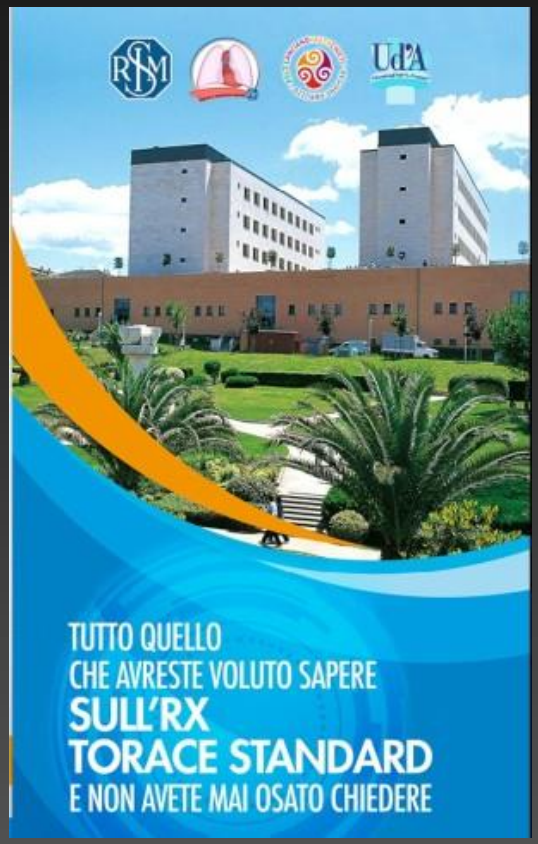
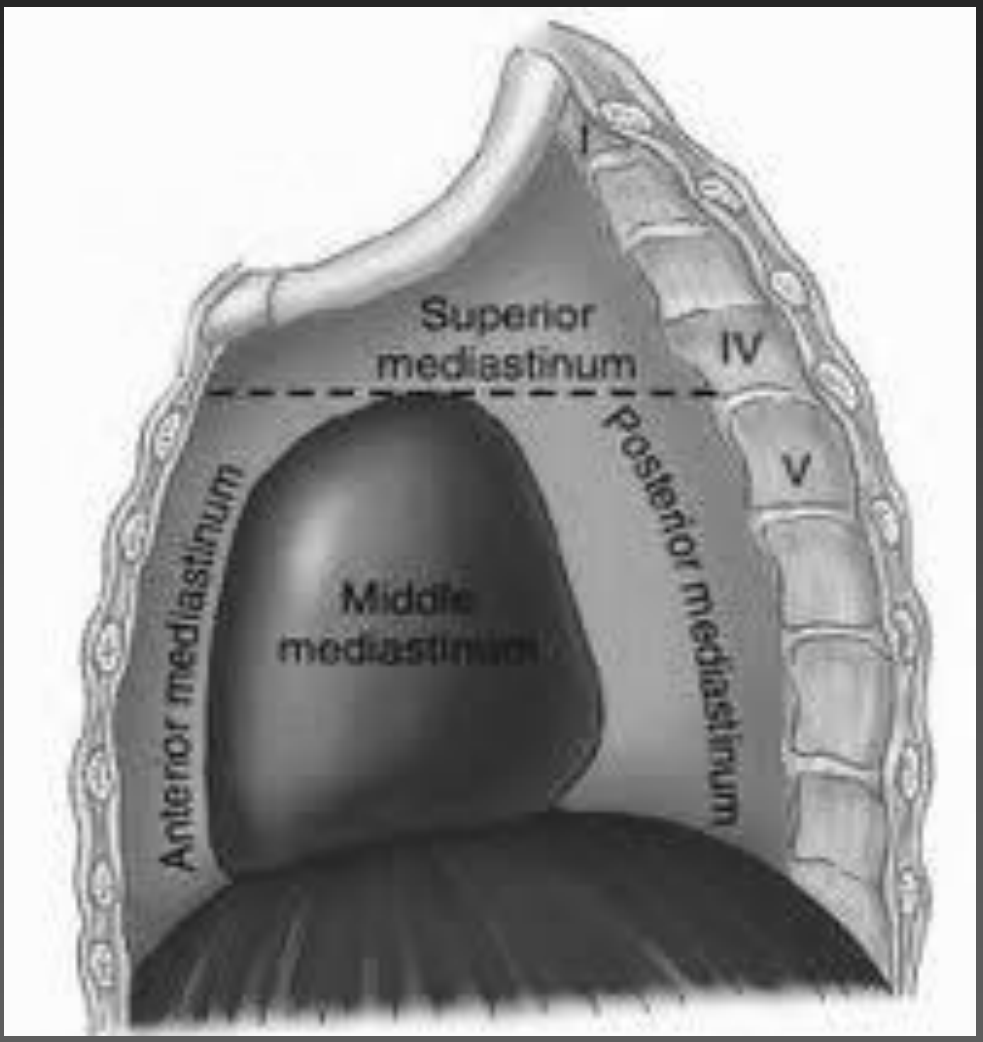
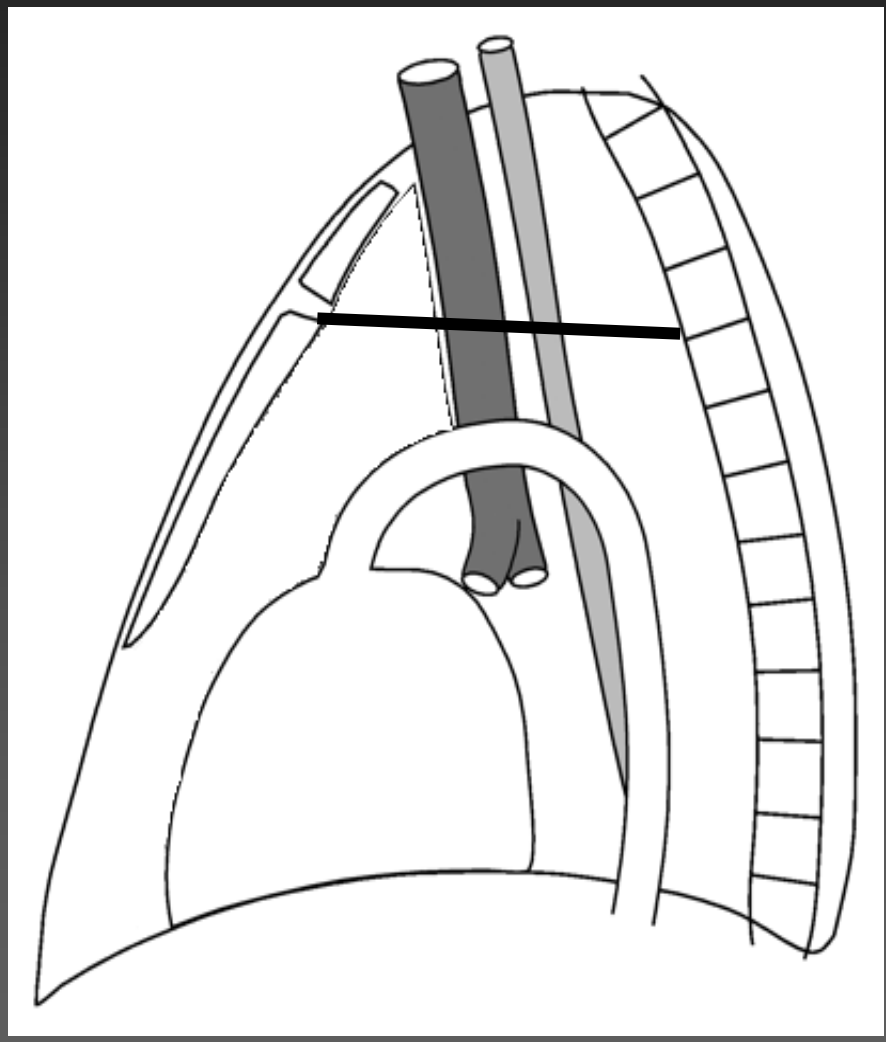
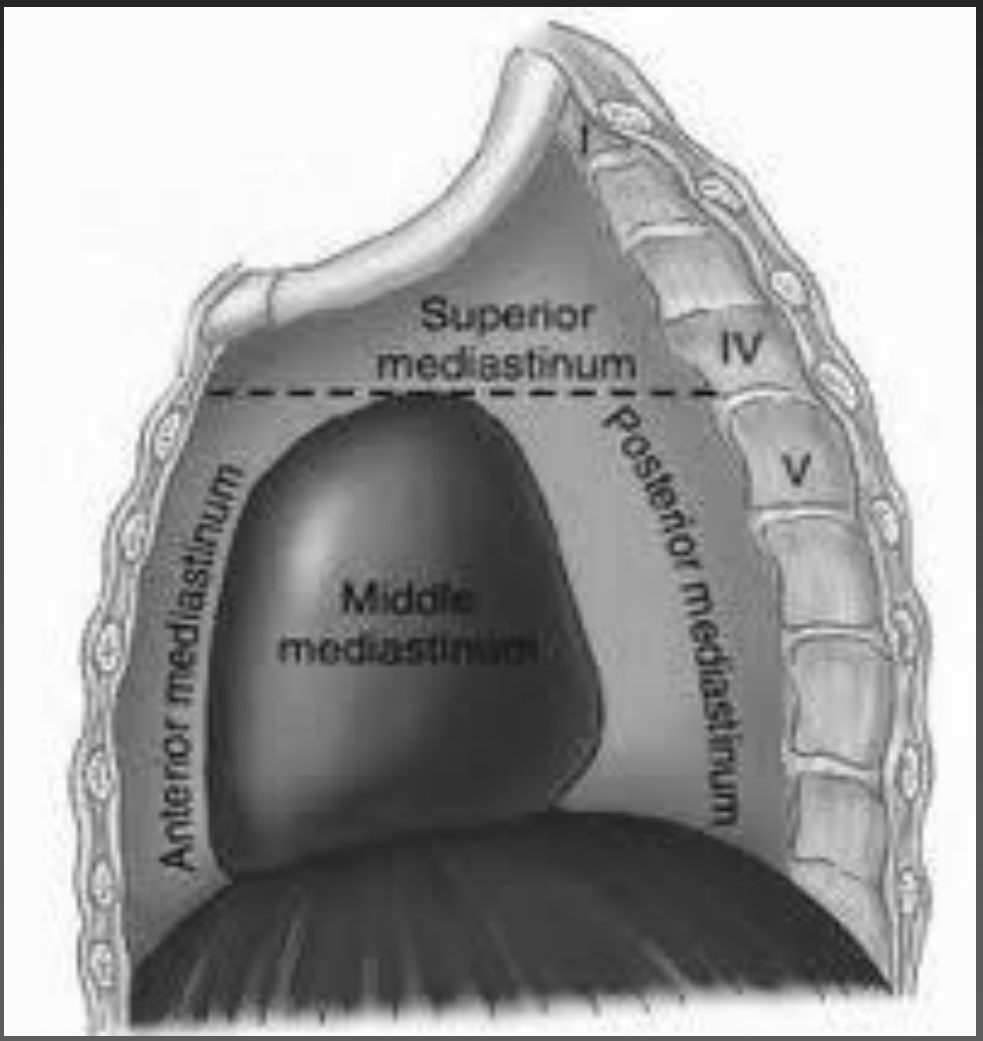


IL MEDIASTINO: LINEE E SPAZI

Giancarlo Cortese
Servizio di Radiologia
Ospedale Maria Vittoria ASLTO2 Torino


I
Superior
mediastinum
IV
V
Posterior mediastinum
Anterior mediastinum
Middle
mediastinum

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IV
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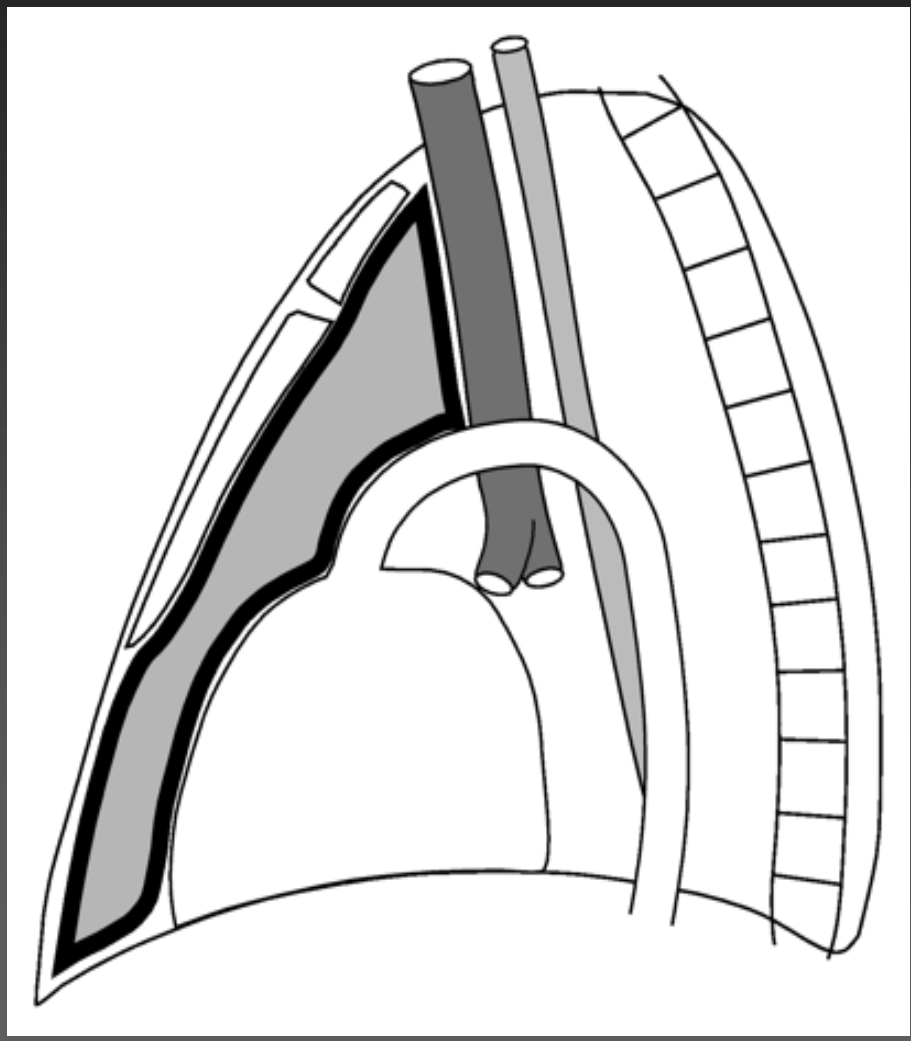

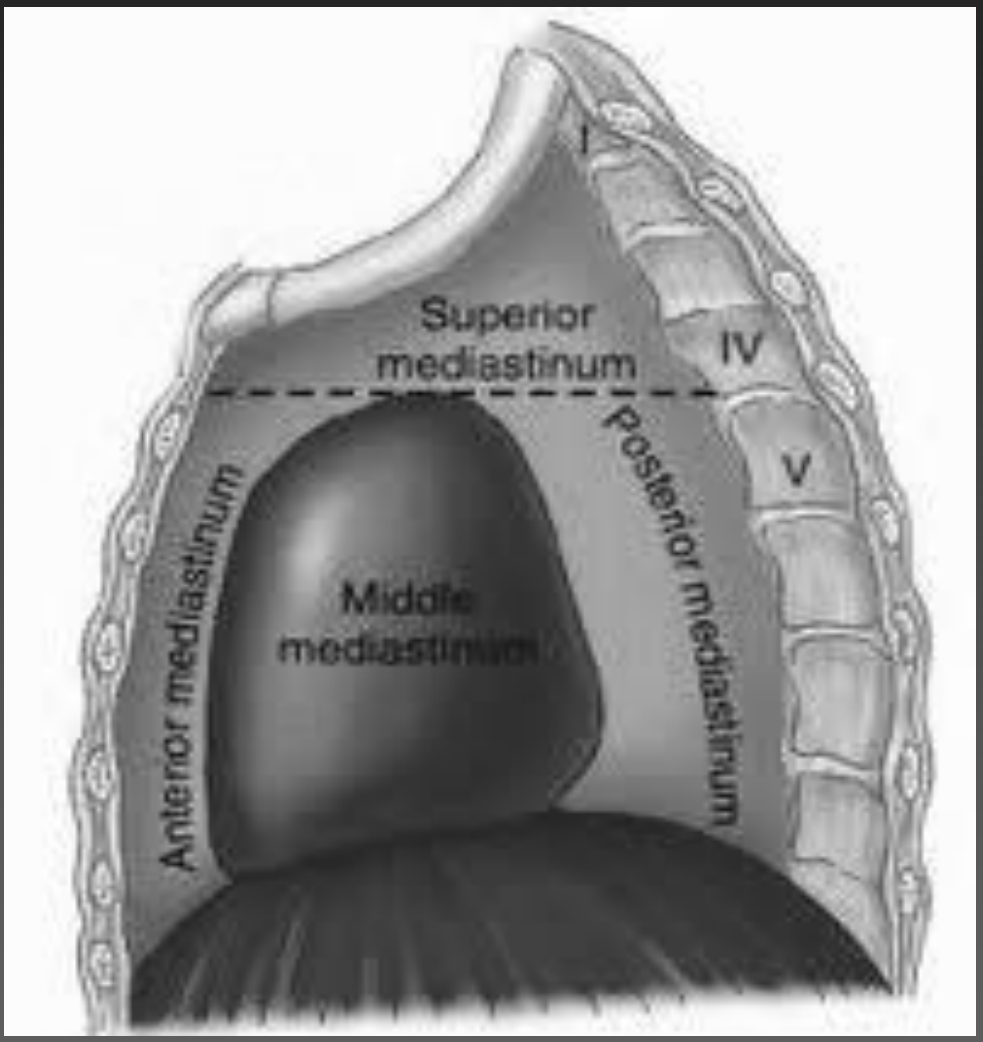
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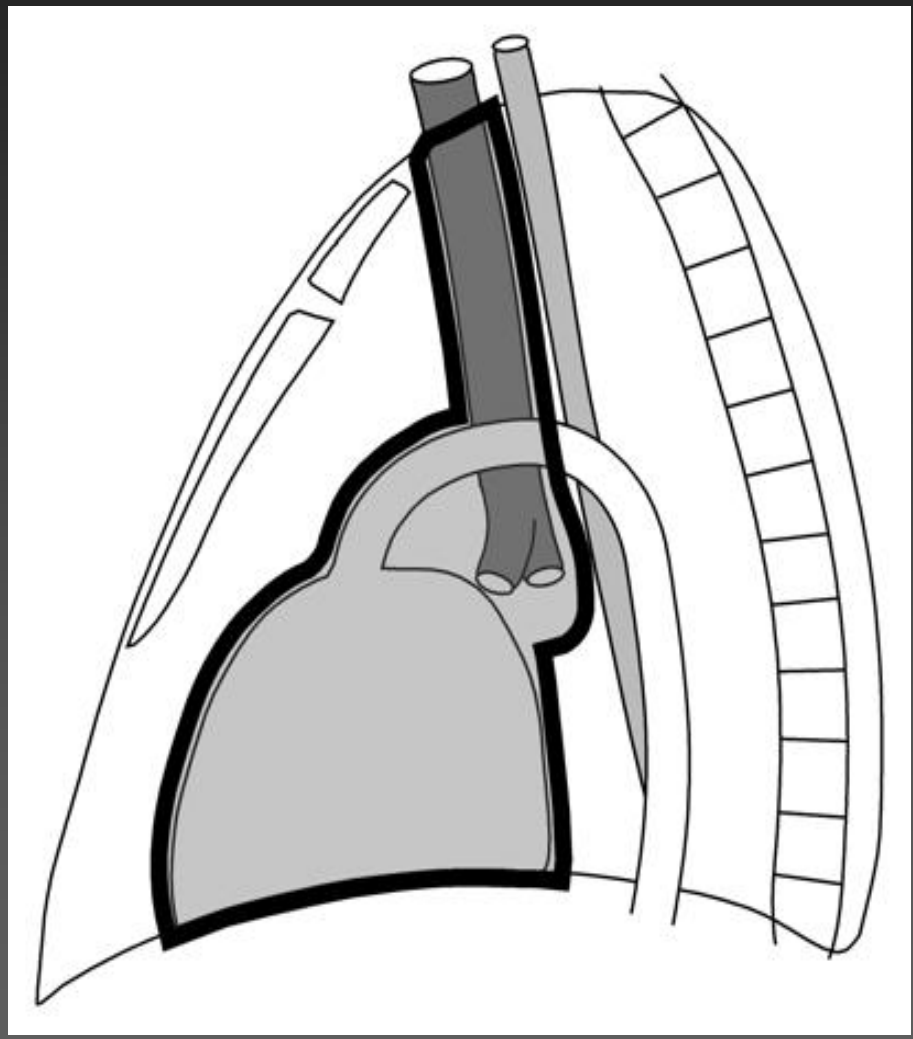

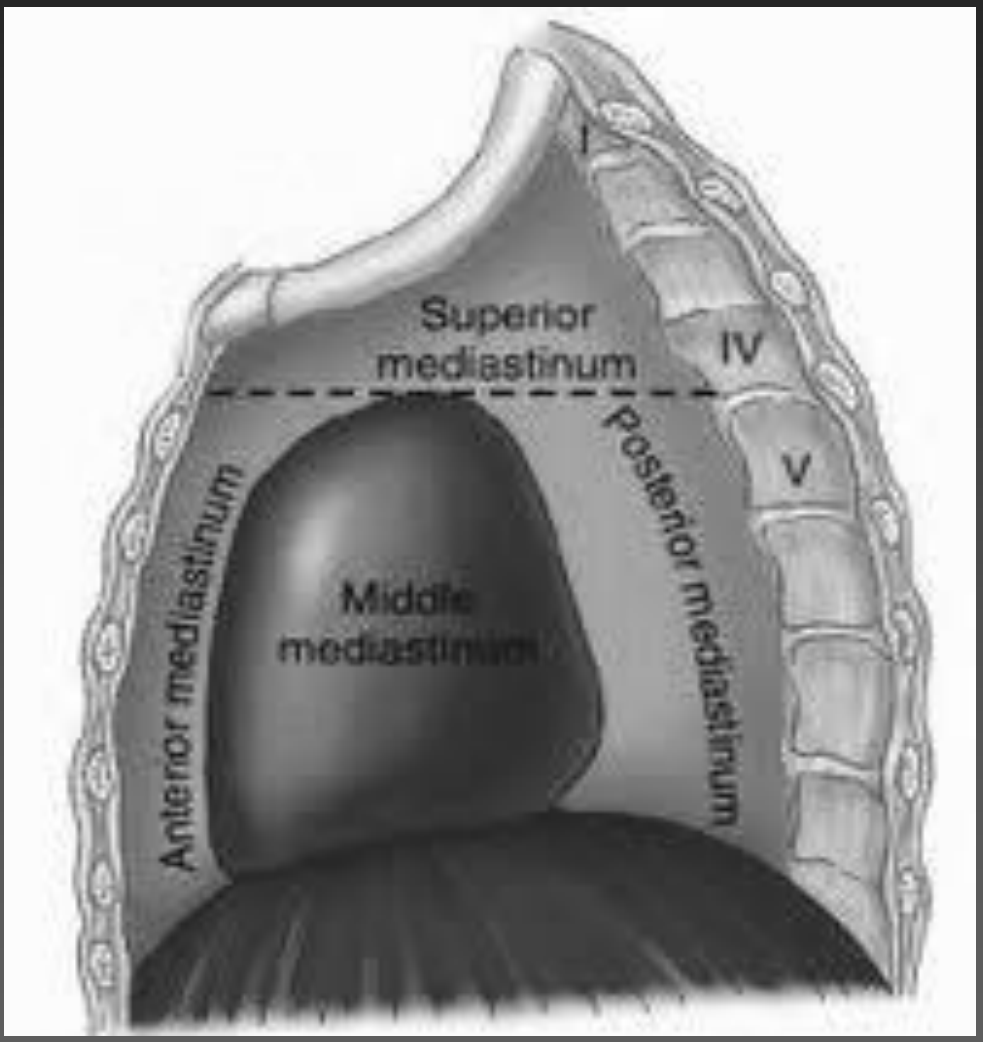
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Superior
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IV
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Anterior mediastinum
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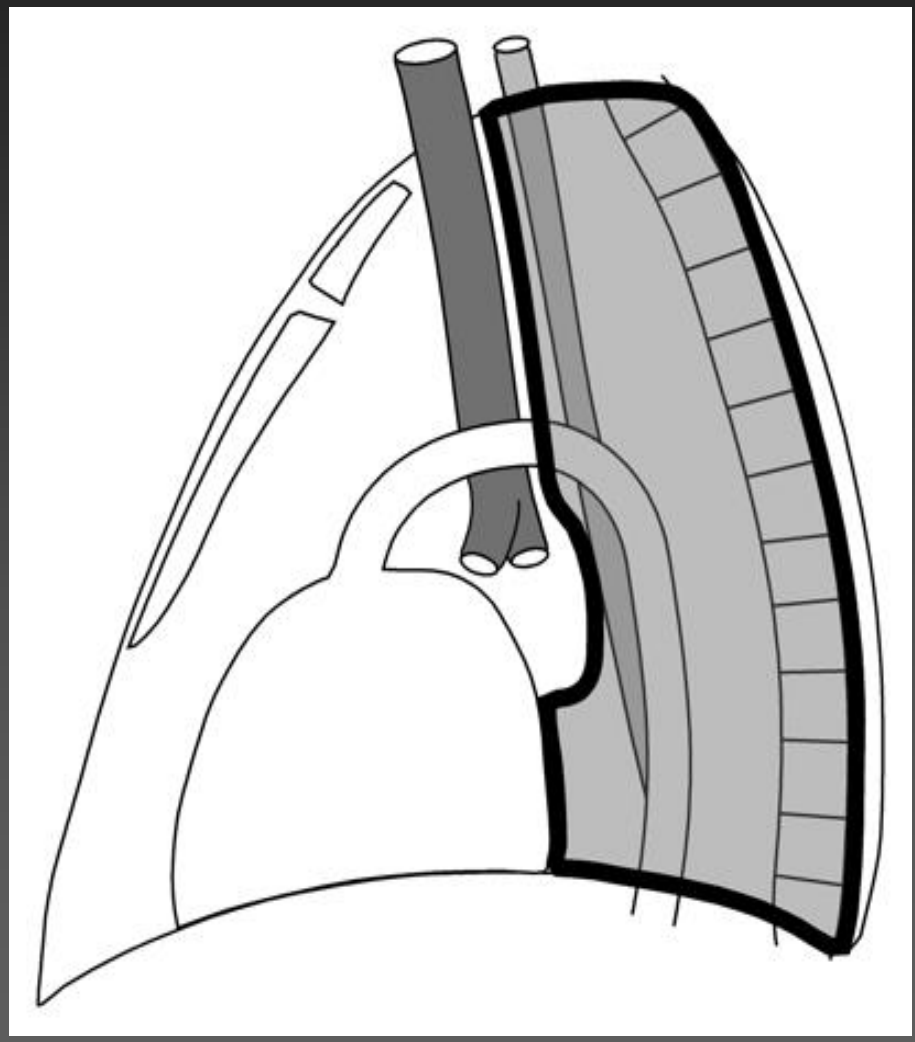
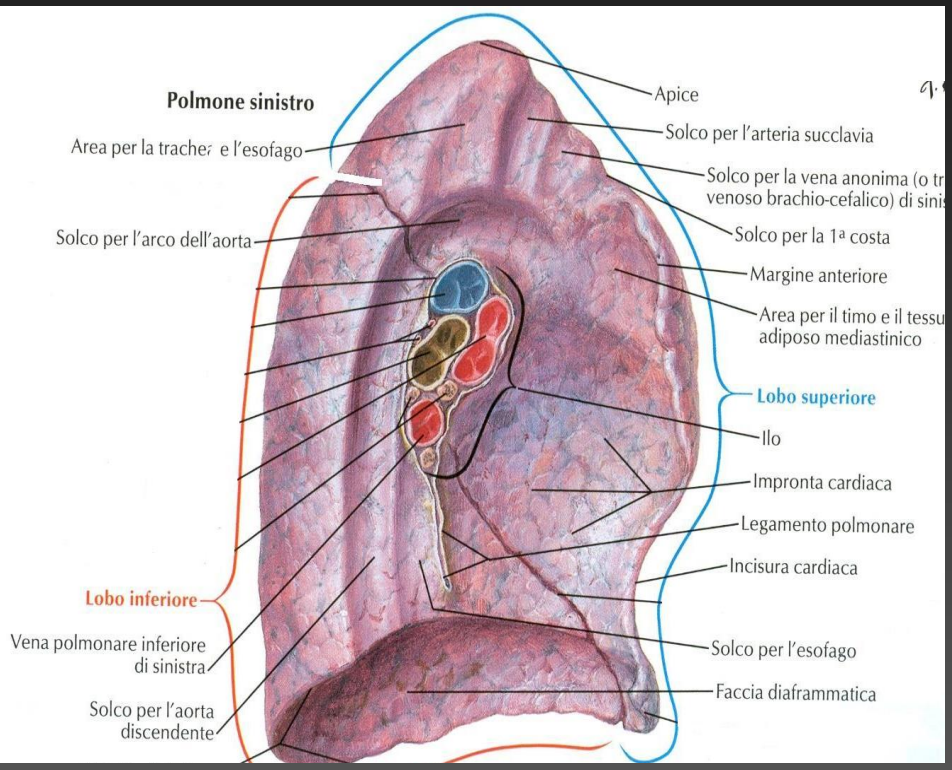
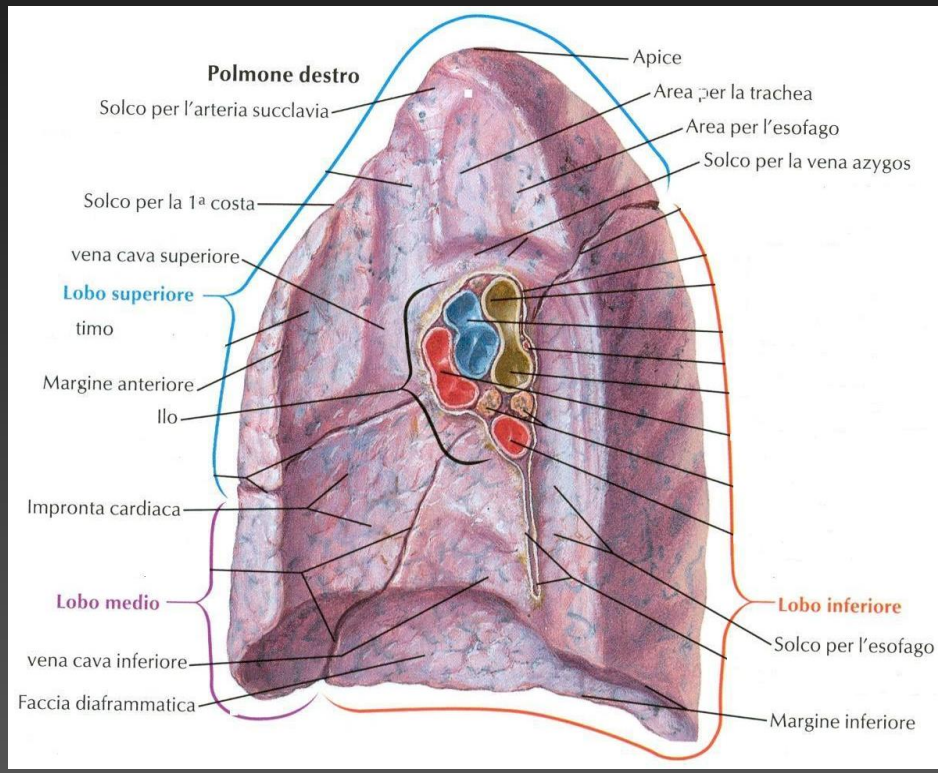
Posterior mediastinum



POLMONE SINISTRO



POLMONE DESTRO



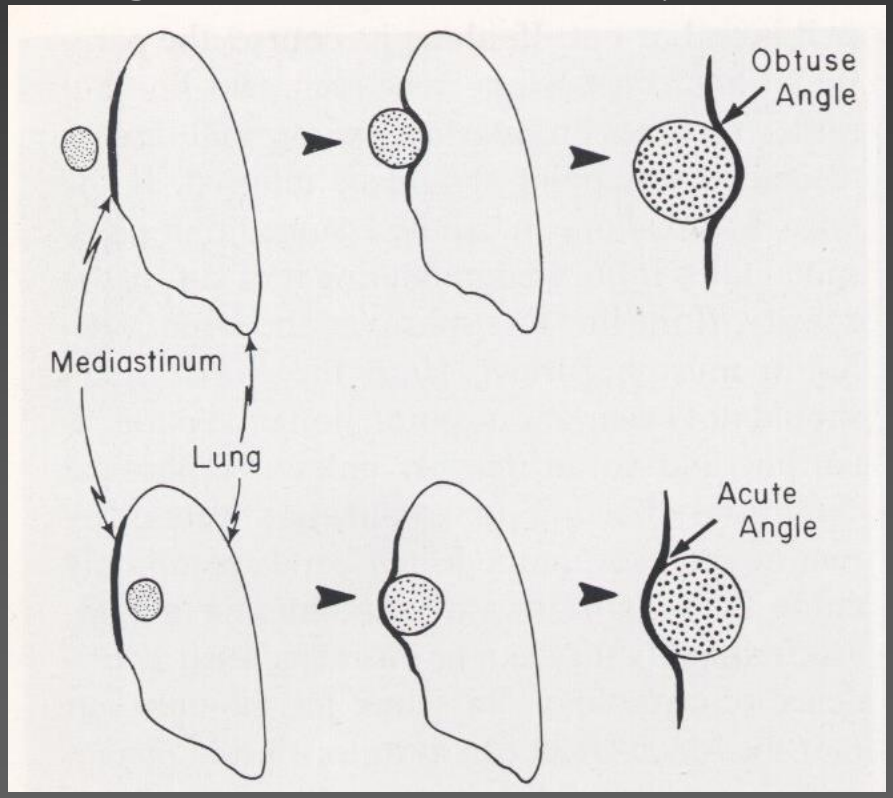
Le strutture al di sotto della pleura mediastinica producono solchi ed incisure nei polmoni

REPERTI RX DI MASSA MEDIASTINICA

I MASSA PURAMENTE INTRAMEDIASTINICA

II MASSA AL CONFINE POLMONE/MEDIASTINO

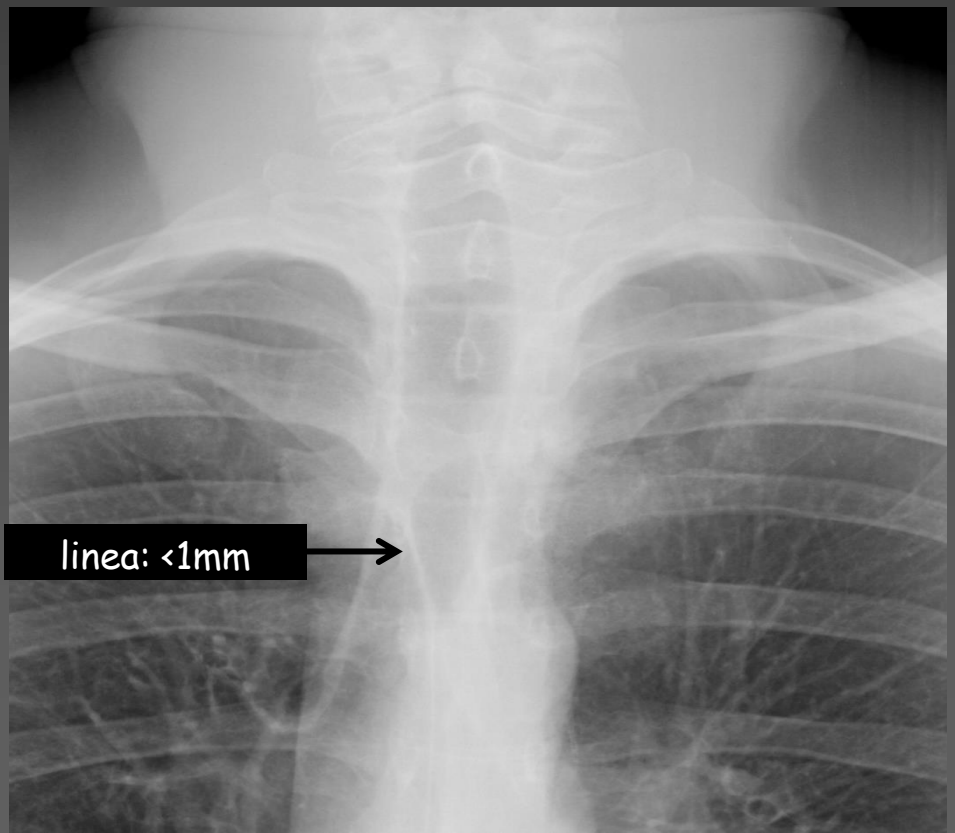
- margini lisci e ben definiti
- assenza di broncogramma aereo
- deformazione delle strutture mediastiniche
- margini ottusi fra lesione e polmone

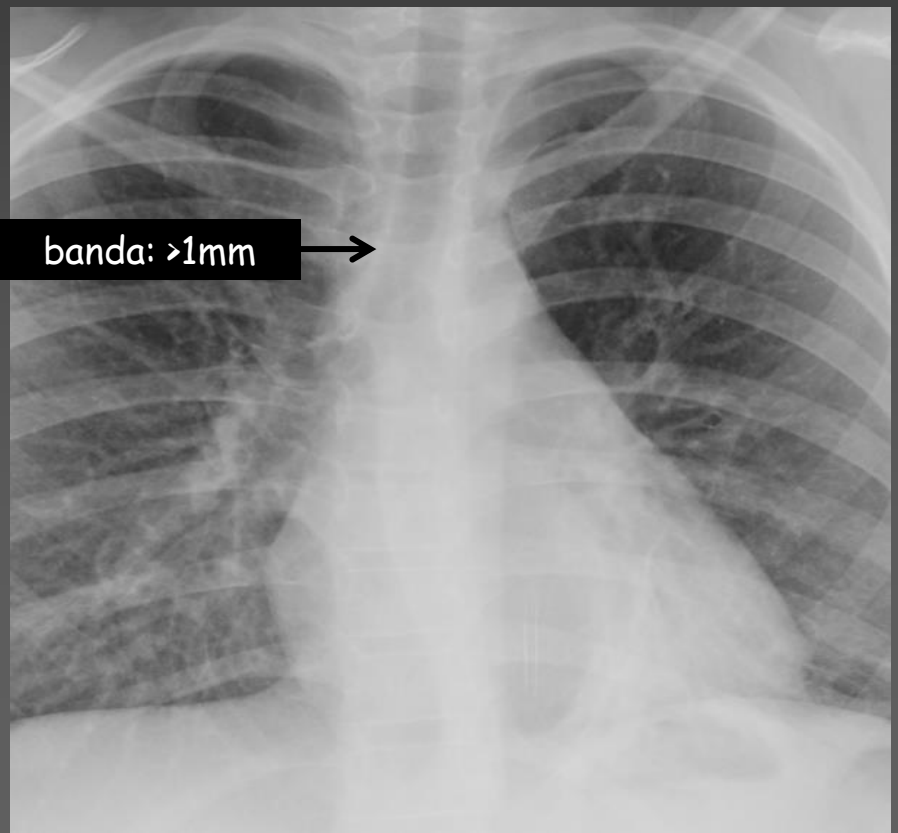


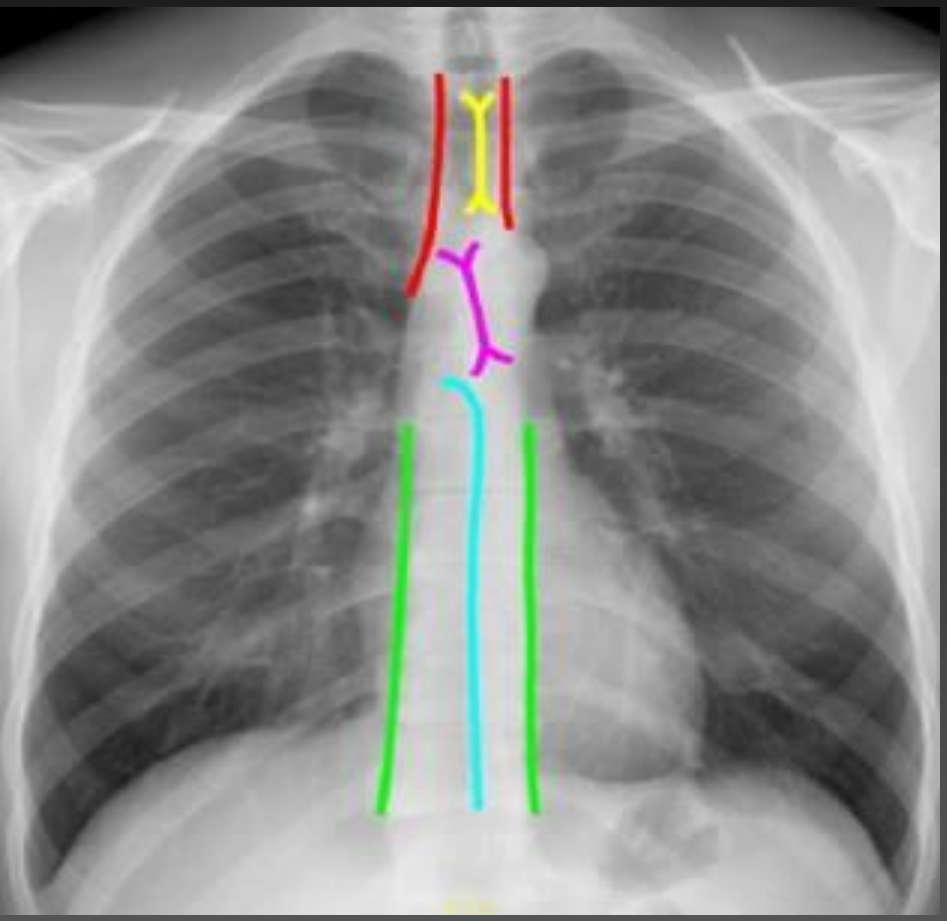
- **alterazione delle linee mediastiniche**

COSA SONO LE LINEE MEDIASTINICHE ?

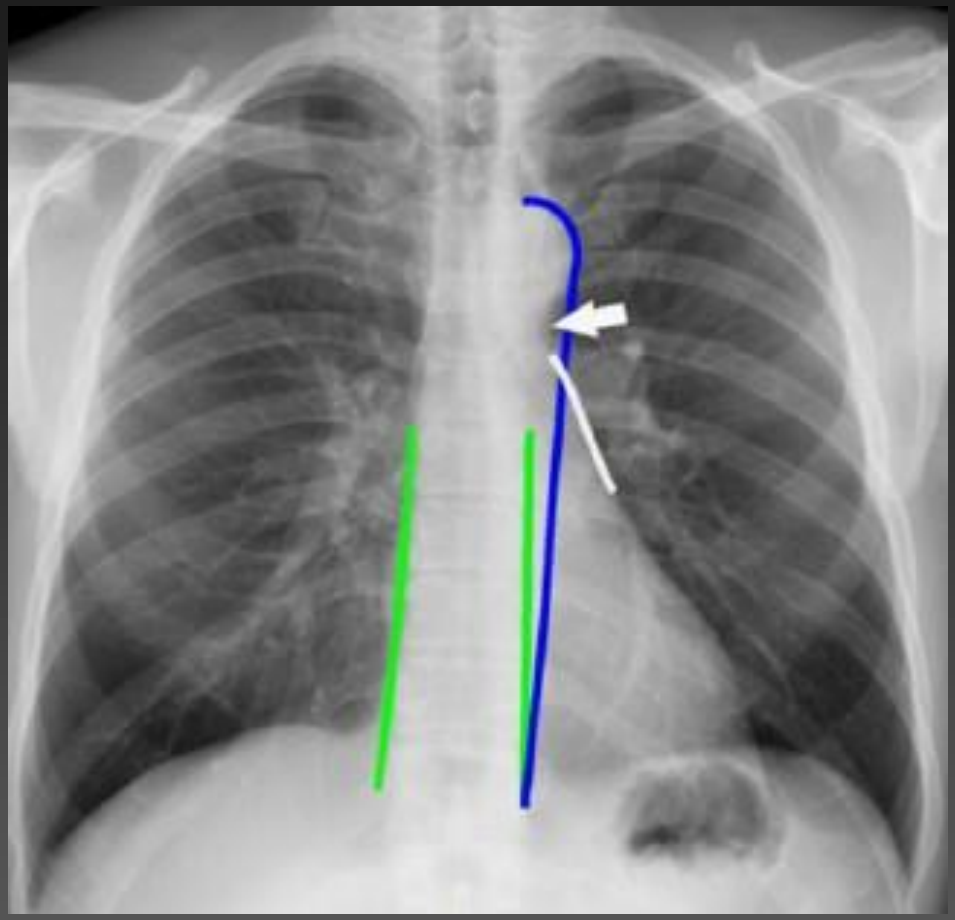
Sono linee verticali corrispondenti alla riflessione della pleura sulle strutture del mediastino, apprezzabili sul Rx quando il fascio radiante colpisce tangenzialmente le interfacce create tra le strutture mediastiniche e l'aria contenuta nei polmoni.







- linea di giunzione posteriore
- bande paratracheali destra e sinistra
- linea di giunzione anteriore
- recesso azygos esofageo



- linea paraaortica
- riflessione aorto polmonare
- finestra A-P (freccia)
- bande paravertebrali dx e sin

LINEE MEDIASTINICHE

NON VISIBILI

- età / costituzione del paziente
- se il raggio non è tangente all'interfaccia polmone-mediastino

CANCELLATE

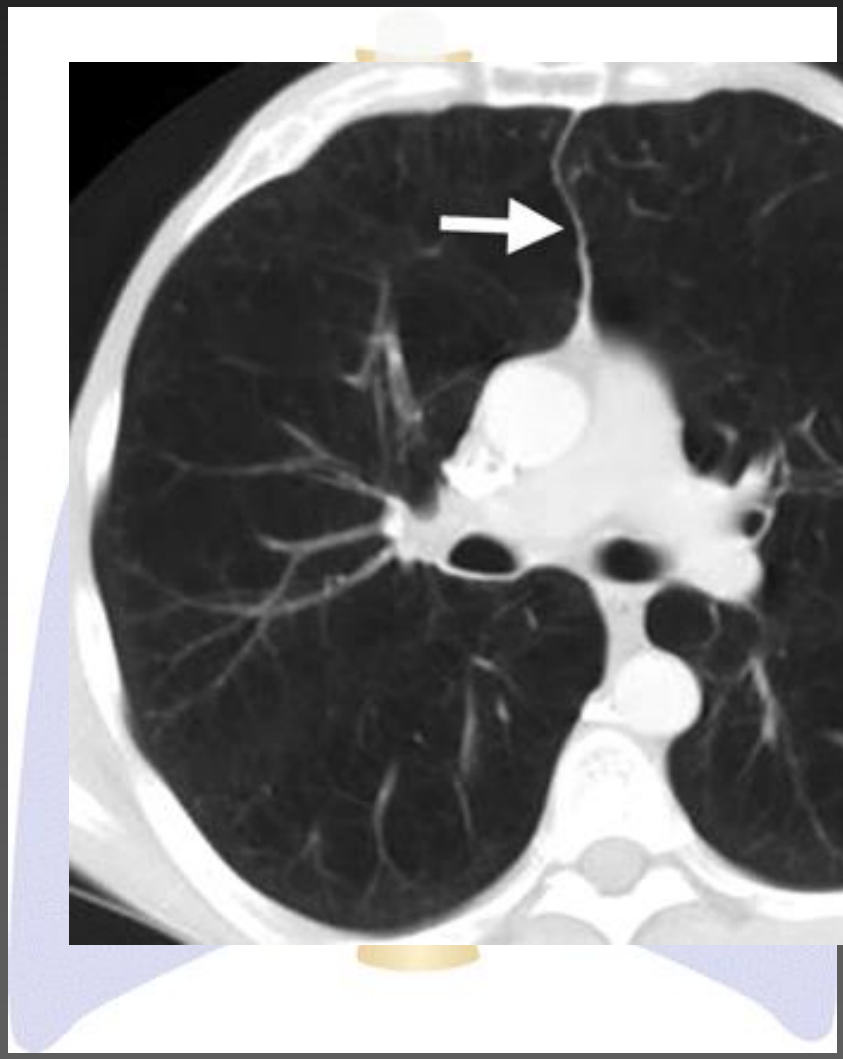
- per un opacità polmonare o pleurica adiacente

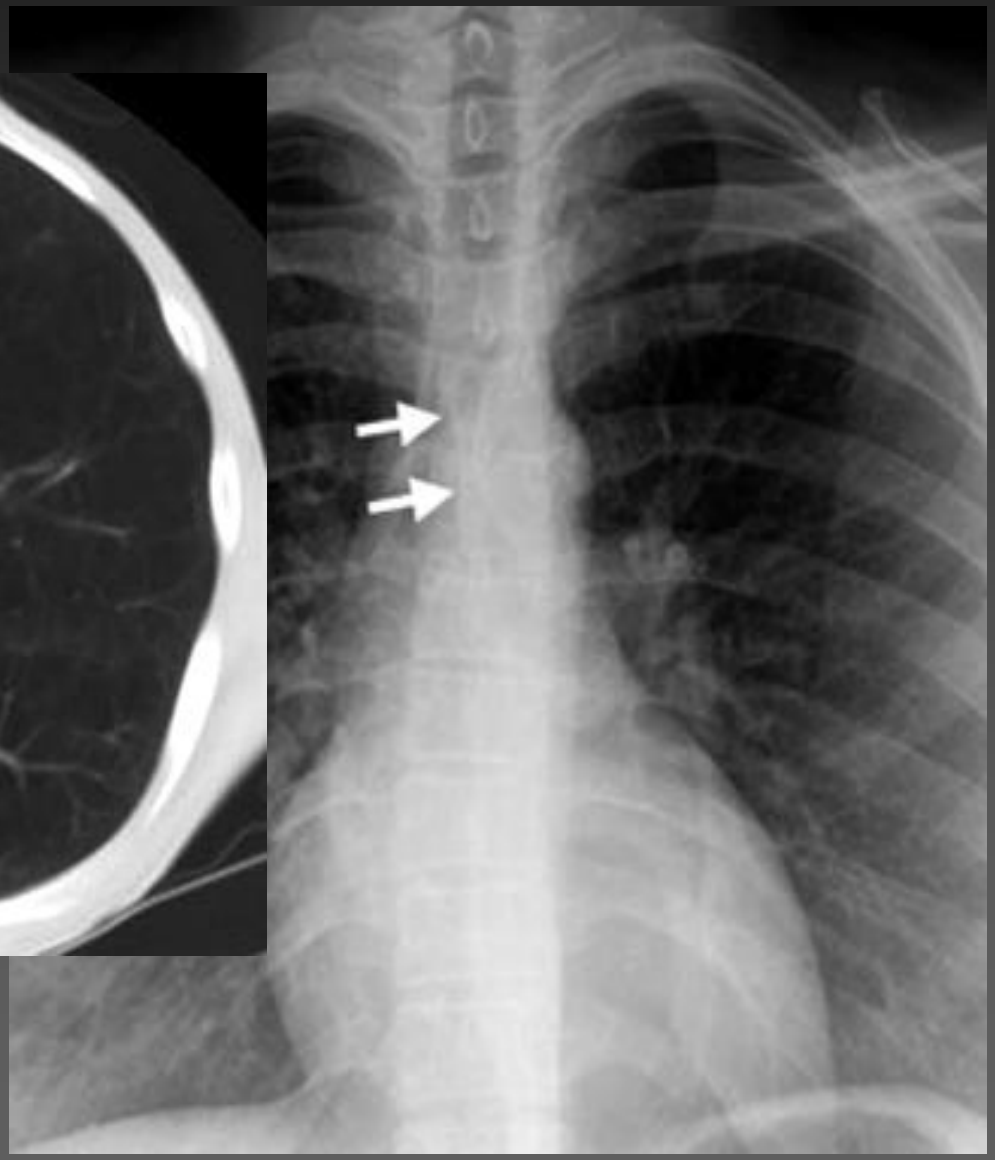
AMPLIATE / DISLOCATE

- da una formazione espansiva mediastinica

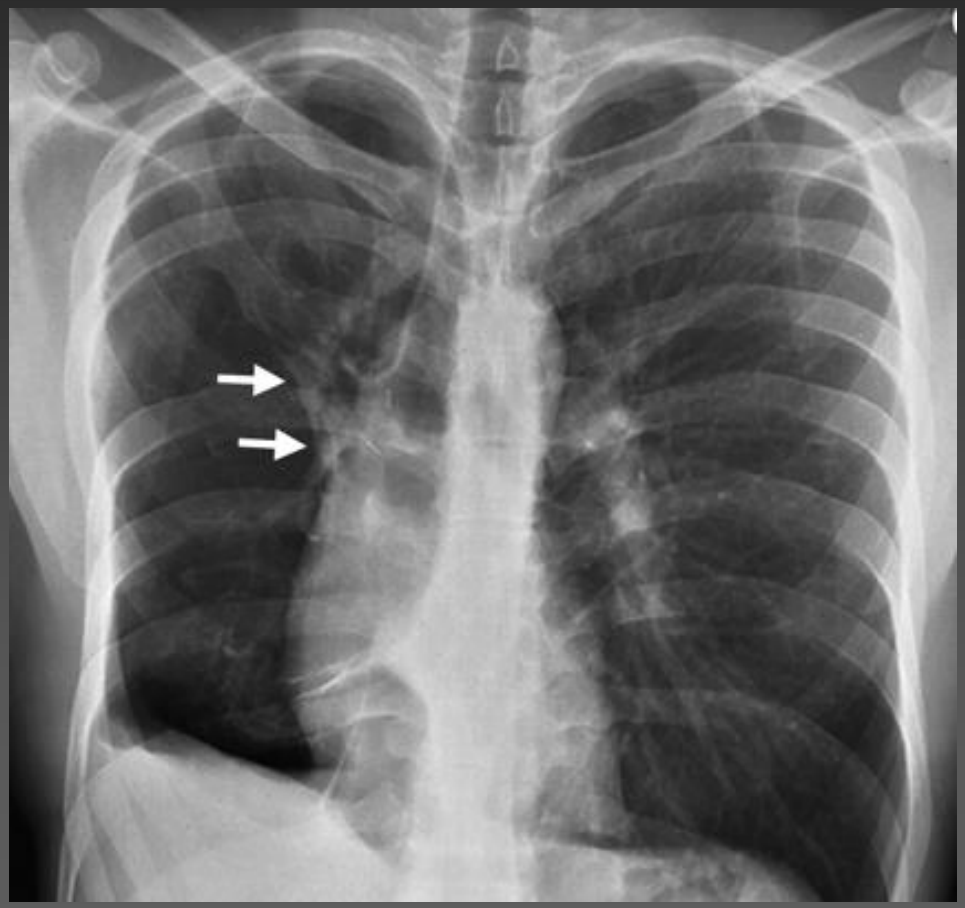
ESTREMAMENTE SIGNIFICATIVA LA CANCELLAZIONE/DEFORMAZIONE DI UNA LINEA MEDIASTINICA PRECEDENTEMENTE RICONOSCIBILE

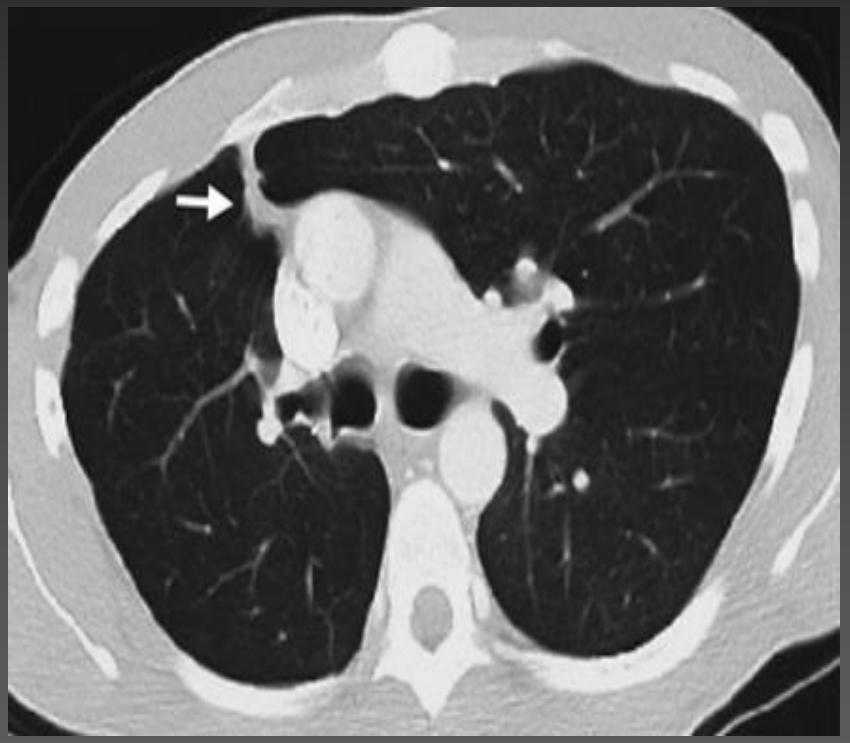
LINEA DI GIUNZIONE ANTERIORE



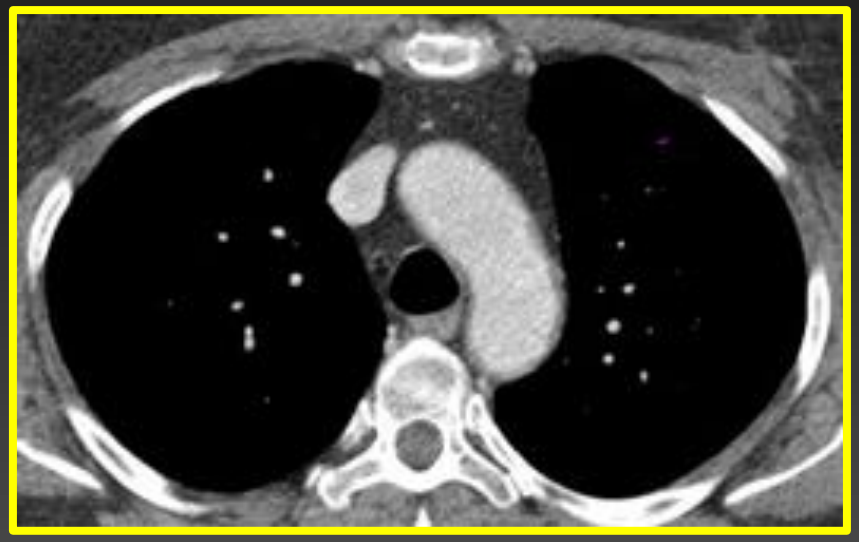


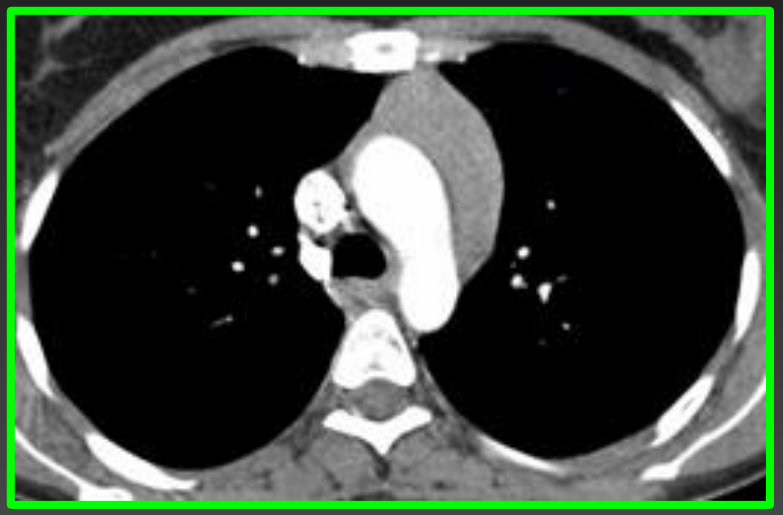
DISLOCAZIONE DELLA GIUNZIONE ANTERIORE

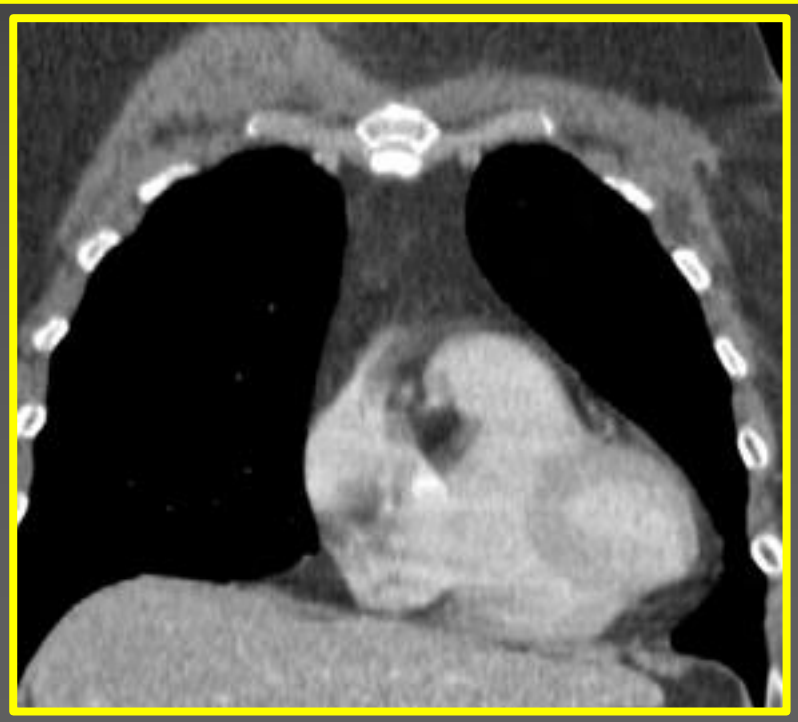


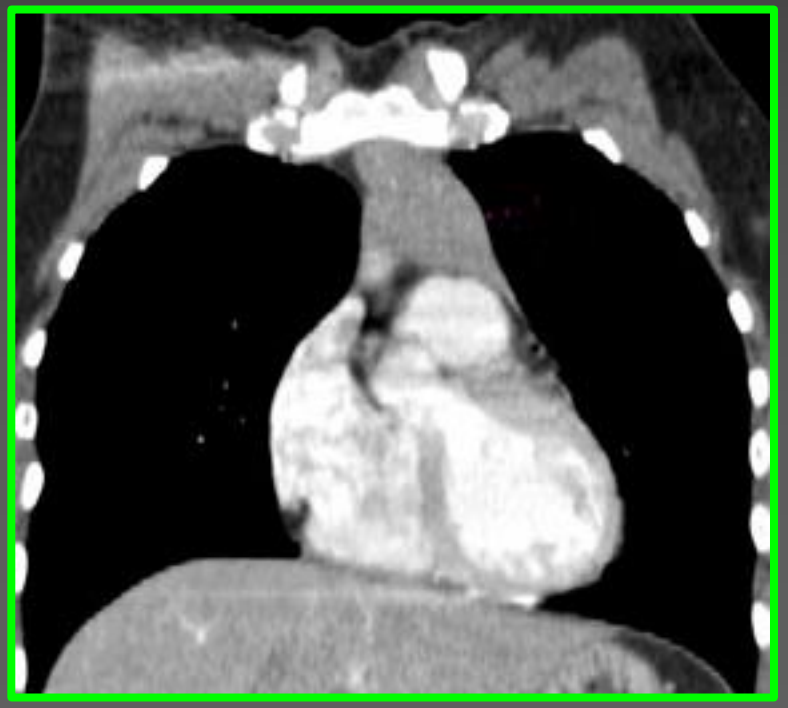


AMPLIAMENTO DELLA GIUNZIONE ANTERIORE







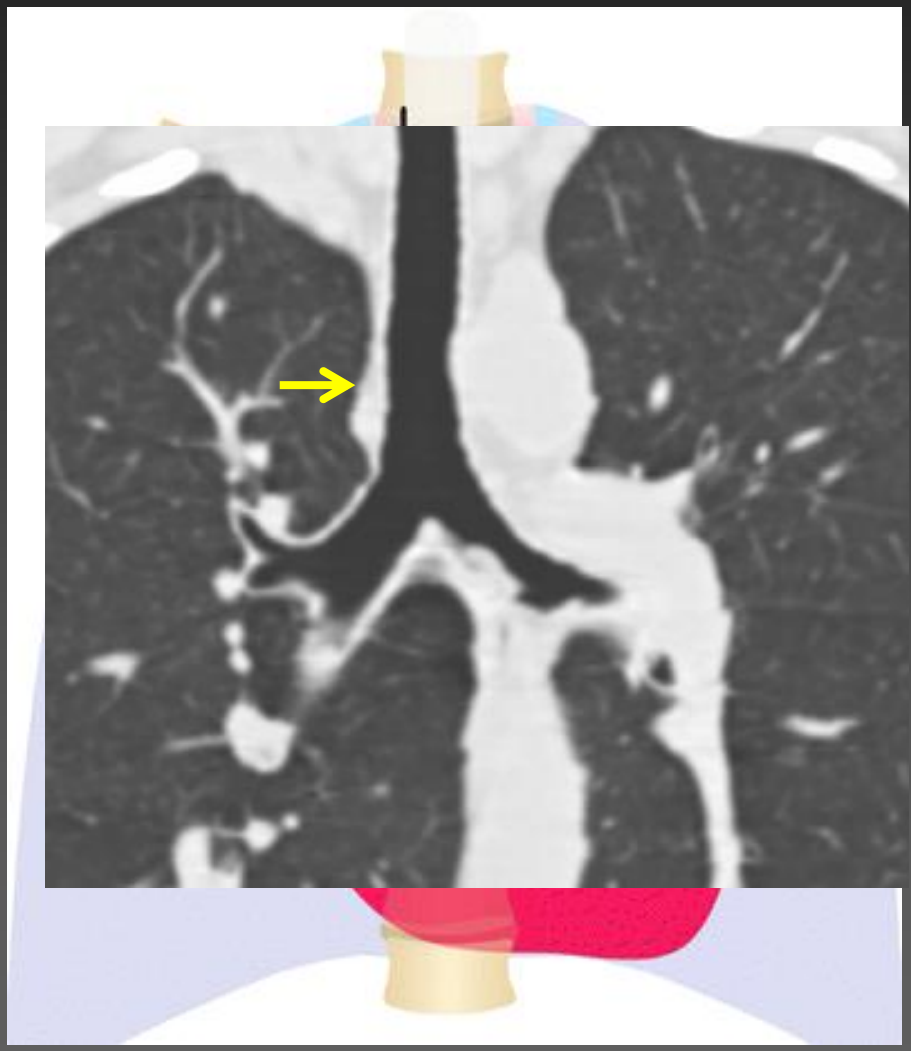


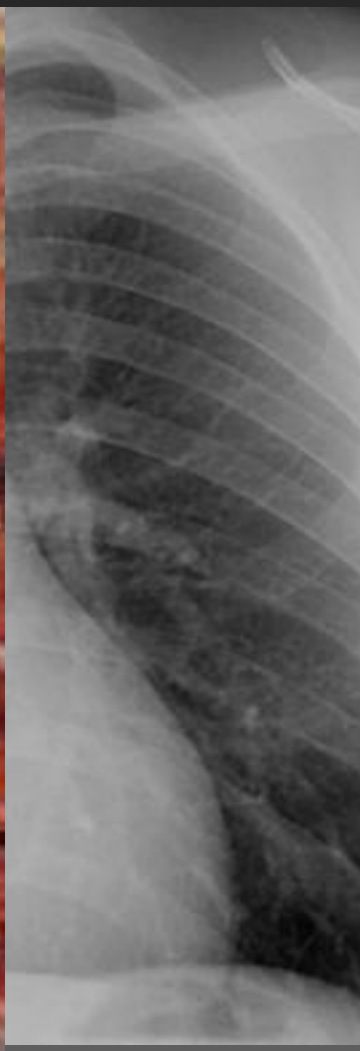
MASSE MEDIASTINICHE ANTERIORI

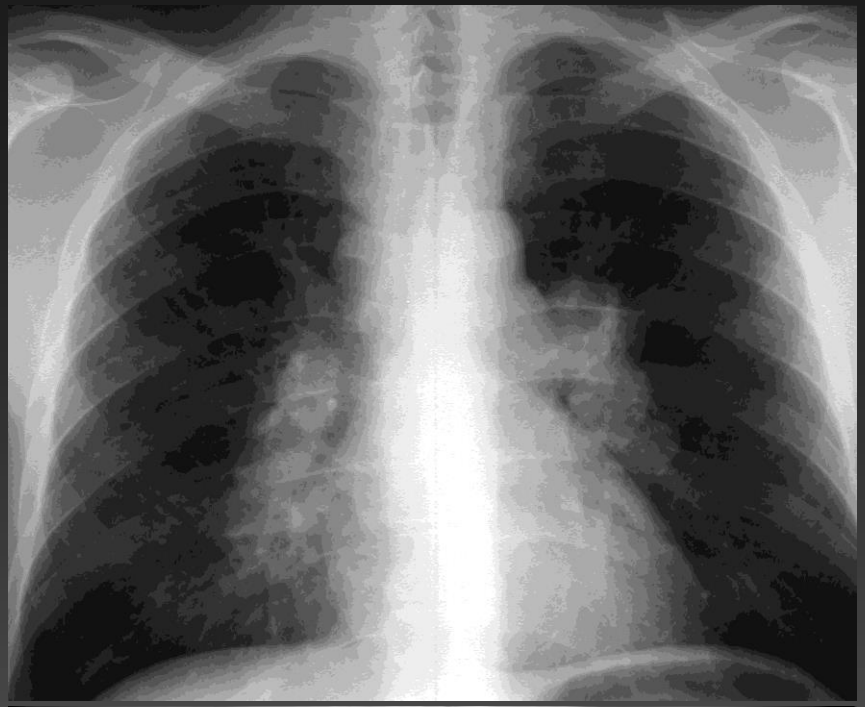
- dislocazione/cancellazione della linea di giunzione anteriore
- obliterazione degli angoli cardio-frenici (segno della silhouette)
- segno della sovrapposizione dell'ilo
- anomalie nel profilo della linea aorto-polmonare

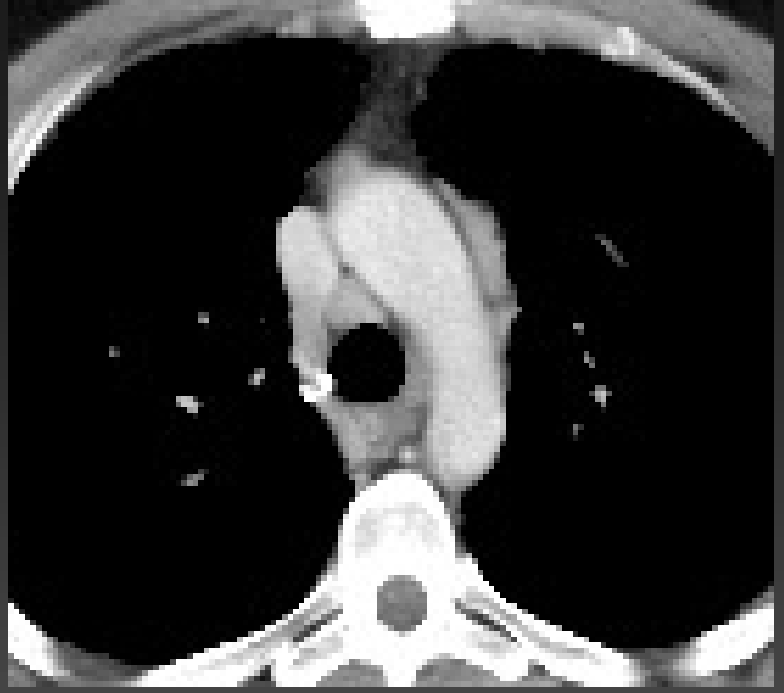
CAUSE: t. timici
t. a cellule germinali (teratoma, seminoma, coriocarcinoma)
patologie della tiroide e paratiroidi
linfomi
t. mesenchimali: lipoma, fibroma, altri (ernia del Morgagni)

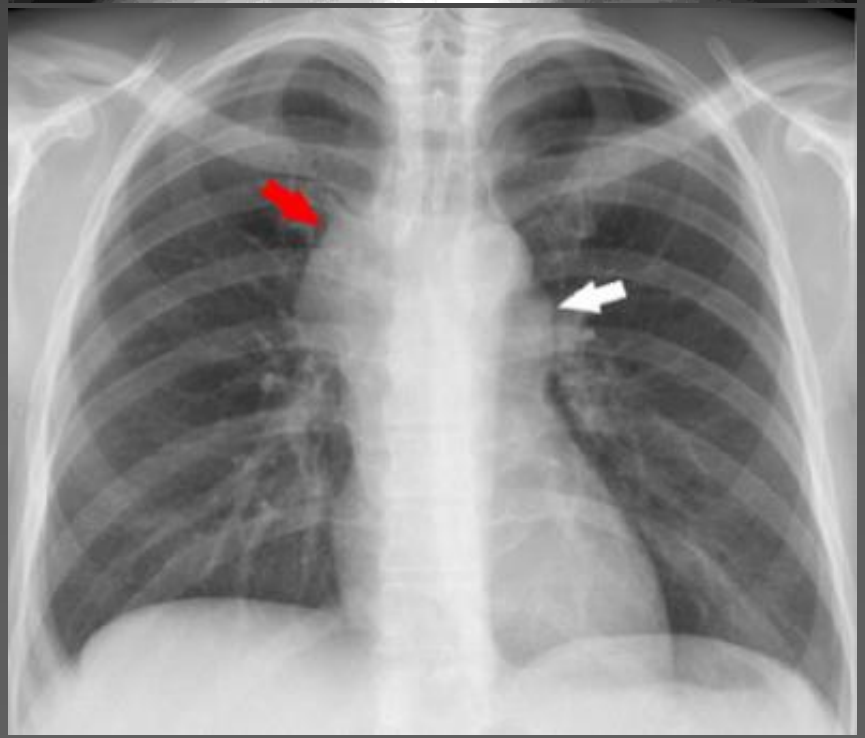
BANDA PARATRACHEALE DX

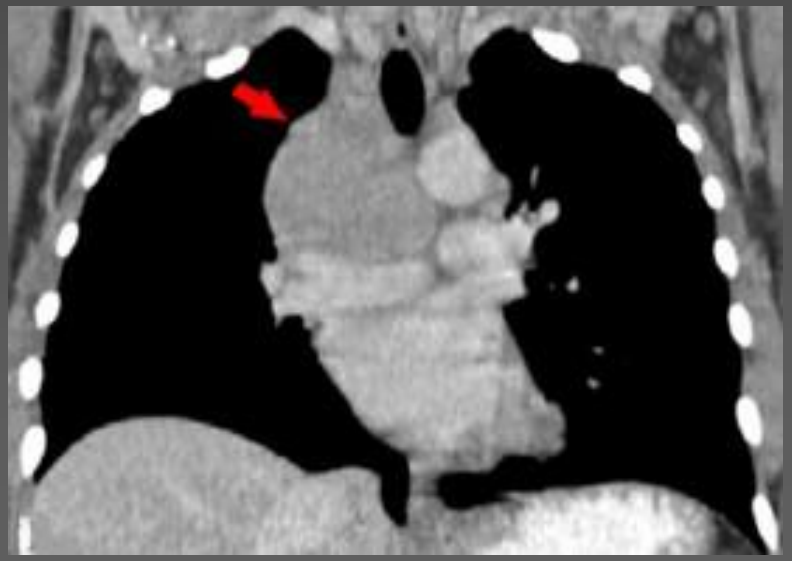




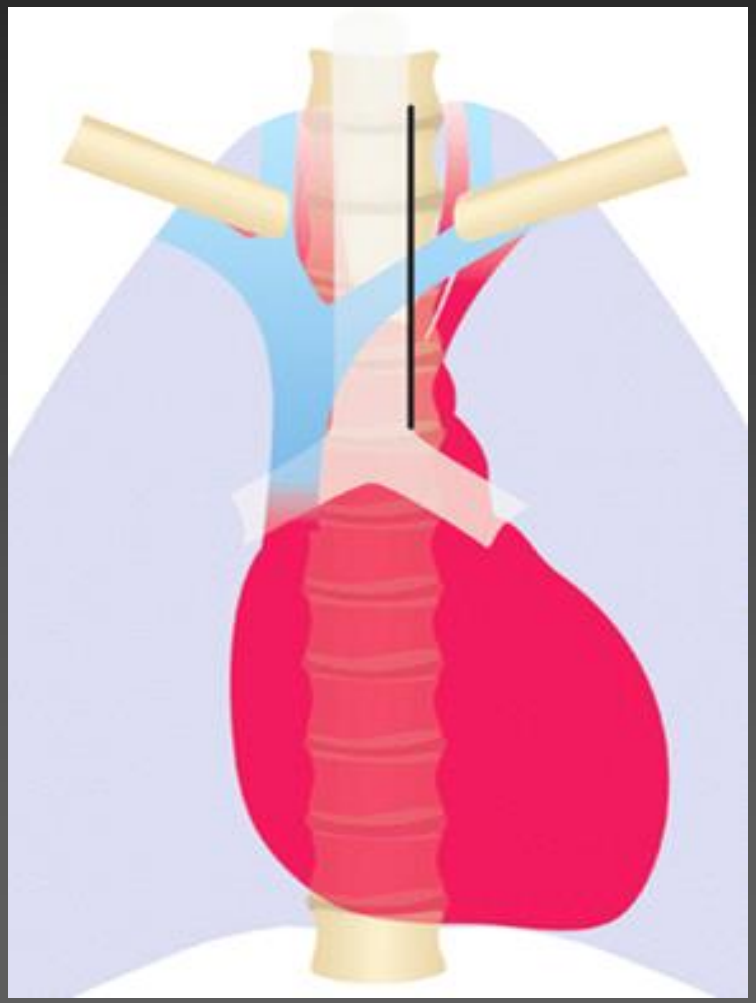


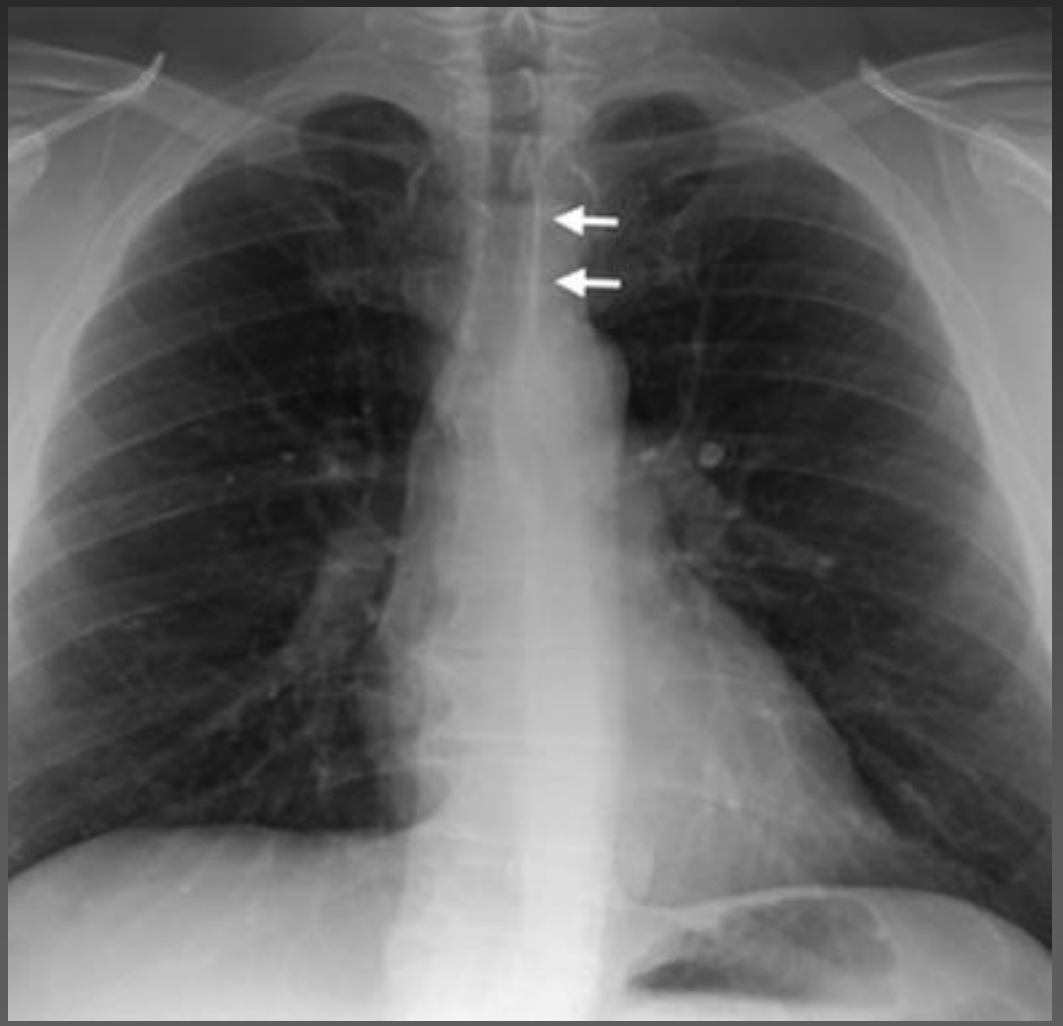


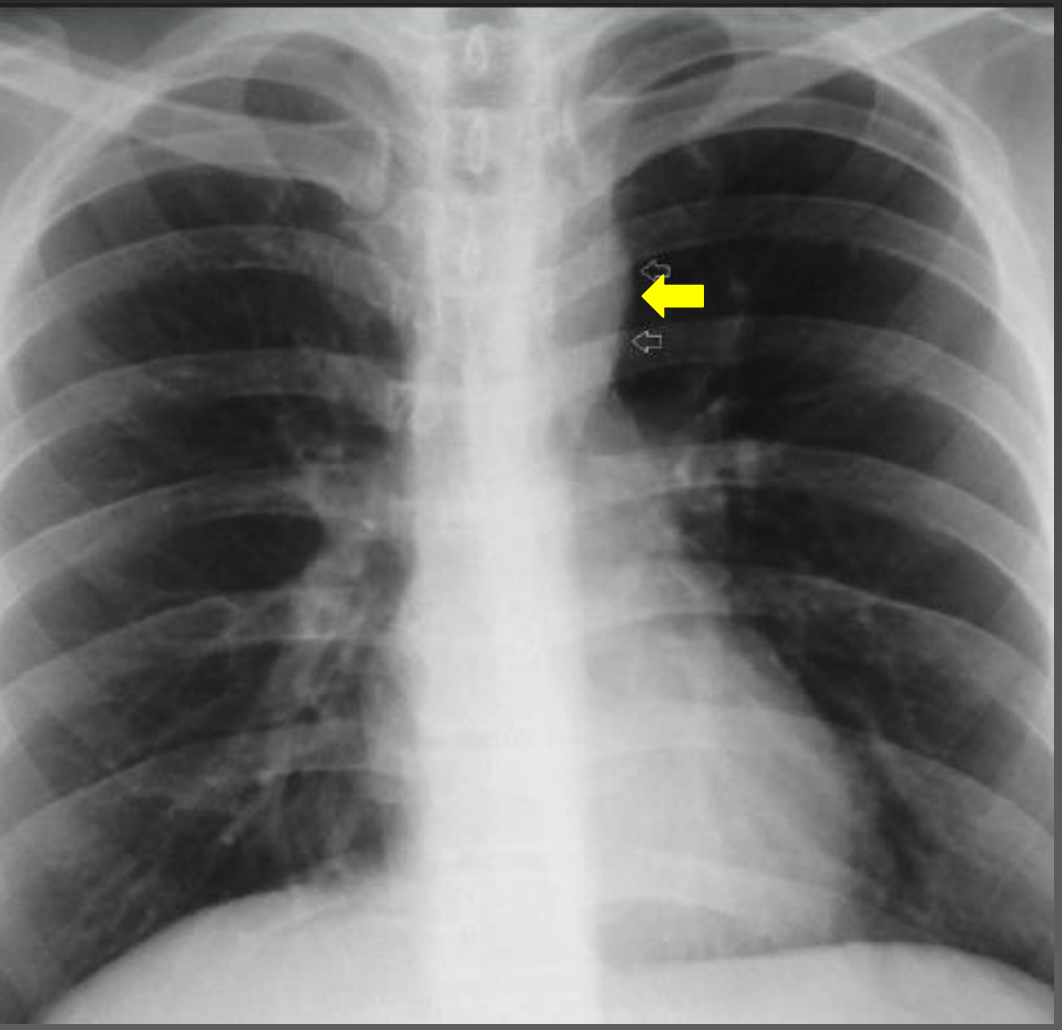


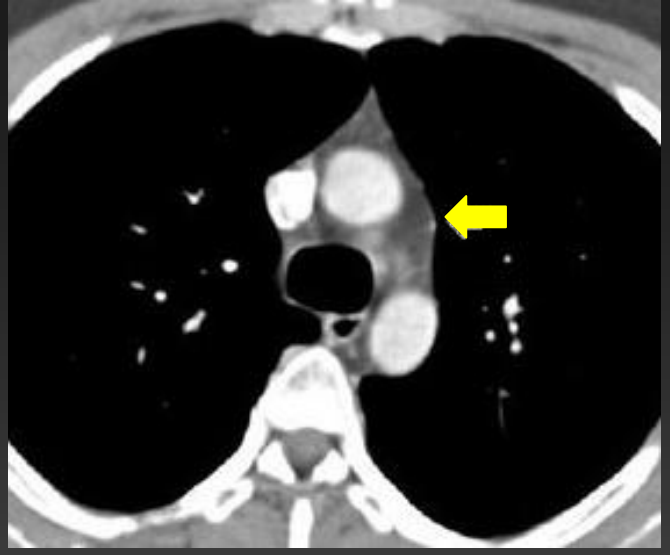


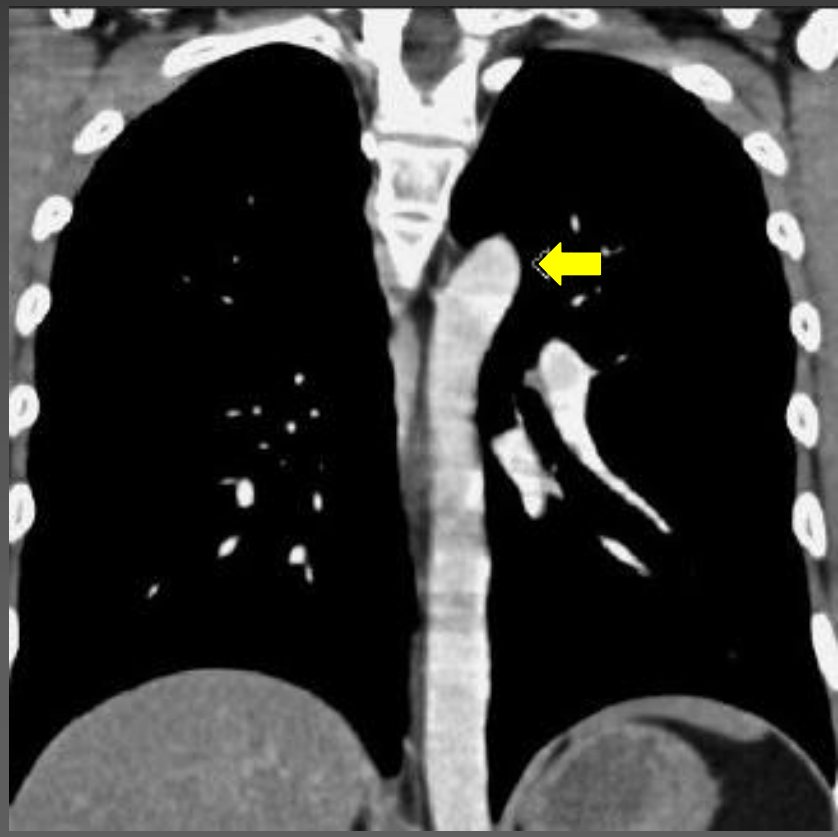
BANDA PARATRACHEALE SIN



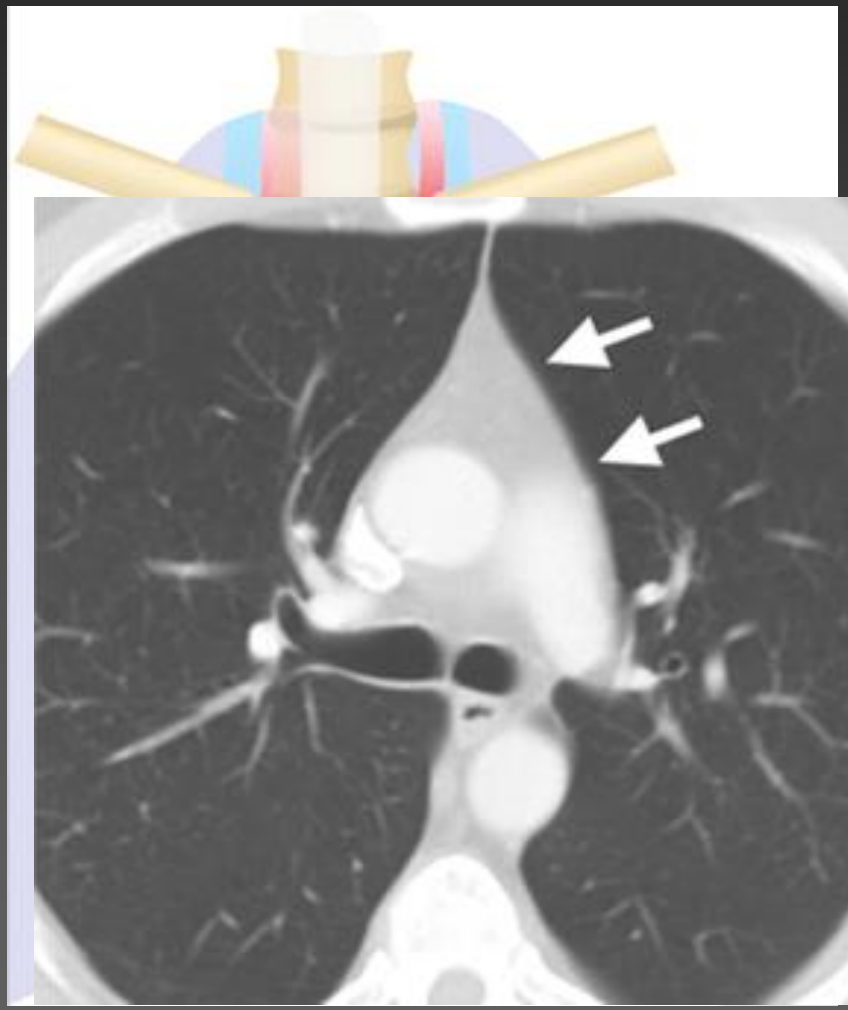


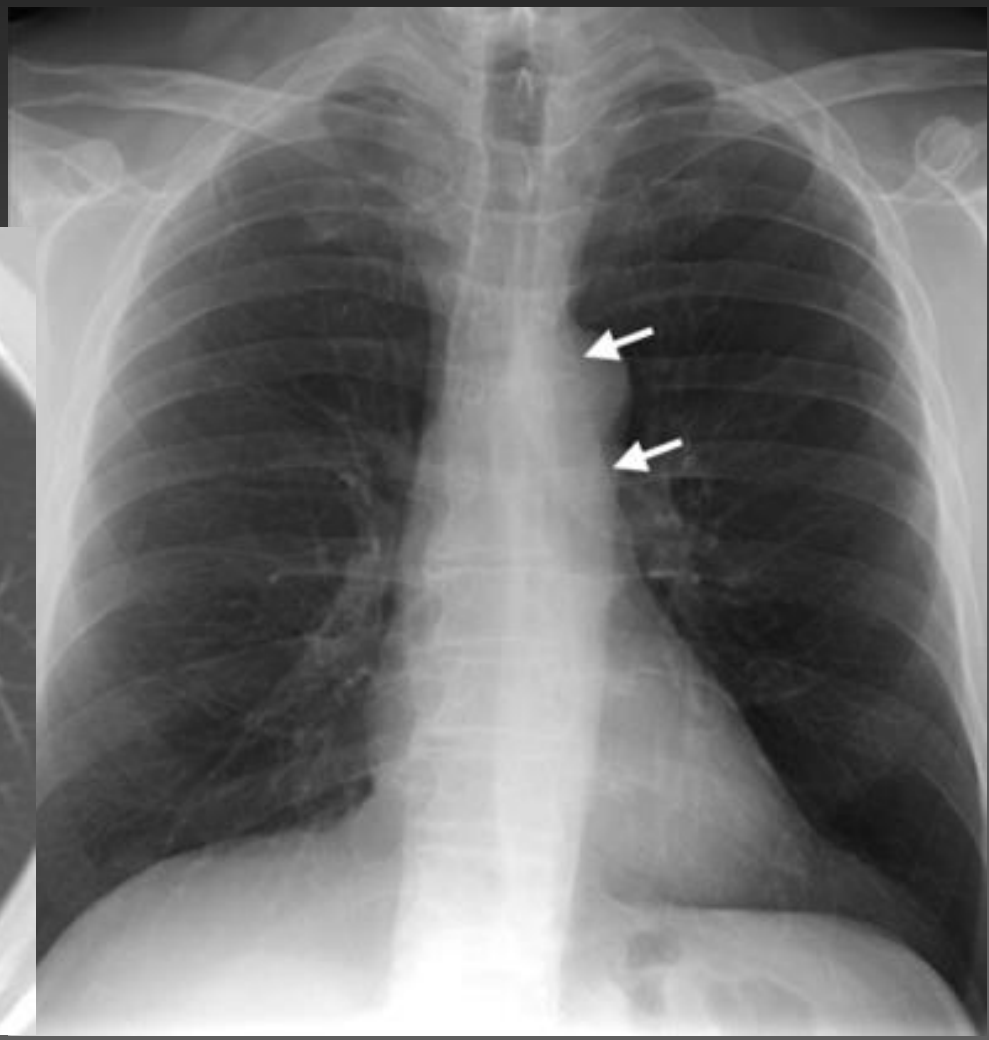


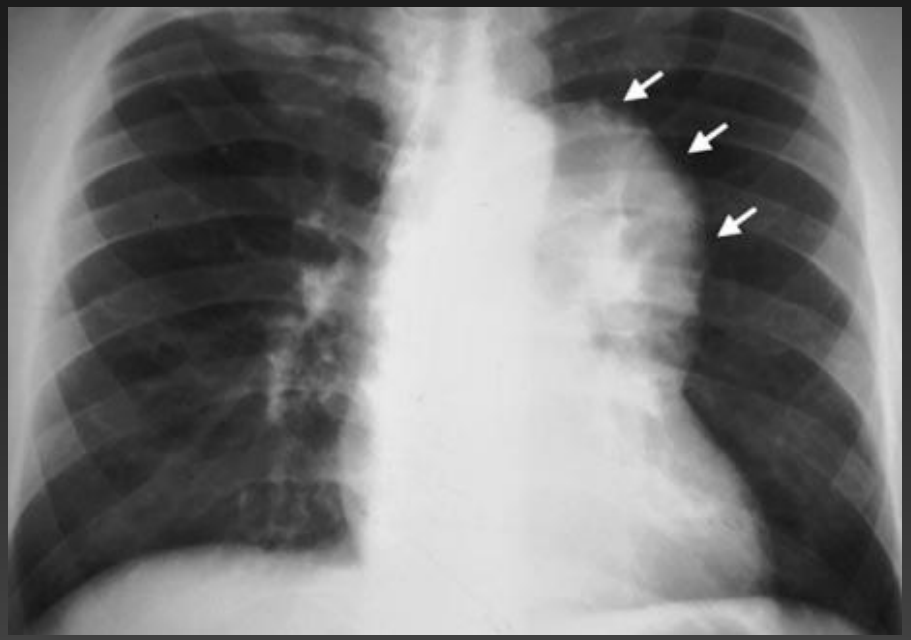


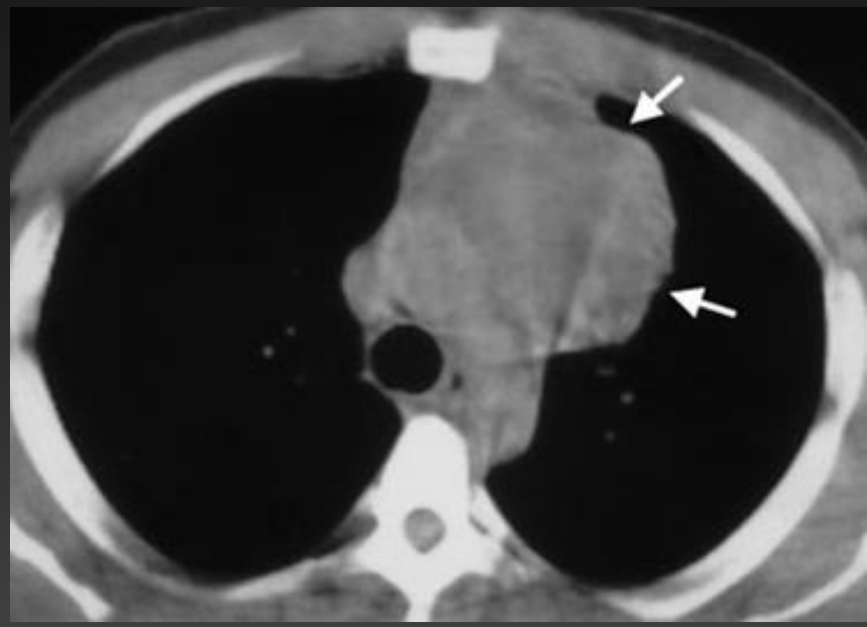


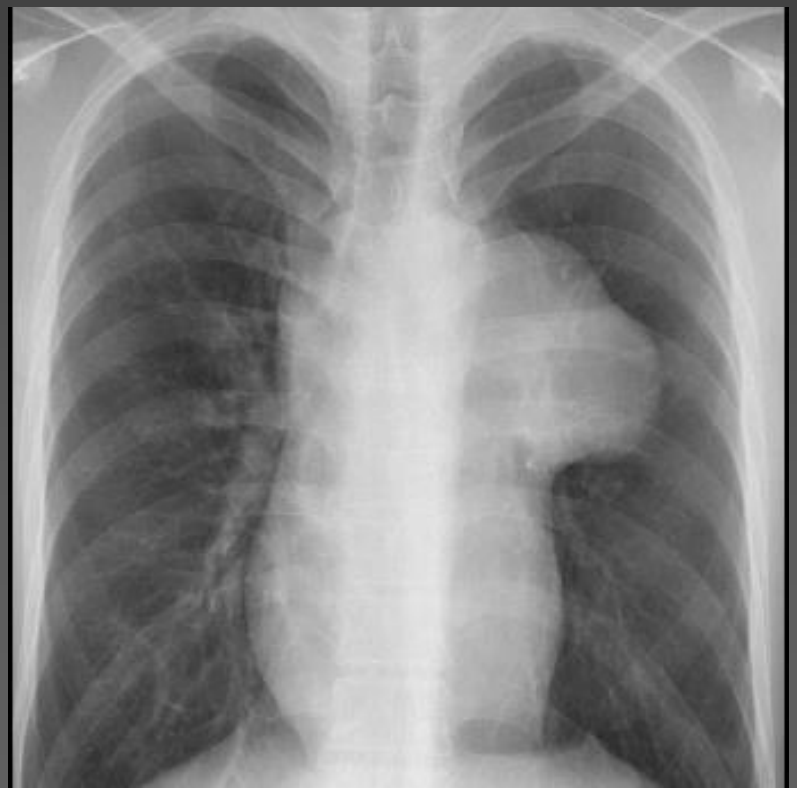
RIFLESSIONE AORTO-POLMONARE

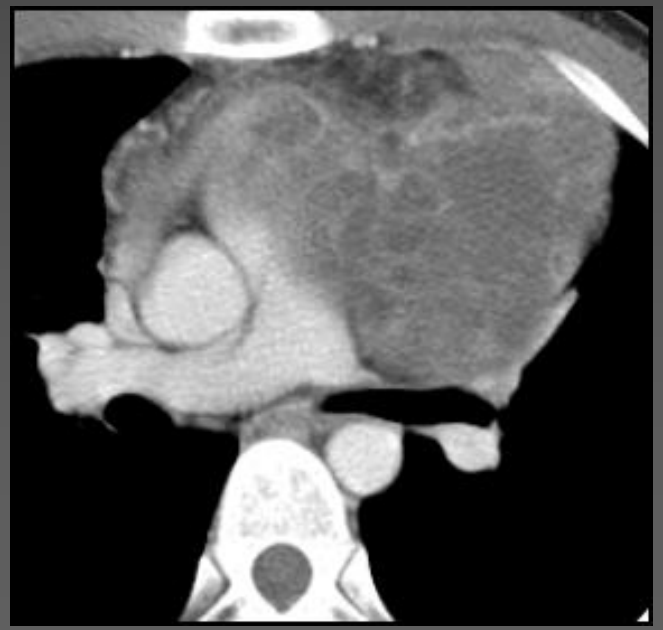






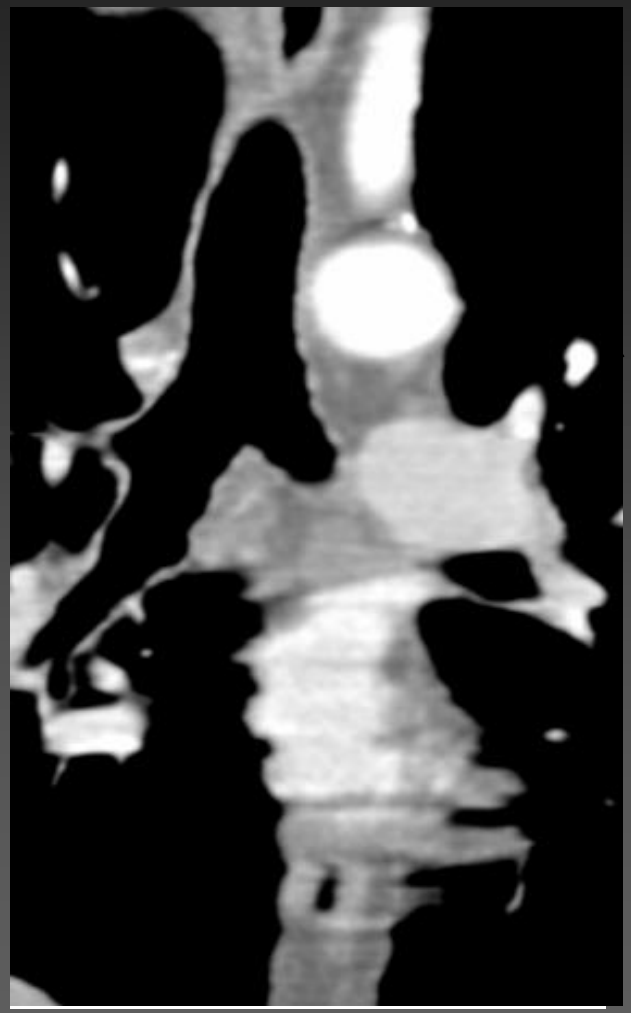


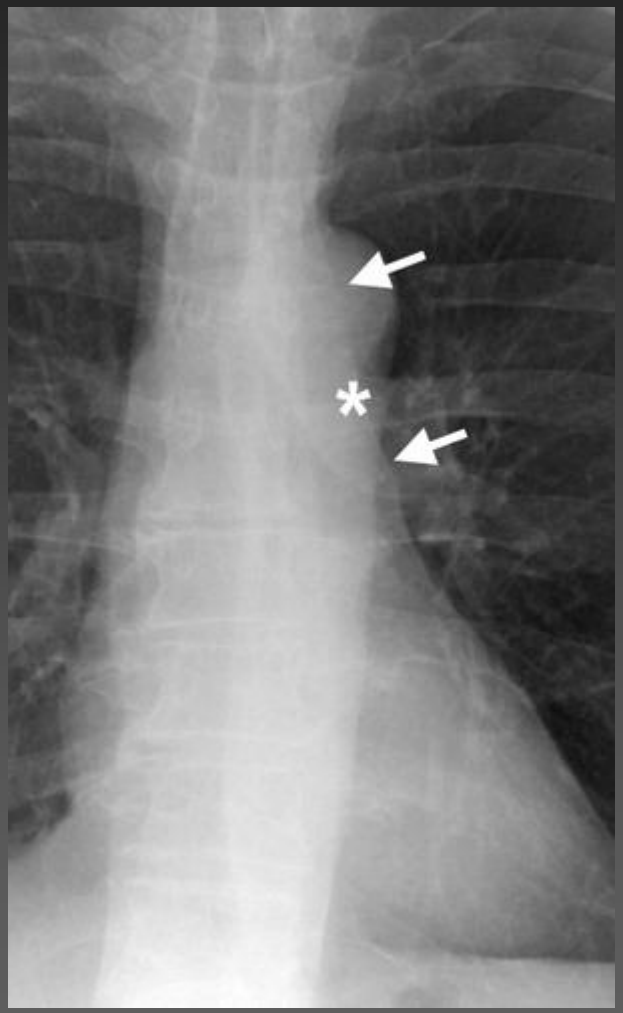


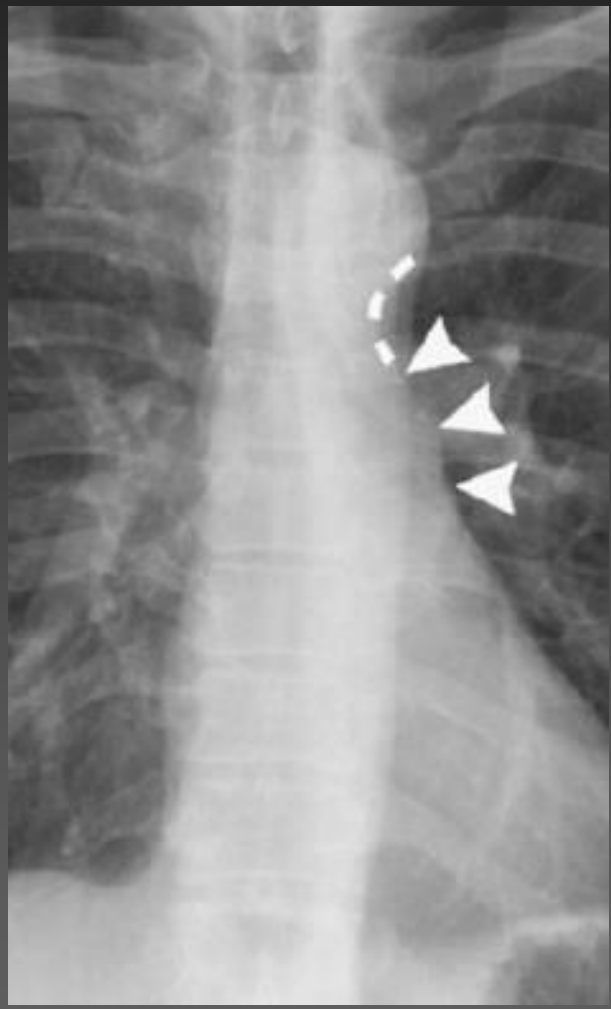


Corio carcinoma

FINESTRA AO-POLMONARE

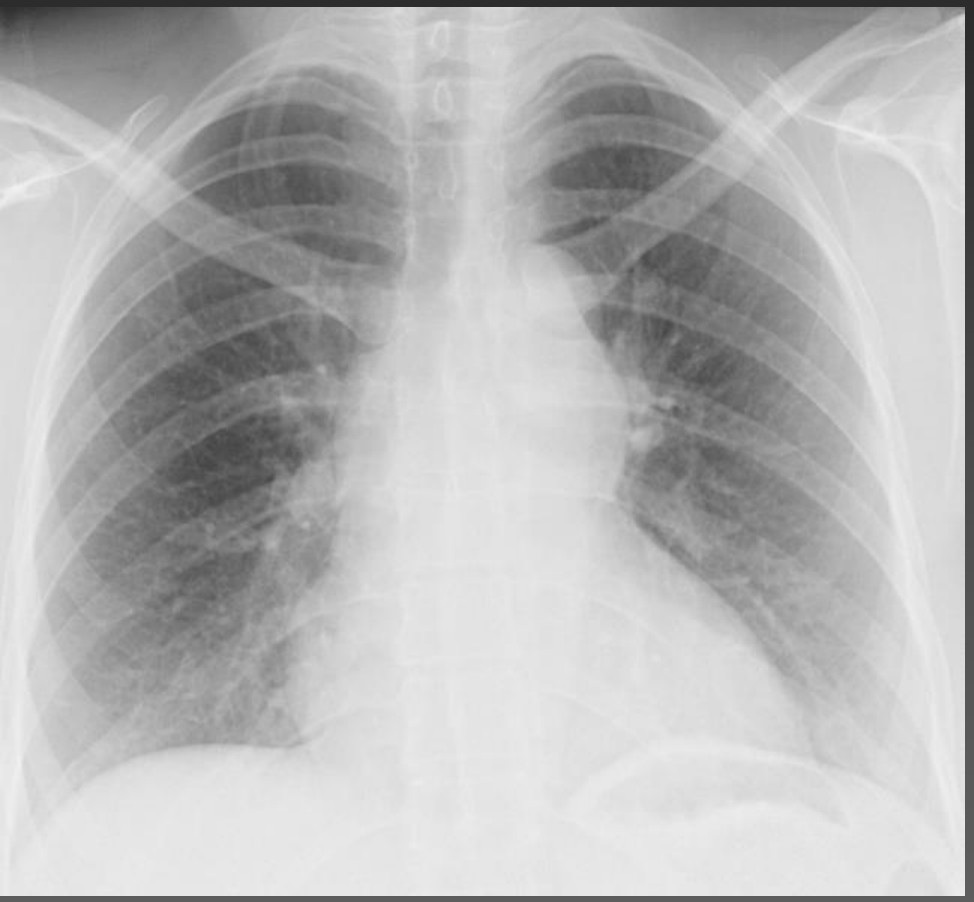


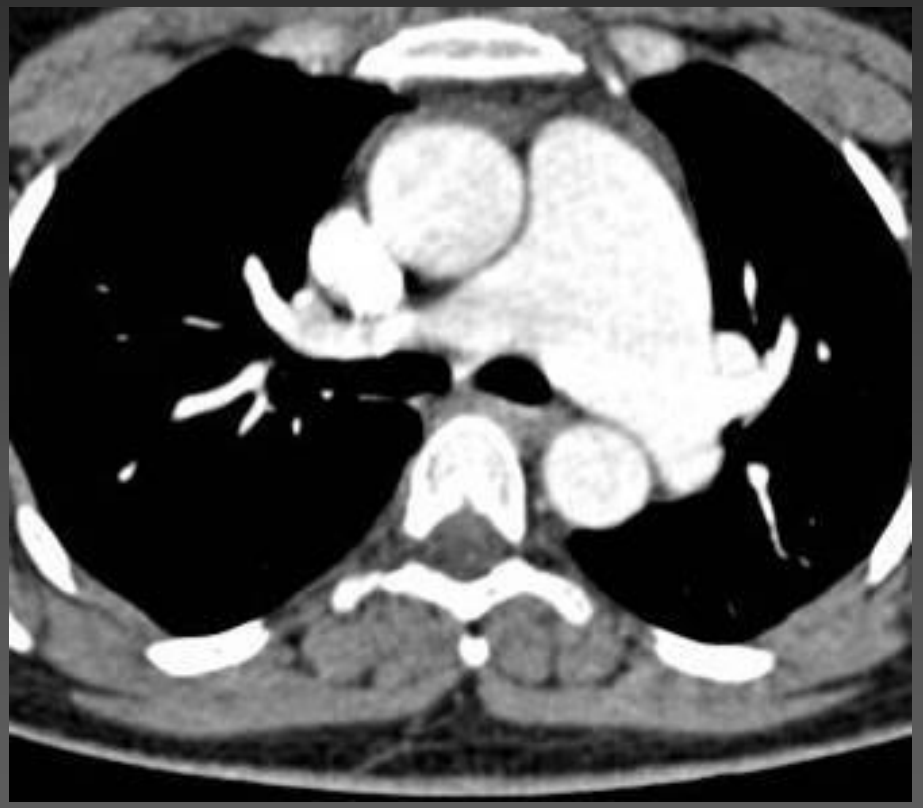




FAP normale (*) : interfaccia con una leggera concavità tra aorta e l’arteria polmonare

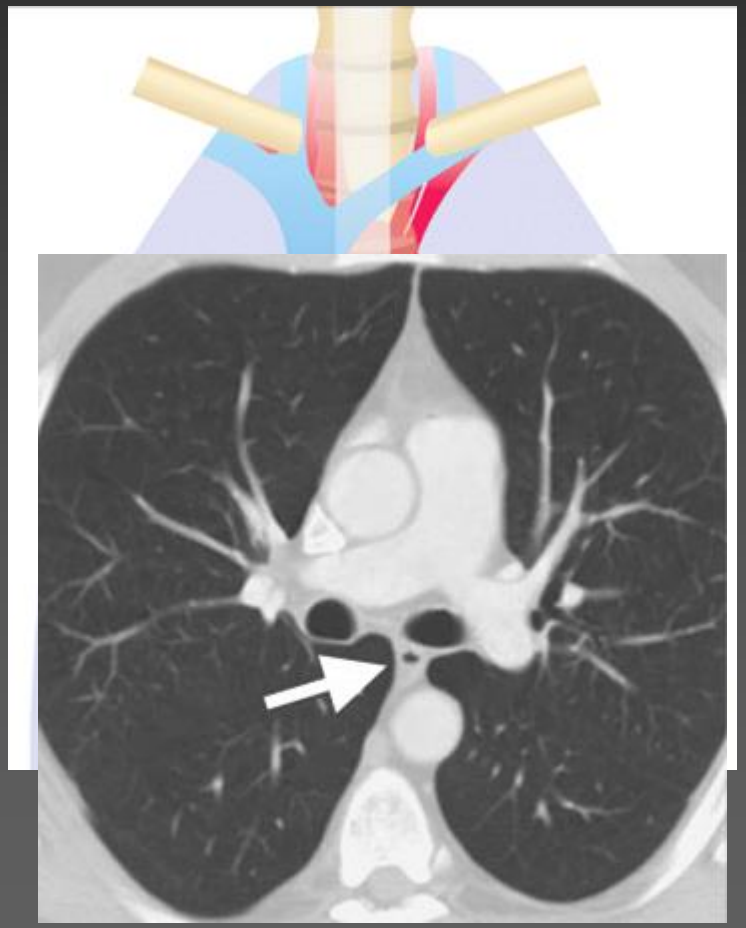
IMPEGNO DELLA FINESTRA AORTO-POLMONARE

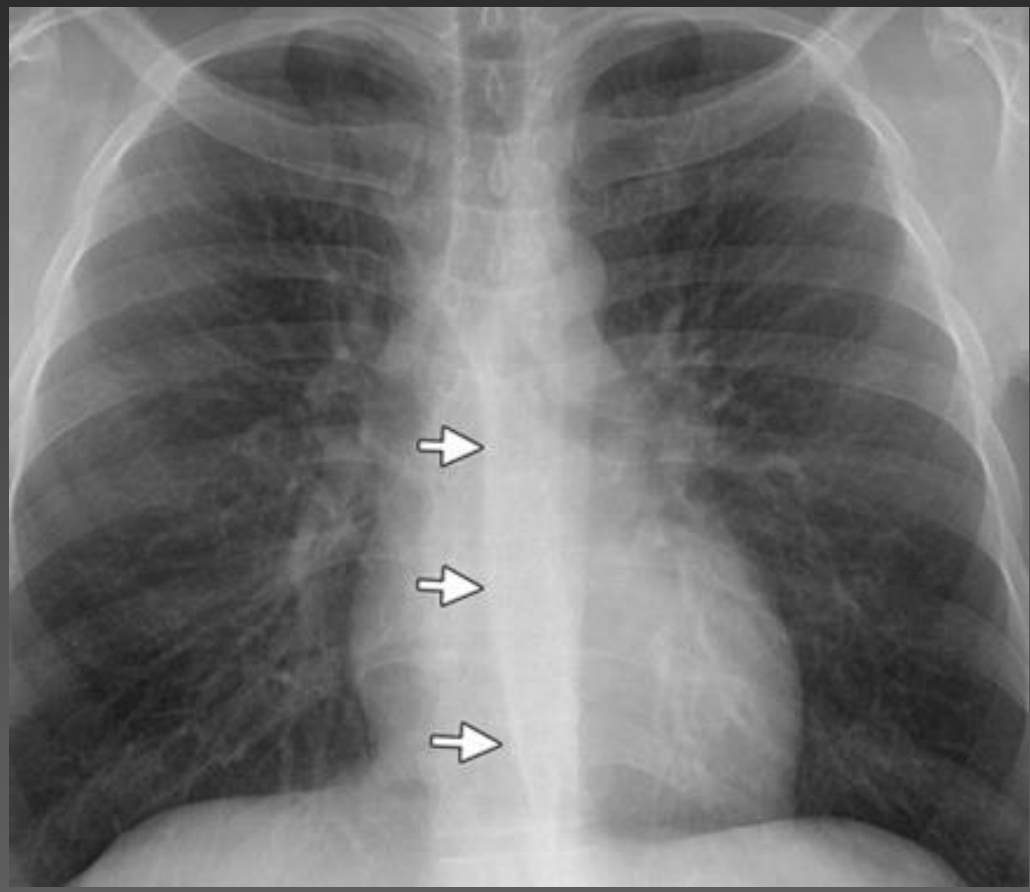


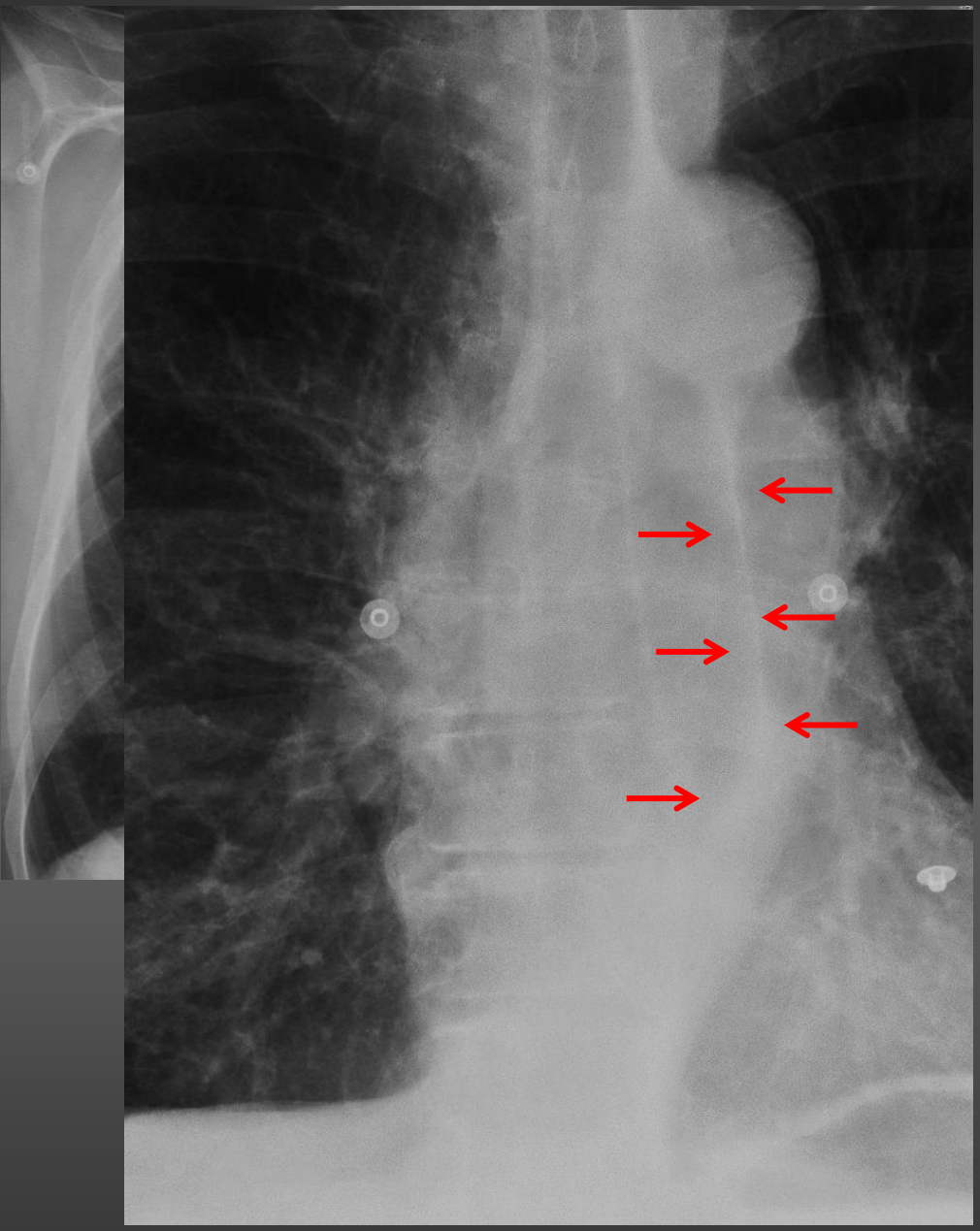


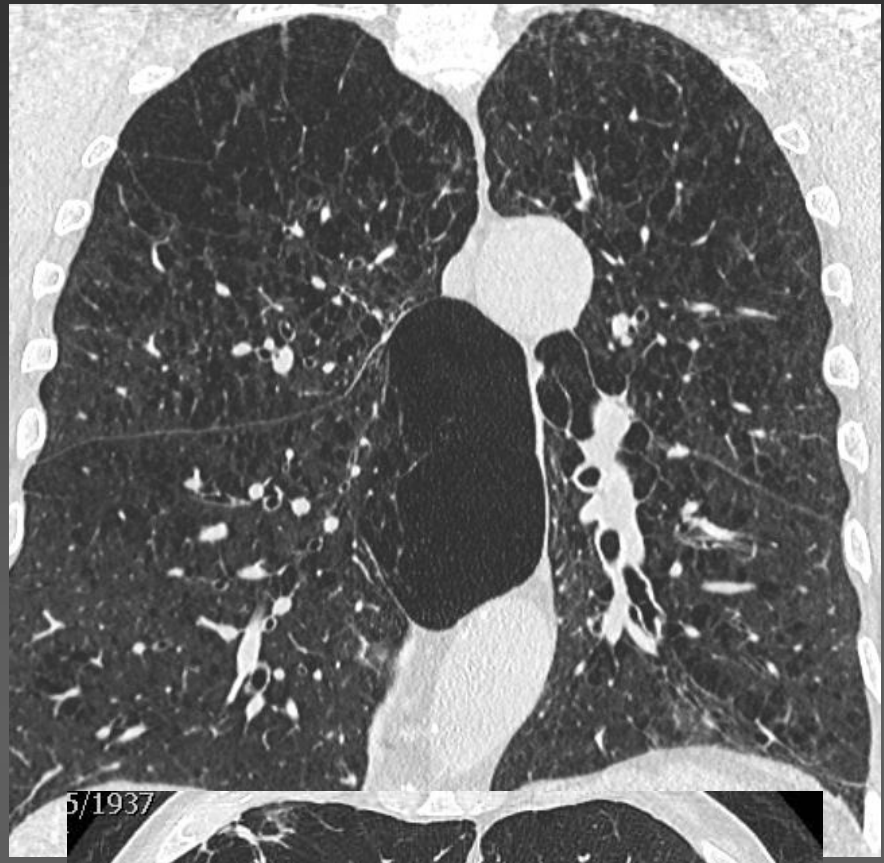
Ipertensione polmonare

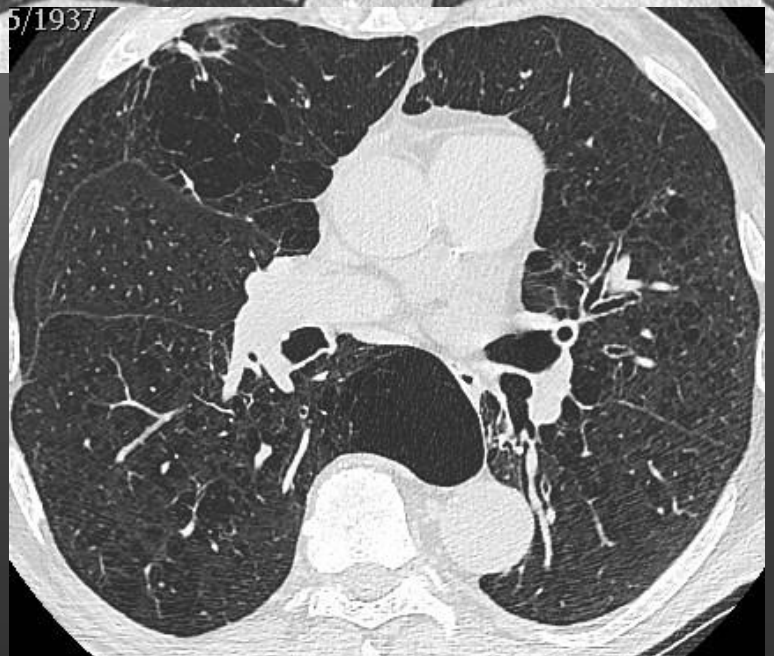
RECESSO AZYGOS-ESOFAGEO

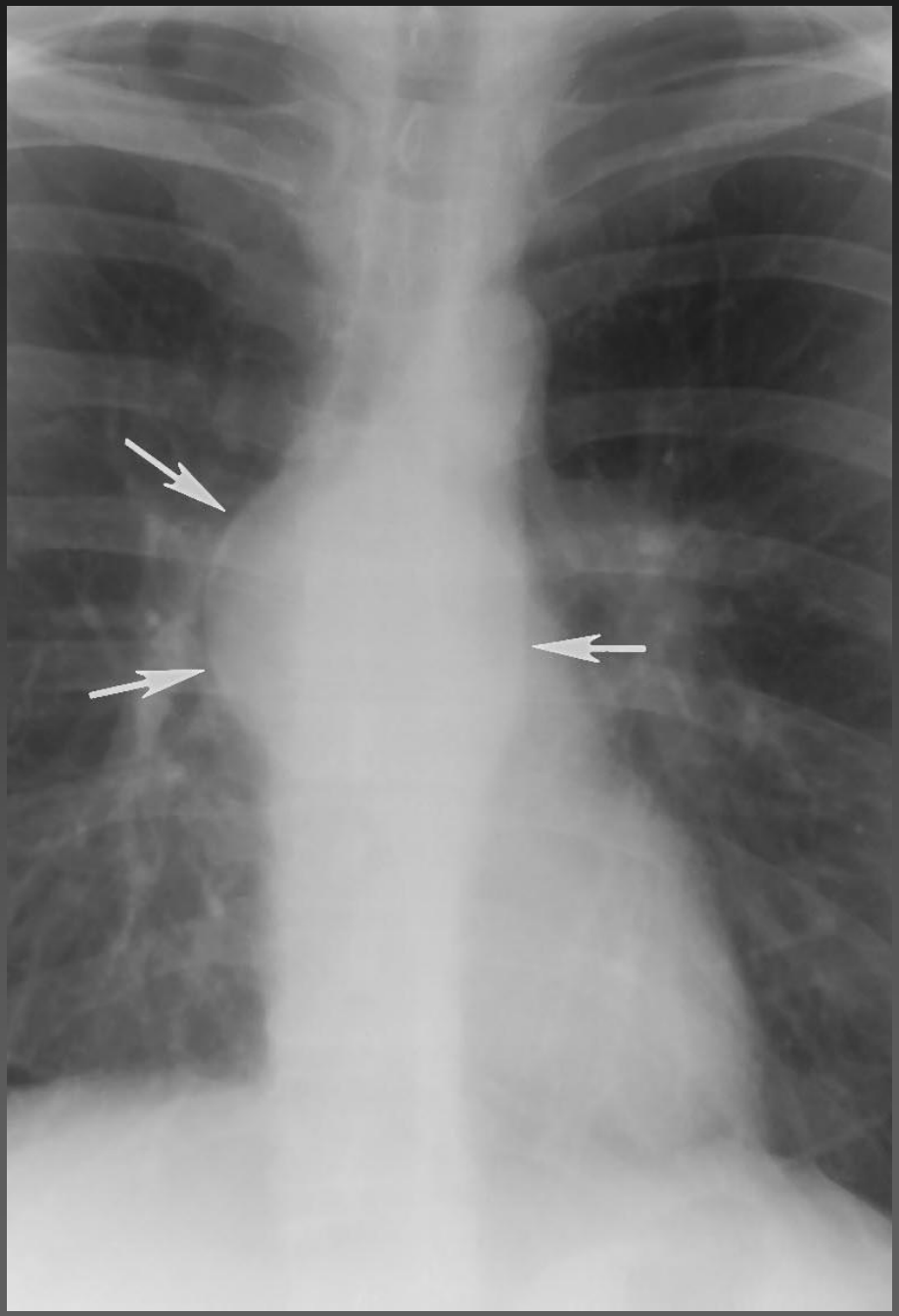


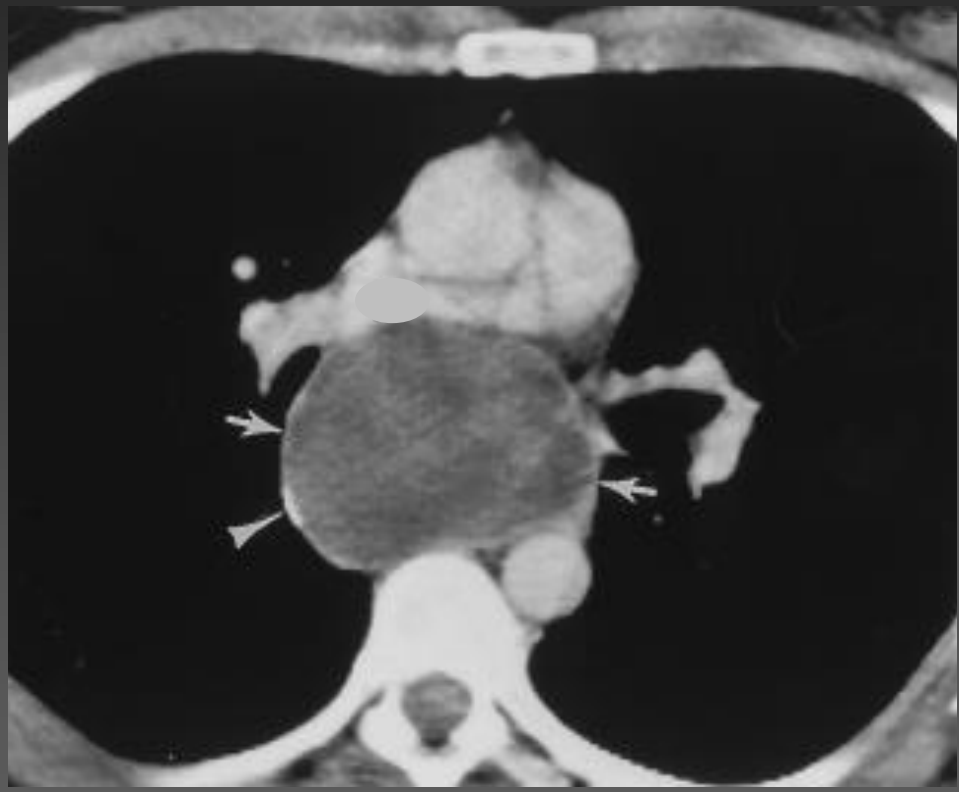




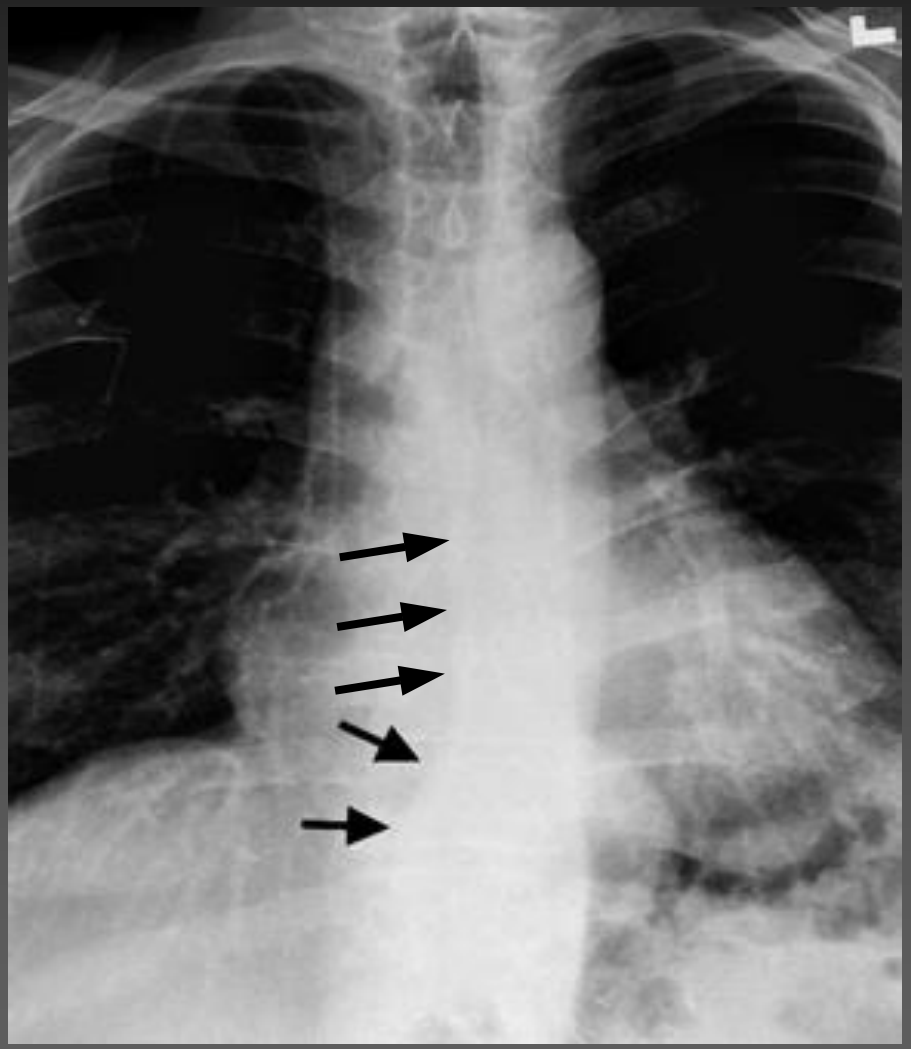


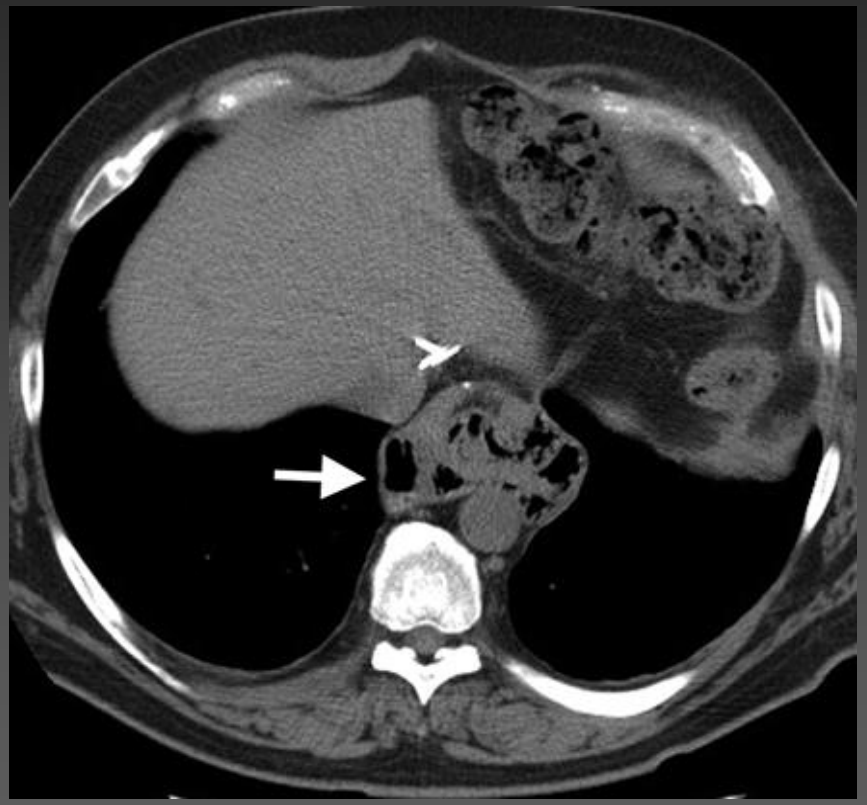






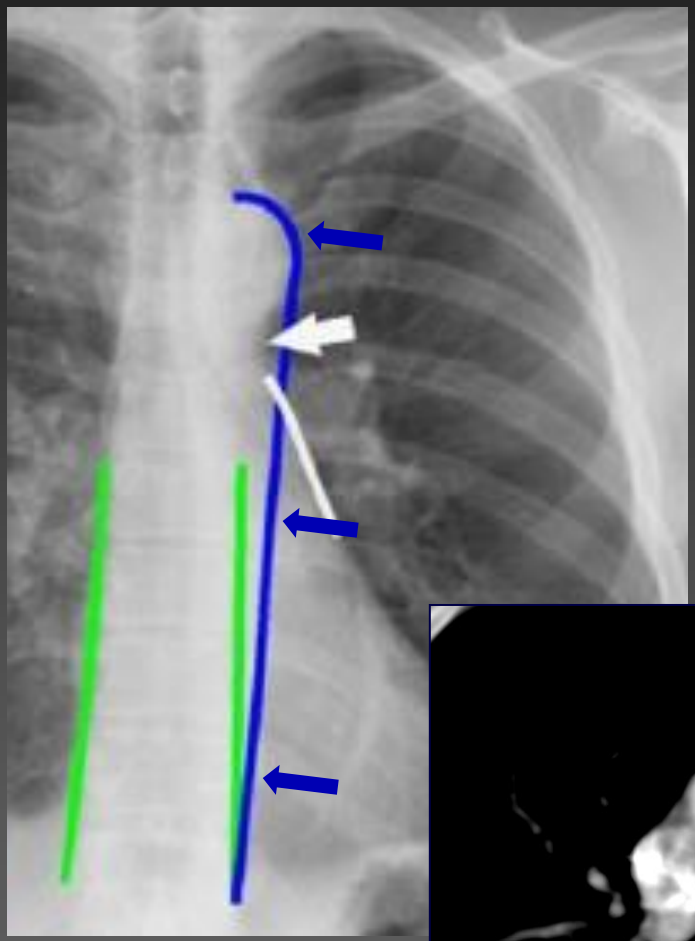
DISLOCAZIONE DEL RECESSO AZYGOESOFAGEO

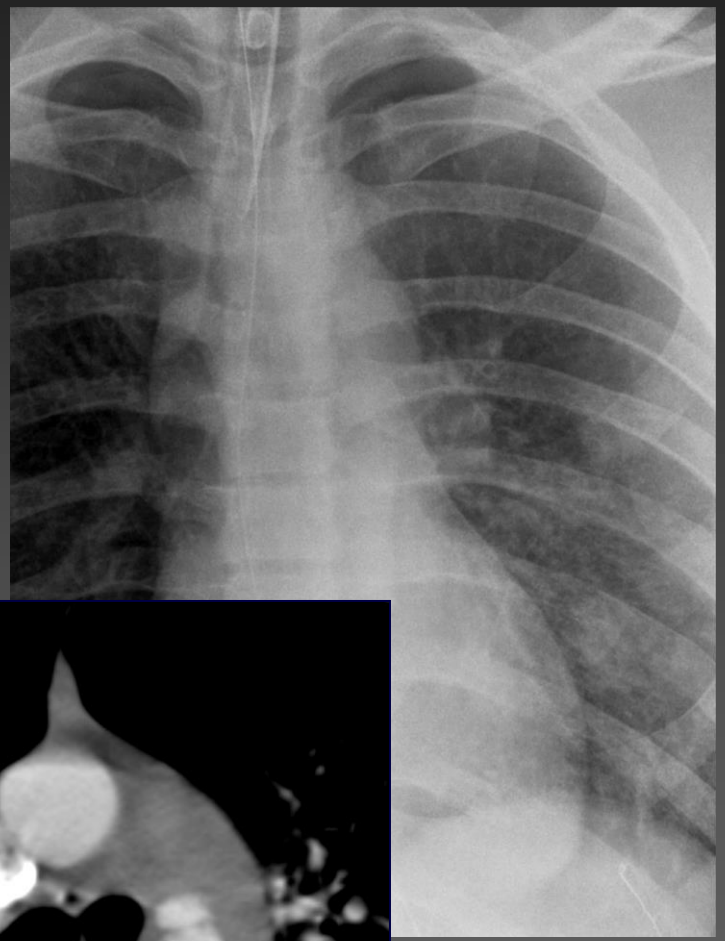


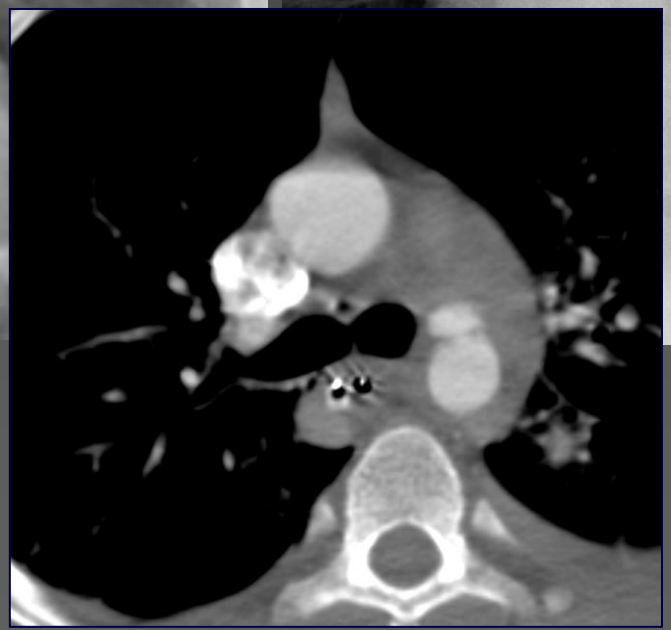


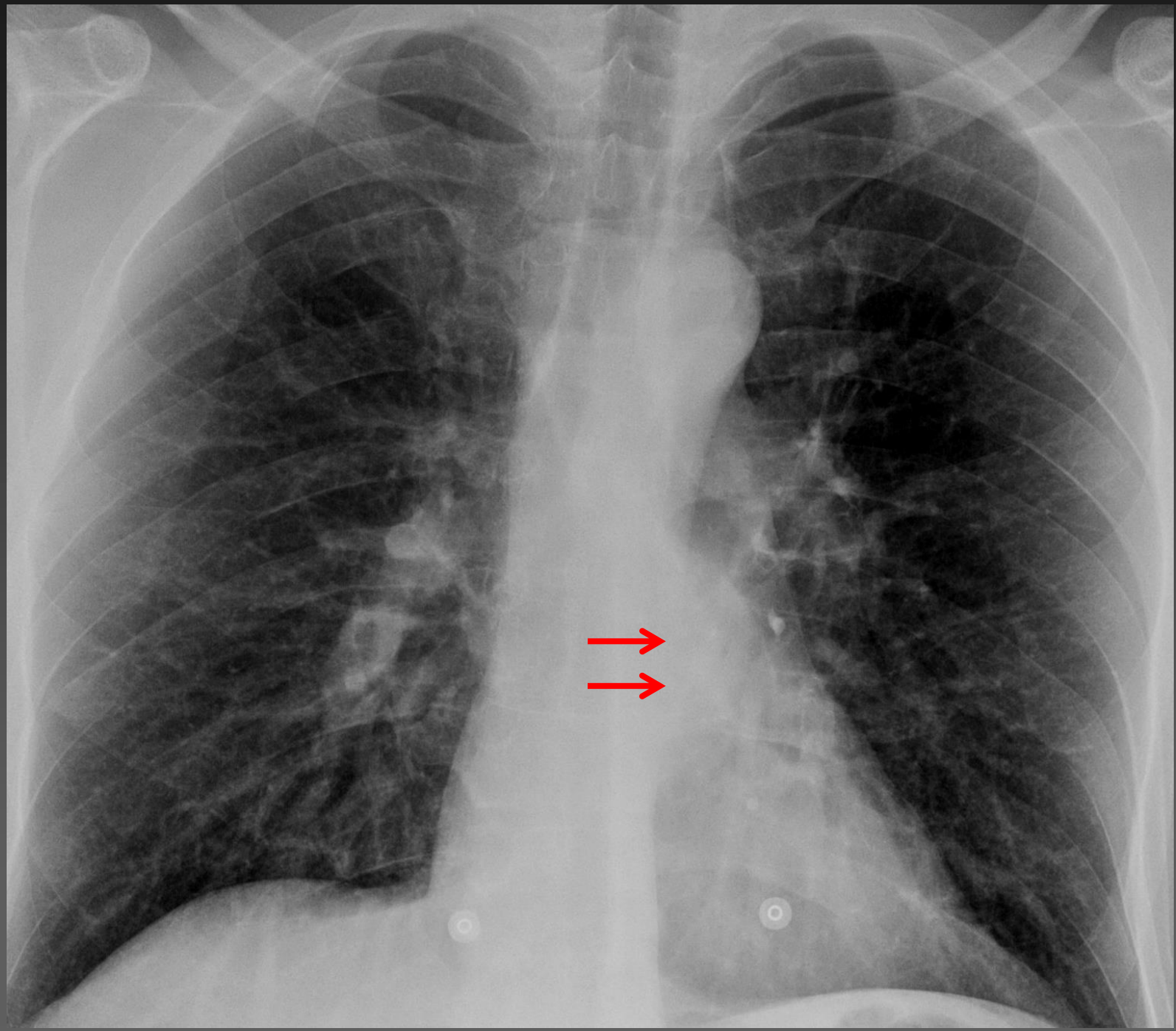
ernia iatale

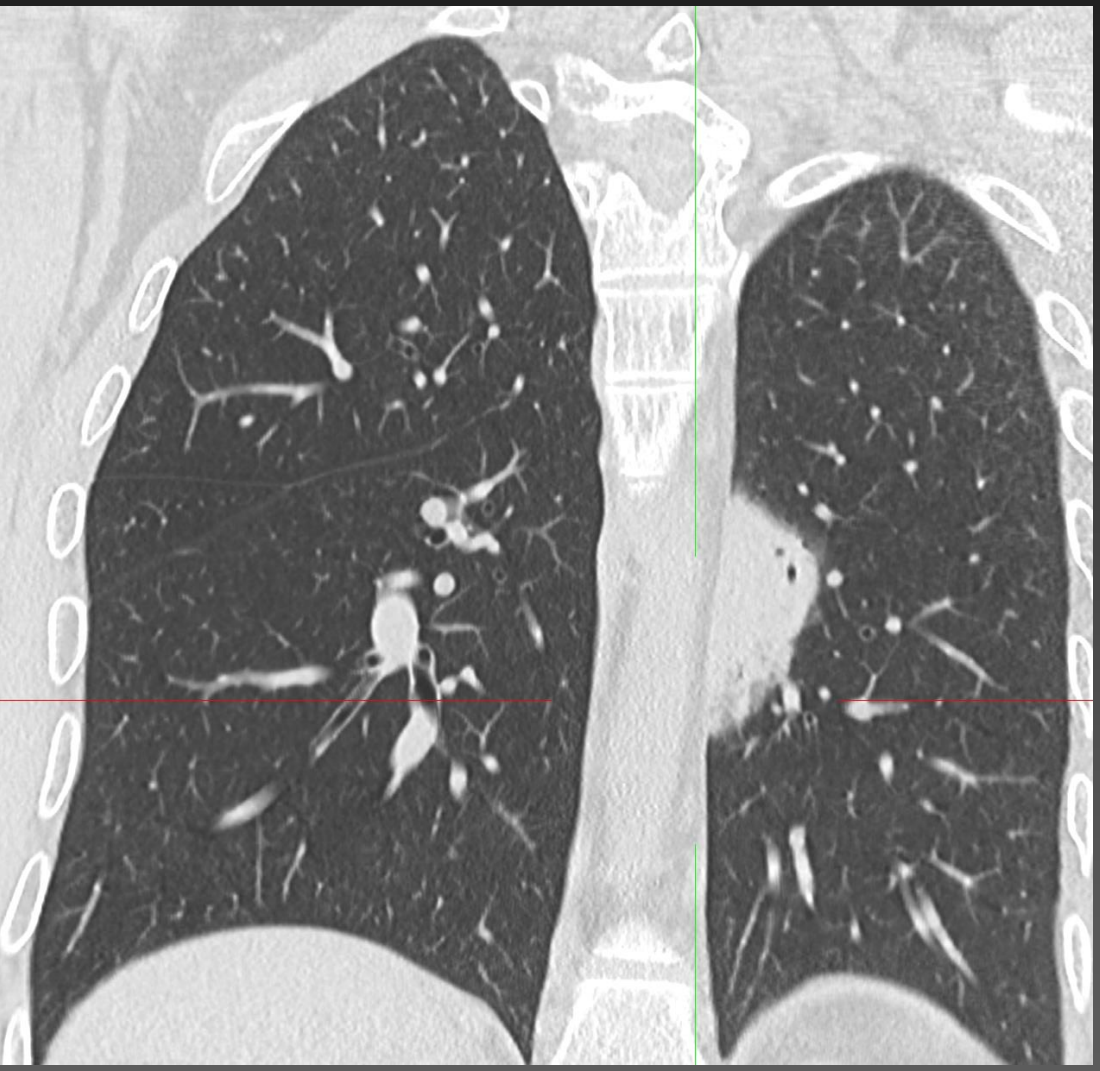
LINEA PARAAORTICA

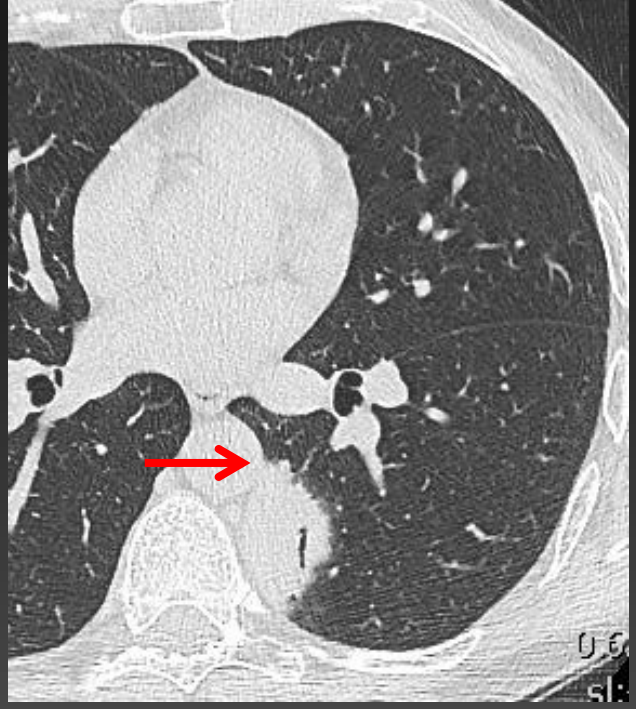


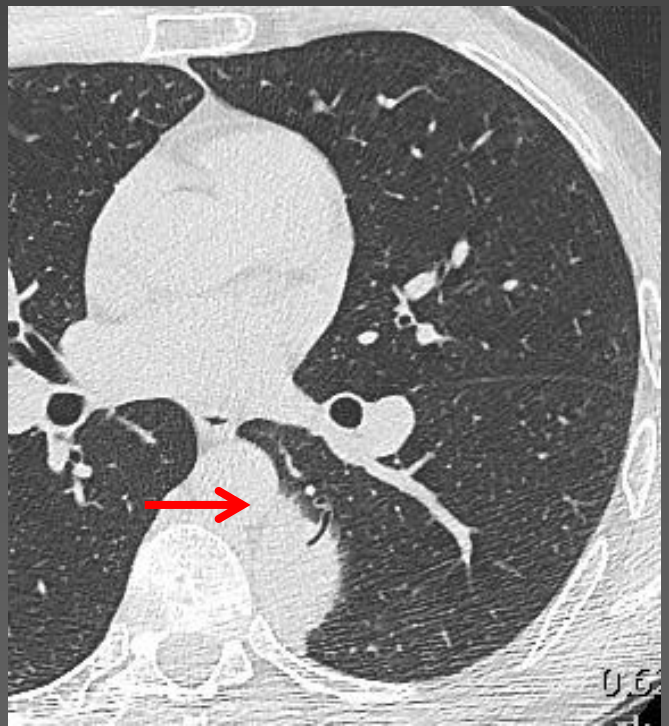




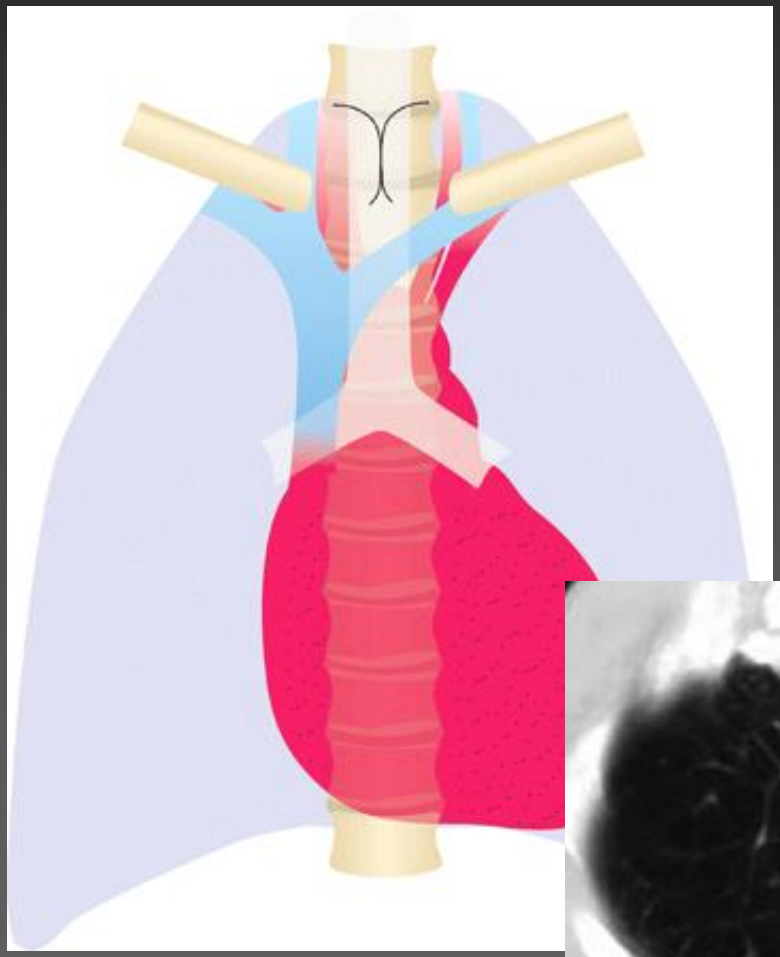


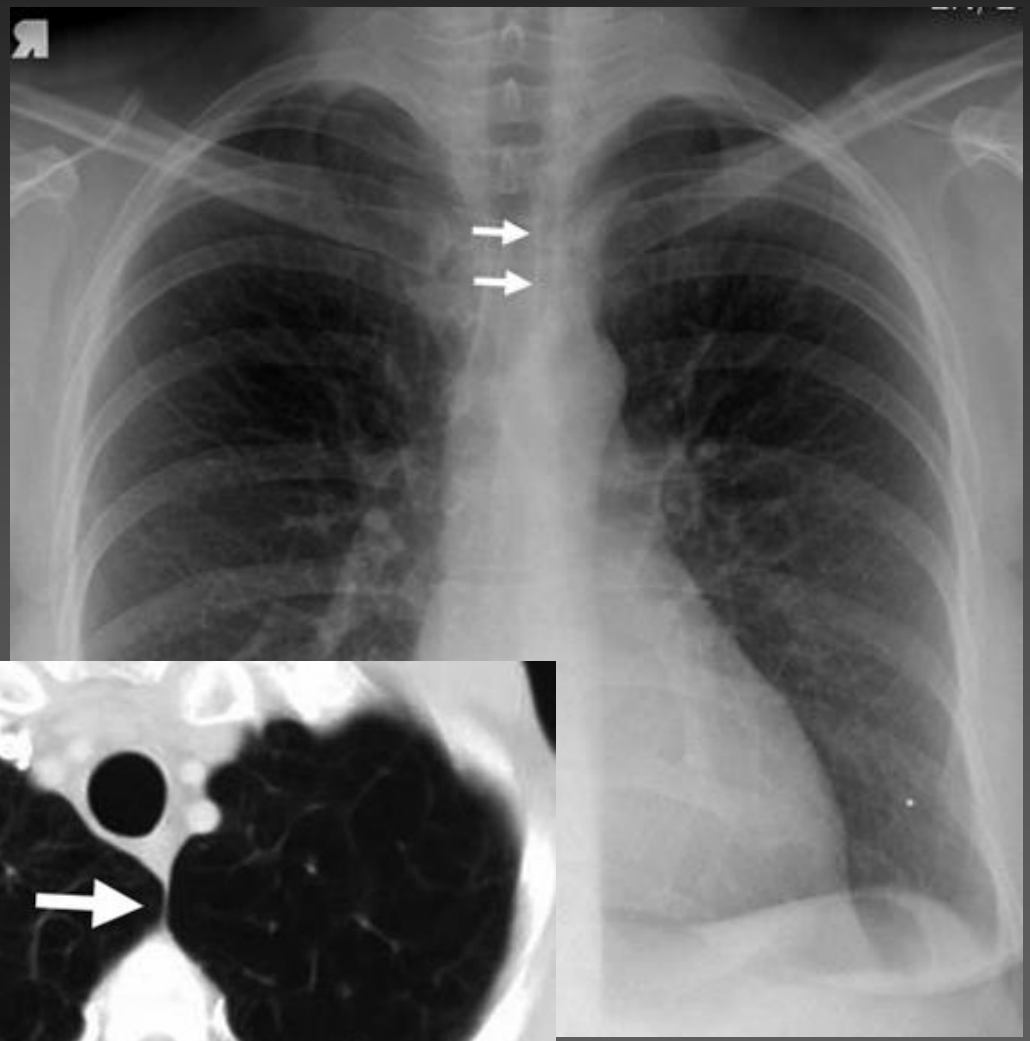


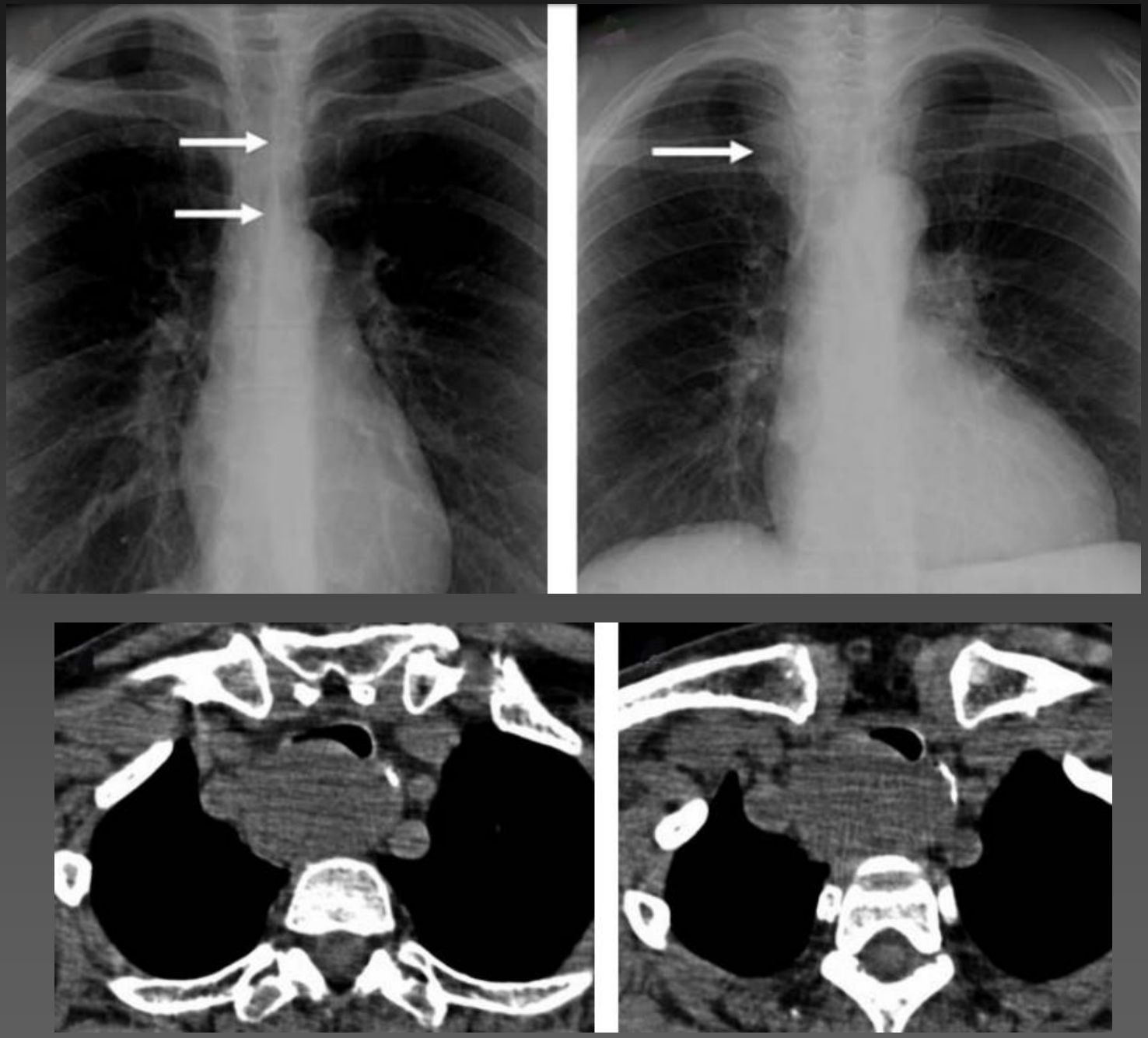




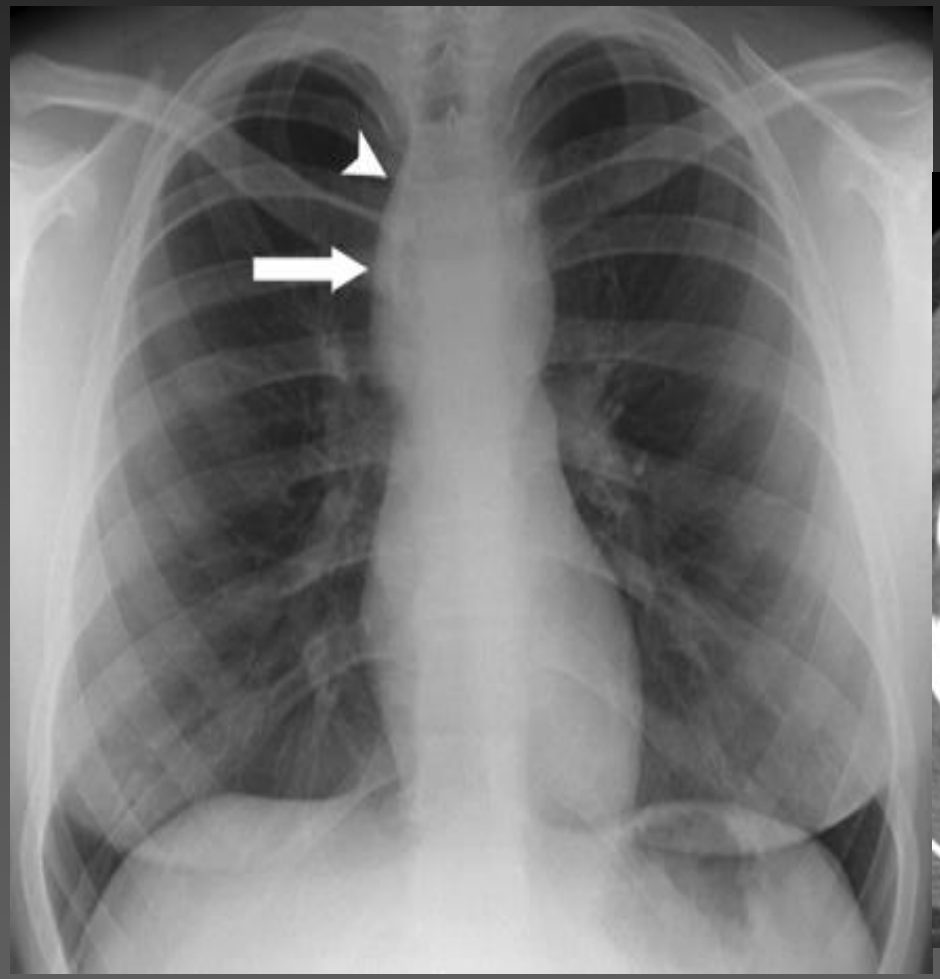
LINEA DI GIUNZIONE POSTERIORE

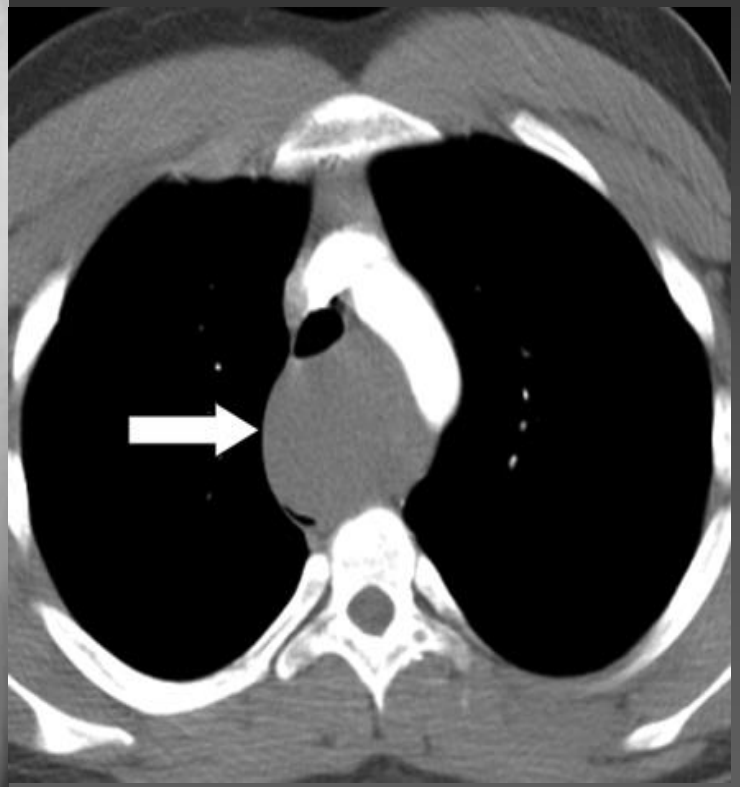






B. Feragalli e Coll. Radiographic evaluation of mediastinal lines as a diagnostic approach to occult or subtle mediastinal abnormalities Radiol med (2011) 116:532–547





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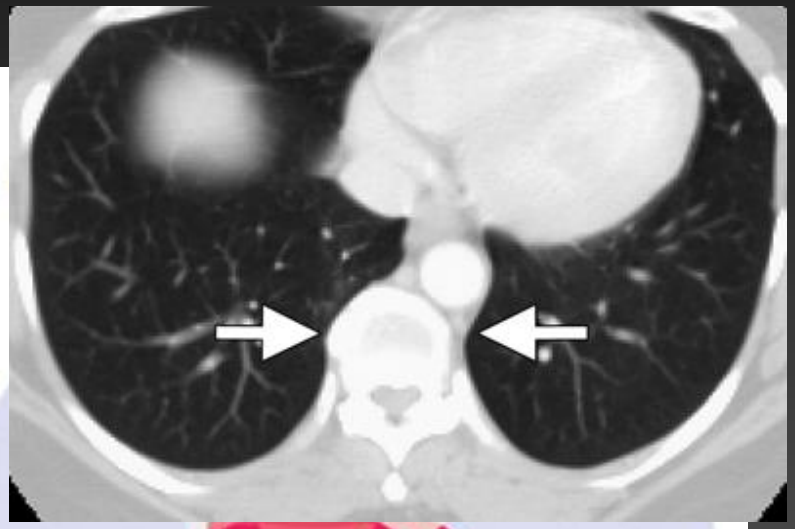
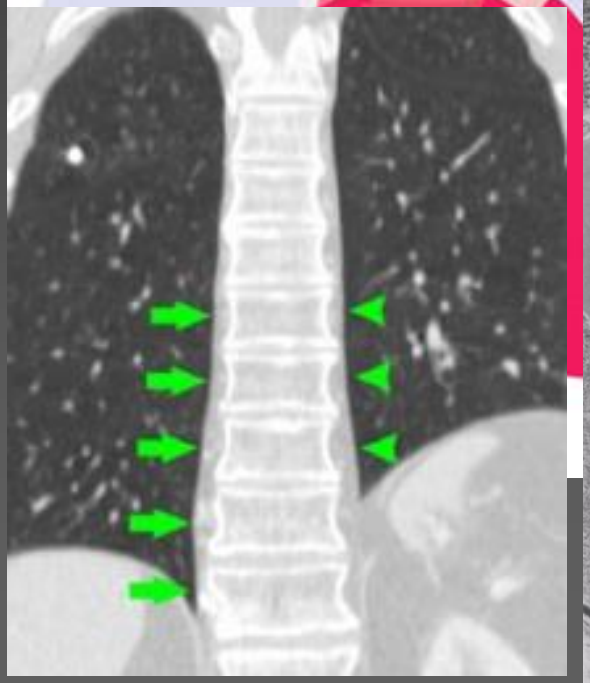
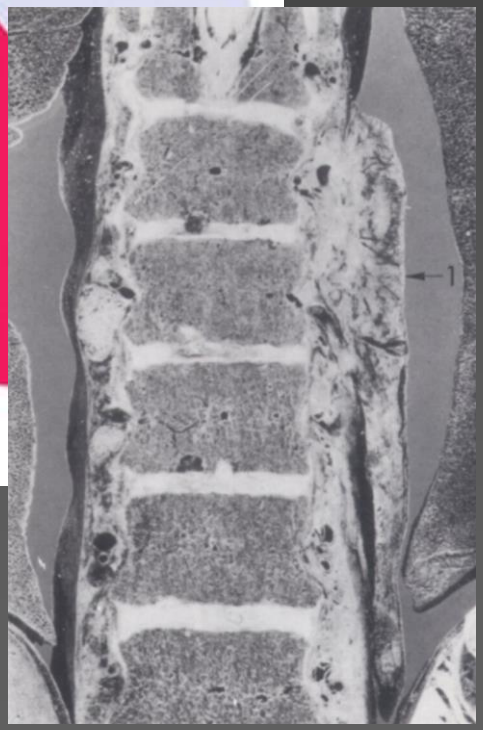
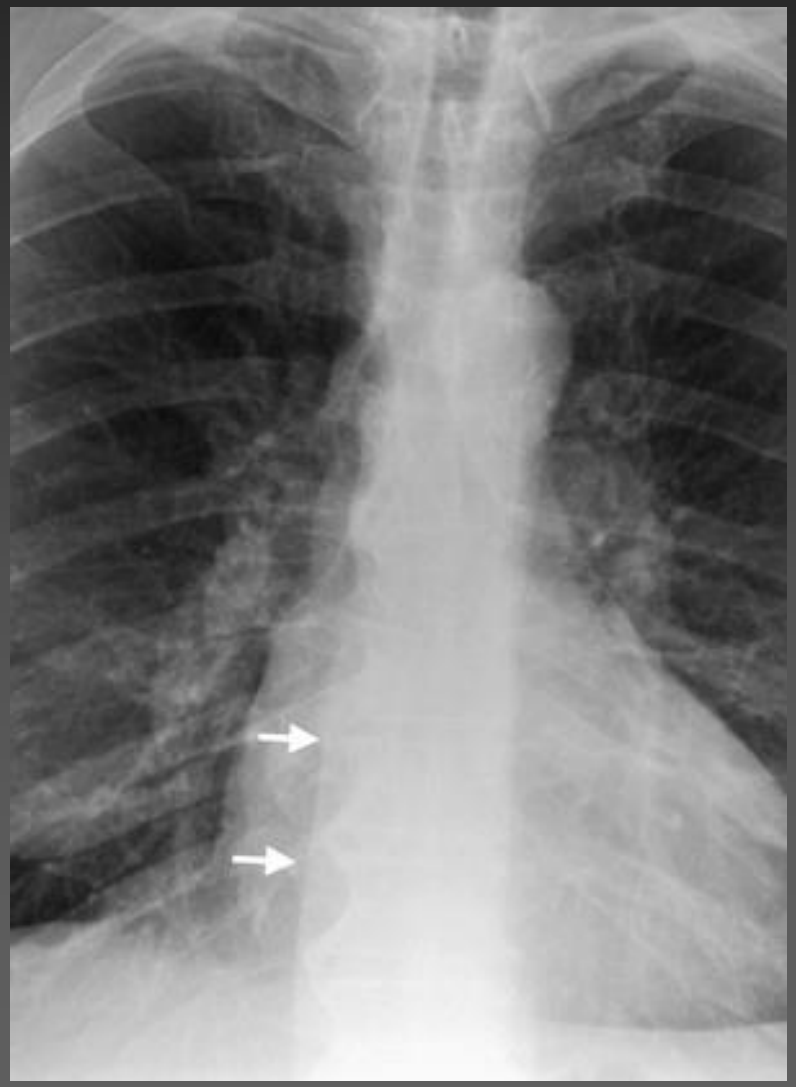
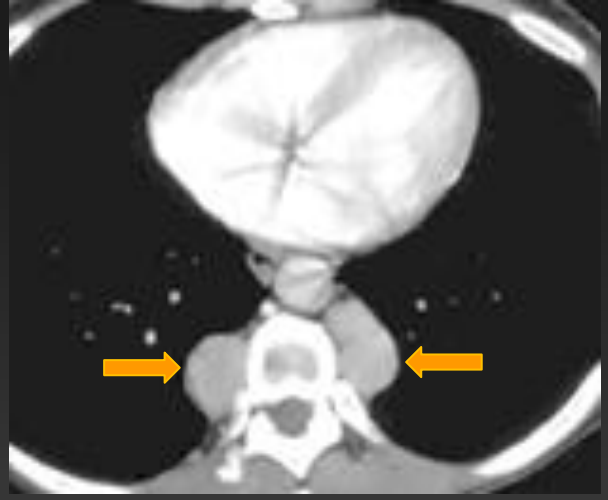
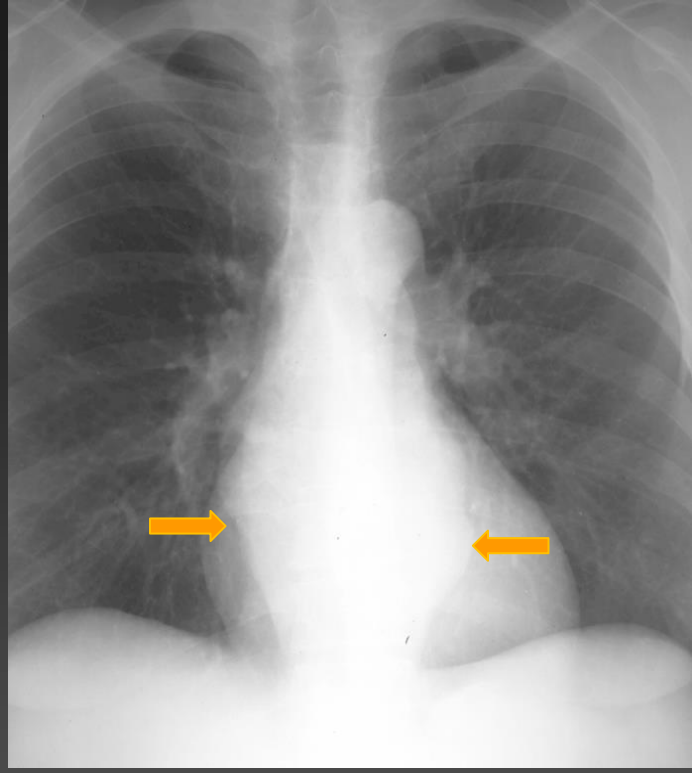


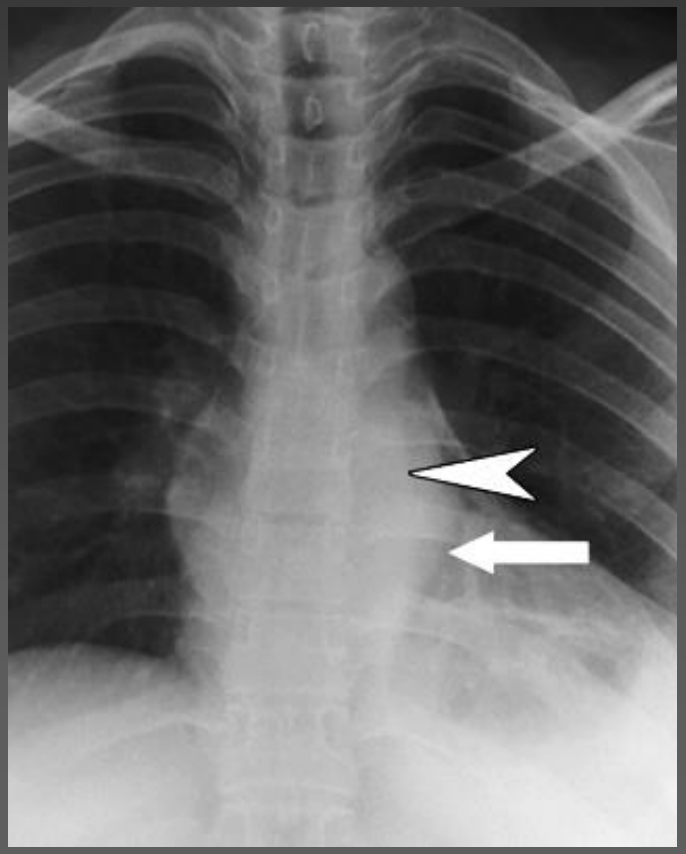


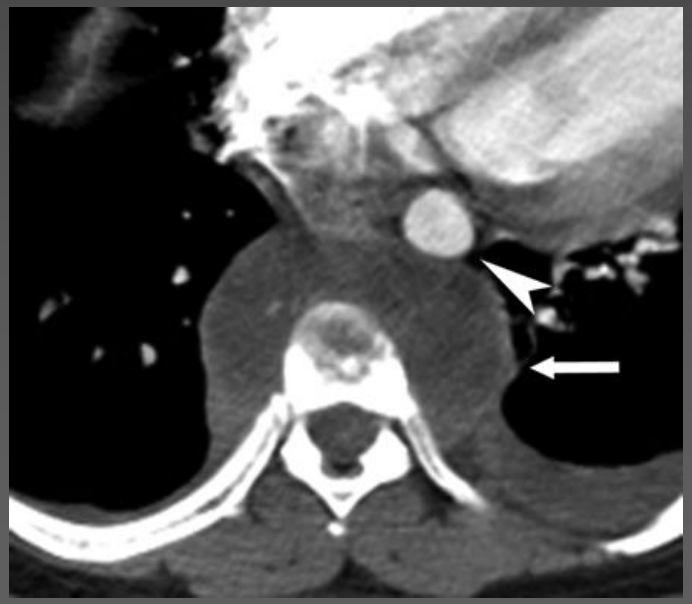


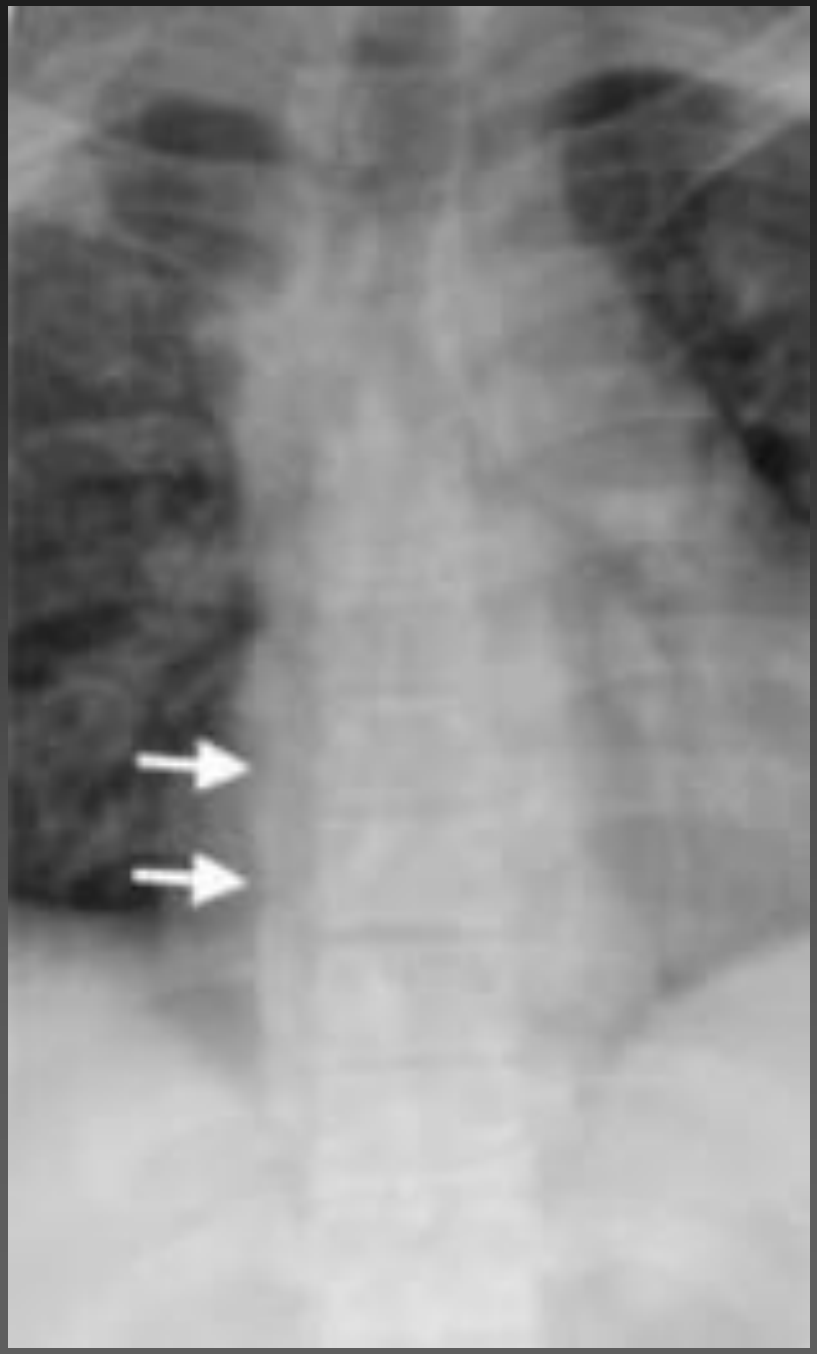


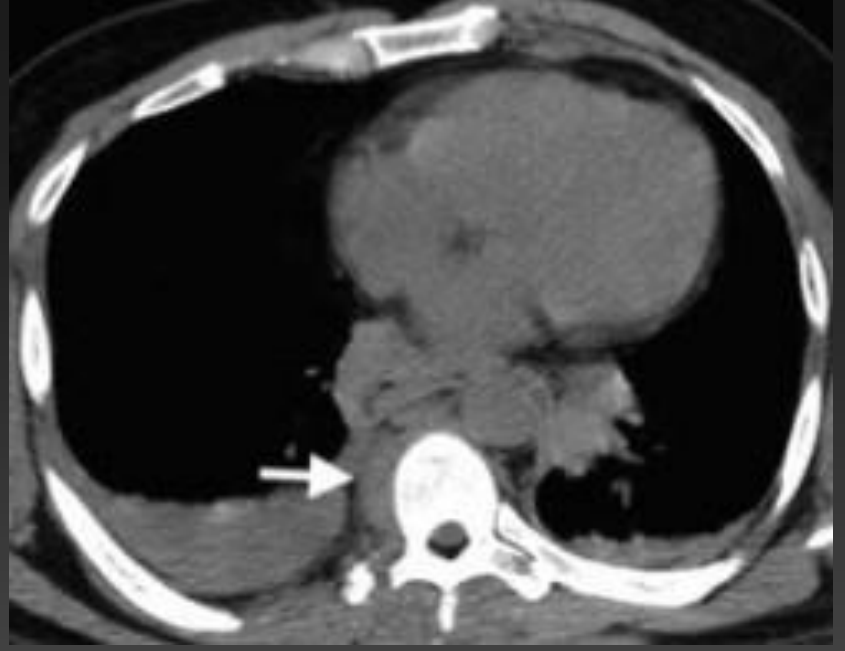


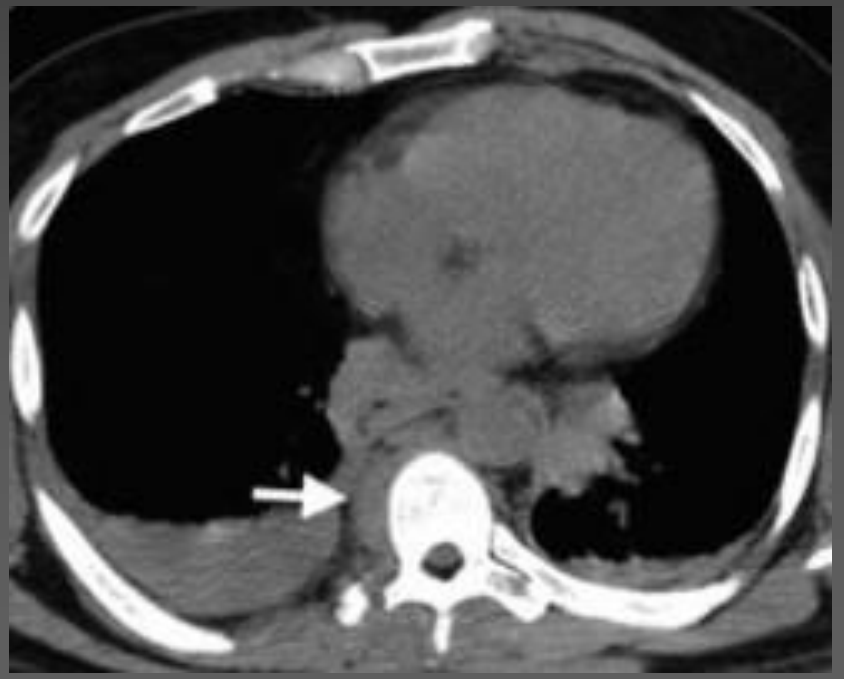












CONCLUSIONI

Le linee mediastiniche sono uno strumento prezioso, pur con notevoli limiti, per individuare o sospettare la presenza di una alterazione intramediastinica, e per ipotizzarne la sede nel piano coronale.

Anterior junction line	24,5 – 57%
Posterior junction line	32%
Right paratracheal stripe	97%
Left paratracheal stripe	21 – 31%
Right paraspinal line	23%
Left paraspinal line	41%

CONCLUSIONI

Le linee mediastiniche sono uno strumento prezioso, pur con notevoli limiti, per individuare o sospettare la presenza di una alterazione intramediastinica, e per ipotizzarne la sede nel piano coronale.

LESIONE DEL MEDIASTINO ANTERIORE

- cancellazione della linea di giunzione anteriore
- alterazione della banda aorto polmonare
- linee mediastiniche posteriori preservate
- segni della silhoutte cardiaca e dell'ilo sovrapposto
- obliterazione degli angoli cardio frenici

CONCLUSIONI

Le linee mediastiniche sono uno strumento prezioso, pur con notevoli limiti, per individuare o sospettare la presenza di una alterazione intramediastinica, e per ipotizzarne la sede nel piano coronale.

LESIONE DEL MEDIASTINO MEDIO

- ampliamento delle bande paratracheali
- distorsione del recesso azygos esofageo
- convessità del bordo della finestra aorto polmonare

CONCLUSIONI

Le linee mediastiniche sono uno strumento prezioso, pur con notevoli limiti, per individuare o sospettare la presenza di una alterazione intramediastinica, e per ipotizzarne la sede nel piano coronale.

LESIONE DEL MEDIASTINO POSTERIORE

- alterazione delle linee paraspinali
- alterazione della linea paraaortica
- cancellazione della linea di giunzione posteriore
- segno cervicotoracico

CONCLUSIONI

Le linee mediastiniche sono uno strumento prezioso, pur con notevoli limiti, per individuare o sospettare la presenza di una alterazione intramediastinica, e per ipotizzarne la sede nel piano coronale.

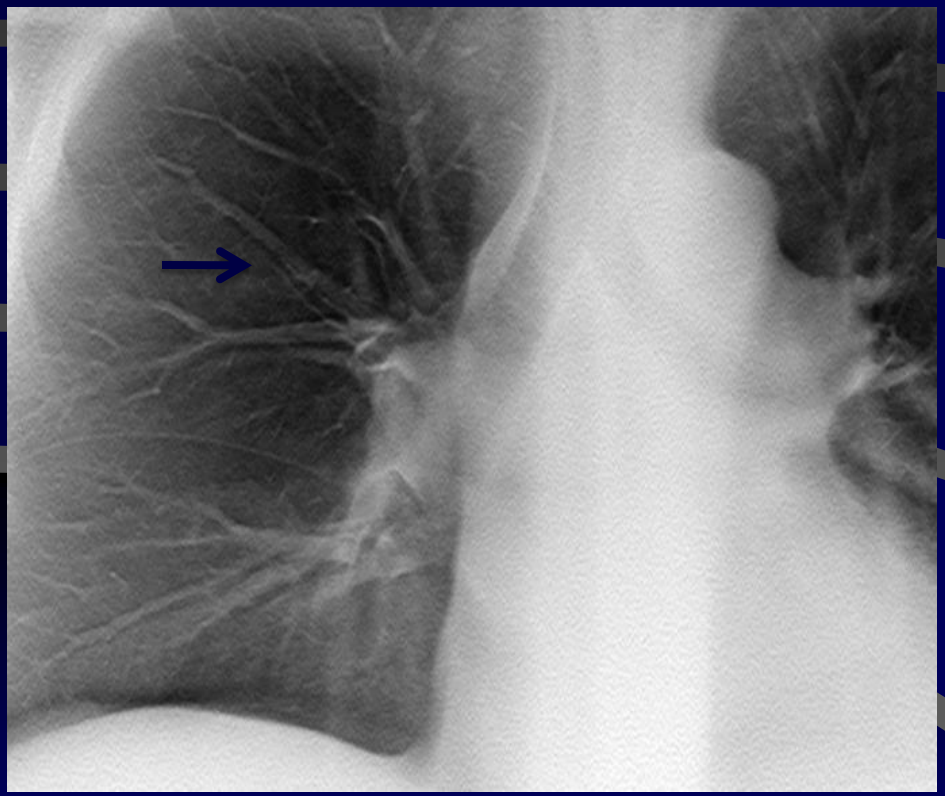
L'integrazione con gli altri segni radiologici classici di patologia mediastinica è indispensabile.

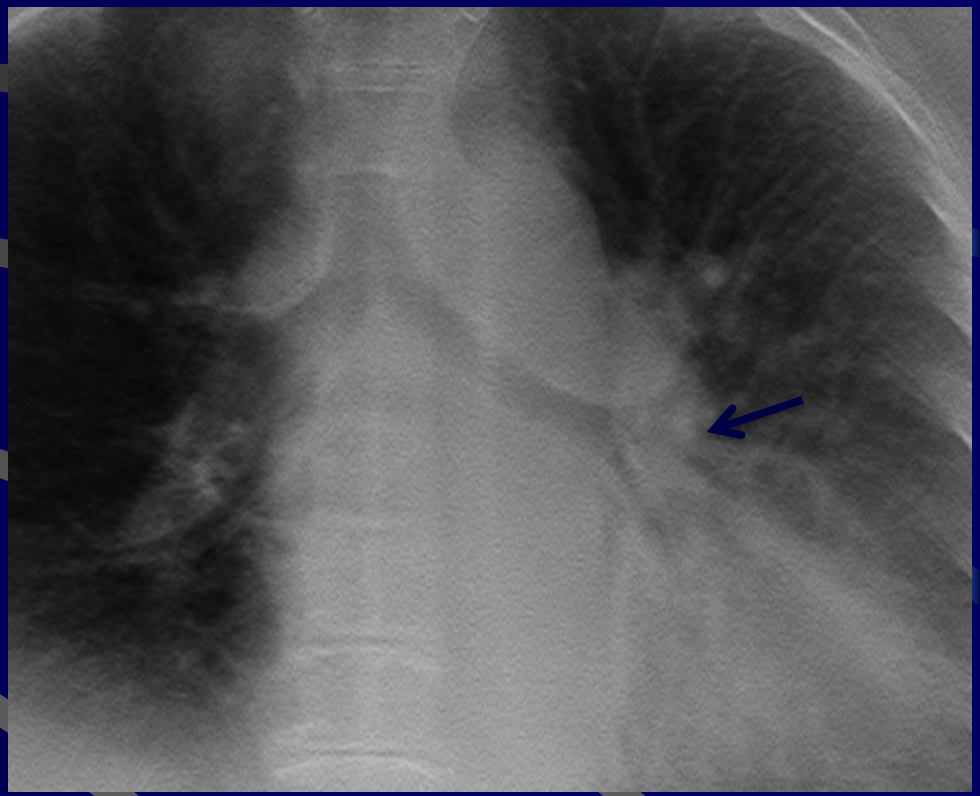
Un radiogramma negativo non esclude la presenza di patologie mediastiniche anche di considerevoli dimensioni, specie in pazienti corpulenti.

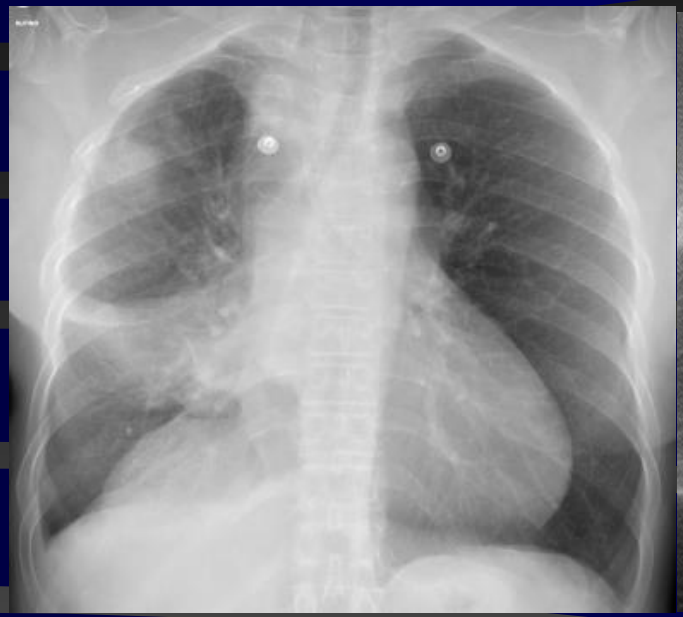
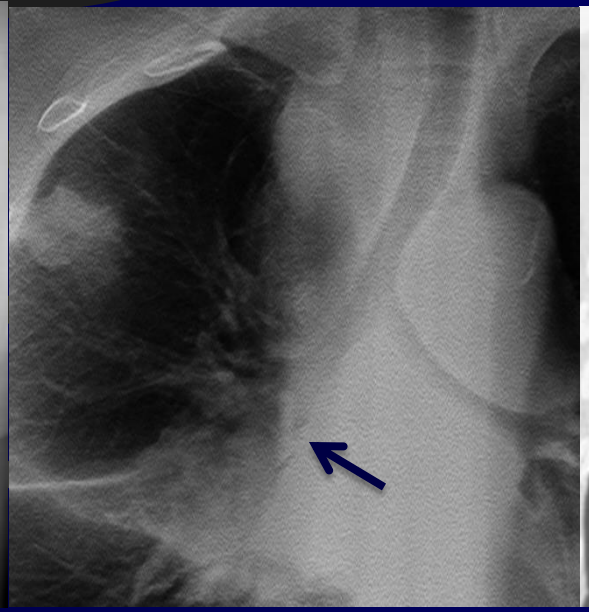
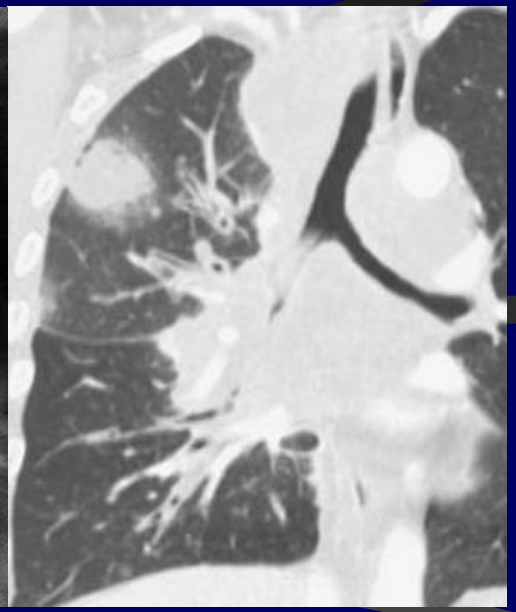
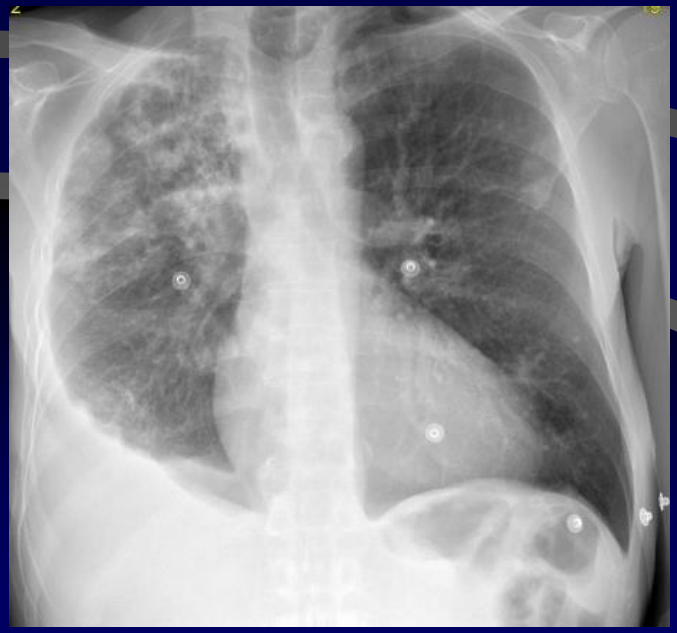
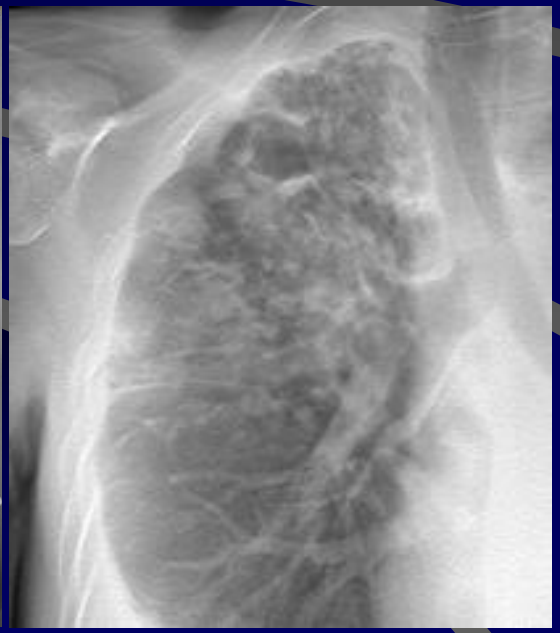
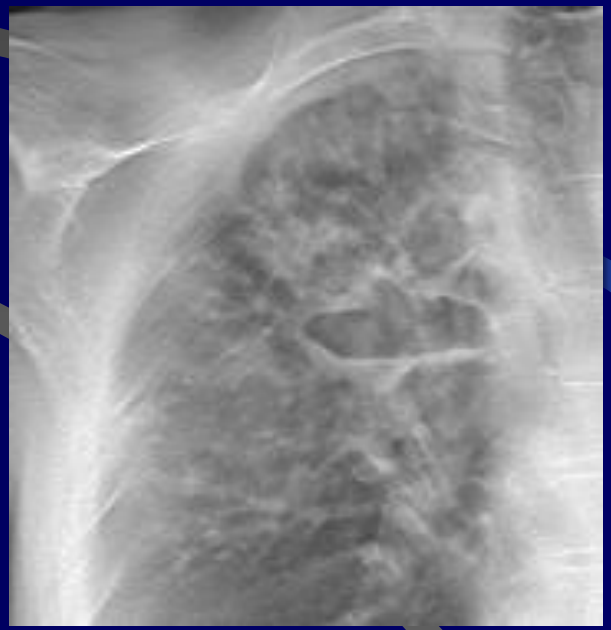
NON DIMENTICATE LA PROIEZIONE LATERALE

Anatomia bronchiale variabile

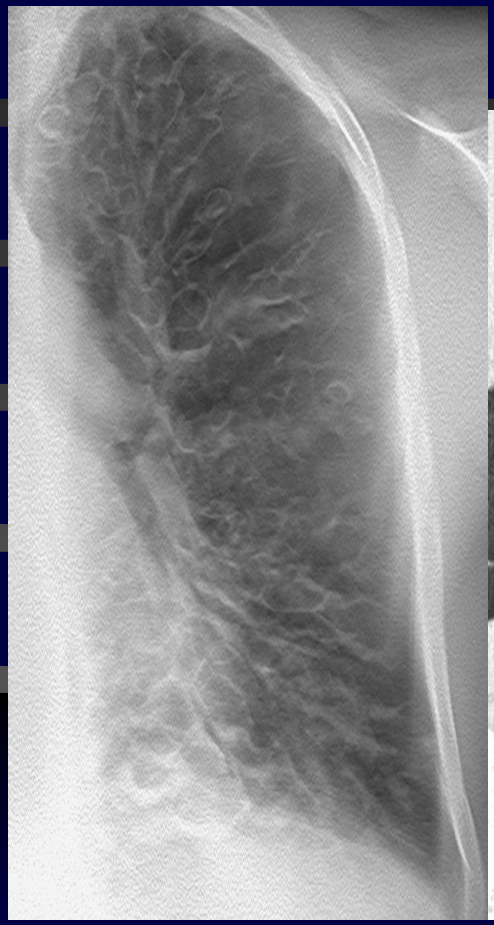
- 43 casi bronchi segmentari
- 5 casi bronchi lobari
- 2 bronchi lobari mal valutabili

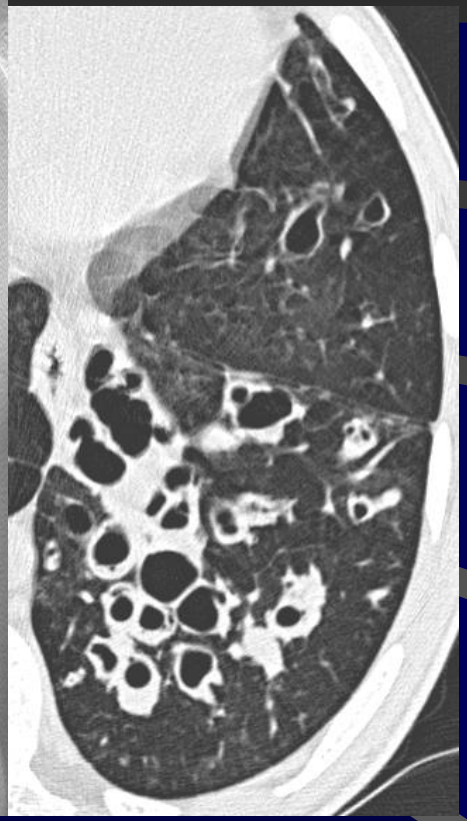


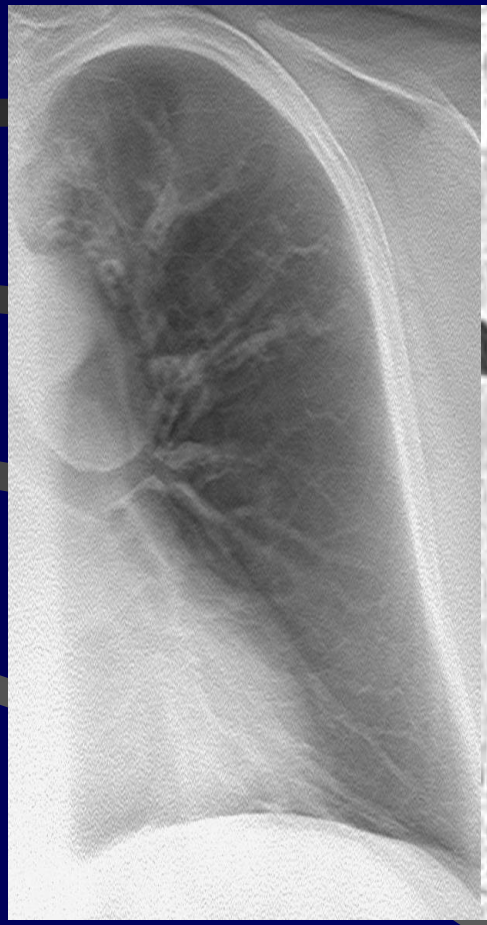


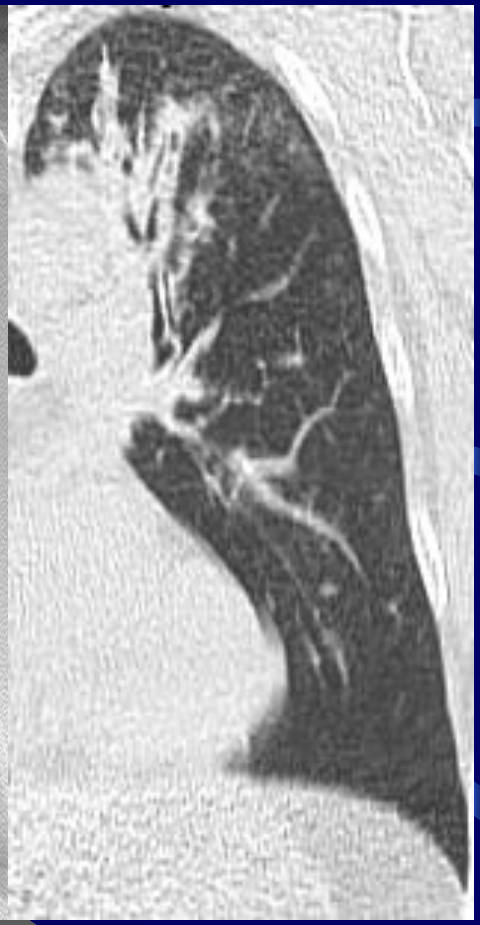







Eccellente correlazione tra punteggio tomosintesi e punteggio TC



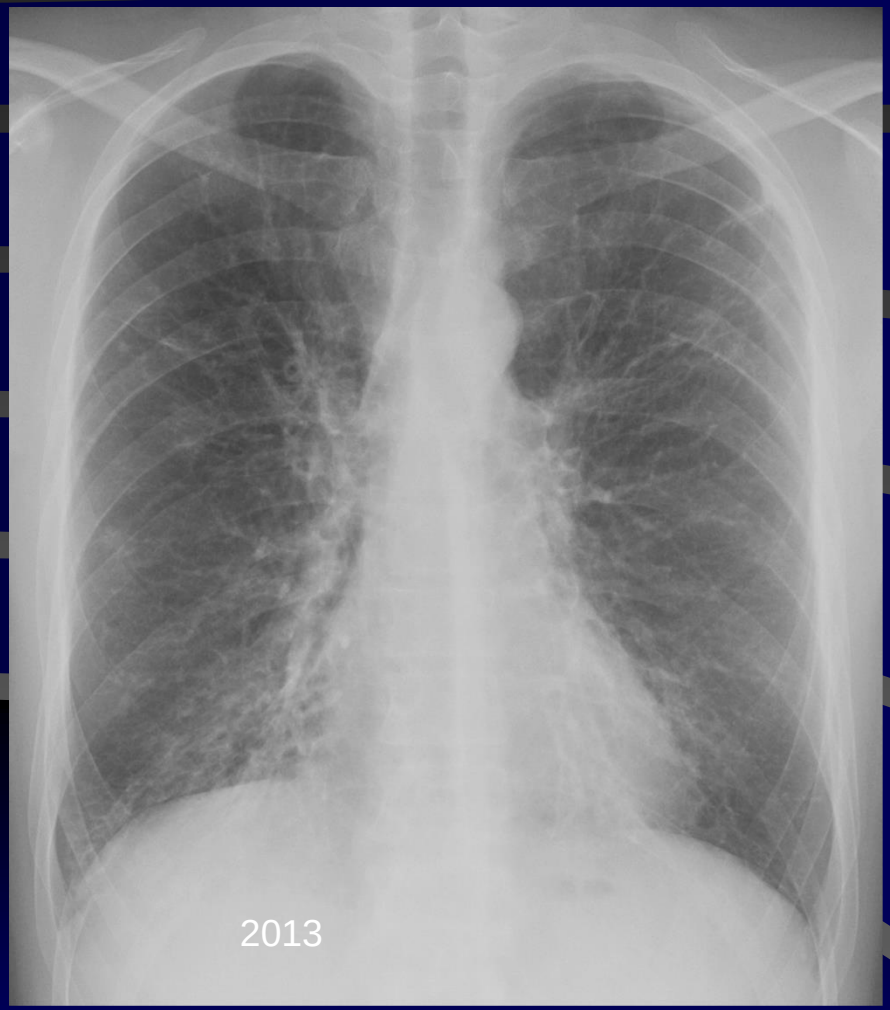


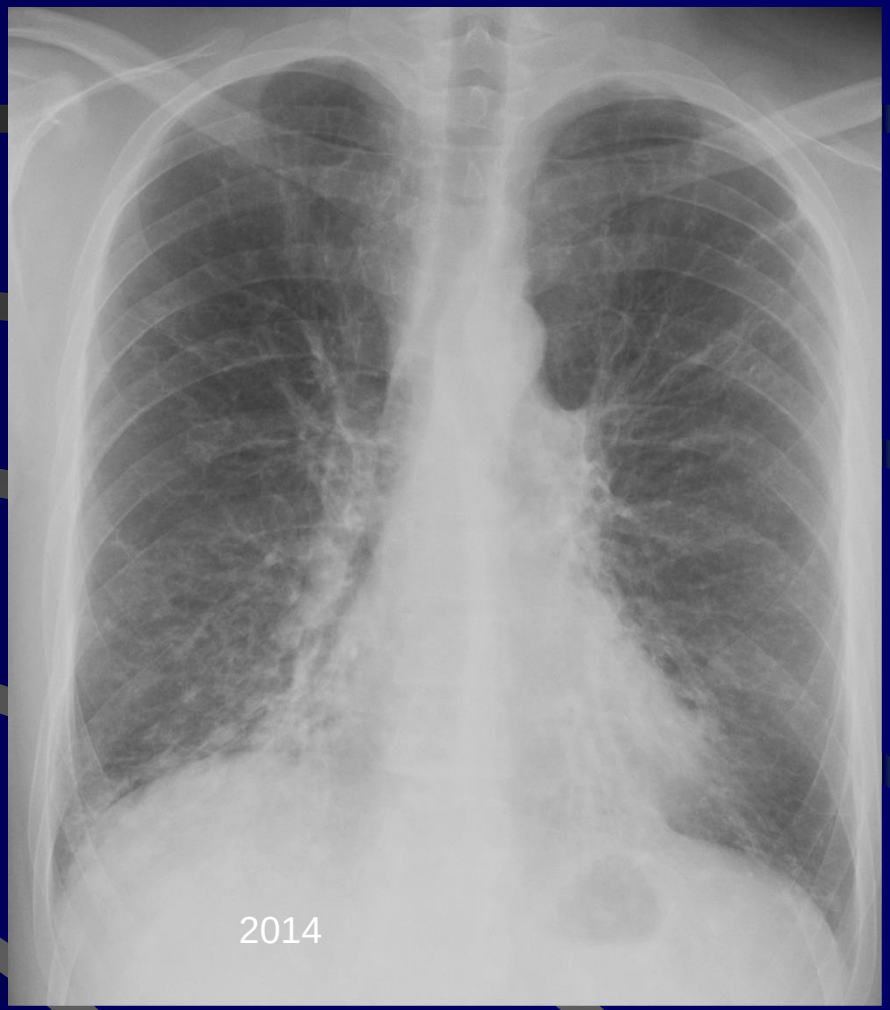


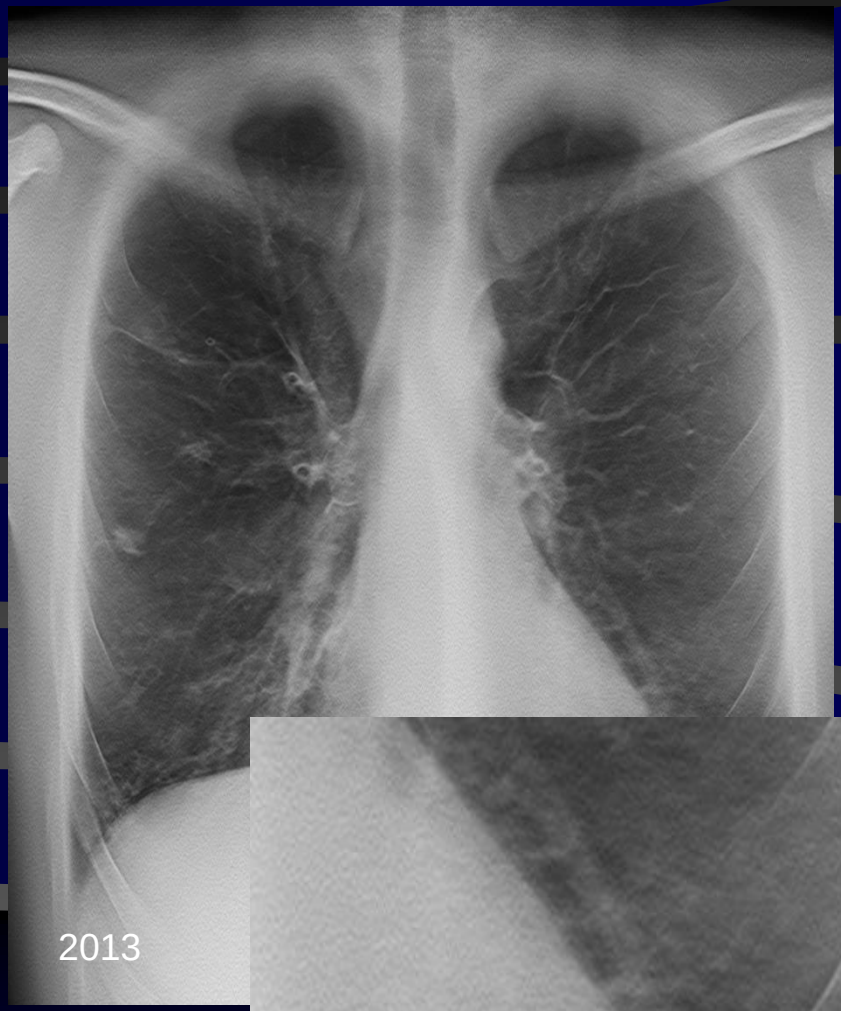


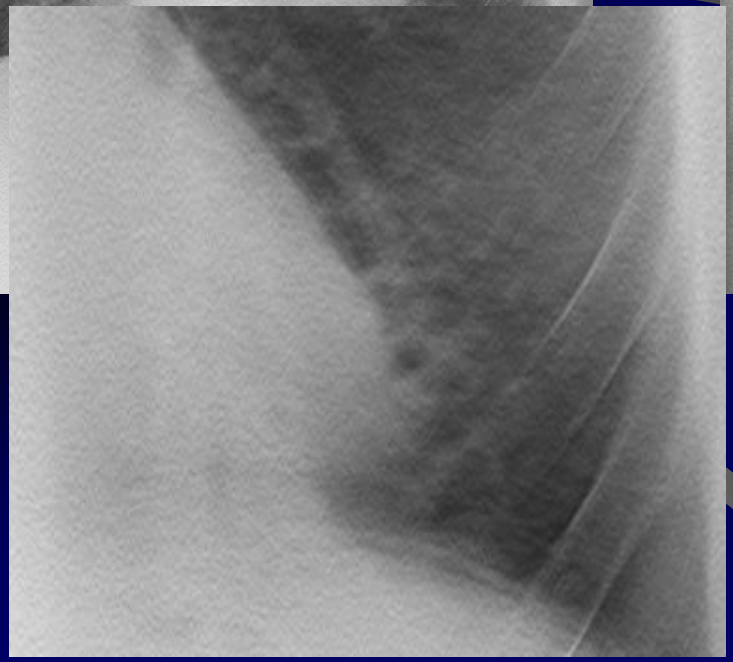
Buona correlazione tra punteggio tomosintesi e valore di FEV1

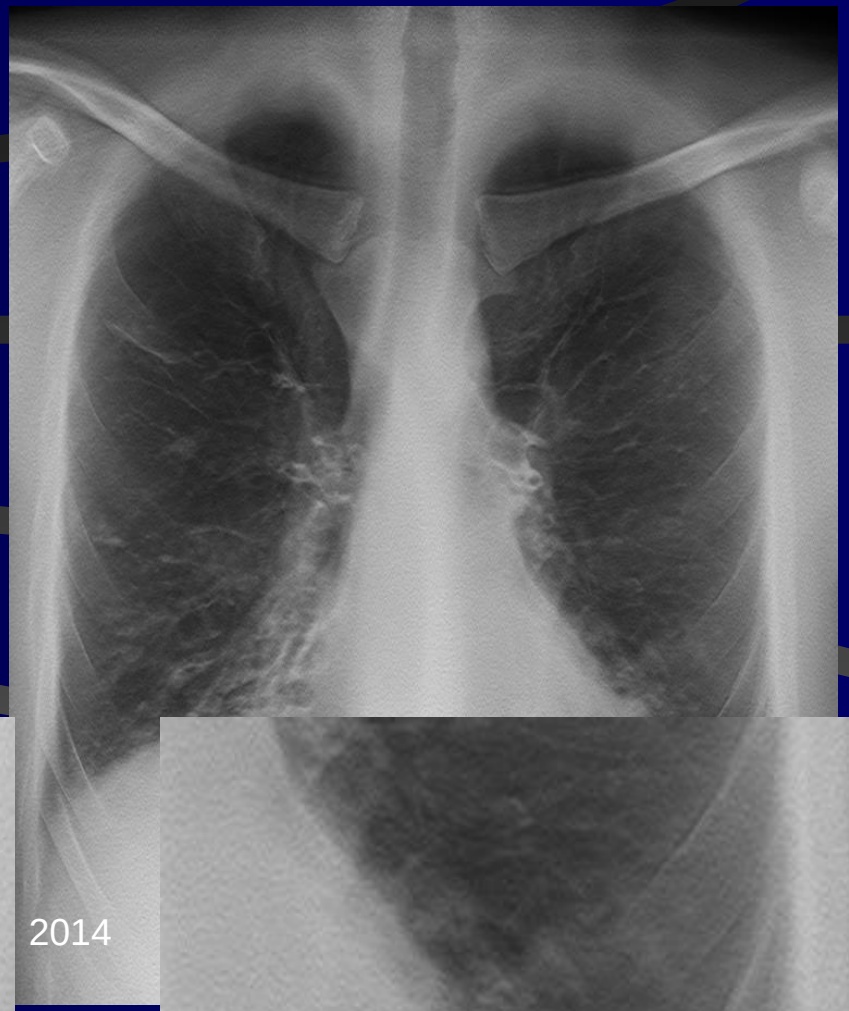
Uomo, 36 anni






2013

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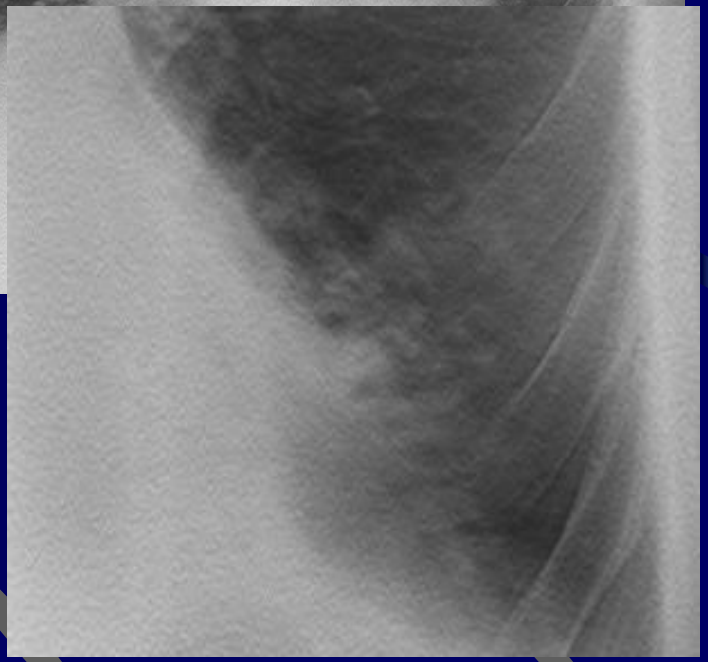

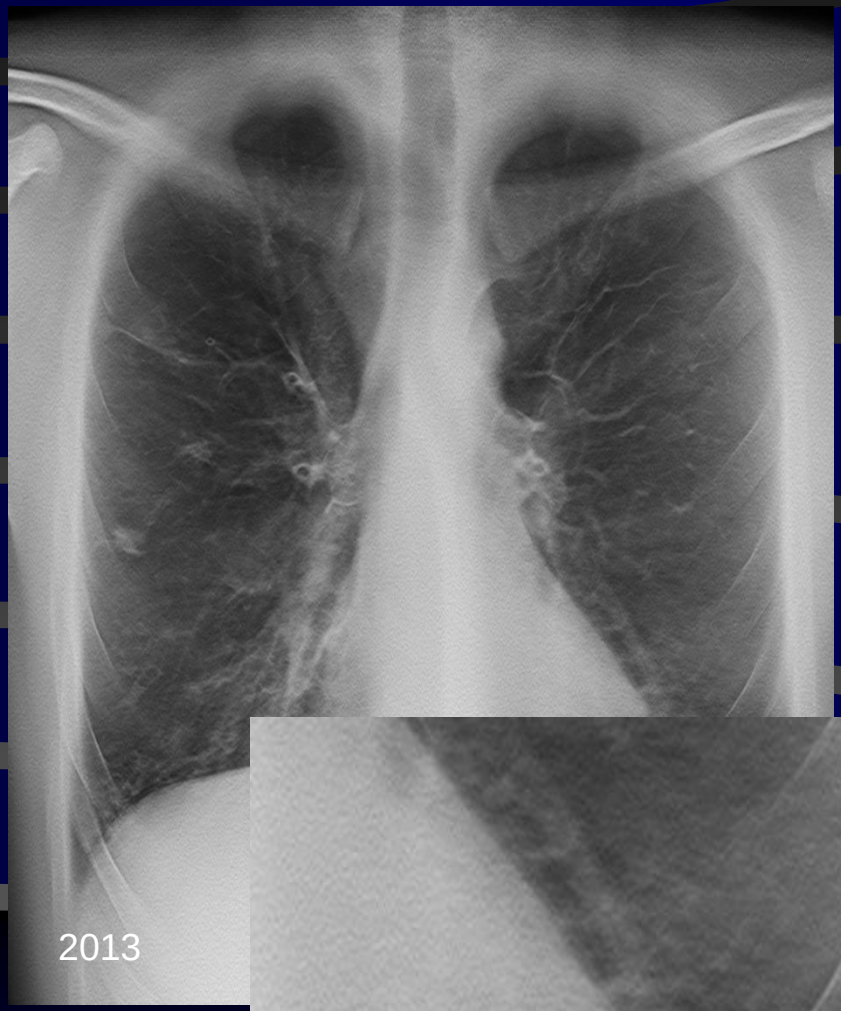
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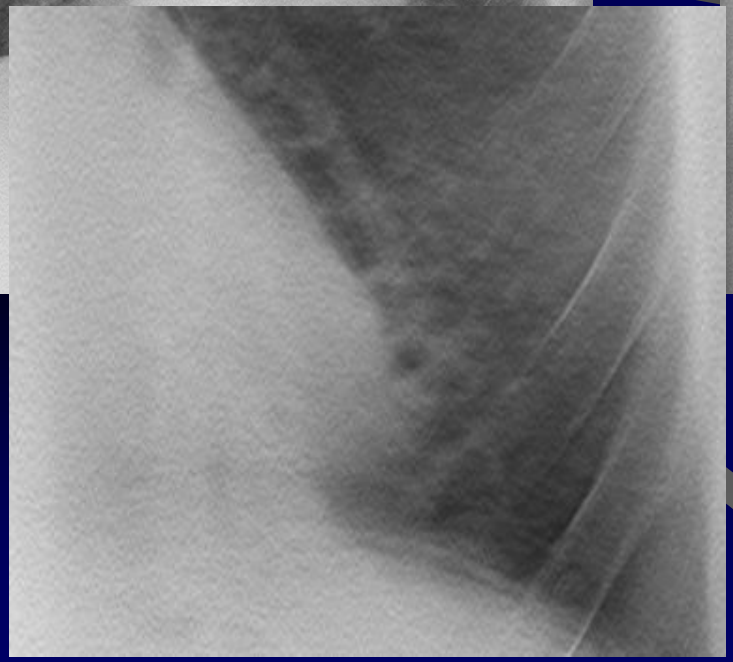

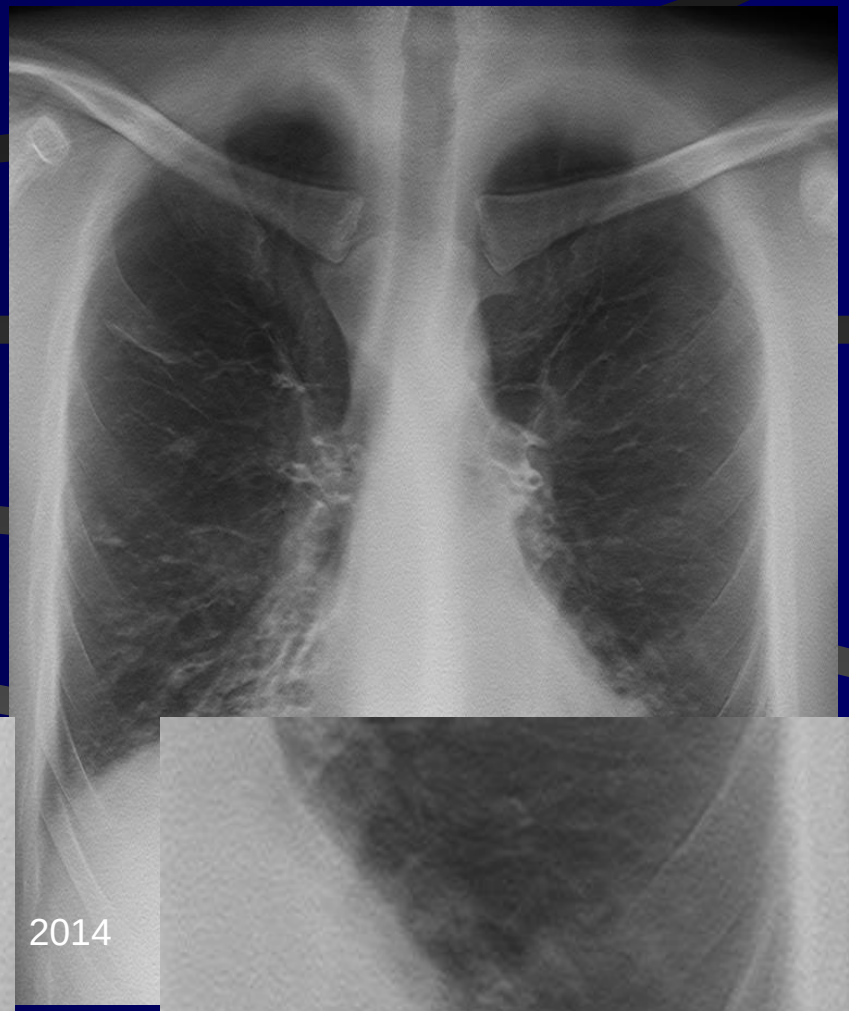
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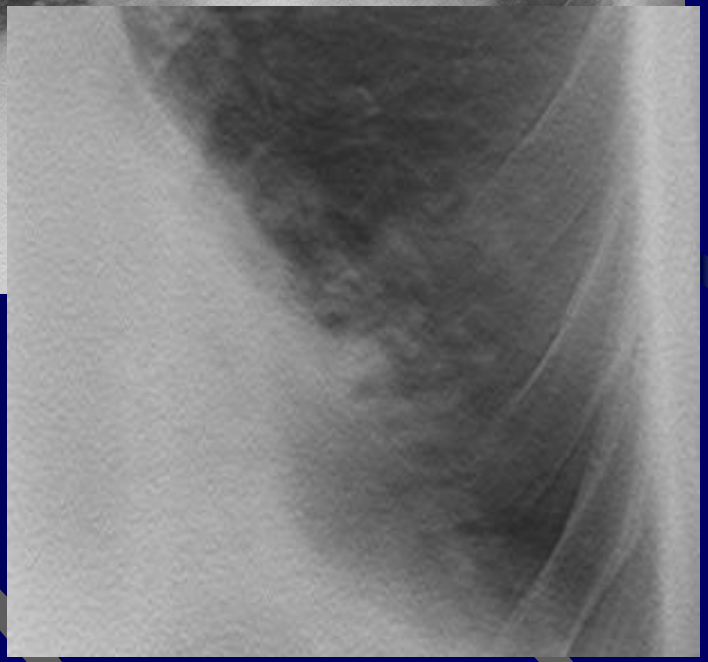
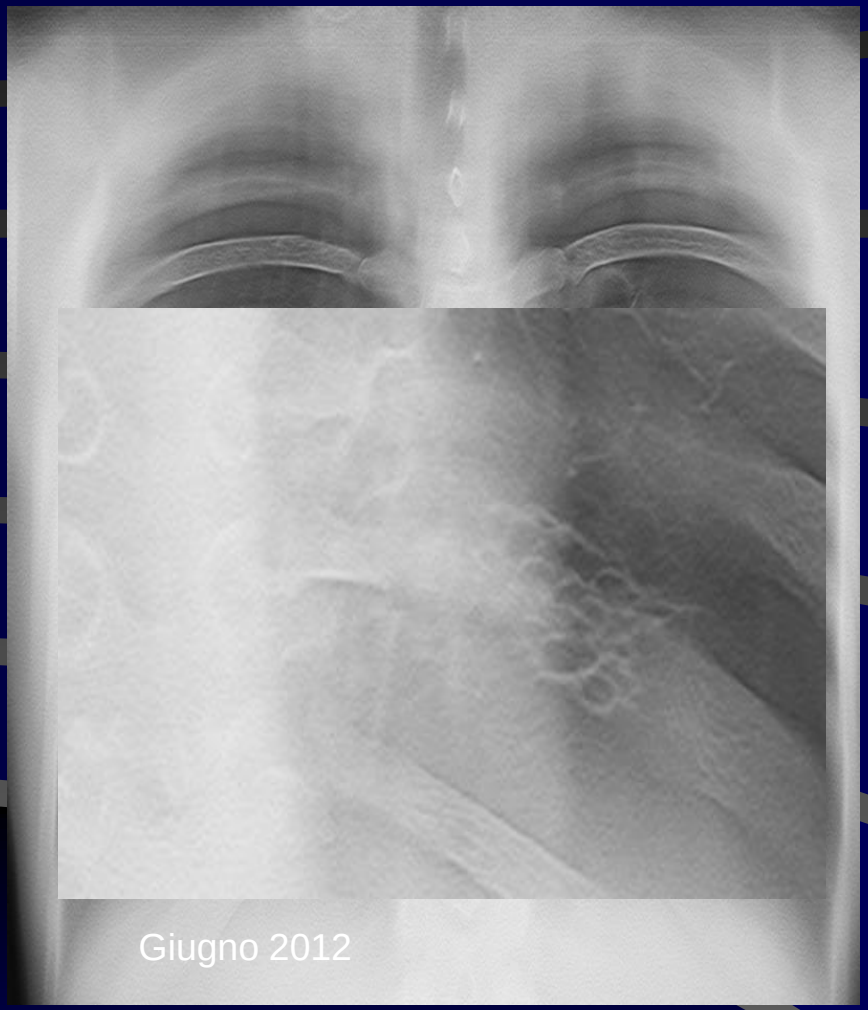
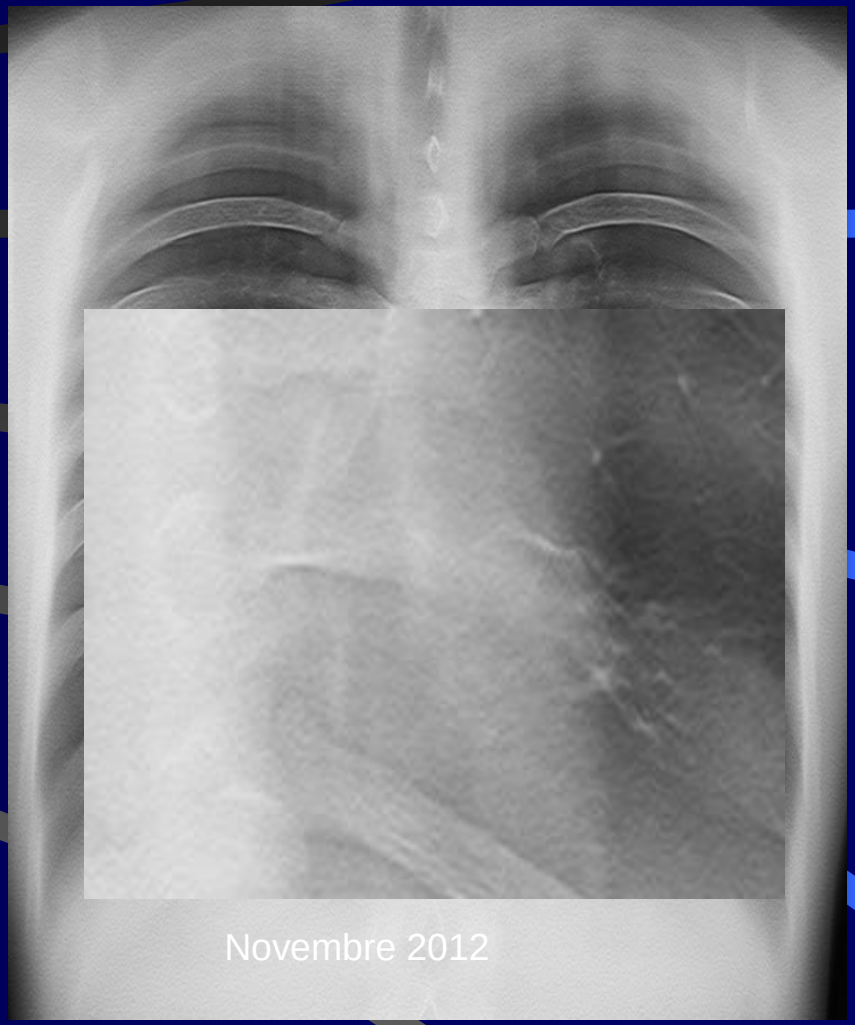




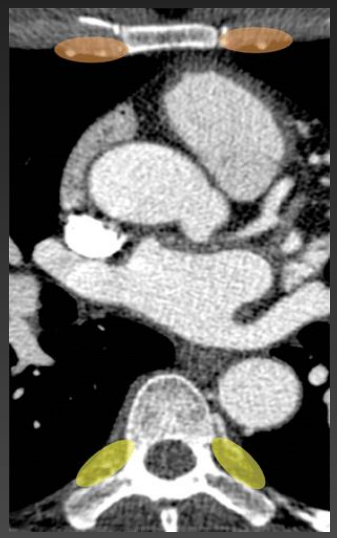
Giugno 2012



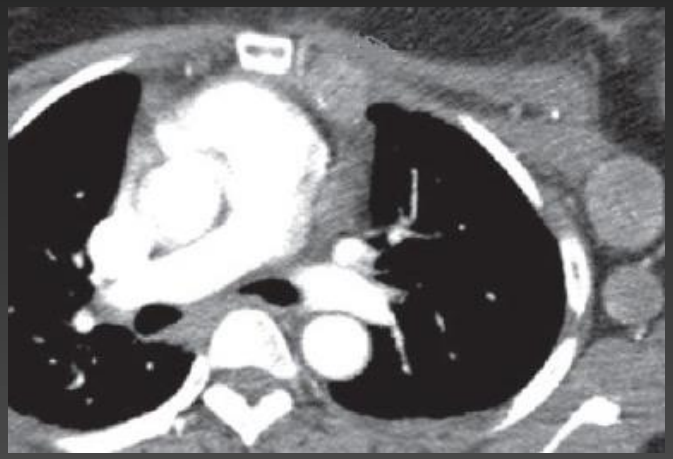
Novembre 2012

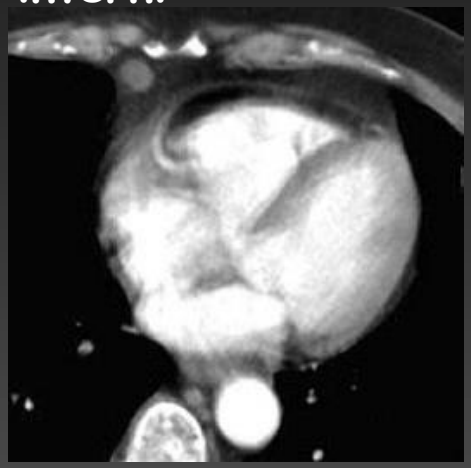

FINE
FINE

LINFONODI TORACICI
PARIETALI

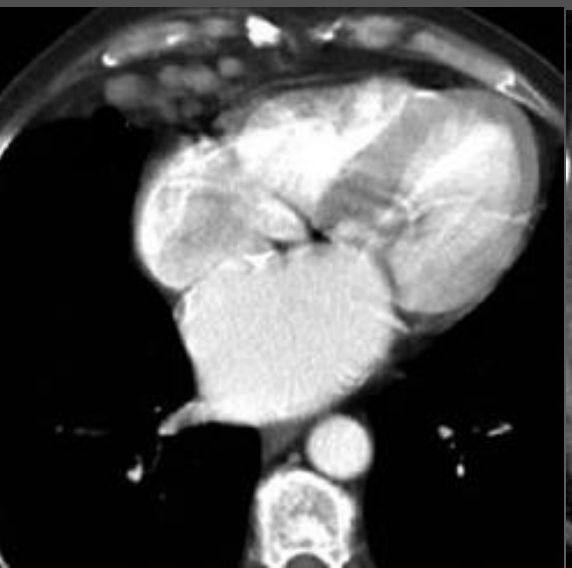


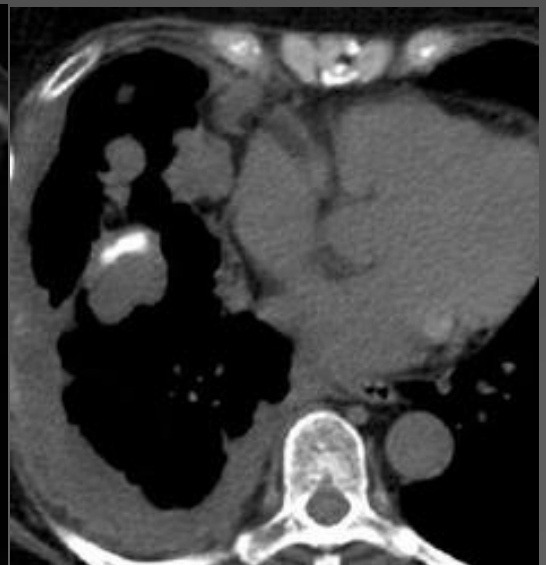
- mammari interni

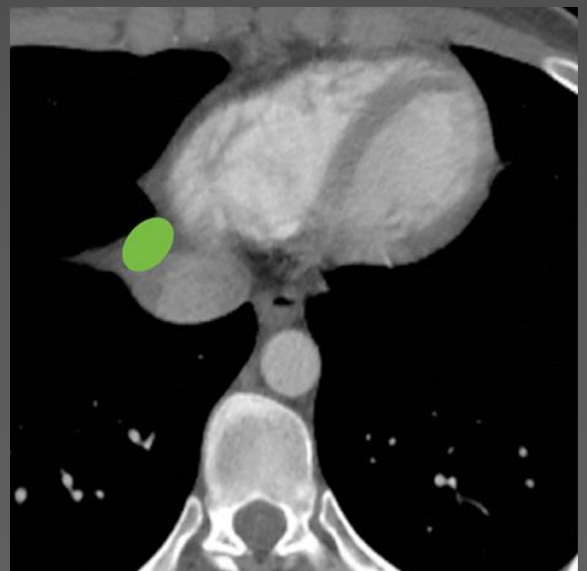




- intercostali
- diaframmatici / cardiofrenici

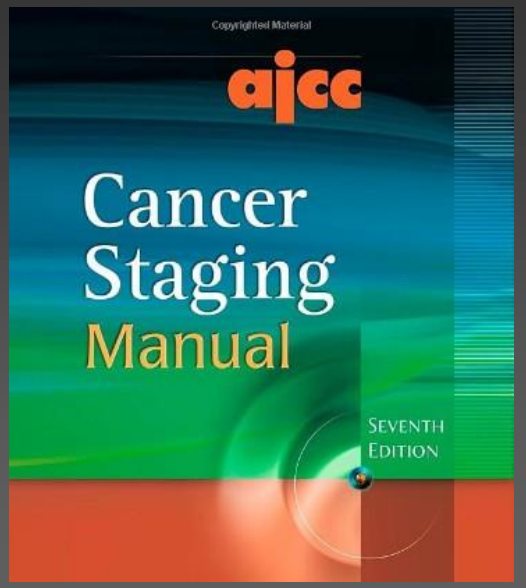




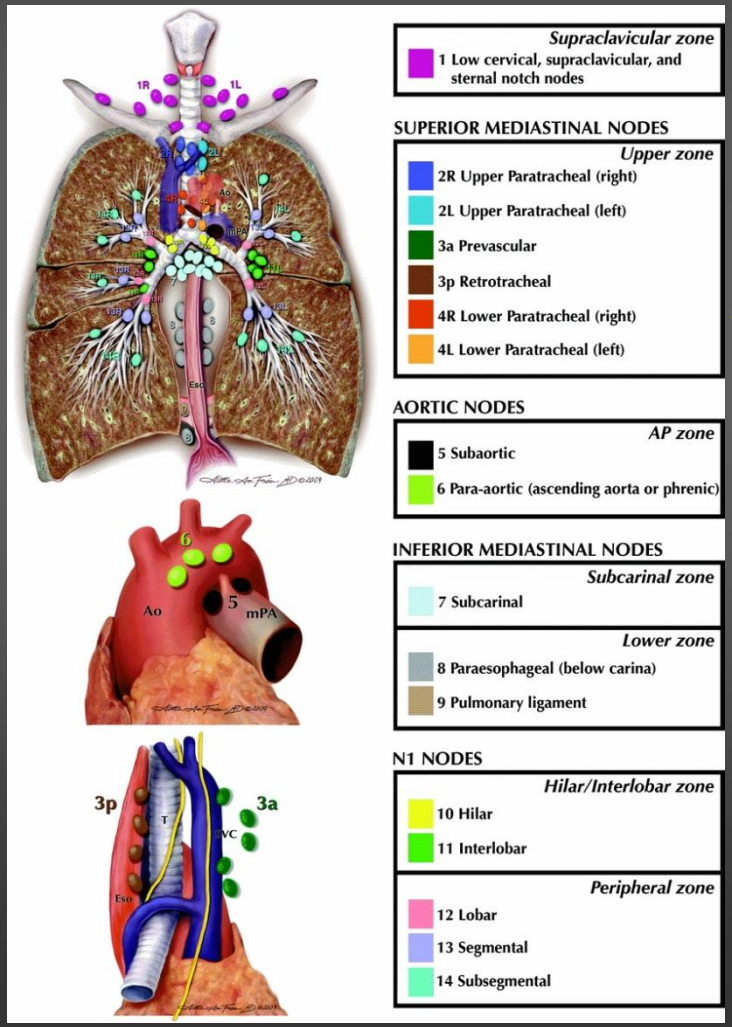


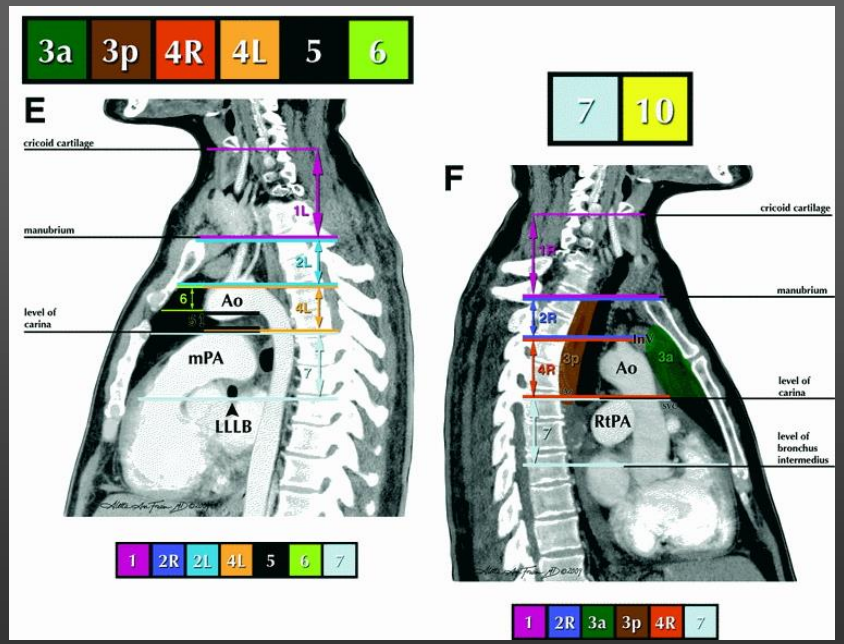
LINFONODI TORACICI
VISCERALI

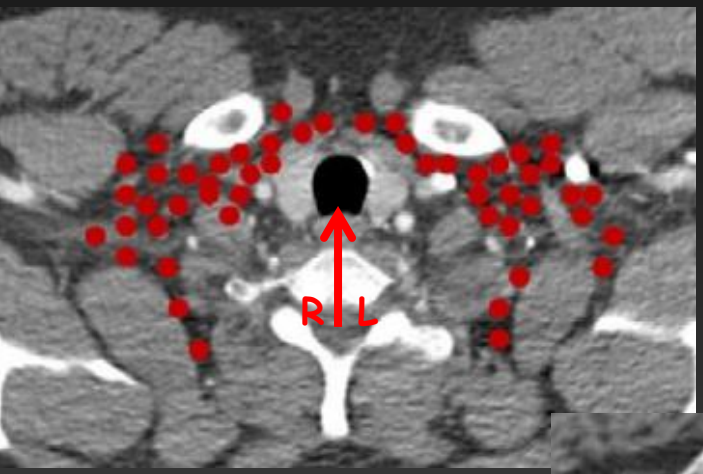
AJCC CANCER STAGING MANUAL
VII° Edizione **2009**



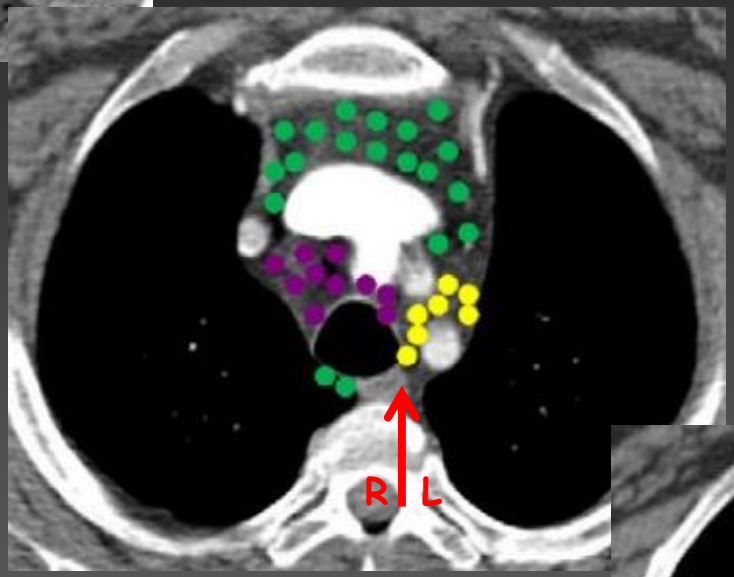
9 staz.mediastiniche (1-9)
5 stazioni ilari (10-14)
7 zone (1 sovraclaveare, 4 mediastiniche, 2 ilari)

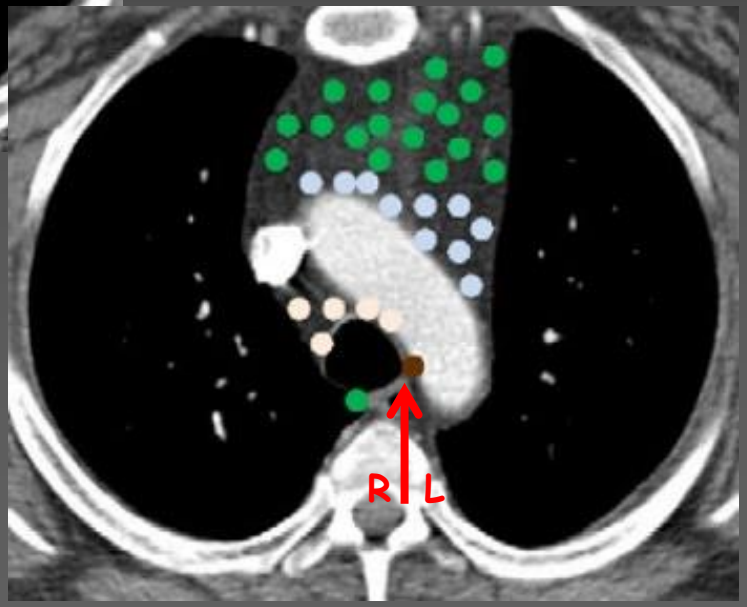




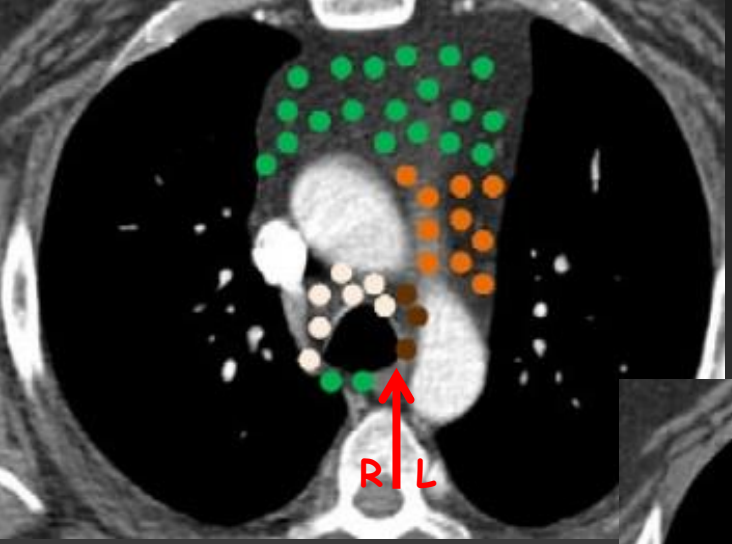


- Stazione 1 – LN cervicali bassi e sovraclaveari
- Stazione 2R – LN paratracheali superiori di dx
- Stazione 2L – LN paratracheali superiori di sin

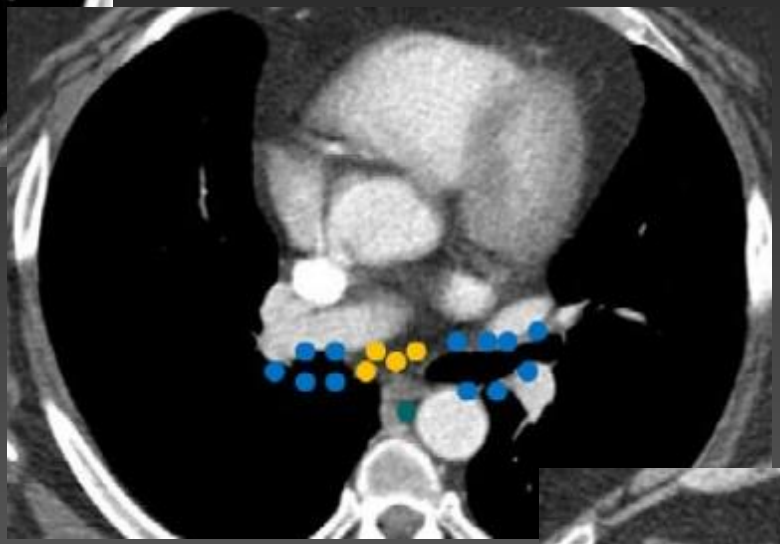


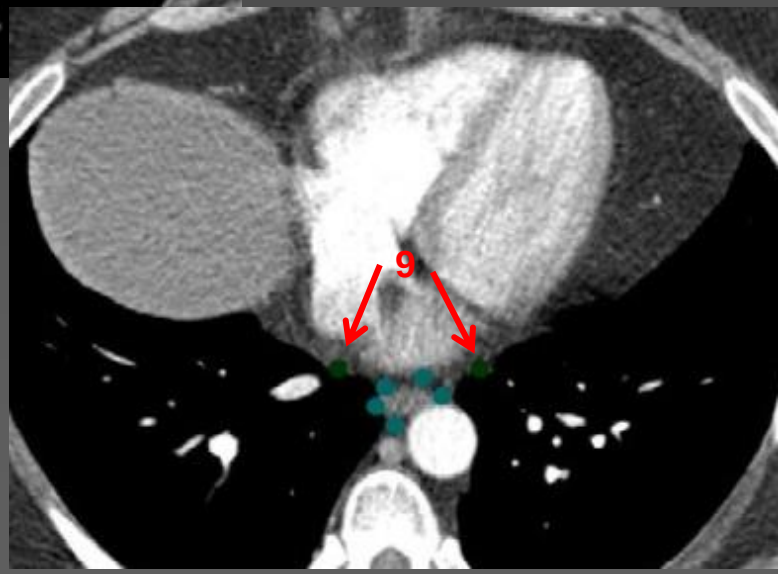


- Stazione 3 – LN prevascolari e retrotracheali
- Stazione 4R – LN paratracheali inferiori di dx
- Stazione 4L – LN paratracheali inferiori di sin
- Stazione 5 – LN subaortici o della finestra AP
- Stazione 6 – LN paraaortici



- Stazione 5 – LN subaortici o della finestra AP
- Stazione 6 – LN paraaortici
- Stazione 7 – LN sottocarinali

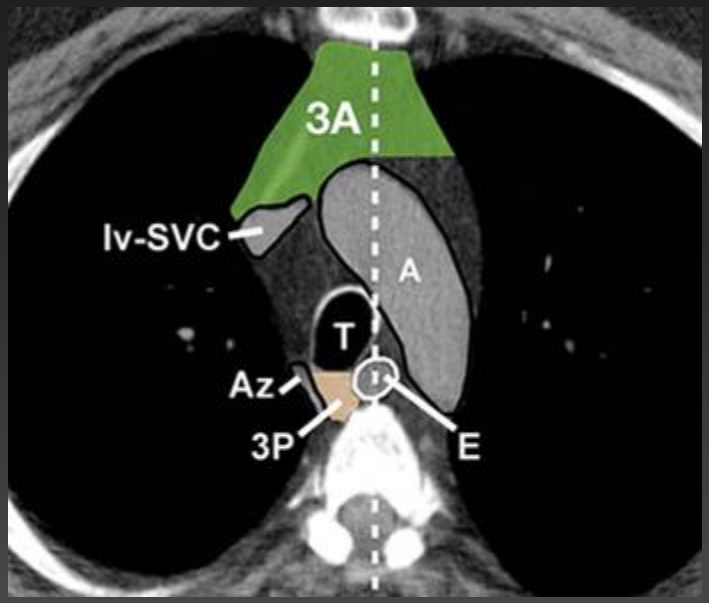


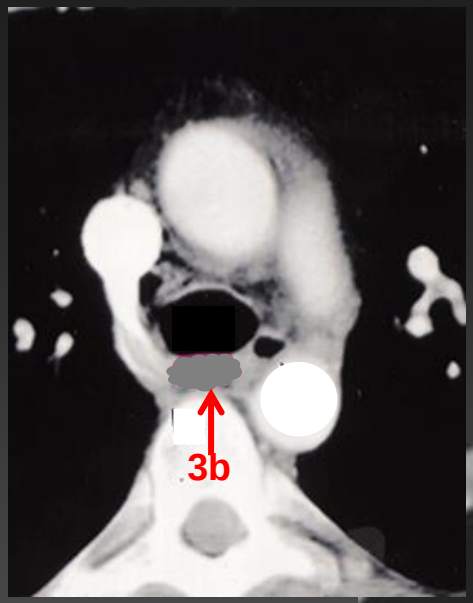


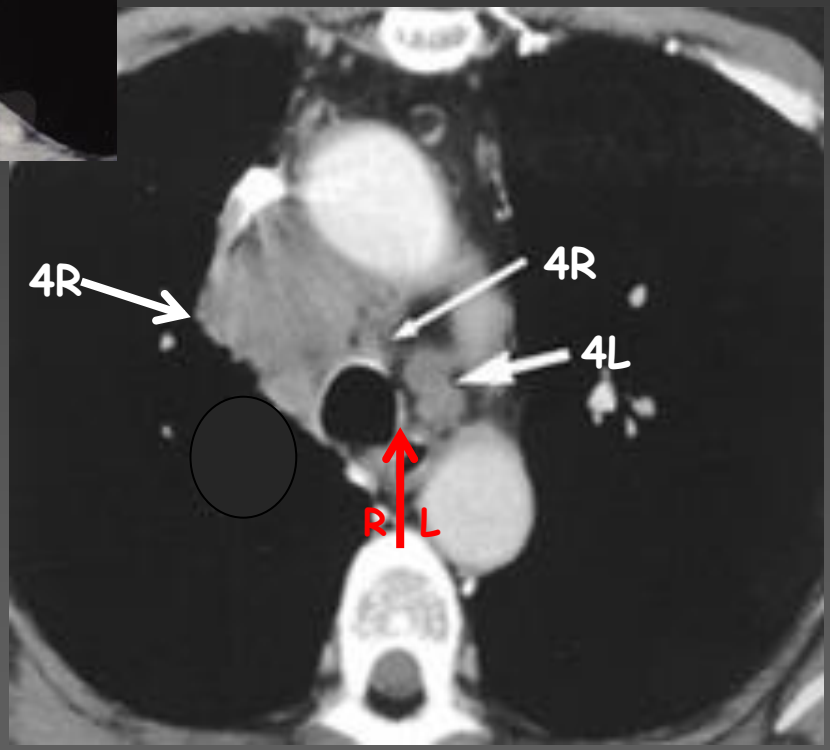
- Stazione 8 – LN paraesofagei
- Stazione 9 – LN del legamento polmonare
- Stazioni 10,11 – LN ilari e interlobari

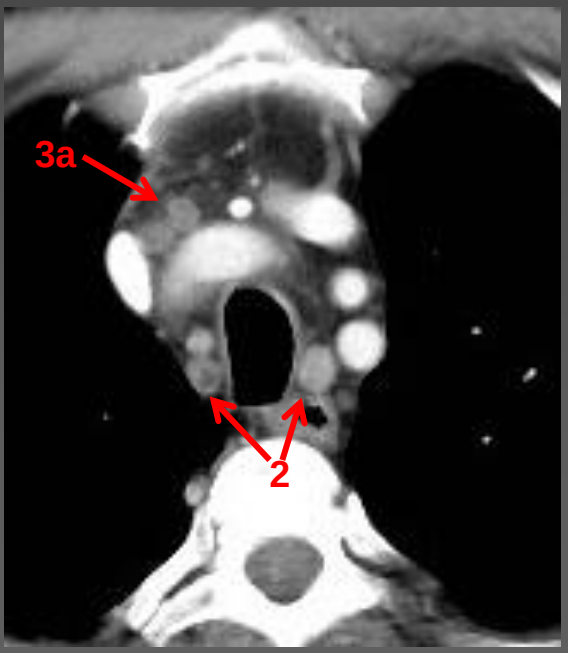
Stazioni 12,13,14 – LN lobari, segmentari, subsegm.

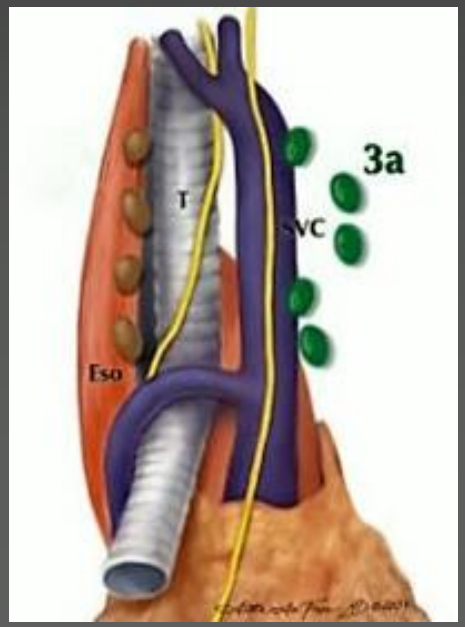
LE POTENZIALI ZONE DI INCERTEZZA



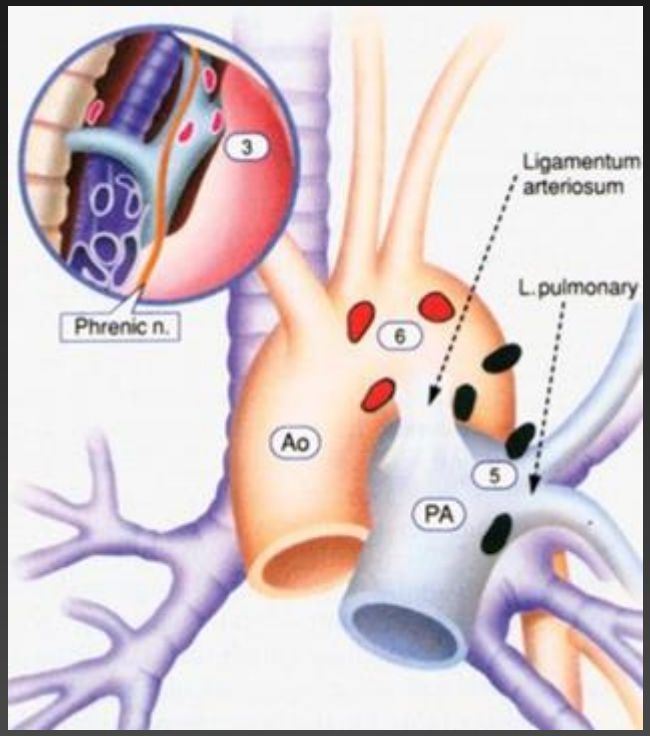


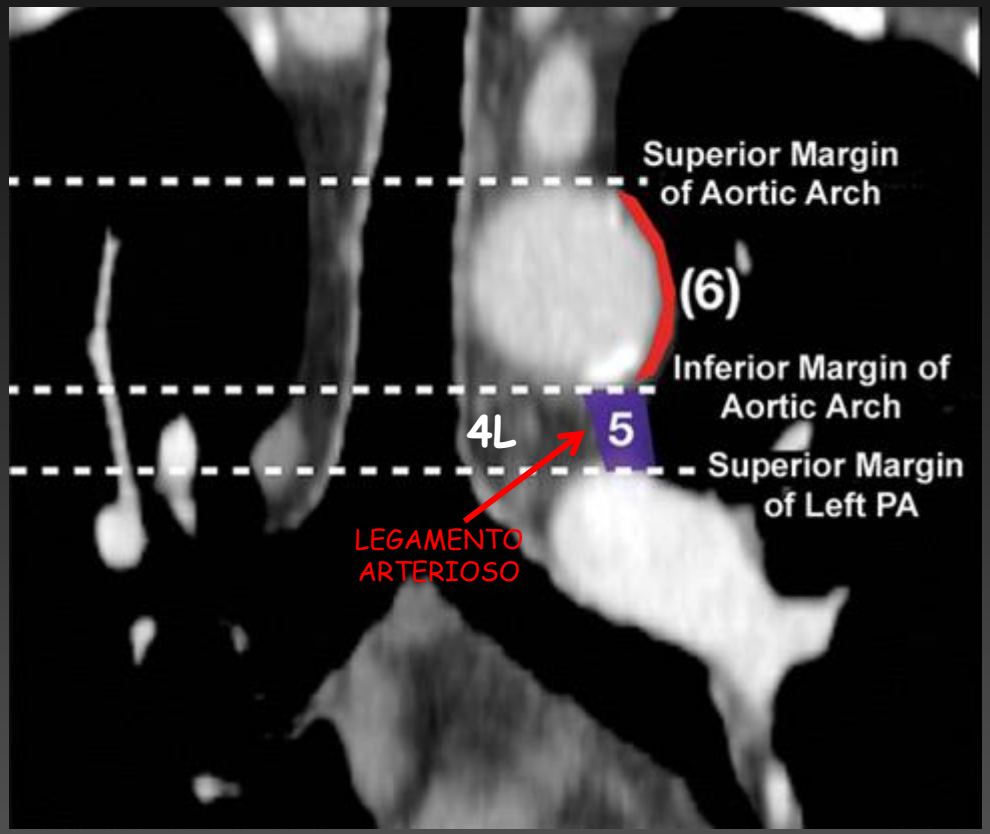


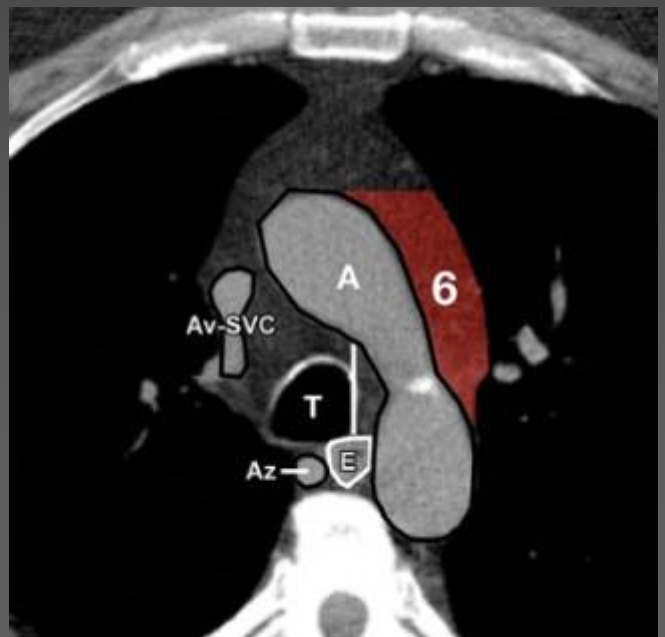


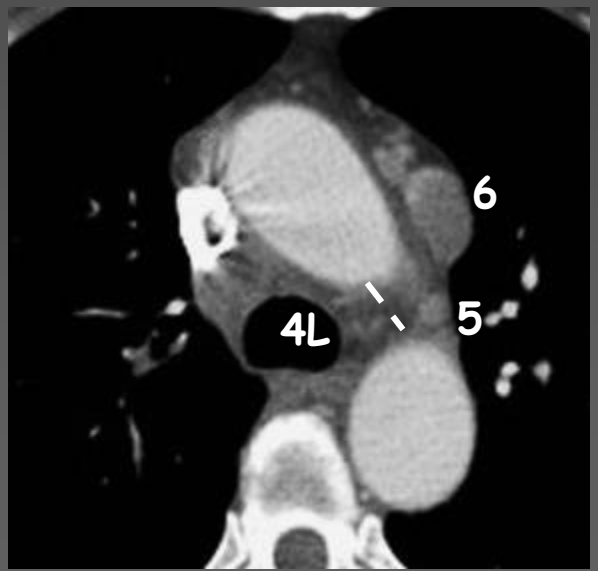


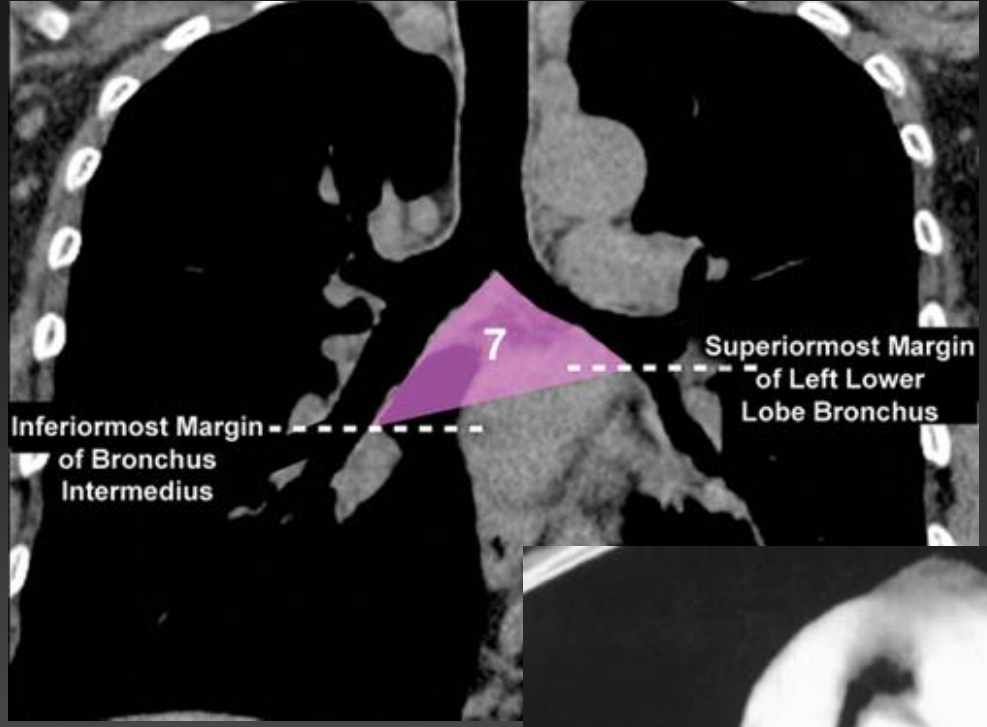
~~PRECARENALI~~
~~DELLA LOGGIA DEL BARETY~~

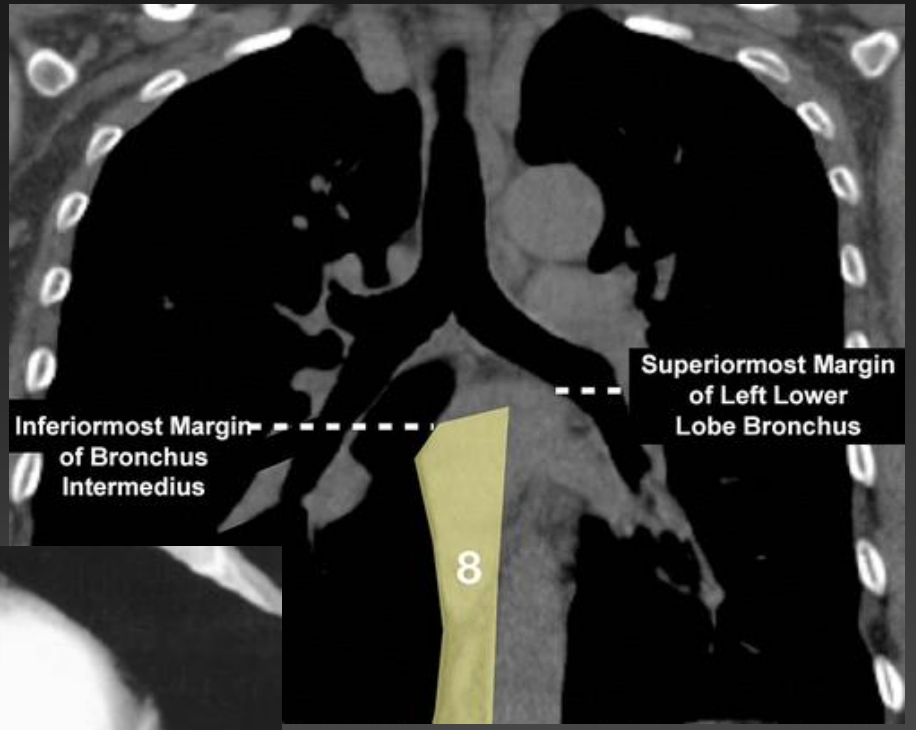

3
Phrenic n.
Ligamentum arteriosum
L. pulmonary
6
Ao
5
PA

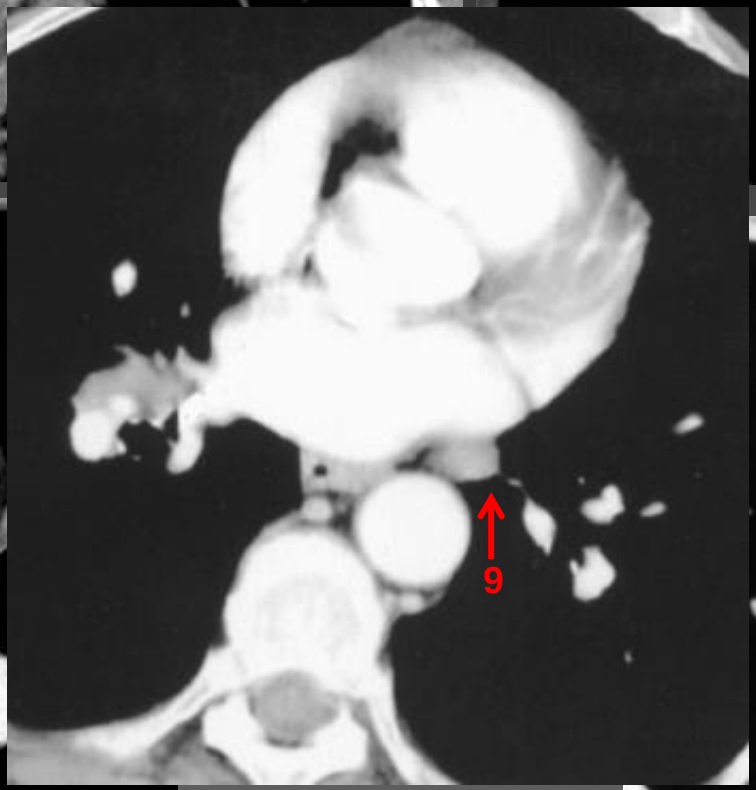

Superior Margin of Aortic Arch
(6)
Inferior Margin of Aortic Arch
4L
5
Superior Margin of Left PA
LEGAMENTO ARTERIOSO

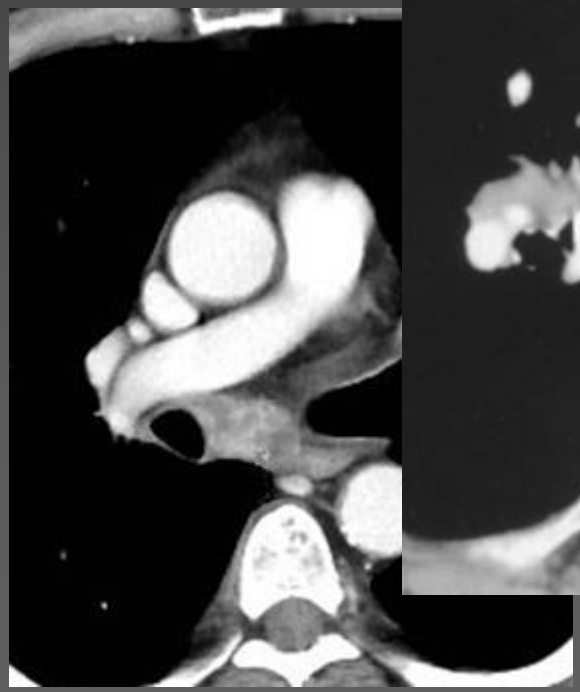

A
6
Av-SVC
T
Az
E

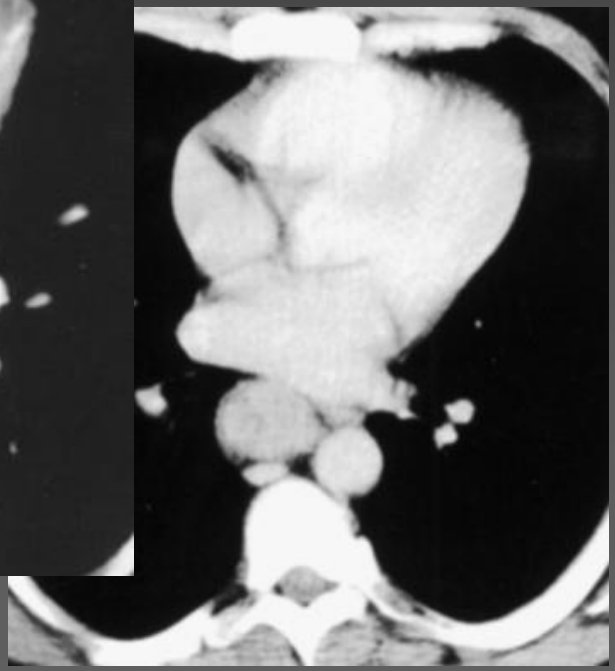

6
4L
5


7
Superiormost Margin
of Left Lower
Lobe Bronchus
Inferiormost Margin
of Bronchus
Intermedius


Superiormost Margin
of Left Lower
Lobe Bronchus
Inferiormost Margin
of Bronchus
Intermedius
8


9





PROBLEMI APERTI: ILO O MEDIASTINO ?

LN PARATRACHEALI INFERIORI STAZIONE 4

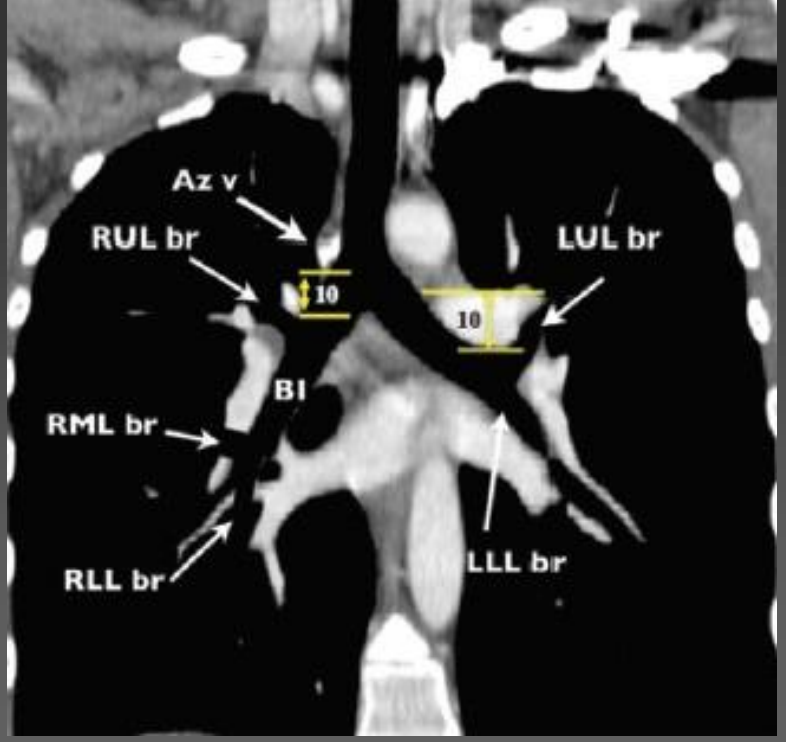
LN ILARI STAZIONE 10

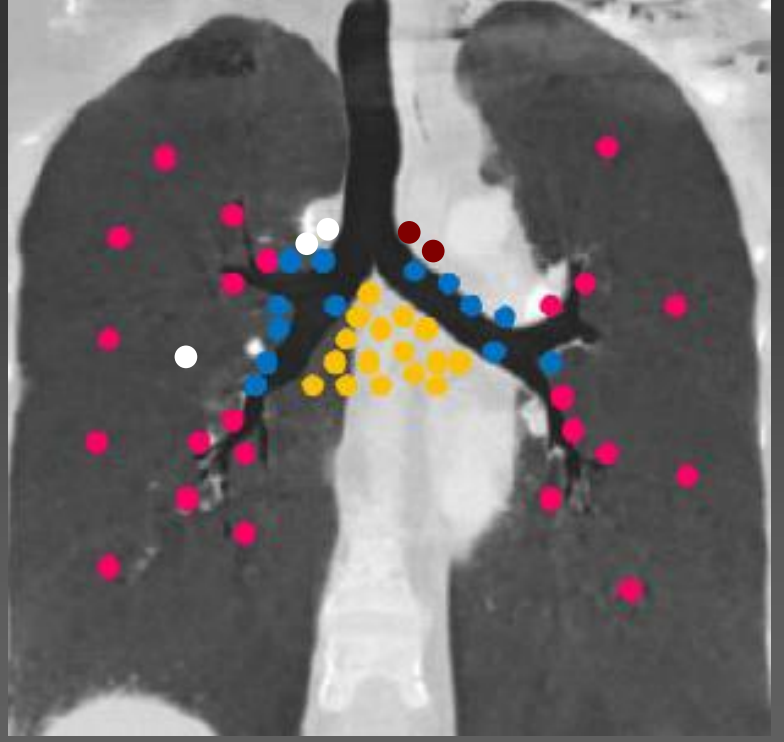
MARGINE SUPERIORE

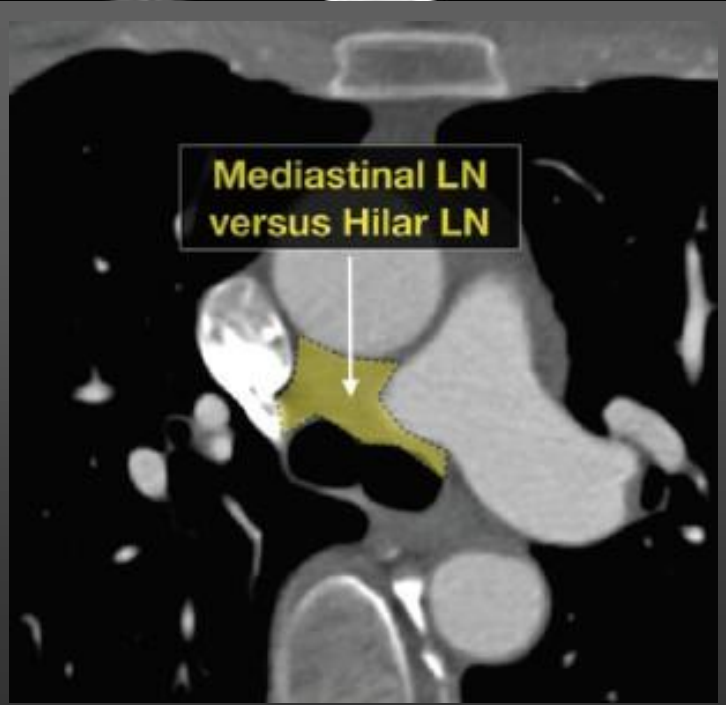
4R: intersezione tra il bordo inferiore della v.anonima e la trachea
4L: margine superiore dell'arco

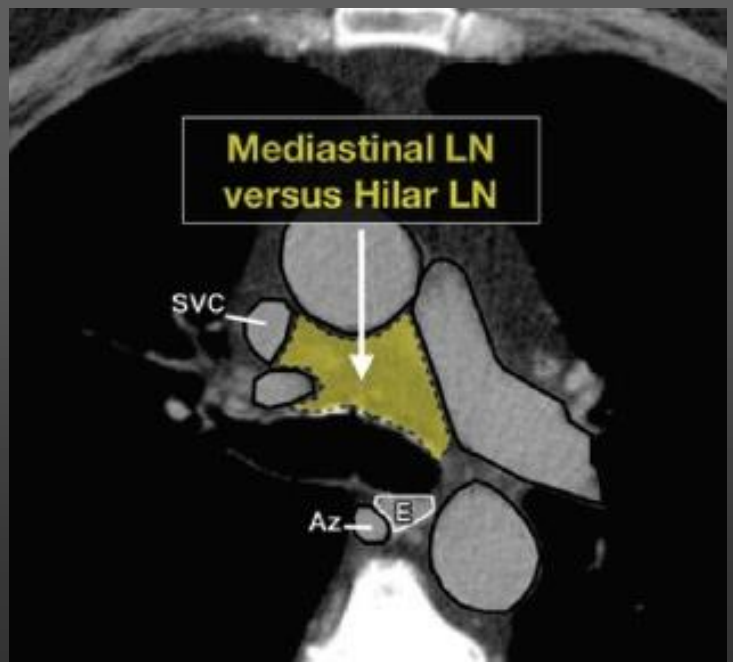
10R: bordo inferiore della v.azygos
10L: bordo superiore dell'arteria polm.

MARGINE INFERIORE


Az v
RUL br
LUL br
10
10
BI
RML br
RLL br
LLL br




Mediastinal LN
versus Hilar LN

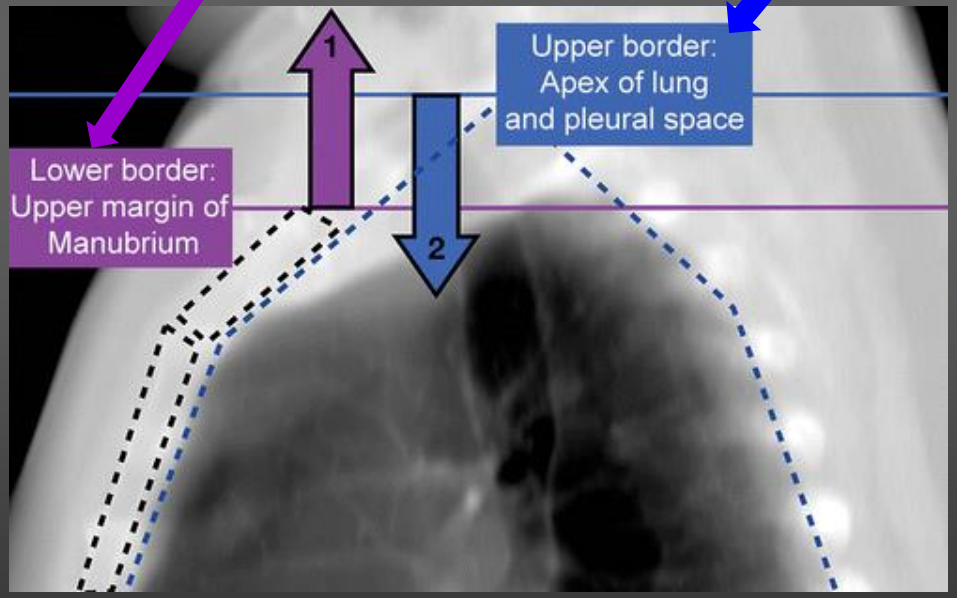

Mediastinal LN
versus Hilar LN
SVC
Az
E

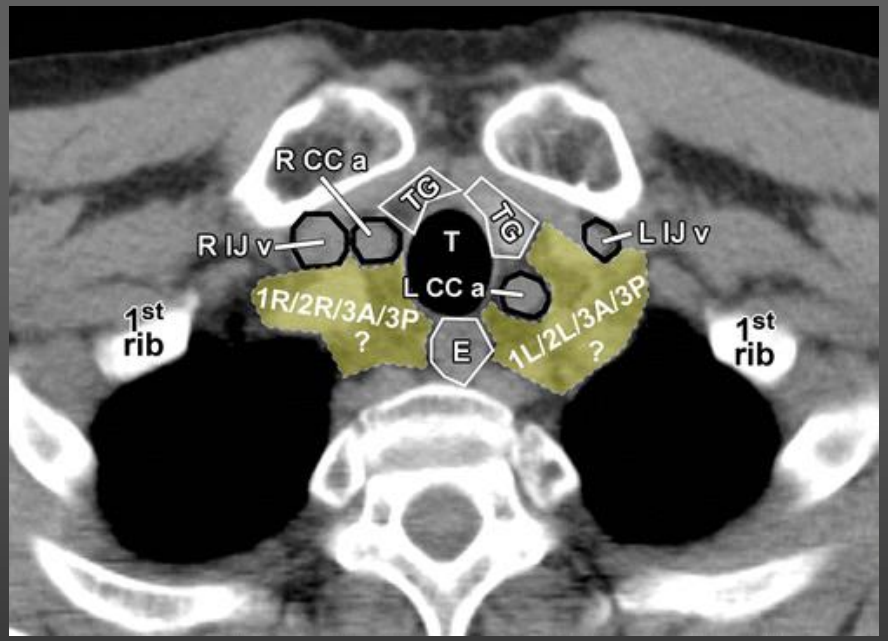
PROBLEMI APERTI: MEDIASTINO O COLLO ?

SOVRACLAVEARI (N3) vs MEDIASTINICI SUPERIORI PREVASCOLARI E RETROTRACHEALI (N2)

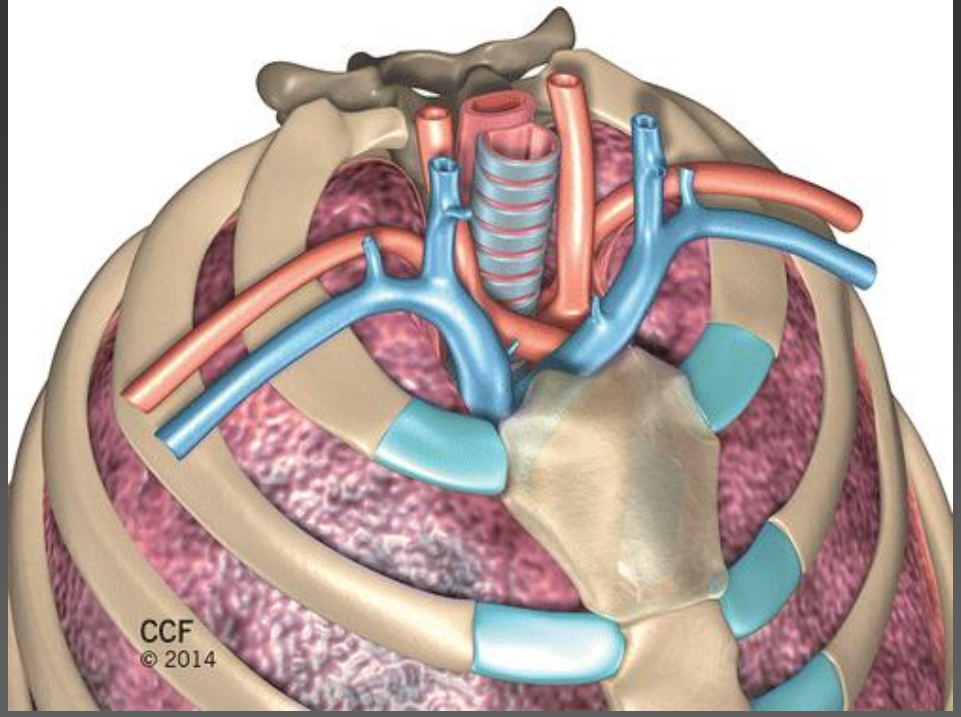
LIMITE INFERIORE : clavicole e manubrio sternale

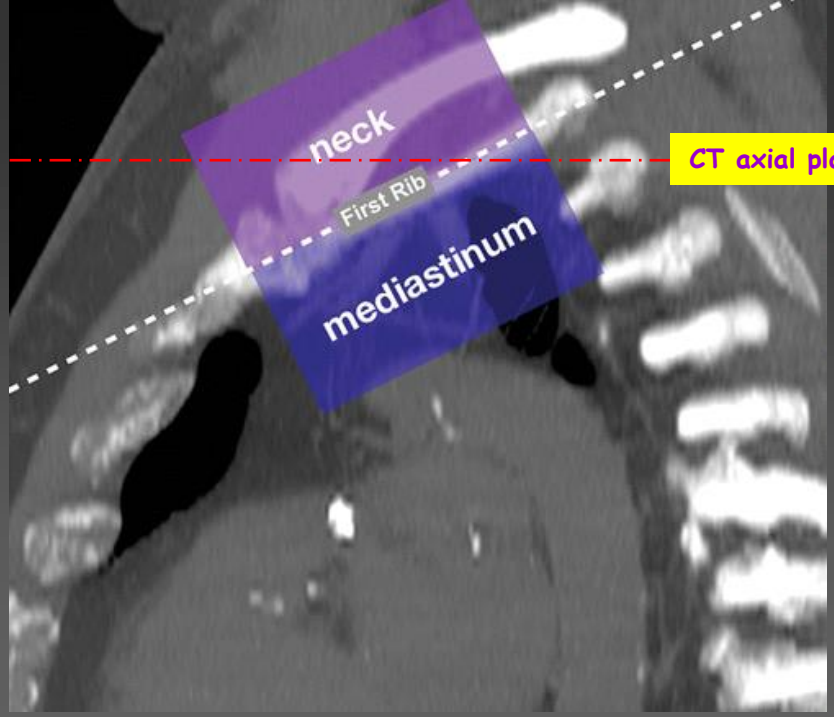
LIMITE SUPERIORE: apice dei polmoni e manubrio sternale

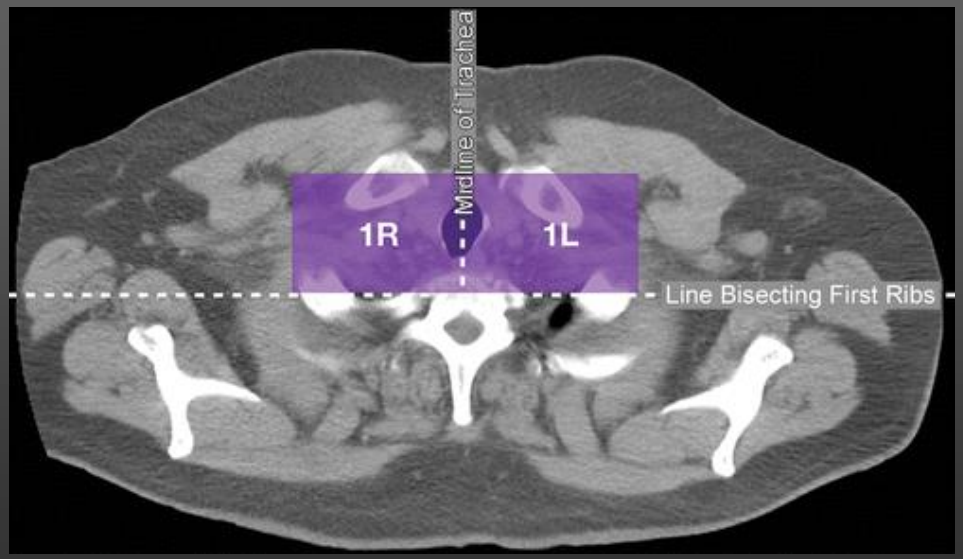


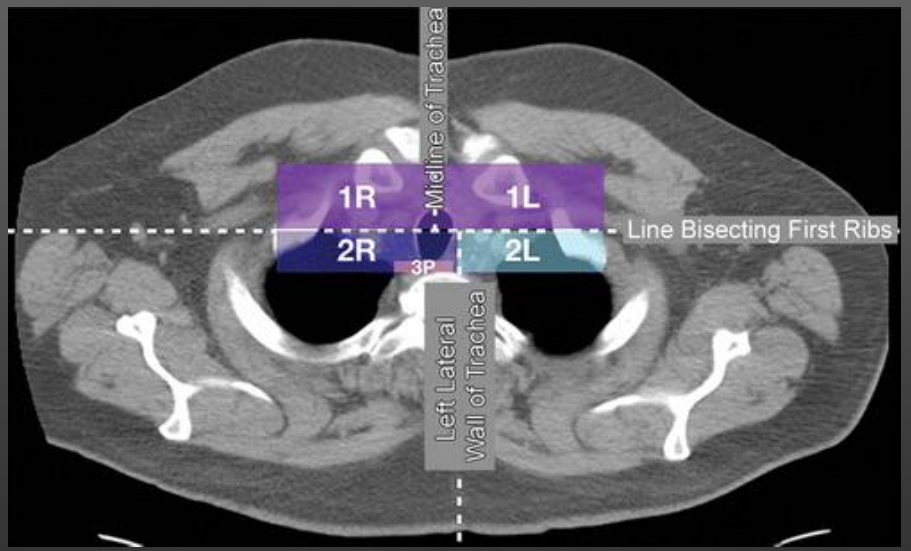


International Association for the Study of Lung Cancer (IASLC) Lymph Node Map: Radiologic Review with CT Illustration
RadioGraphics 2014; 34:1680–1691


CCF
© 2014


neck
First Rib
mediastinum
CT axial plane


Midline of Trachea
1R
1L
Line Bisecting First Ribs


Midline of Trachea
1R
1L
Line Bisecting First Ribs
2R
3P
2L
Left Lateral Wall of Trachea


FINE
FINE