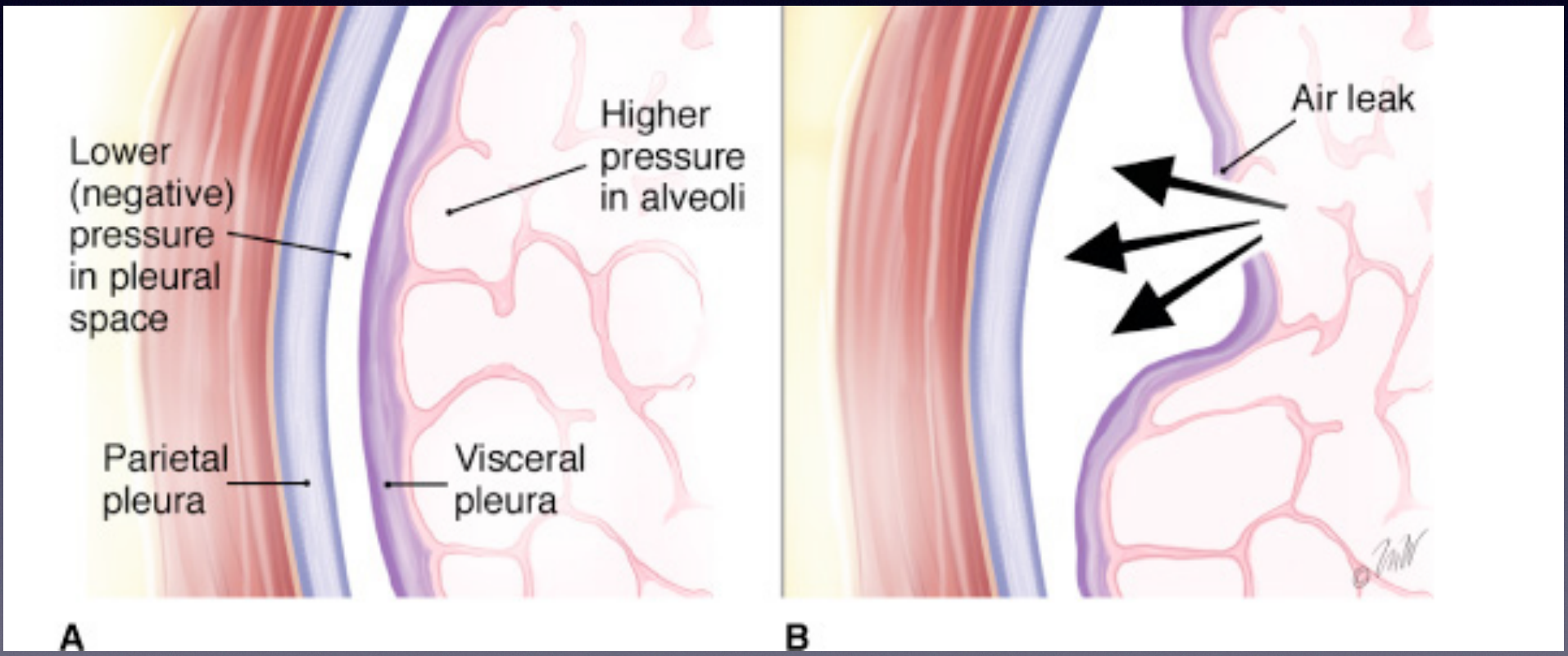
Pnömotoraks



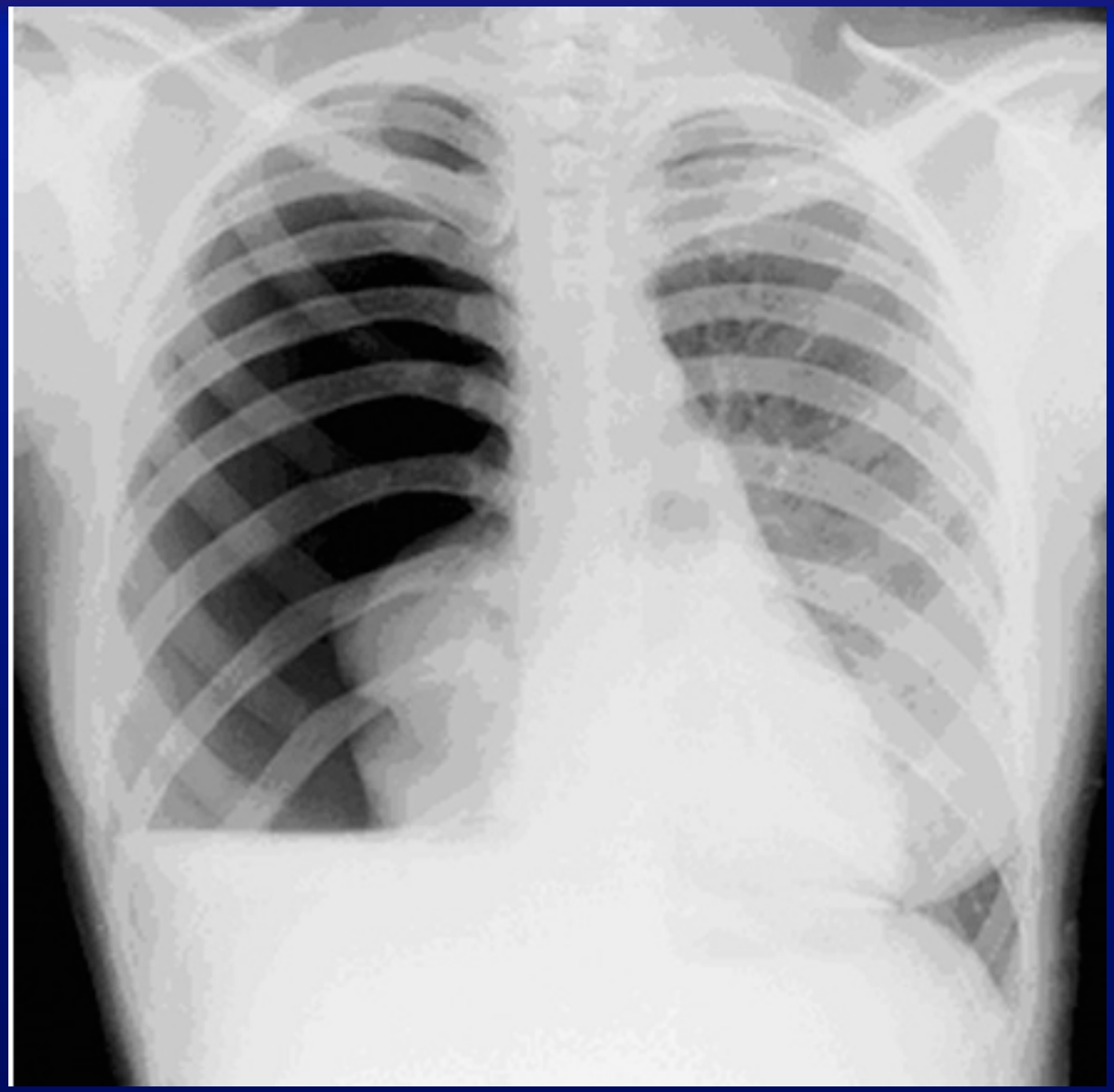
Pnömotoraks

- Viseral ve parietal plevra yaprakları arasında hava bulunmasıdır.
- İnsidans: 8 - 14 /100.000/yıl.
- Tipik Spontan Primer Pnömotorakslı Hasta
  - Genç
  - Uzun Boylu
  - İnce yapılı
  - Sigara içen
  - Erkek

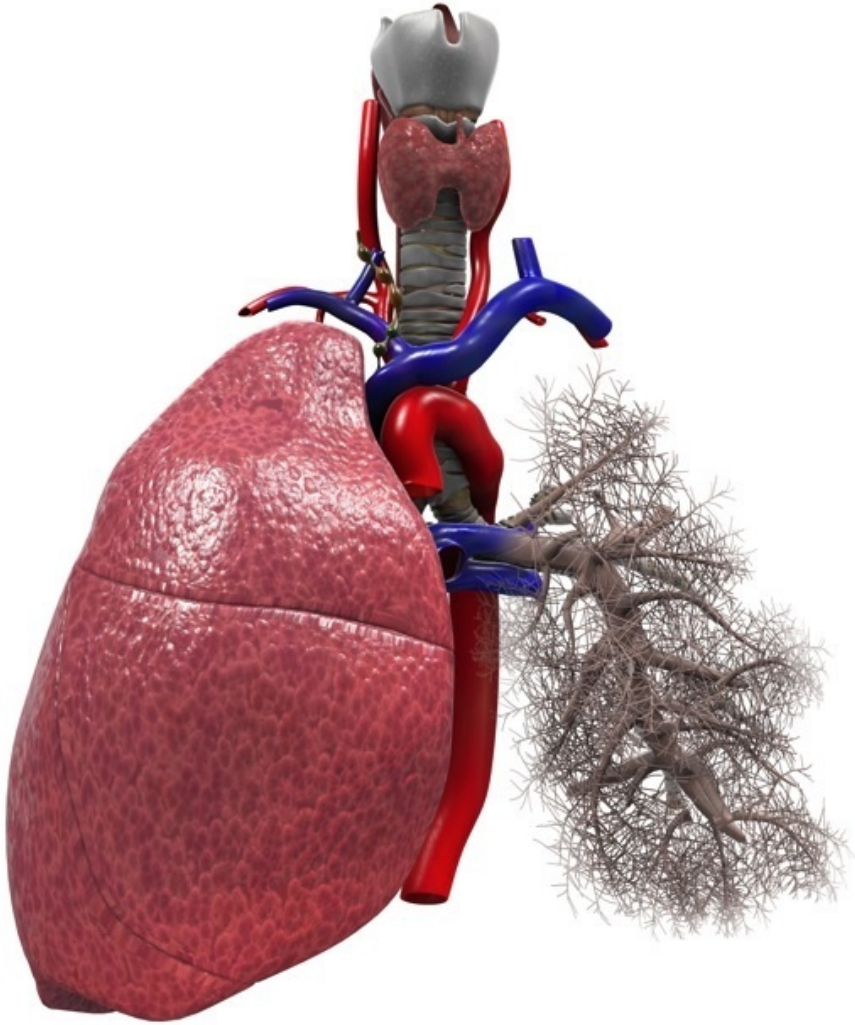
Pnömotoraks

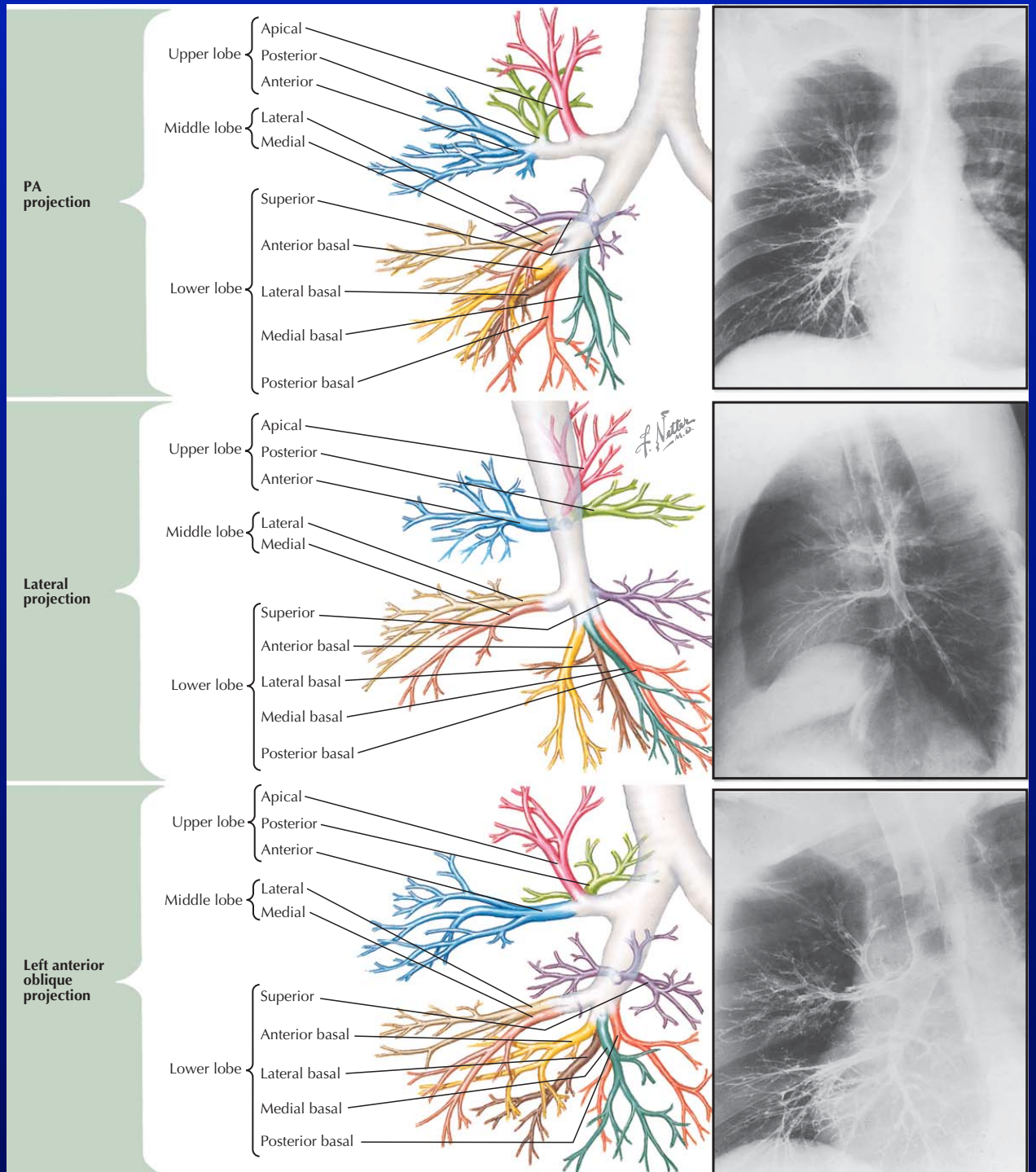


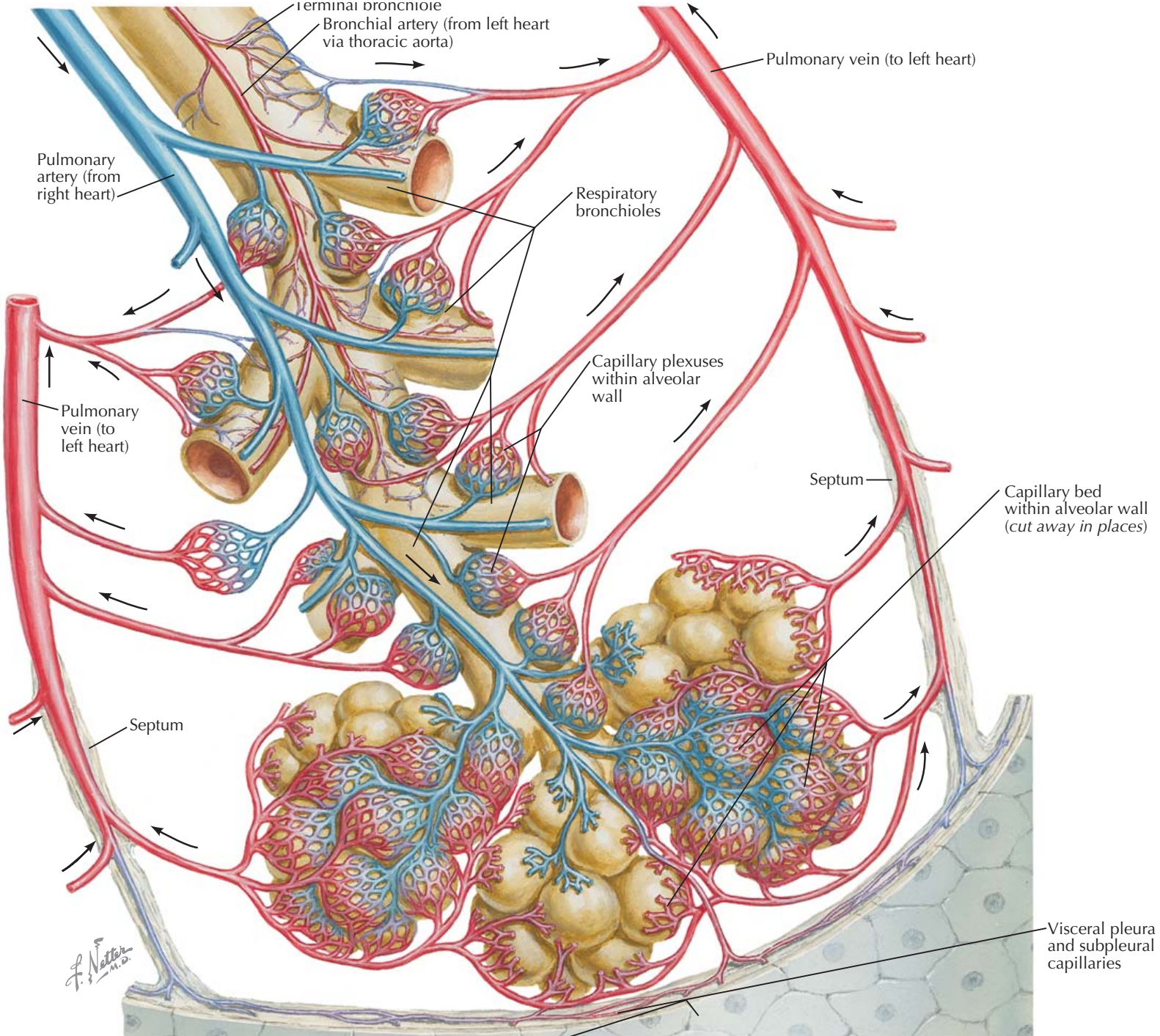
Pnömotoraks



Akciğerin Yapısı




PA projection
Upper lobe
Apical
Posterior
Anterior
Middle lobe
Lateral
Medial
Lower lobe
Superior
Anterior basal
Lateral basal
Medial basal
Posterior basal
Lateral projection
Upper lobe
Apical
Posterior
Anterior
Middle lobe
Lateral
Medial
Lower lobe
Superior
Anterior basal
Lateral basal
Medial basal
Posterior basal
Left anterior oblique projection
Upper lobe
Apical
Posterior
Anterior
Middle lobe
Lateral
Medial
Lower lobe
Superior
Anterior basal
Lateral basal
Medial basal
Posterior basal


Terminal bronchiole
Bronchial artery (from left heart via thoracic aorta)
Pulmonary vein (to left heart)
Pulmonary artery (from right heart)
Respiratory bronchioles
Capillary plexuses within alveolar wall
Pulmonary vein (to left heart)
Septum
Capillary bed within alveolar wall (*cut away in places*)
Septum
Visceral pleura and subpleural capillaries
F. Netter M.D.


© Bernd Kohlhas/Corbis

Mekanizma

- Subplevral bir bleb ya da bülün rüptürü.
- İatrojenik olarak ya da künt veya delici-kesici bir alet yolu ile.

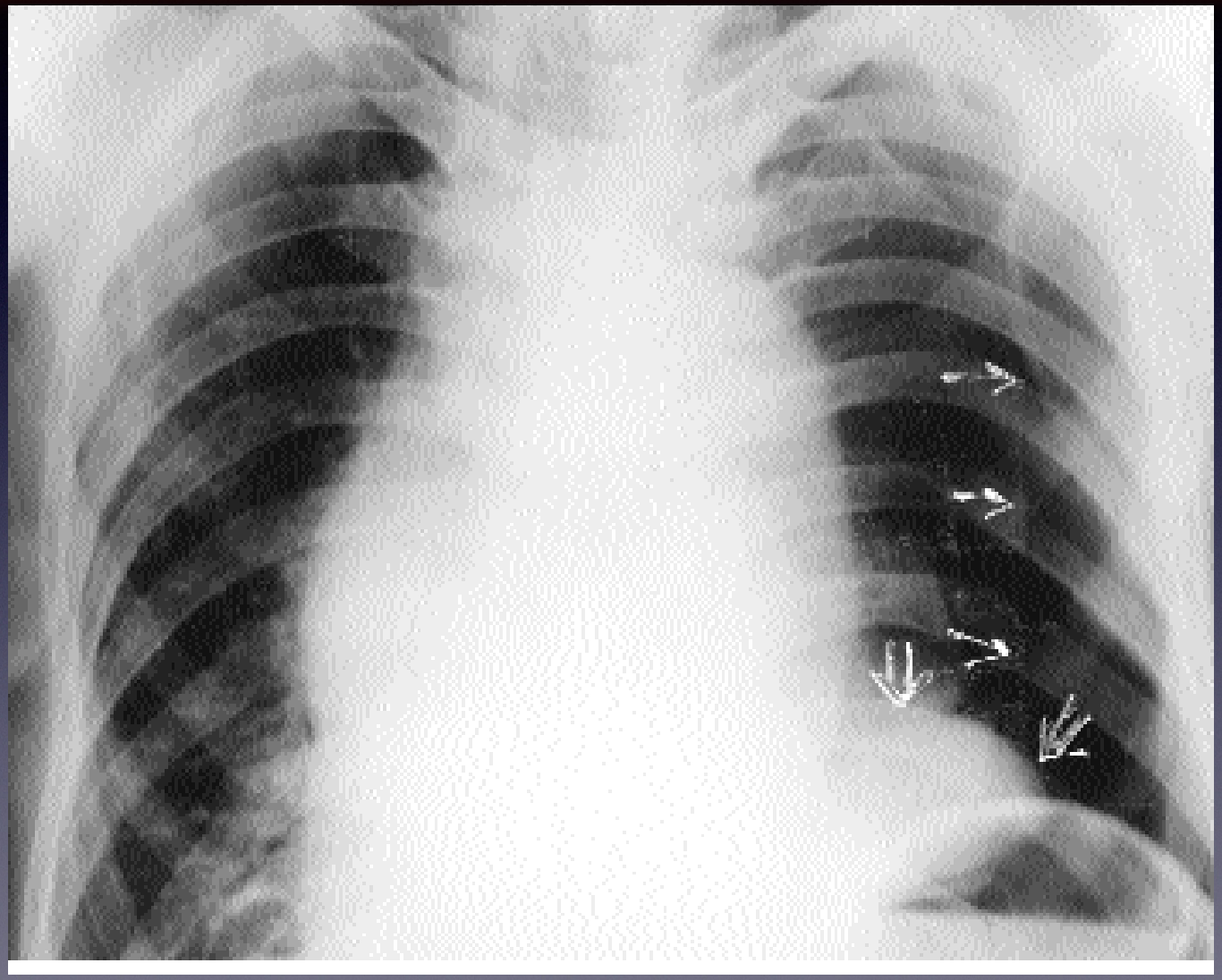
Spontan Pnömotoraks'ın Sık Görüldüğü Hastalıklar

- Alfa-1 Antitripsin Eksikliği
- Marfan Sendromu *(fibrillin-1 mutasyonu)*
- Tuberoz-Skleroz *(tsk-1,2 mutasyonu)*
- Kistik Fibroz*(CFTR mutasyonu)*
- Birt-Hogg-Dube Sendromu(FLCN)

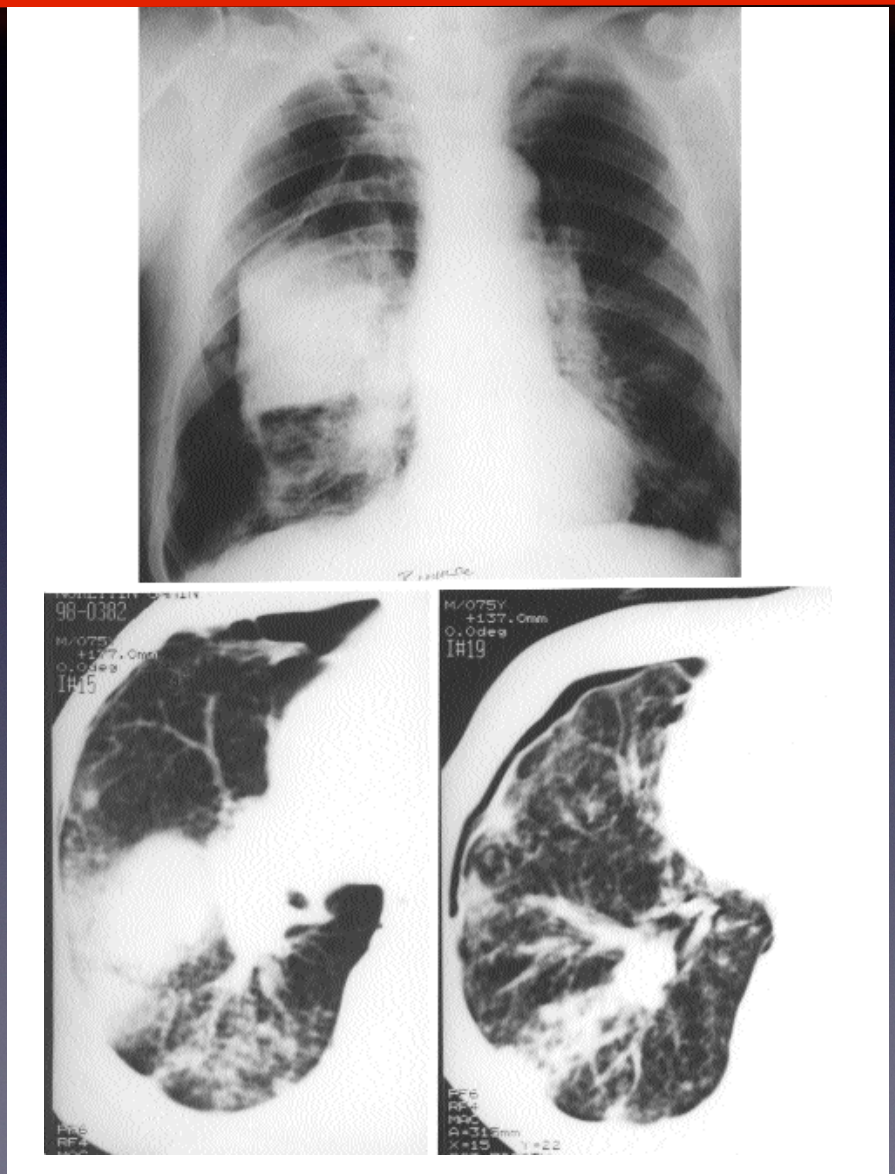
Etyolojiye Göre Sınıflandırma

- Spontan
  - Primer : Akciğer patolojisi yok
  - Sekonder : Bir akciğer patolojisi var.
  - Katamenial : Diyafragmada endometriozis
- Travmaya bağlı
  - Penetran
  - Künt
  - Barotravma
- İatrojenik (CVP kateteri, bronkoskopi, TTİA vb)
- İnfeksiyona bağlı
- Havayolu tıkanıklığına bağlı
- Maligniteye bağlı

Tümöre bağlı Pnömotoraks



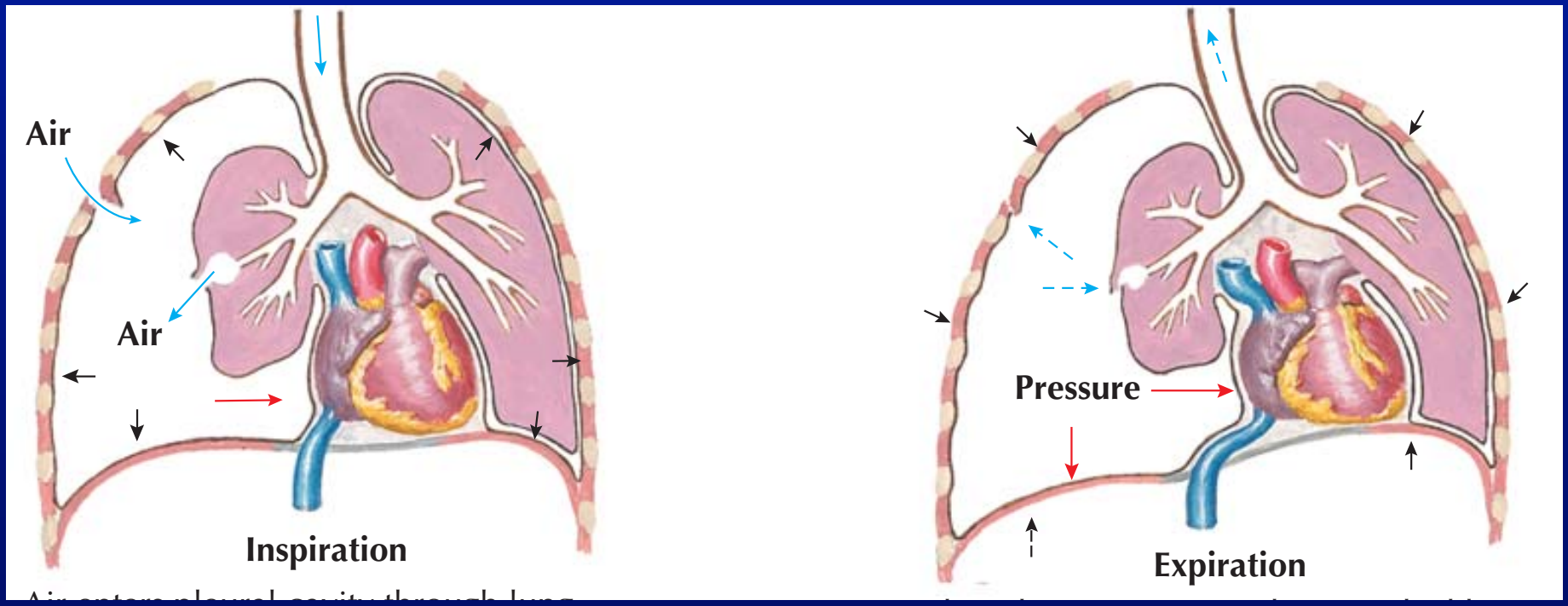
Tümöre bağlı Pnömotoraks



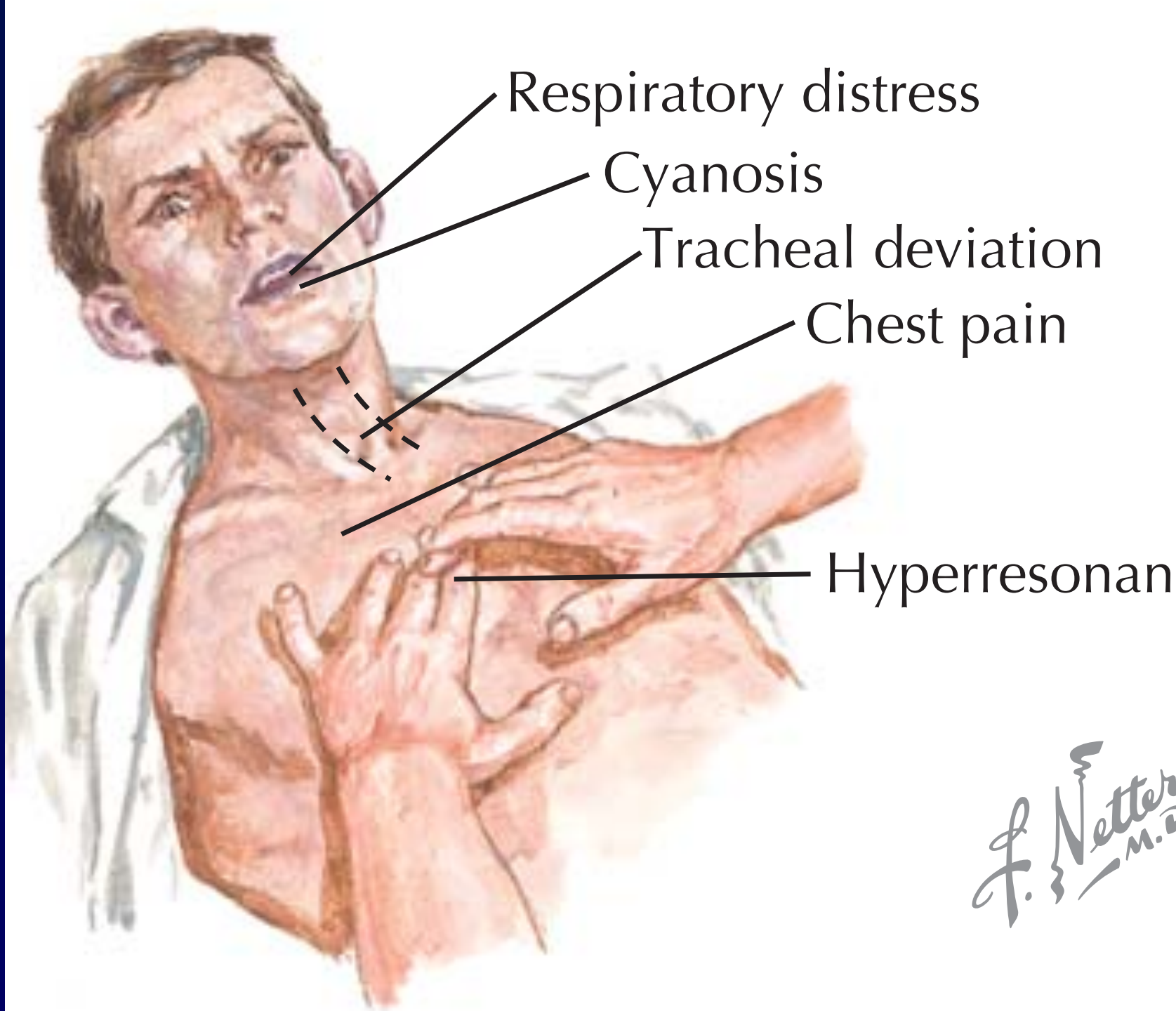
Klinik

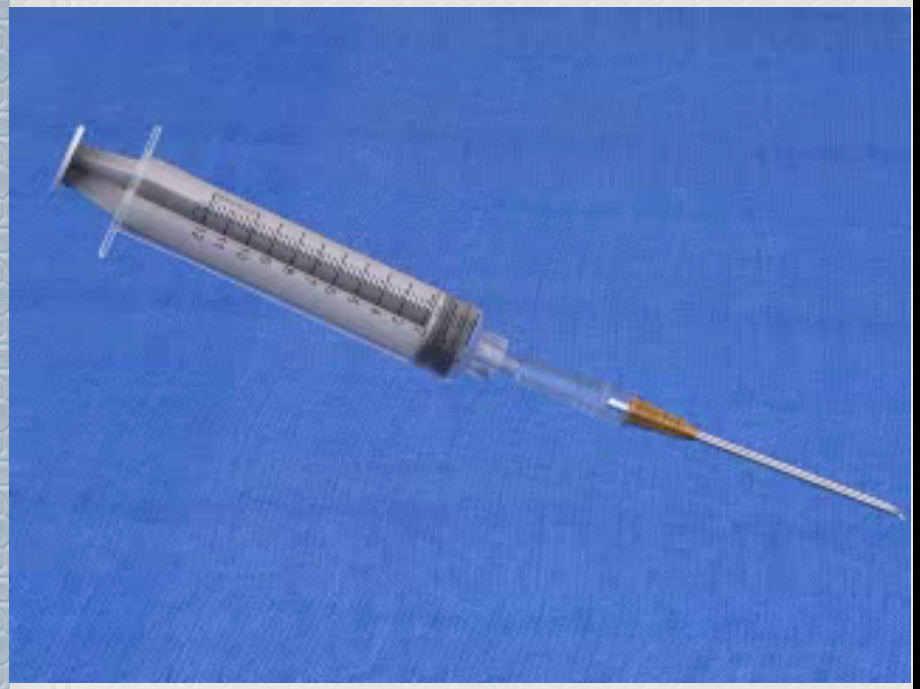
- Ani ve dinlenirken başlayan ağrı.
- Batıcı-delici tarz ağrı
- Nefes darlığı
- Kardiyopulmoner yetersizlik (Tansiyon pnömotoraksı)

Tansiyon Pnömotoraksı



Tansiyon Pnömotoraksta Akciğer Filmi


Respiratory distress
Cyanosis
Tracheal deviation
Chest pain
Hyperresonan



Needle Decompression
Take 1
Angle 1
Good bubbly

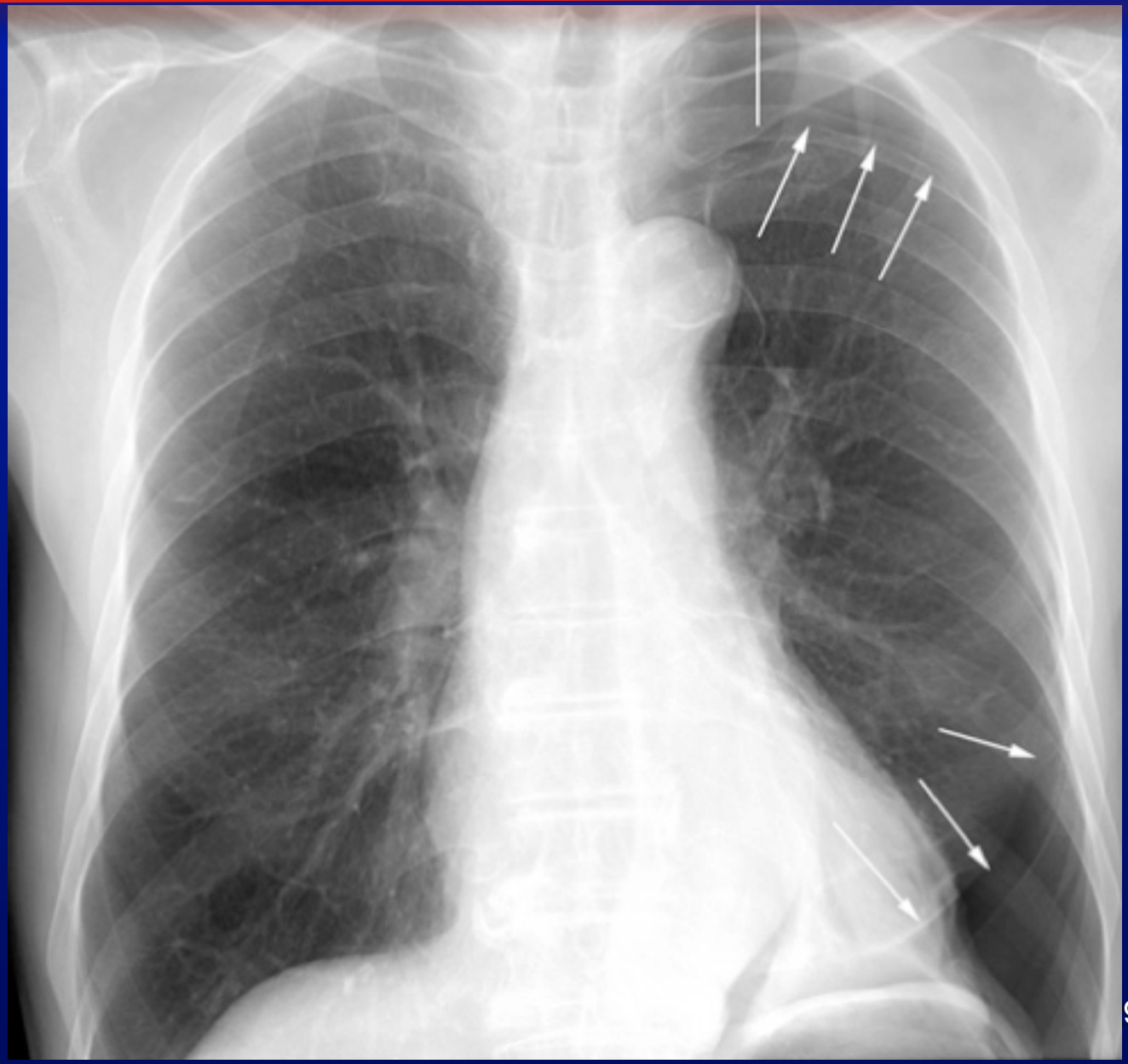
TANI

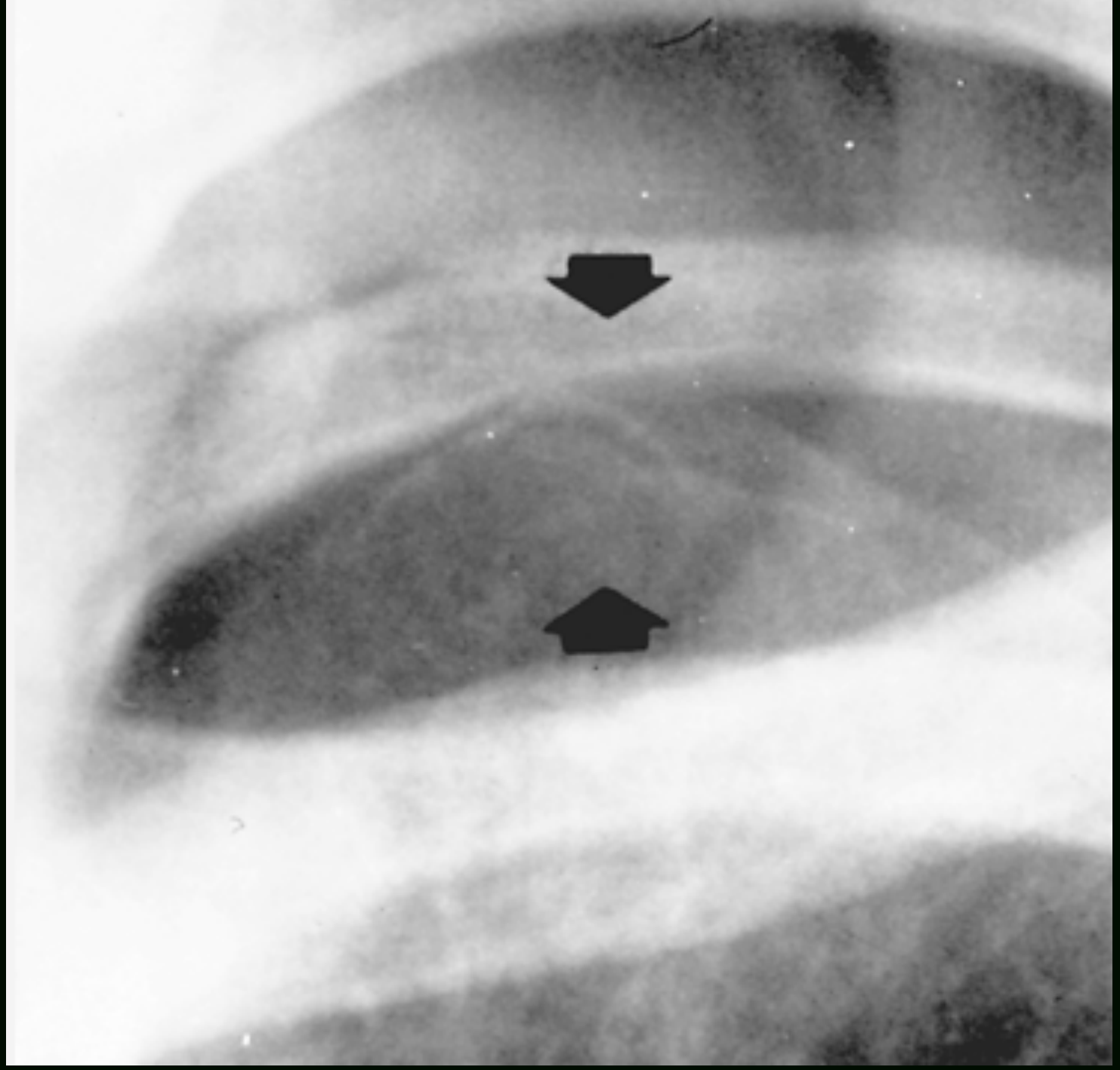
- Posteroanterior göğüs radyografisi
- Tomografi
- Klinik (Tansiyon Pnömotoraks)

Küçük Pnömotoraks

- Küçük Pnömotoraks: Posteroanterior akciğer grafisinde parenkim üst sınırının kupuladan 3 cm den daha yakın olduğu pnömotoraks

Küçük Pnömotoraks

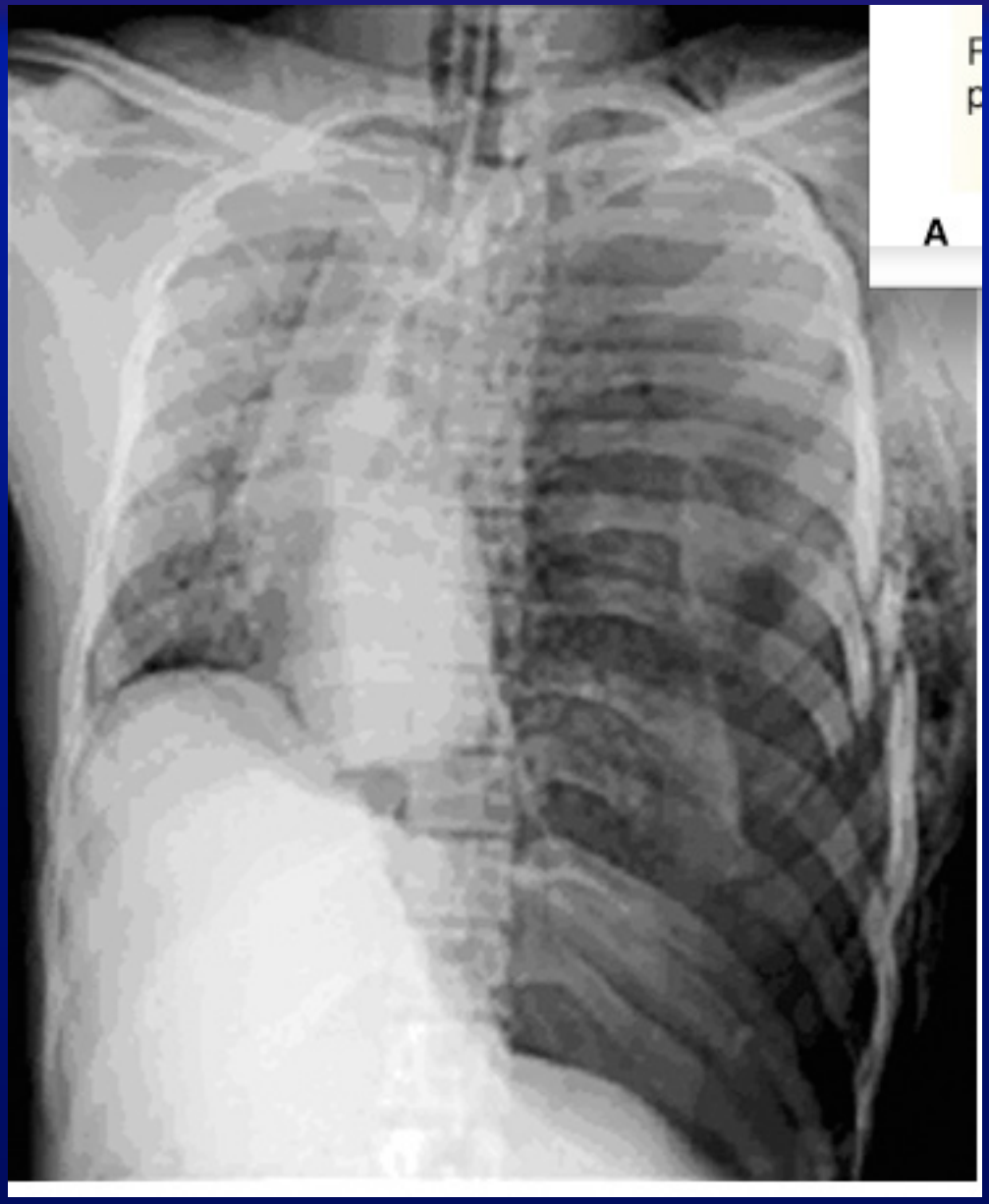




Total Pnömotoraks

Tansiyon Pnömotoraksı

Tansiyon Pnömotoraksı



AYIRICI TANI ?

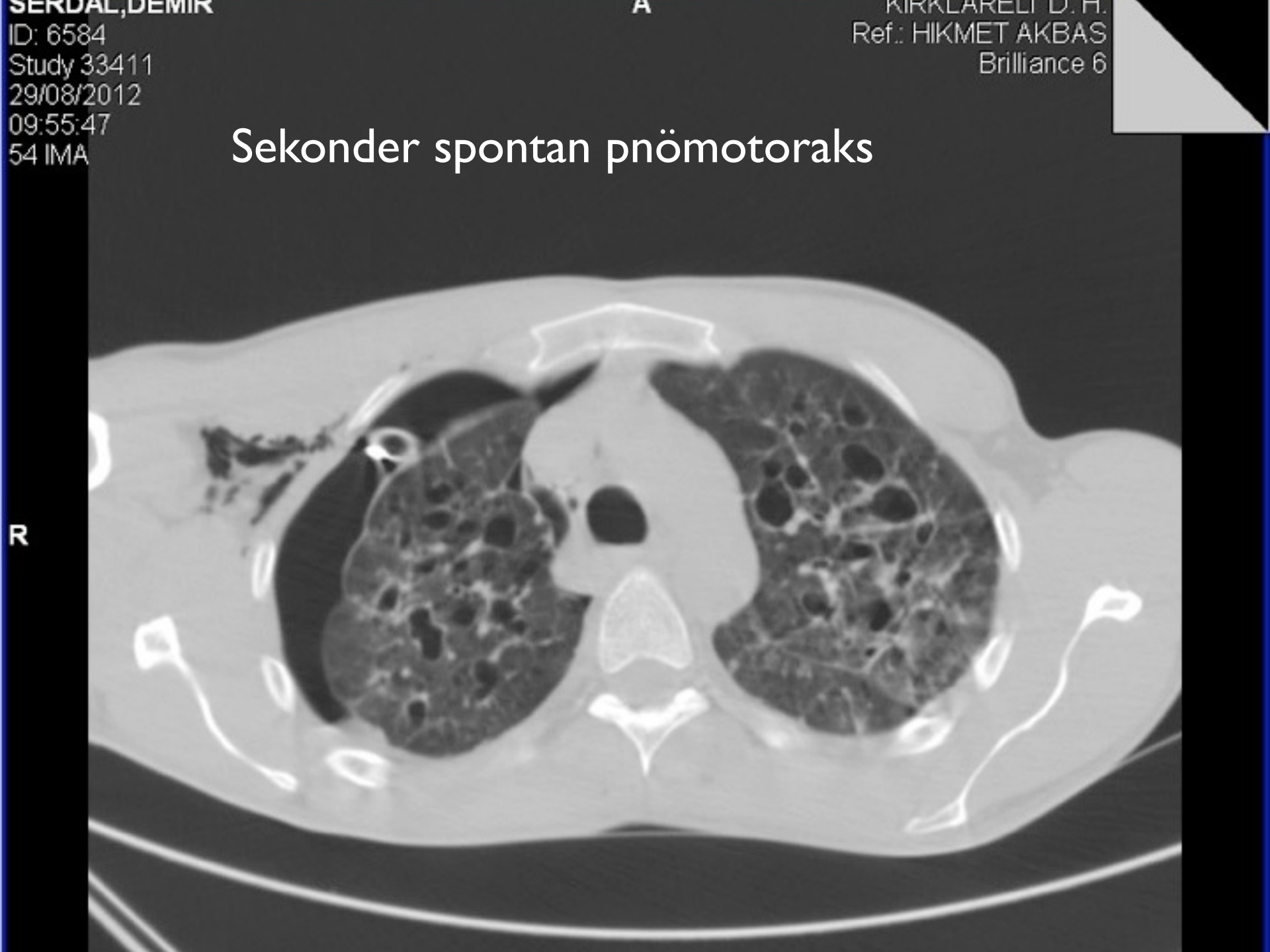
Bül mü? Pnömotoraks mı?

32 yaş

Sigara içmemiş

Kalp: Normal

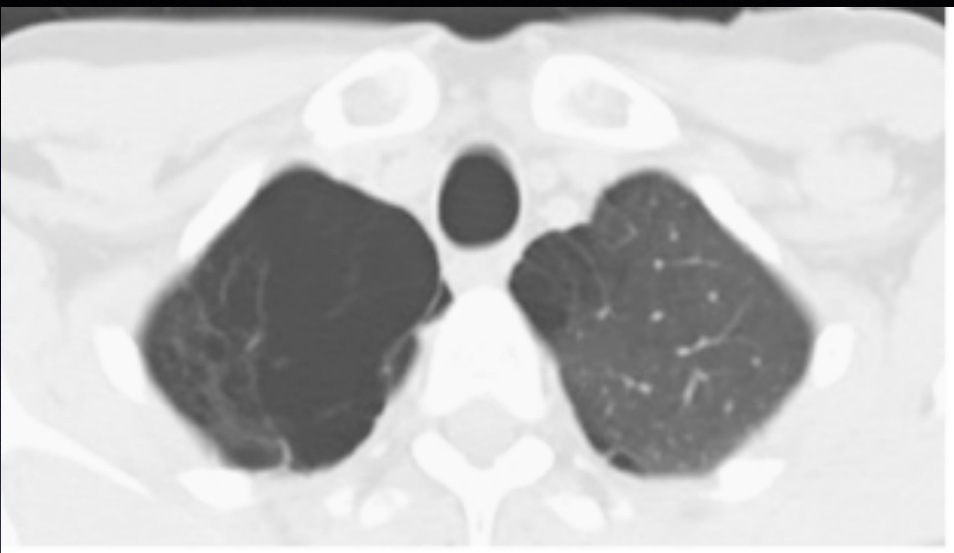
Solunum Sıkıntısı: Son 6 ay



Sekonder spontan pnömotoraks

Bilateral Sarkom Metastazı

Travmatik Pnömotoraks (Ateşli Silah Yaralanması)

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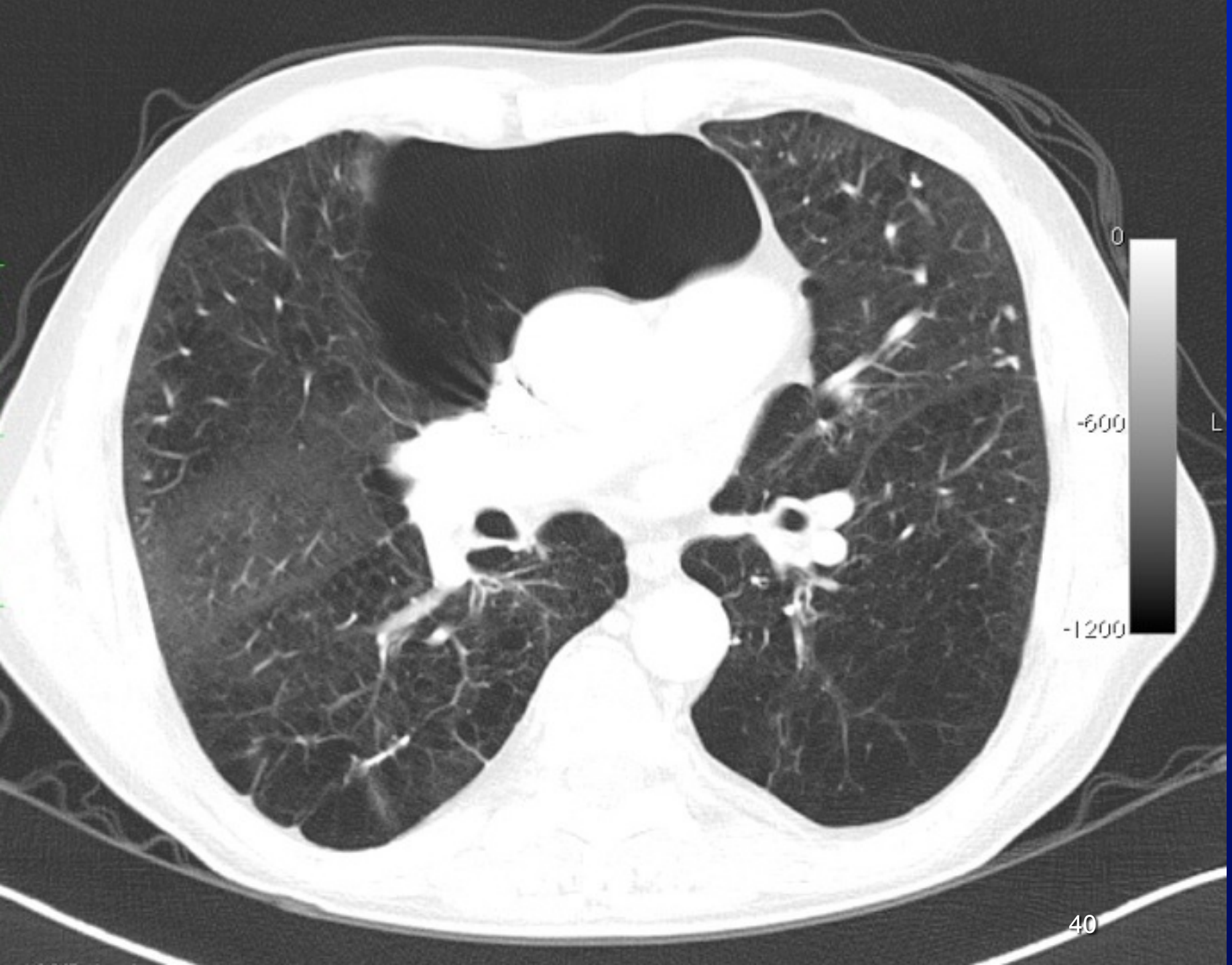
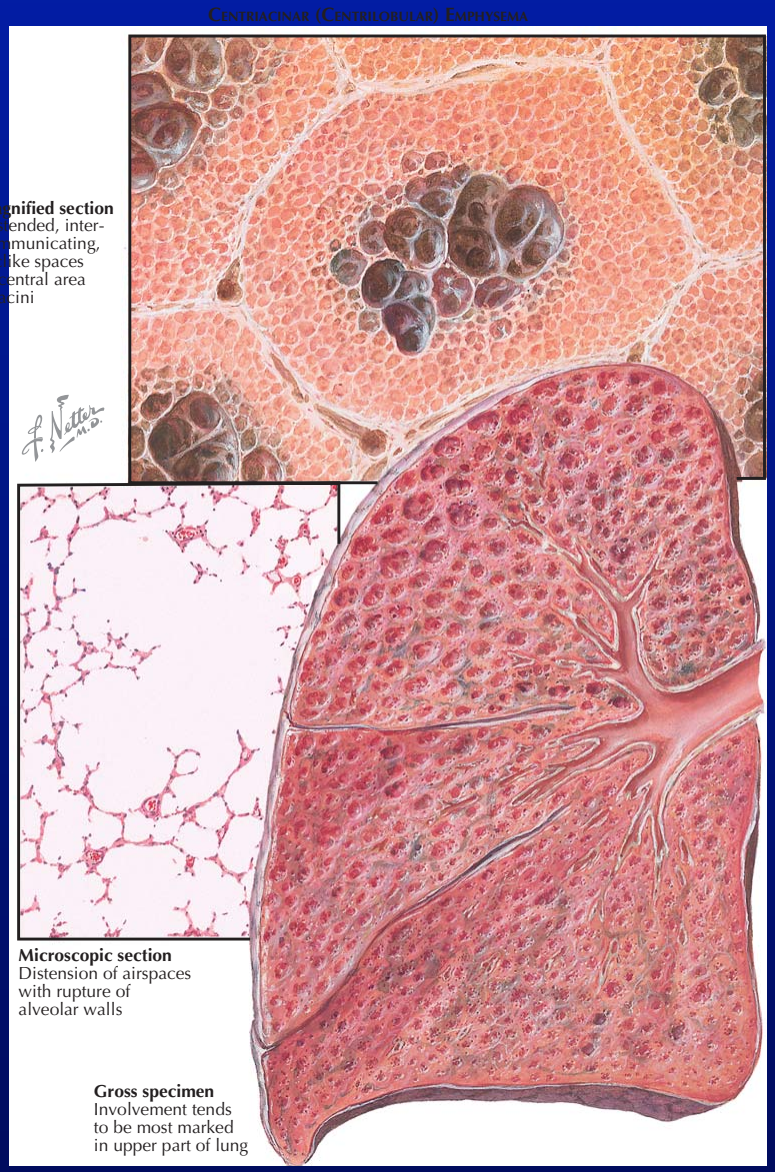
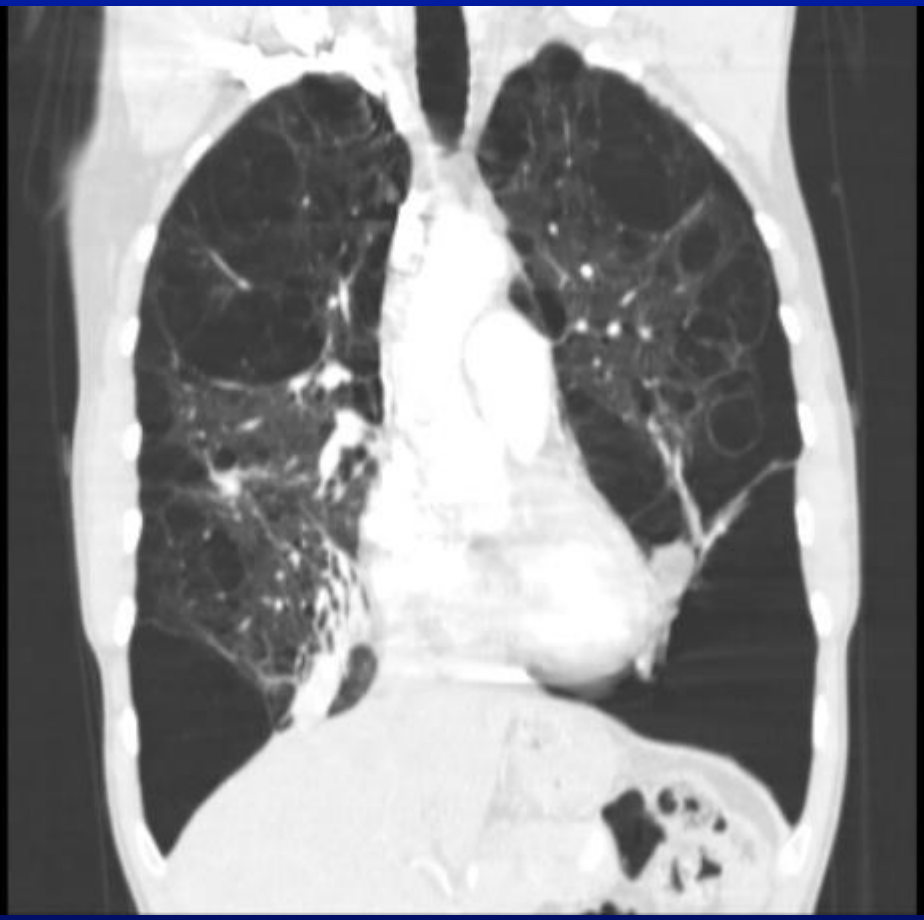
Im:44
[A]
Study Date:6/25/200
Study Time:9:51:50 A
MRN
[P]
[P]


0
-600
-1200
L

KOAH'lı Hastalarda Amfizem ve Bülün Oluşumu



Büller+Amfizem+Pnömotoraks



TEDAVİ-1
Küçük Pnömotoraks

- Oksijen Tedavisi:

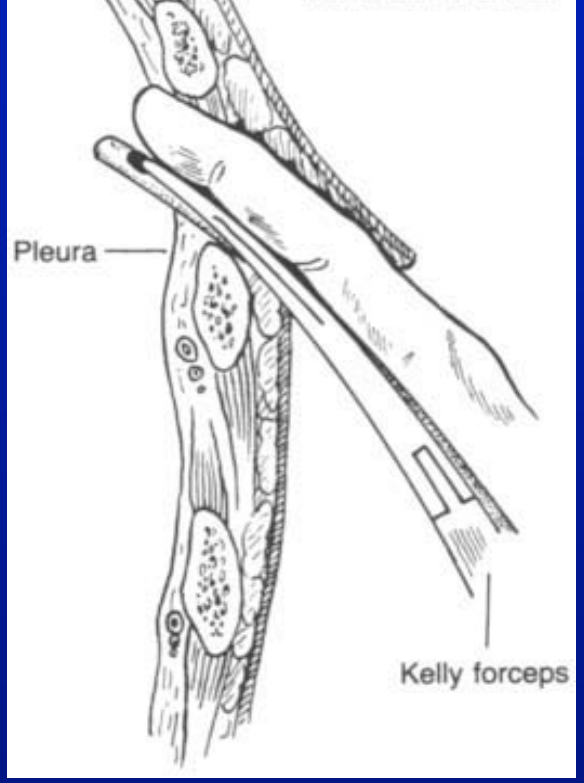
Nazal Oksijen 10 lt/dk'ya varan

Beklenen düzelme : %1.25/gün (Oksijensiz), %3-4 /gün (Oksijenli)

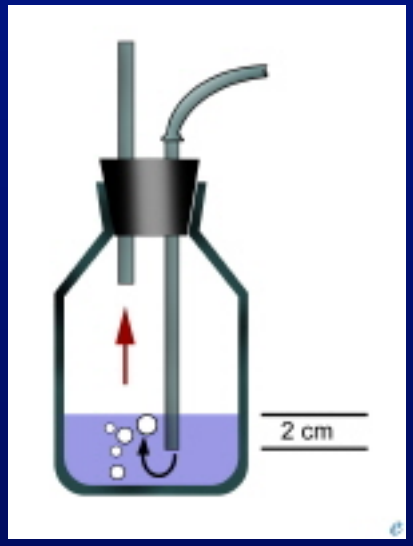
- Parenkim sınırı kupuladan <1 cm uzaklıkta ise oksijen tedavisi sonlandırılabilir

TEDAVİ-2
Küçük Olmayan Pnömotoraks

Toraks tüpü


Pleura
Kelly forceps


Underwater D


2 cm

Elektronik Drenaj Sistemi


R

Toraks Tüpünün Kalınlığı: Total Pnömotoraks

En küçük: 24 F toraks tüpü.

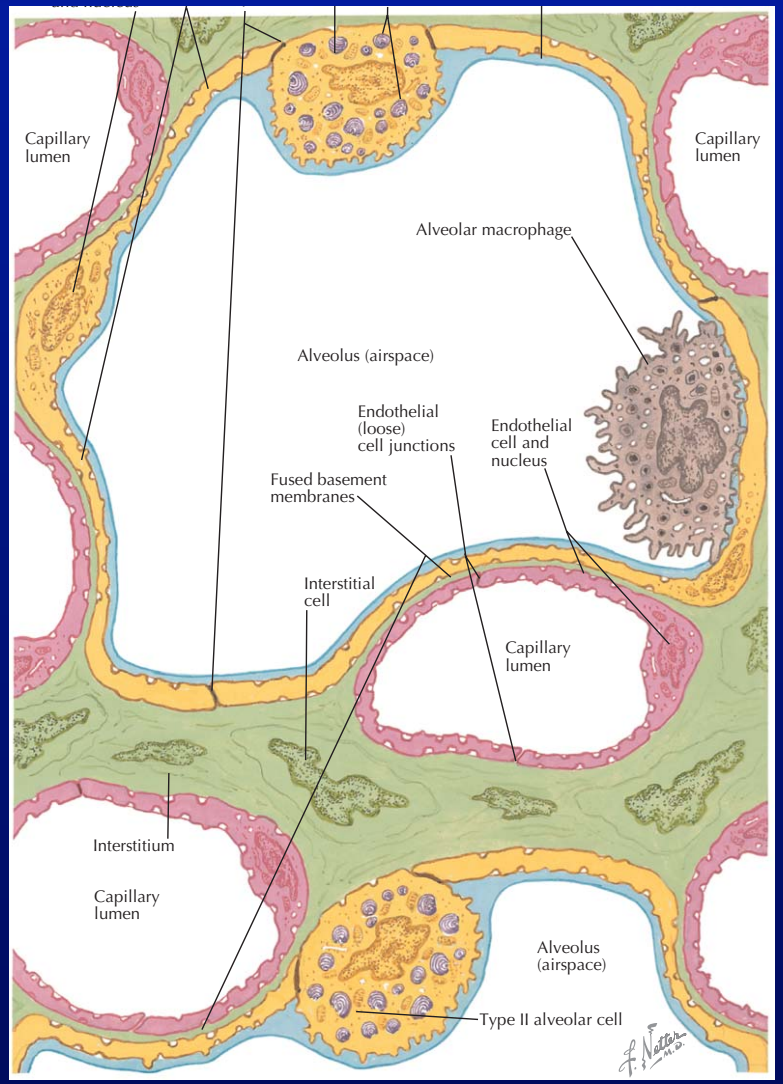
Torakostomi
Bazı teknik noktalar

- Standart :5-6. İnterkostal aralık
- Özelliği Olan Hastalar: -
  - Anterior 2.interkostal aralık (Pezzer dren)
  - 7. İnterkostal Aralık lateral
  - 7. İnterkostal Aralık Posterior

Re-ekspansiyon Ödemi

- Uzun süre müdahalesiz kalan pnömotorakslı hastalarda ‘re-ekspansiyon ödemi’ görülebilir. Tedavisi
  - Diüretik (i.v.)
  - Oksijen 4-6 lt/dk
  - Pozitif inotropik ajanlar

Re-ekspansiyon ödemi oluşumu



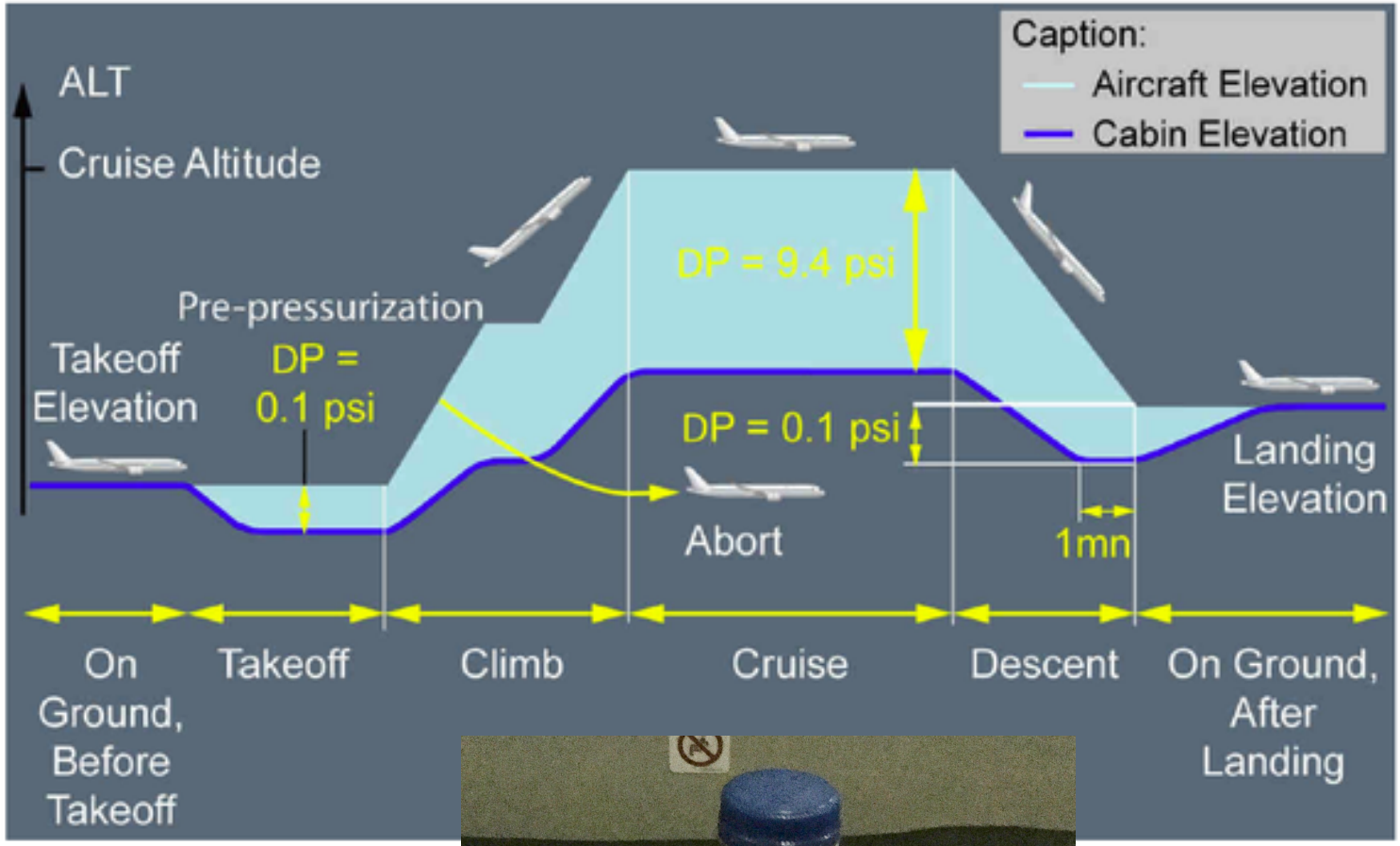
Negatif Basınç Uygulama

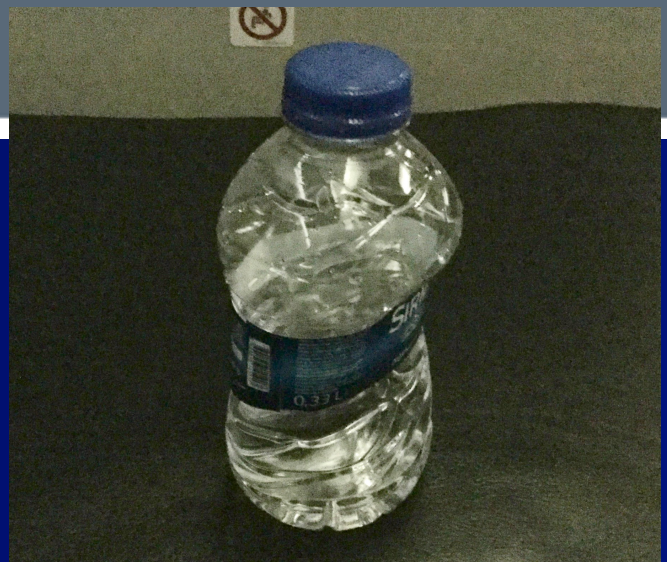
- Akciğerde %20‘den fazla re-ekspansiyon kusuru mevcut ise ve masif akciğer kaçağı (ekspiriumun başında başlayan hava kaçağı) yok ise, su altı drenajı sistemi bir aspirasyon sistemine bağlanır ve -15 ila -20 cm H_20 basınç uygulanır

Pnömotoraksta Ameliyat İndikasyonları

- Uzamış Hava kaçağı (>7 gün)
- Aynı tarafta ikinci pnömotoraks
- Daha önce geçirilmiş kontralateral pnömotoraks
- Dalgıç ya da pilotlardaki ilk pnömotoraks
- Senkron bilateral pnömotoraks

Pressurization Flight Profile

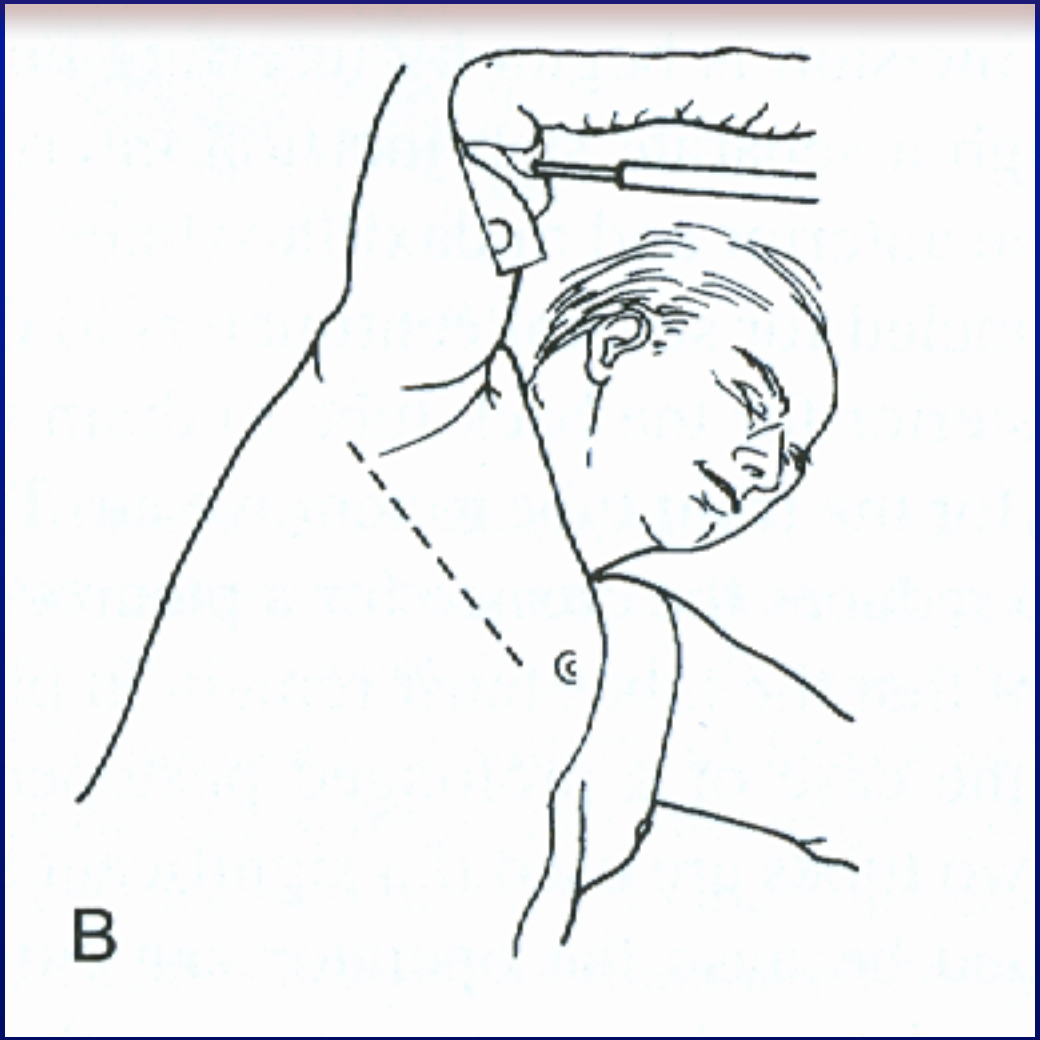




Hangi Cerrahi Girişim?

- Aksiller Torakotomi
- Videotorakoskopi

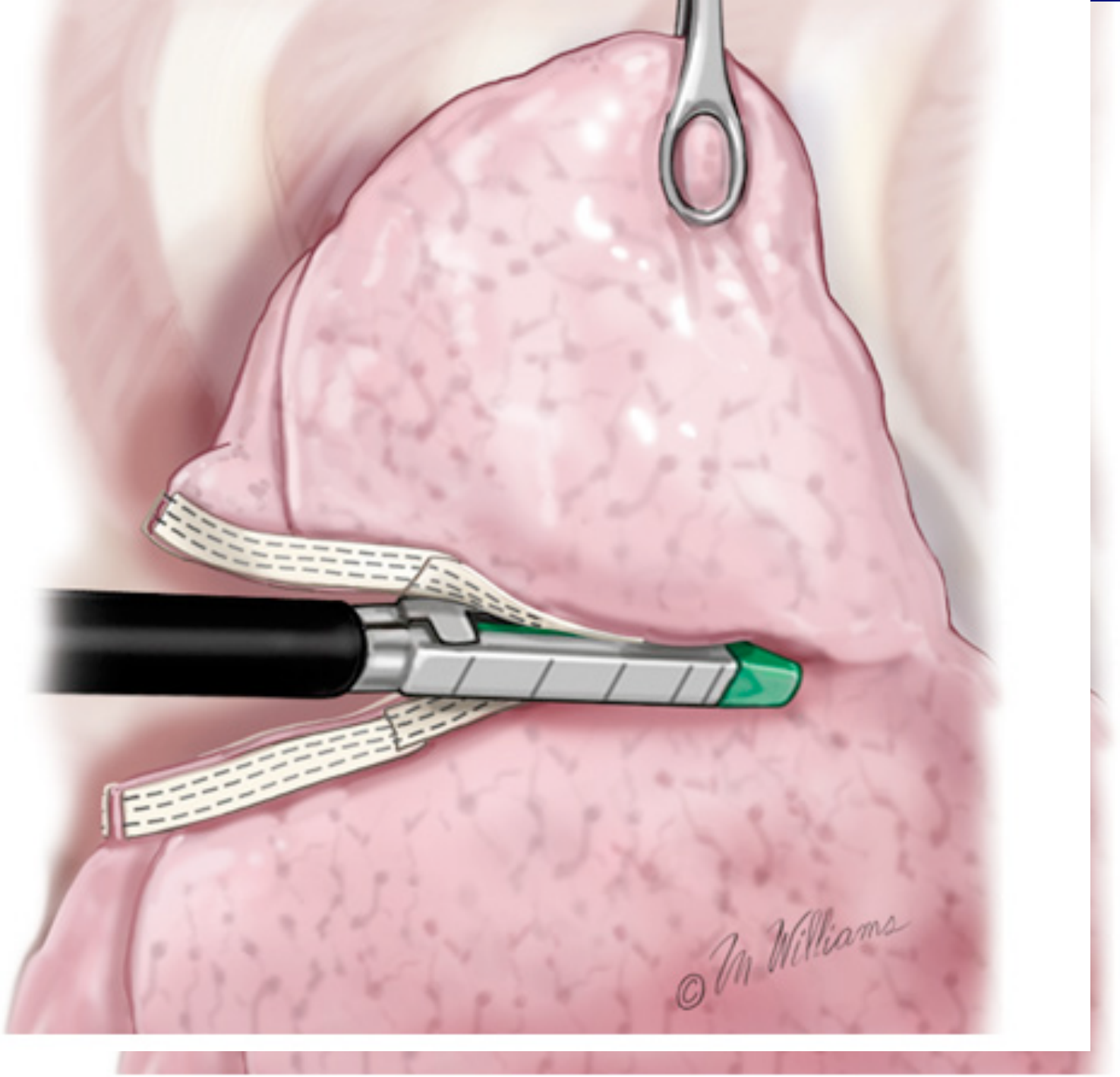
Aksiller Torakotomi

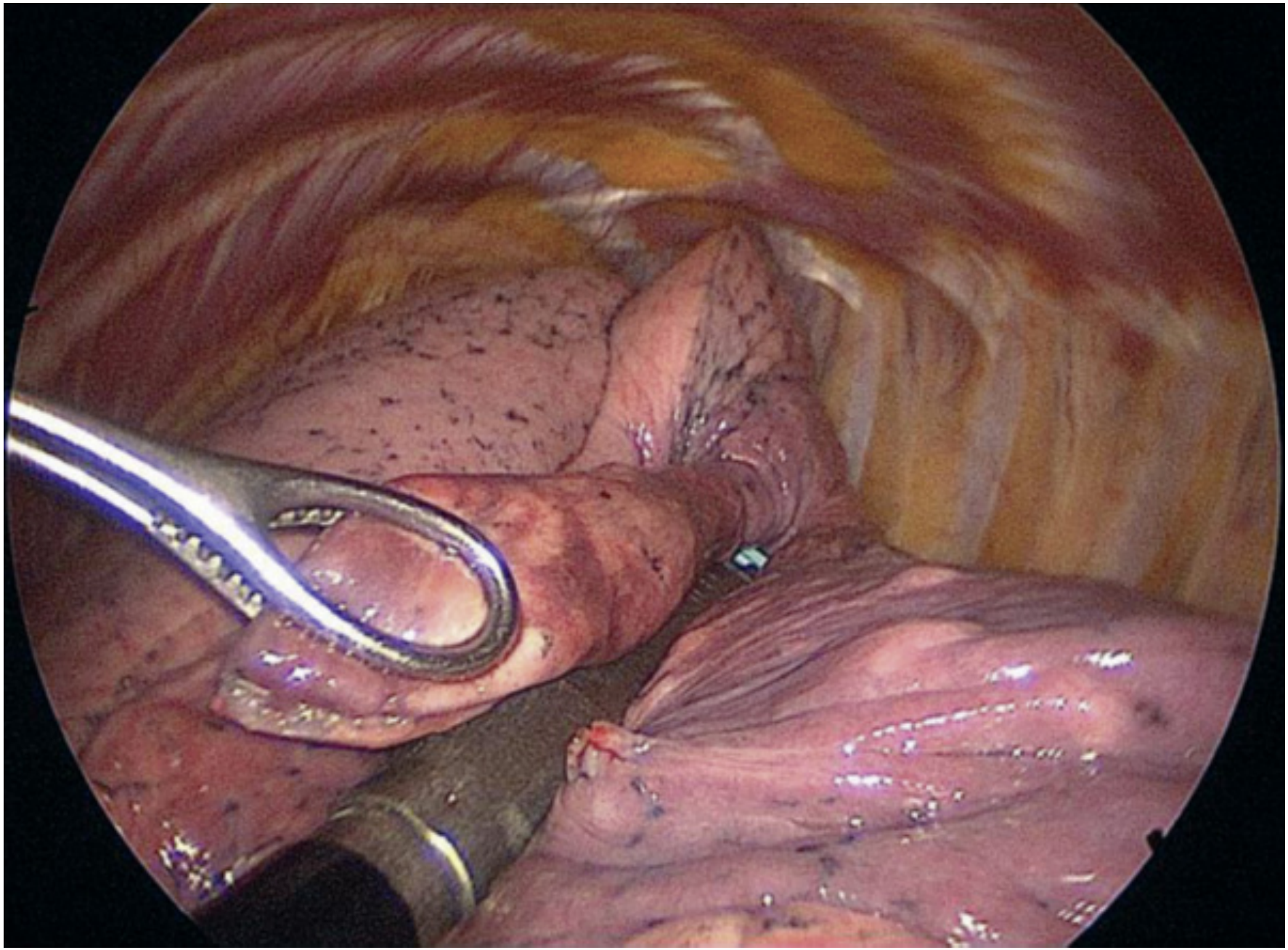


Aksiller Torakotomi

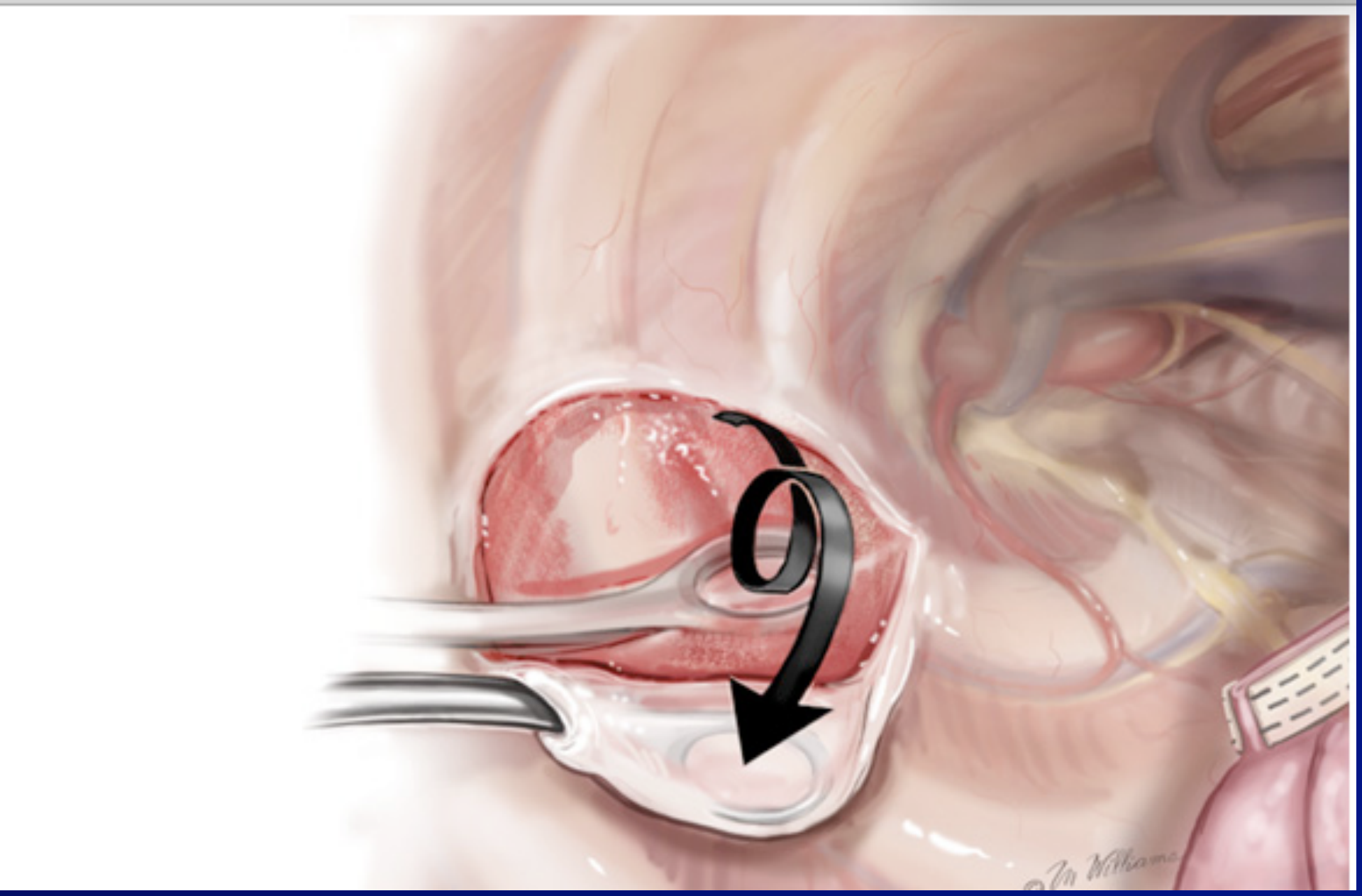
Cerrahi Yöntem

- Hava kaçağı varsa saptanmalı
- Kaçak olan bölge ve blebli/büllü bölgeye wedge rezeksiyon
- Parietal plörektomi / Plevral abrazyon


©M Williams



Çıkarılan Materyal ('Wedge' rezeksiyon)



VATS'ın Avantajları

- Daha az ağrı
- Daha iyi kozmetik sonuç
- Daha kısa yatış süresi / 'Yoğun bakım gereksiz'
- Kronik ağrı neredeyse yok. (Kostal nörit)


COVIDIEN
Endo GIA Ultra

Curr Anesthesiol Rep (2016) 6:125–128
DOI 10.1007/s40140-016-0160-y

Uniportal Video-Assisted Thoracoscopic Surgery

H. Volkan Kara[1] · **Akif Turna**[1]

Published online: 8 April 2016

Abstract Starting from 1990's, video-assisted thoracic surgery (VATS) has commonly been used in thoracic surgery clinics. This is a minimally invasive operative technique where the surgery is performed through 2–4 incisions without any rib spreading under the camera vision of surgical field. Including oncological surgery for non-small cell lung cancer, the VATS experience and knowledge has increased in time. These beneficial and successful results encourage thoracic surgeons to perform surgery via smaller sized and number of incisions. This modification brought the definition of '*Uniportal VATS*,' which seems to be the highlighted future direction in thoracic surgery as reviewed in the present manuscript.

Keywords Uniportal VATS · Thoracic surgery · Non-small cell lung cancer · Minimally invasive surgery

Introduction

Minimally invasive thoracic surgery was first performed by a physician Dr. Cruise in 1885 as a diagnostic thoracoscopy [1]. In 1910, Jacobaeus used the thoracoscope for induction of artificial pneumothorax for treating pulmonary tuberculosis and referred to his name 'Jacobaeus procedure' [2, 3]. In 1970s, the thoracoscope was a straight hollow tube with an incandescent bulb light located on the tube's tip without any working channel so with a mandatory second hole for instrumentation. In 1980, video camera system was developed but the lightening was still not sufficient [3]. In 1989, the insufficient lighting providing incandescent light was no more used with the invention of the bright xenon lamp. This revolution about having the surgical field more visible started an incredible inertia to the field of minimally invasive thoracic surgery. All surgical team members including operating room nurse, physician assistant, and surgical trainees had a direct view from the surgical area so that they may help and assist the operating surgeon and also learn key points of surgery more efficiently. This created a knowledge development and competition to do things from less and smaller areas.

Starting from the 1990's, thoracic surgery clinics got involved in video-assisted thoracic surgery (VATS) in the diagnosis and treatment of pulmonary disease where the vision in operating field with a camera system transmitted to screens in the OR [4]. The technique became more common as telescopic-guided minimally invasive procedure in the treatment of pneumothorax [5]. The usage of the system became more popular with pleurectomy and thoracic sympathectomy cases [6]. This was followed by pulmonary wedge resections [7]. Soon afterward, VATS had started to be used in more complex pathologies such as anatomical pulmonary resections. With the principles individual dissection of anatomical structures of lung as pulmonary veins, pulmonary arteries and bronchus also complete systematic mediastinal lymphadenectomy by using the surgical instruments under the screen vision provided by a camera through 2–4 incisions without any rib spreading. This usage had formed a large knowledge accumulation of anatomical resections [8–10] including complex procedures such as chest wall and sleeve resection [11]. The number of the port sides in VATS has been

This article is part of the Topical Collection on *Thoracic Anesthesia*.

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volkan_kara@yahoo.com

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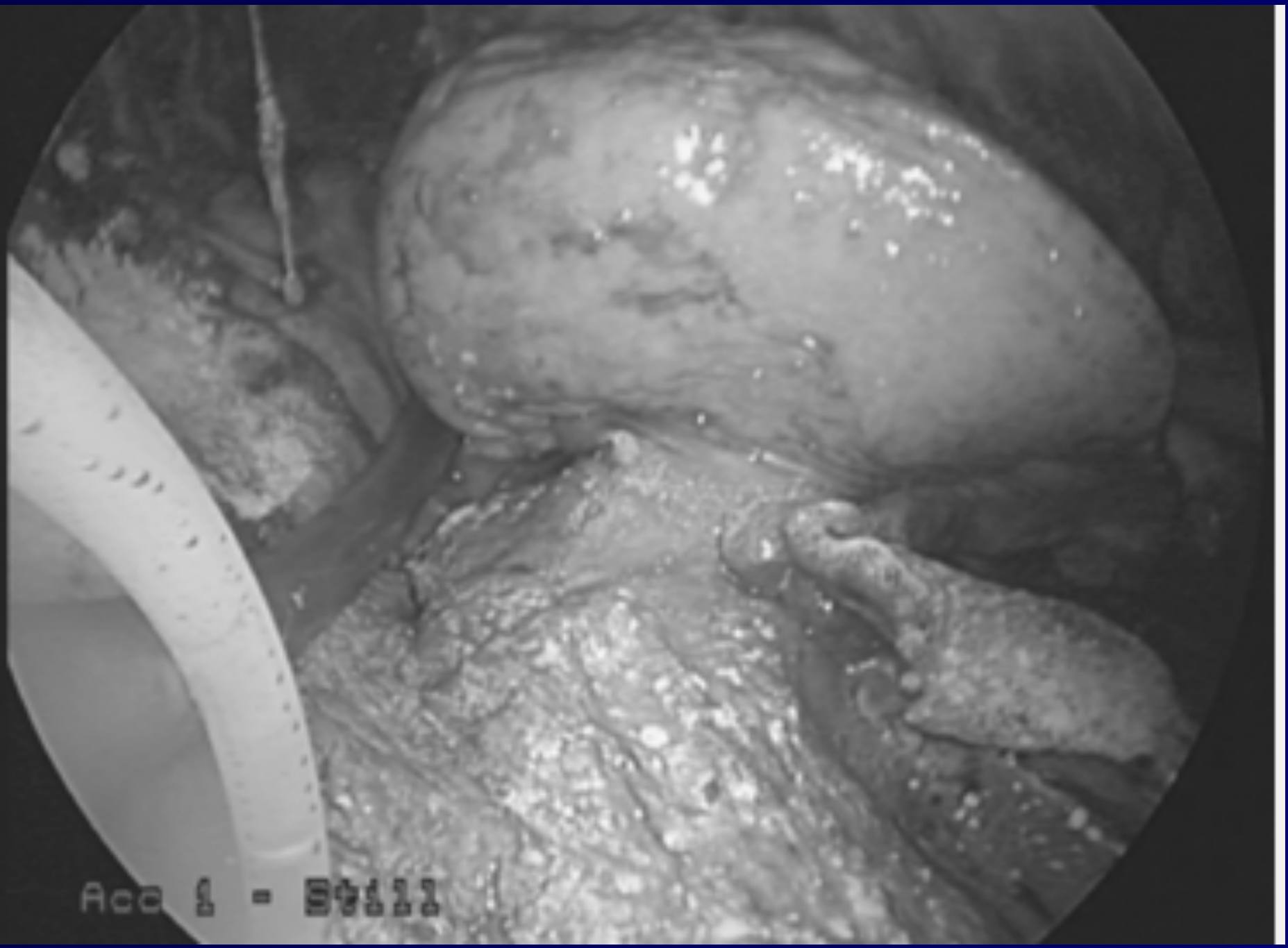
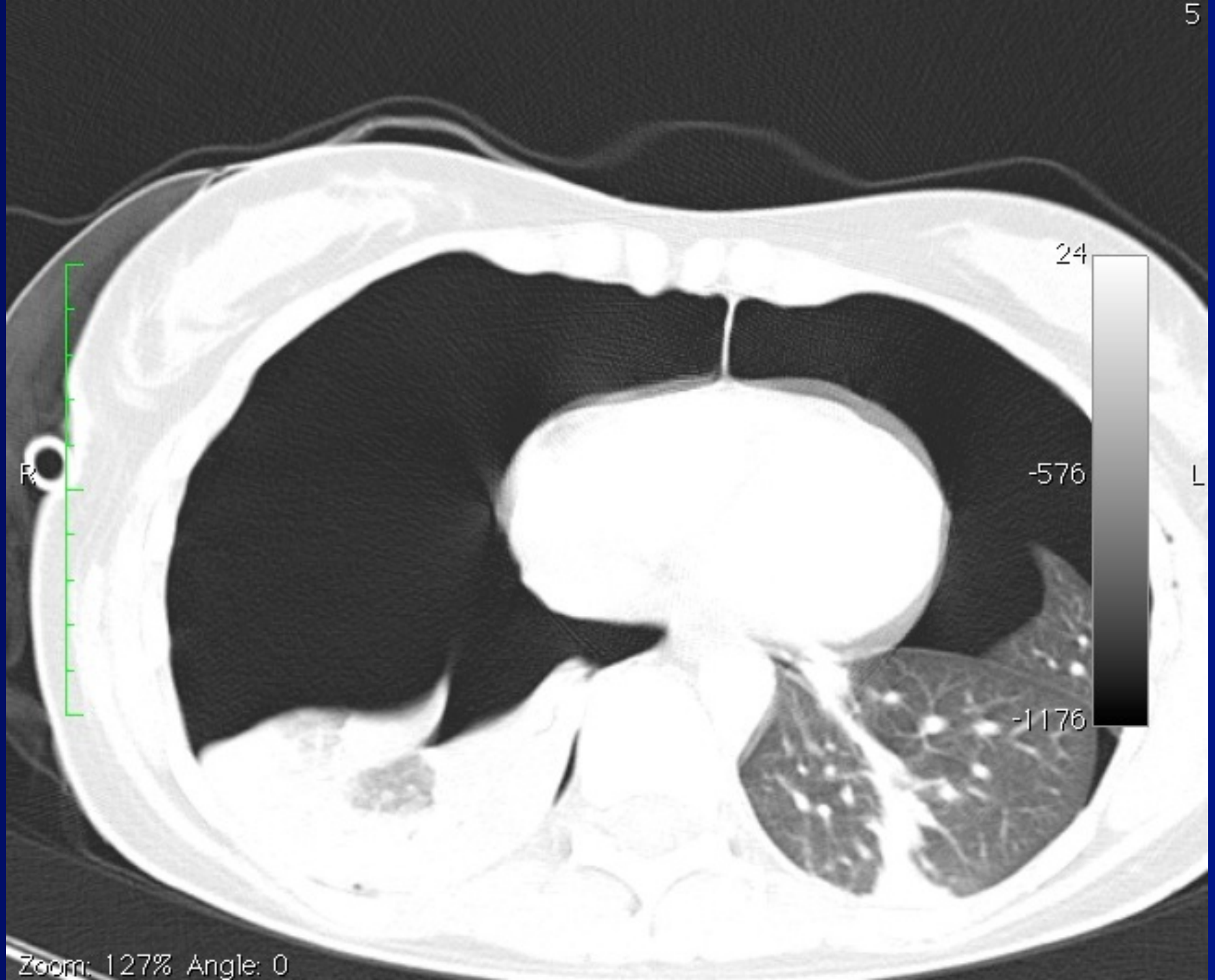
Plörodez

- Ameliyat olmak istemeyen hastalar
- Talk (4 - 8 gr)
  - İnsuflasyon
  - Bulamaç



Senkron Bilateral Pnömotoraks

- Mekanizması tam belli değil.
- Kontralateral geçiş olabilir.
- Hayatı tehdit edici bir durum yaratma olasılığı yüksektir (İleri dispne)
- Sistemik ya da bilateral akciğer hastalığı olanlar hastalarda görülebilir.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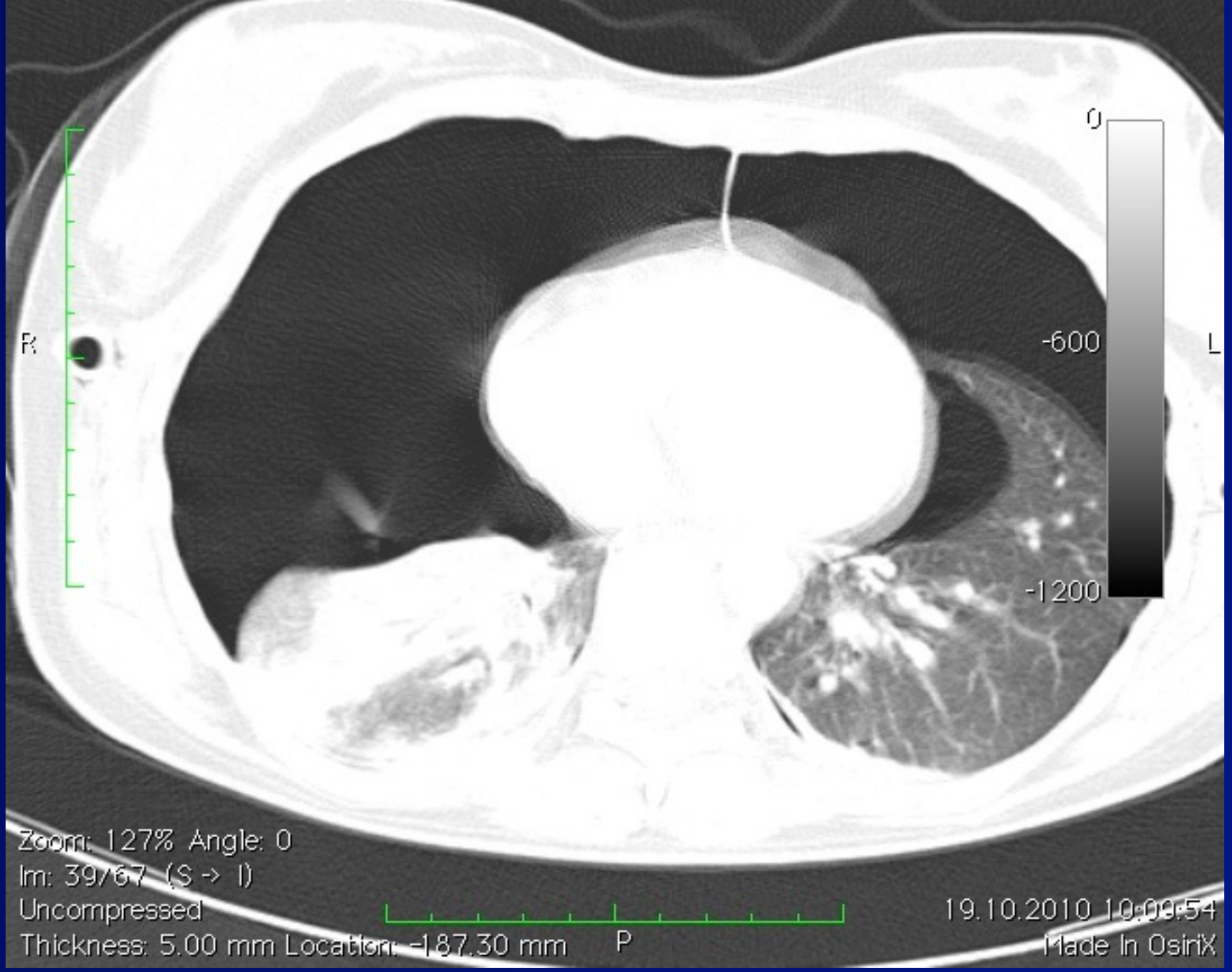
24
-576
-1176
L
Zoom: 127% Angle: 0

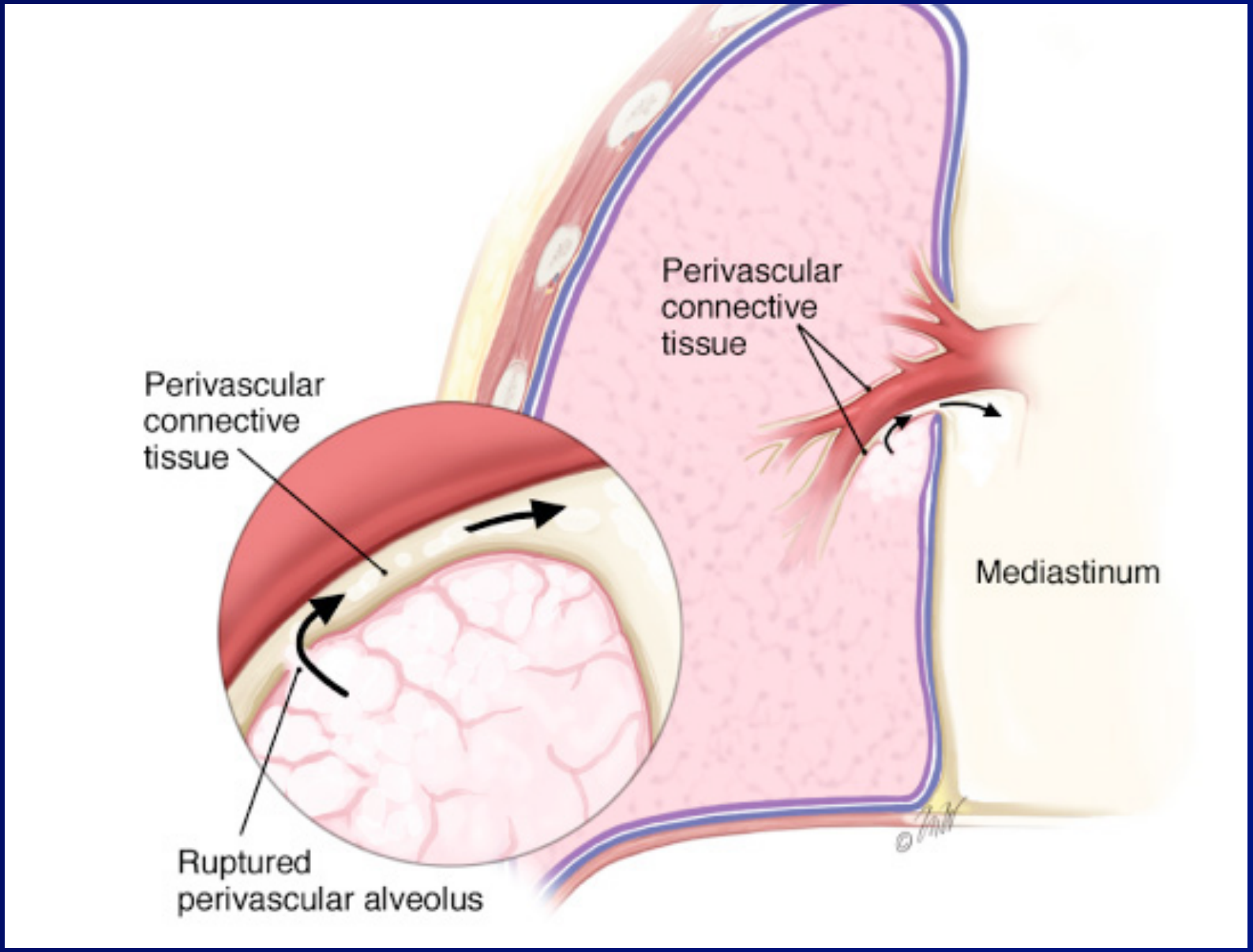

0
-600
-1200
L
R
Zoom: 127% Angle: 0
Im: 39/67 (S -> I)
Uncompressed
Thickness: 5.00 mm Location: -187.30 mm
P
19.10.2010 10:00:54
Made in OsiriX

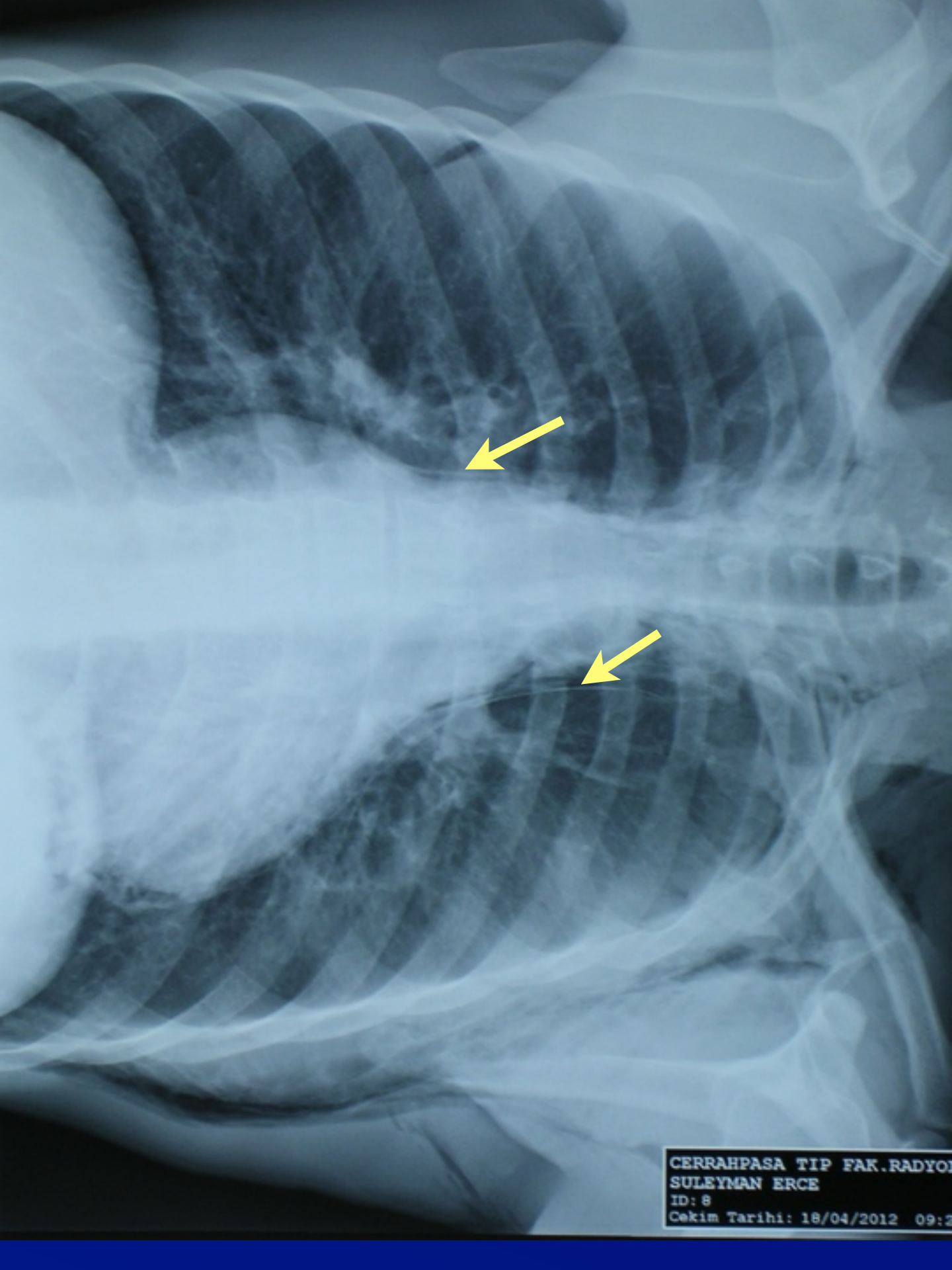
Kontralateral geçiş

Pnömomediastinum

- Nedenler:
  - Spontan (Bronşial astma, KOAH),
  - Travmatik (künt toraks travması;trakea ve ana bronş rüptürü, özofagus rüptürü),
  - Iatrojenik (Trakea cerrahisi, özofagus, batın cerrahisi)
- Tedavi: Konservatif, Cerrahi (Mediastinostomi)

PNÖMOMEDİASTİNUM

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SULEYMAN ERCE
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Cekim Tarihi: 18/04/2012 09: