



Fundació
Docència i Recerca
MútuaTerrassa



XVIII Edició
**Actualització en
l'Àrea Pediàtrica**

—
Temes d'interès en Pediatria
d'Atenció Primària

—
Dimarts, 24 d'octubre de 2023

Sessió iconogràfica: Lectura RX simple de tòrax

Ignasi Barber MD PhD

Diagnòstic per la Imatge

Hospital Sant Joan de Déu



Sant Joan de Déu
Barcelona Hospital

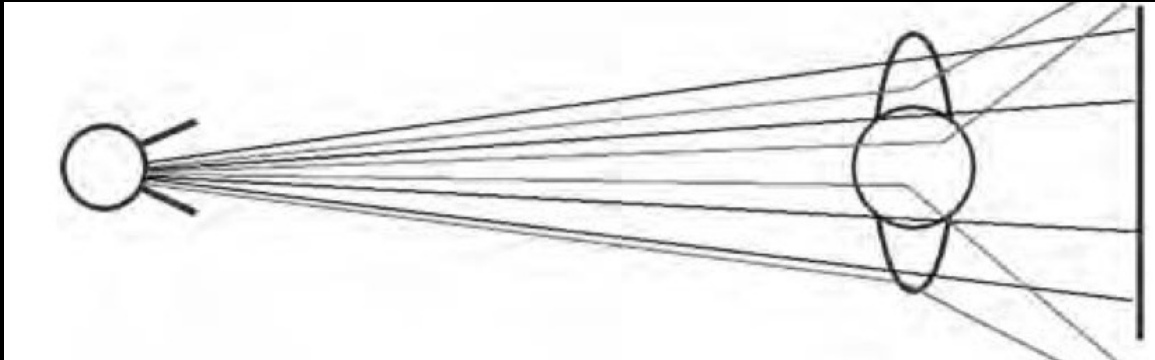
Salut/



Hospital Universitari
MútuaTerrassa



1. Justificació
2. Indicació
3. Sol.licitud
4. Adquisició
5. **Lectura semiològica**
6. Correlació amb clínica i orientació diagnòstica



Guia d'Idoneïtat

d'Exploracions Radiològiques

no Urgents en Pediatria.

Servei de Radiologia Pediàtrica
Hospital Materno-infantil Vall d'Hebron
Barcelona

www.pediatricrad.info

Les causes principals de l'ús no adequat d'exploracions de diagnòstic per imatge són:

Motiu incorrecte	Pregunta a fer-se
Sol·licitud d'exploració que no modifica el maneig del pacient, perquè el resultat positiu per al malalt no té conseqüència, com la "artrosis vertebral (tan "normal" que el cabell gris durant l'envelliment) o perquè un resultat positiu és altament improbable.	<i>És necessària ?</i>
Sol·licitud d'exploració massa freqüent, és a dir, abans que la malaltia hagi pogut progressar o al contrari desaparèixer, o abans que els resultats influeixin sobre el tractament.	<i>És necessària ara?</i>
Sol·licitud d'exploracions ja practicats abans en altre hospital.	<i>L'exploració ja ha estat realitzada? On és?</i>
Sol·licitud d'exploració el motiu clínic de la qual no es va orientar en la petició, conduint a un examen mal dirigit (projeccions inútils i/o projeccions útils omeses).	<i>He explicat el problema i el que espero de l'exploració?</i>
Sol·licitud de tècnica estudi no idoni: les tècniques d'imatges evolucionen en efecte ràpidament.	<i>He demanat la millor exploració?</i>

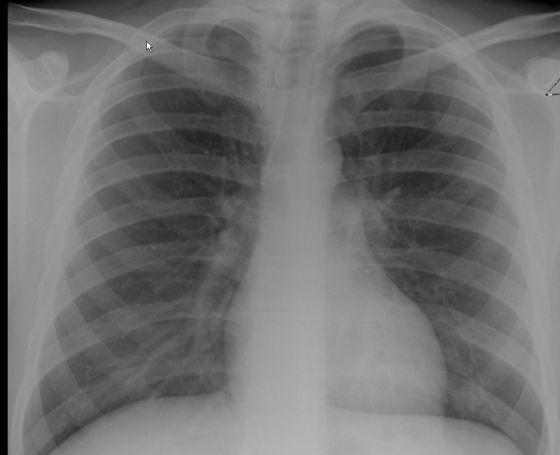
Taula 1 : Equivalència Comparativa de Dosis d'Exposició per Exploracions Radiològiques

Exploració	Equivalència dosi eficaç mitjana (msv)	Equivalència en plaques de tòrax	Equivalència en temps de Irradiació Natural (dies)
Irradiació Natural Anual	2.4	150.0	365.0
1 Rx de tòrax	0.016	1.0	2.4
1 Rx crani (1 p)	0.015	0.9	2.3
1 Rx d'abdomen	0.065	4	10
TEGD	0.245	15	37
Ènema de bari	0.505	32	77
TC de crani	1.46	91	222
TC del tòrax (helical)	2.2	150	335
TC abdominal	2.6	163	395

RX Normal 3 anys
vs 12 anys



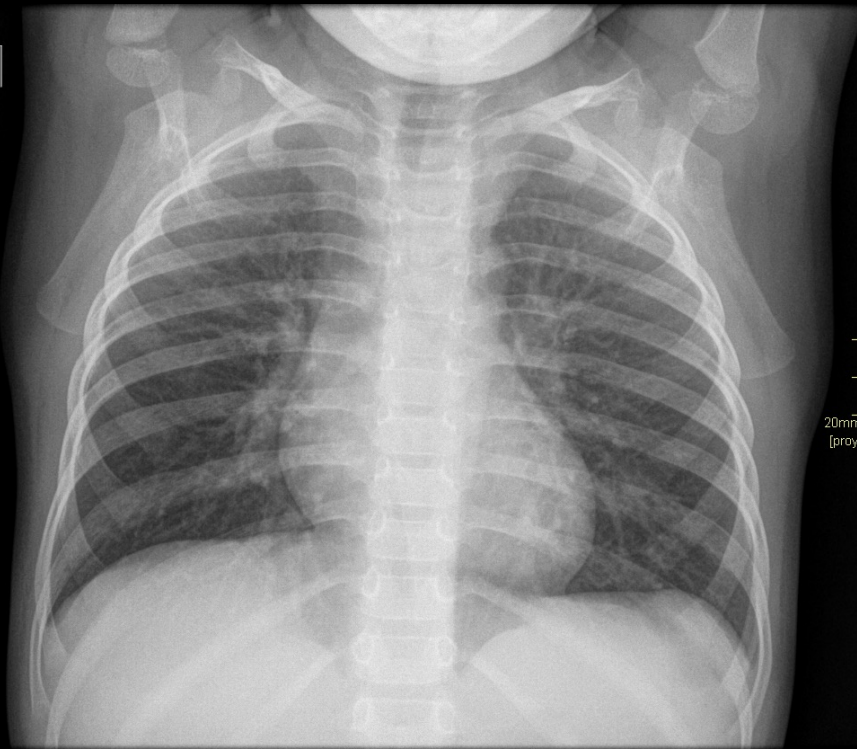
3 year old



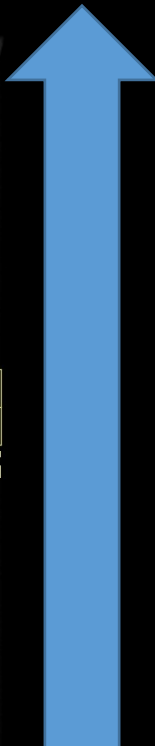
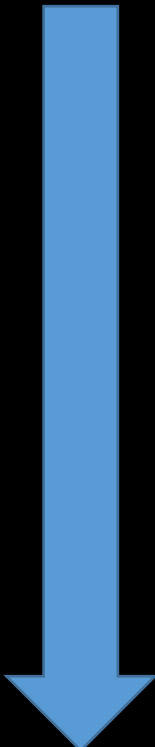
12 year old

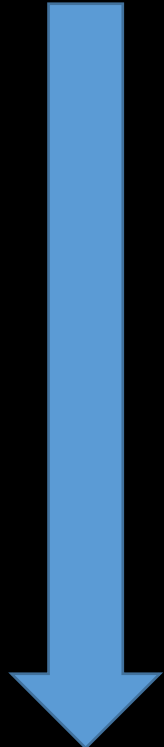


D



2 anys.

- 
- 
1. Tràquea i bronquis
 2. Hils pulmonars
 3. Parènquima pulmonar
 4. Pleura
 5. Cissures
 6. Angles
costofrènics+Diafragmes
 7. Cor
 8. Mediastí
 9. Parts toves
 10. Esquelet



Airway

Bones

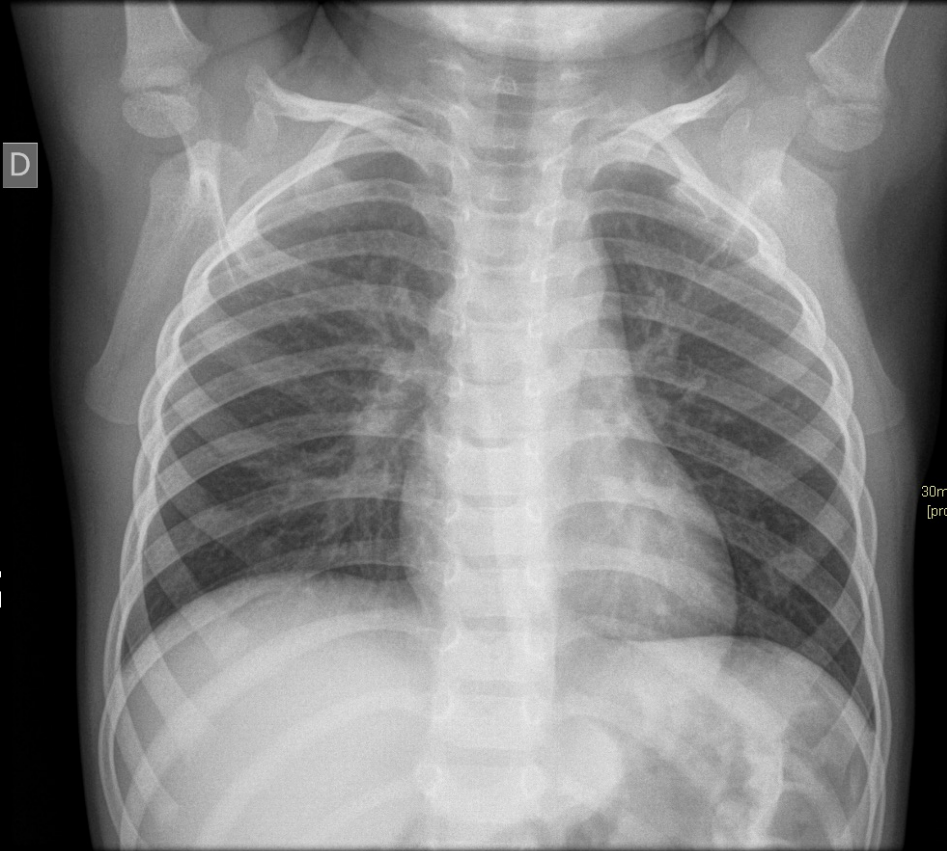
Cardiac

Diaphragm

Extrathoracic tissues

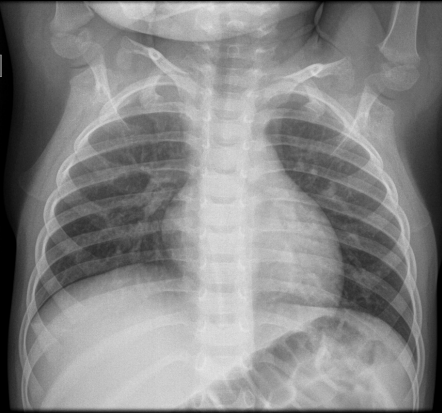
Fields and fissures

D

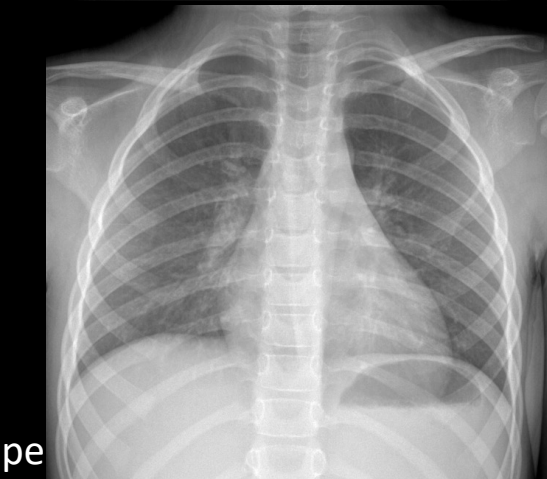
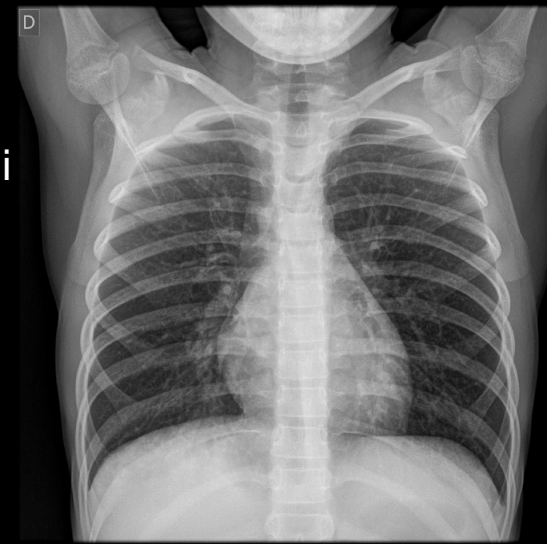


30m
[pro]

3 anys

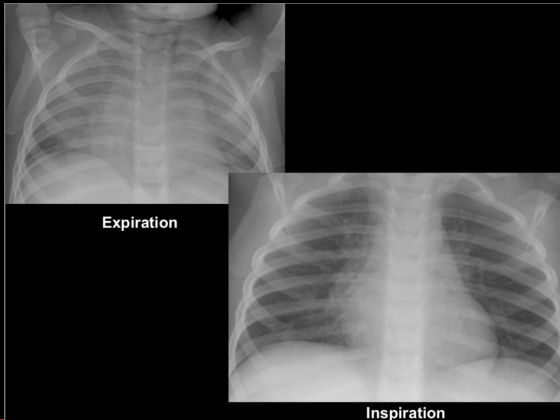


22 mesos.



6 anys. Bipe

1. **Projecció AP** en supí (no col·laboren) i PA (bipedestació).
2. La projecció lateral, es reserva para troballes dubtoses o localitzar.
3. La radiografia ha de realitzar-se correctament (**ALARA**)
4. Ha d'incloure les regions supraclaviculars i la totalitat de les regions diafragmàtiques (**col·limació**).
5. Es fonamental reconèixer el grau d'**inspiració i rotació**.
6. Realizar una **lectura sistemàtica**.
7. **Història clínica**.



Densitats radiològiques

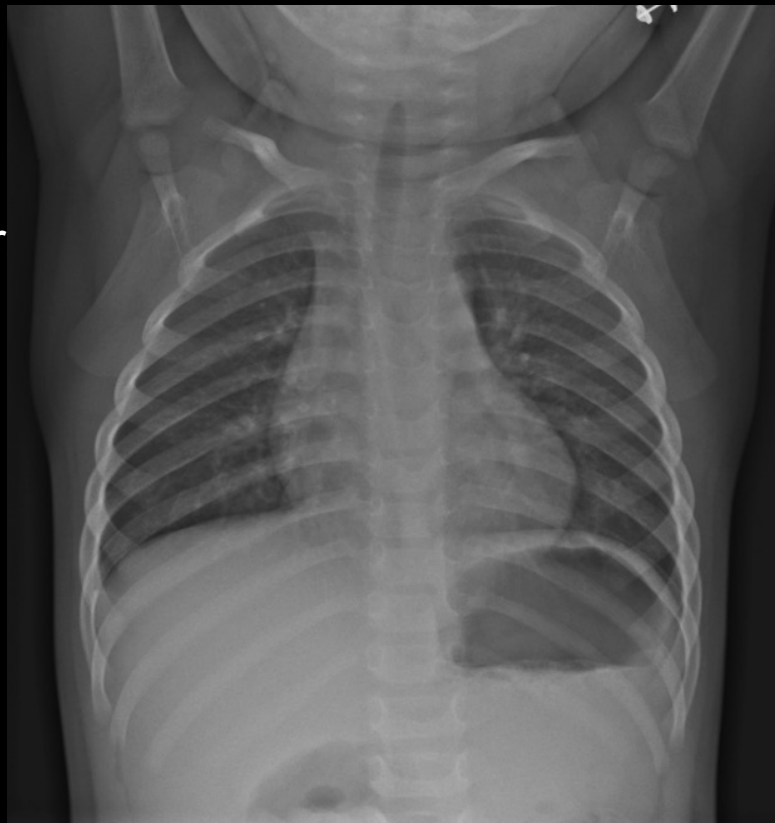
Aire: parènquima pulmonar

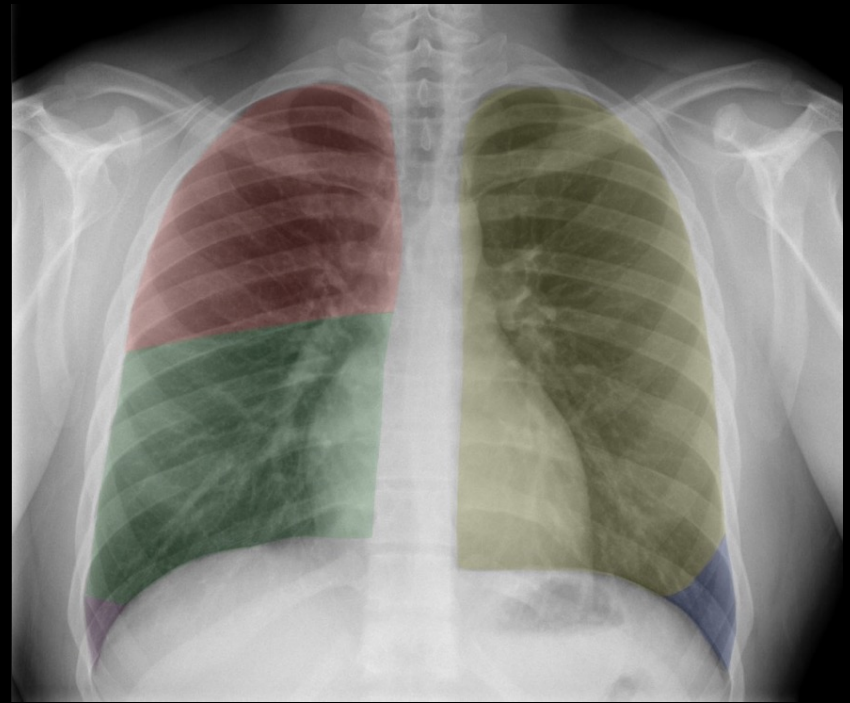
Aigua: mediastí.

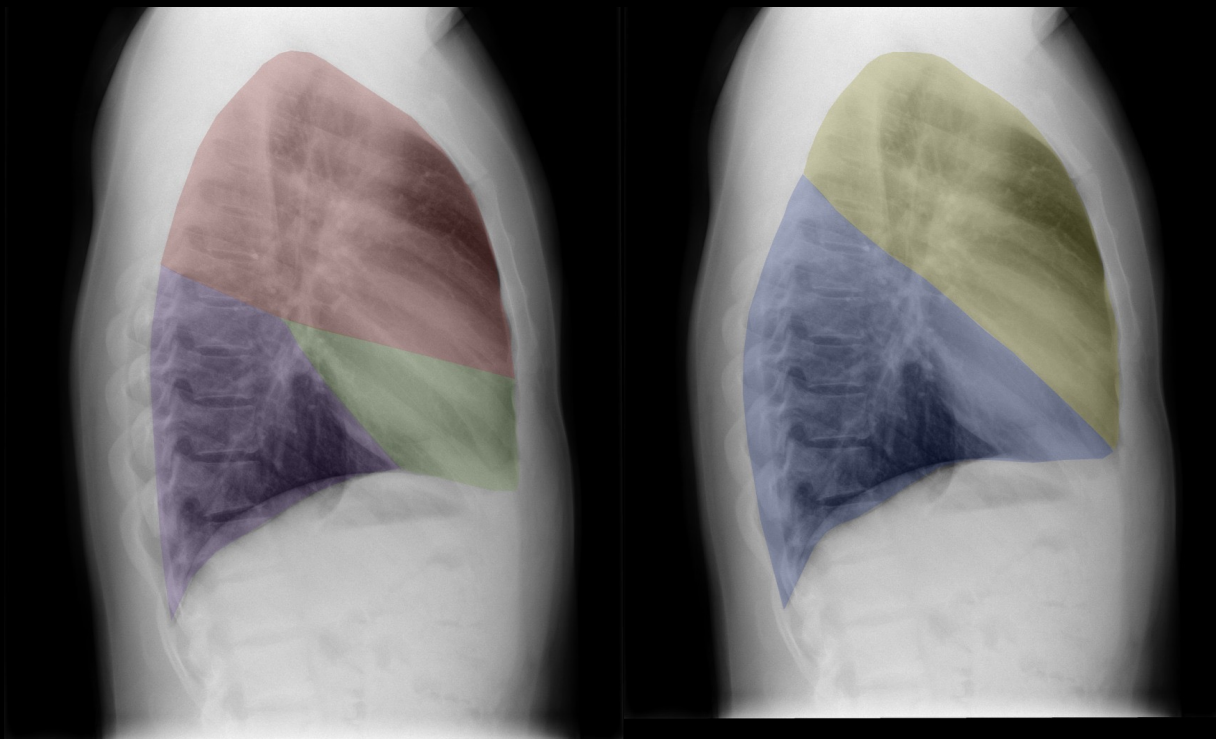
Greix: Teixit cel·lular subcutani.

Calç: estructures òssies

Metall: cossos estranys metàl·lics, clips quirúrgics.







<https://prod-images.static.radiopaedia.org/images/>

Dreta

D

Vena cava superior

Arc de la vena àcigos

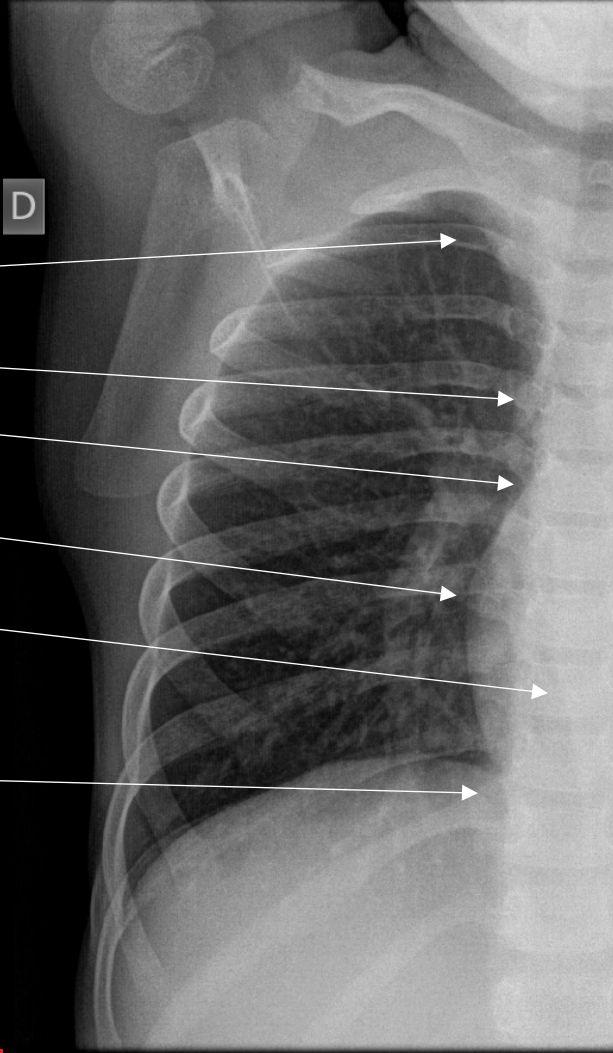
Línia para espinal dreta

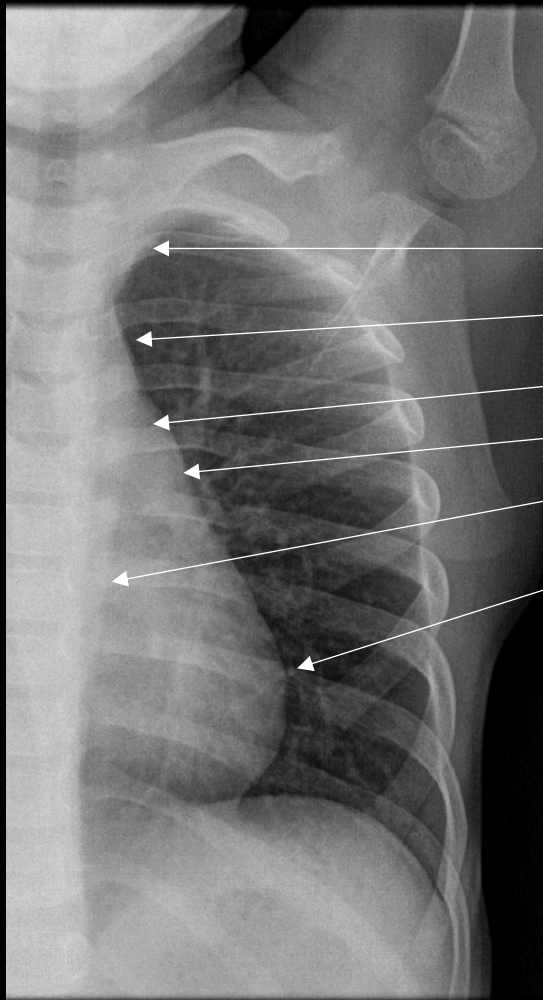
Aurícula dreta

Recés àcigo-esofàgic o

línia paraesofàgica
dreta

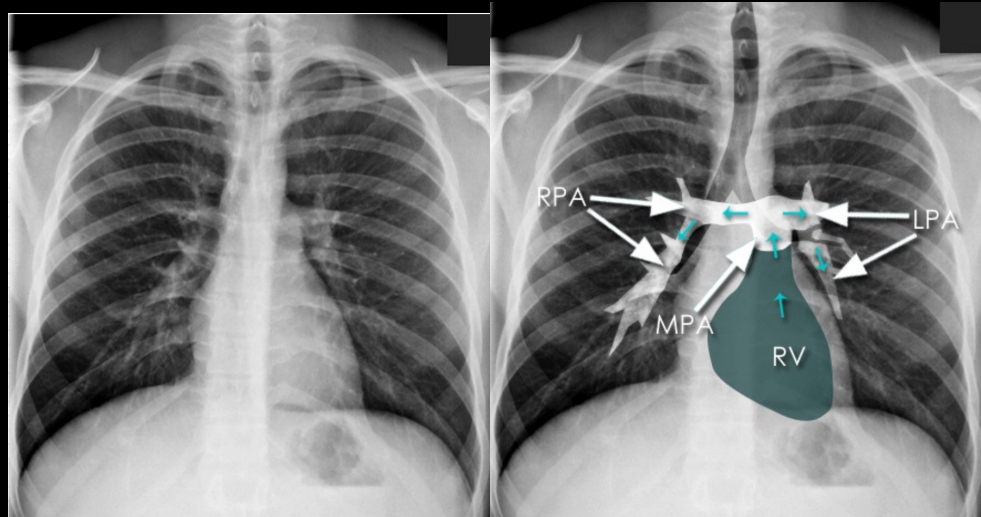
Marge lateral de la
vena cava inferior





Esquerra

- Arteria subclàvia esquerra
- Crossa Aòrtica
- Finestra aortopulmonar
- Arteria pulmonar principal
- Línia para espinal esquerra
- Ventricle esquerre



Introduction to Pediatric Chest Radiography

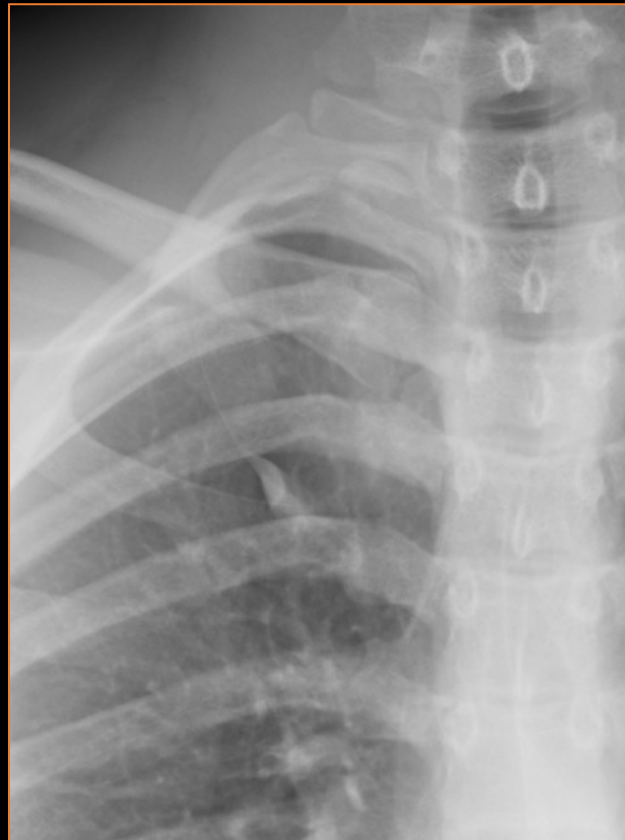
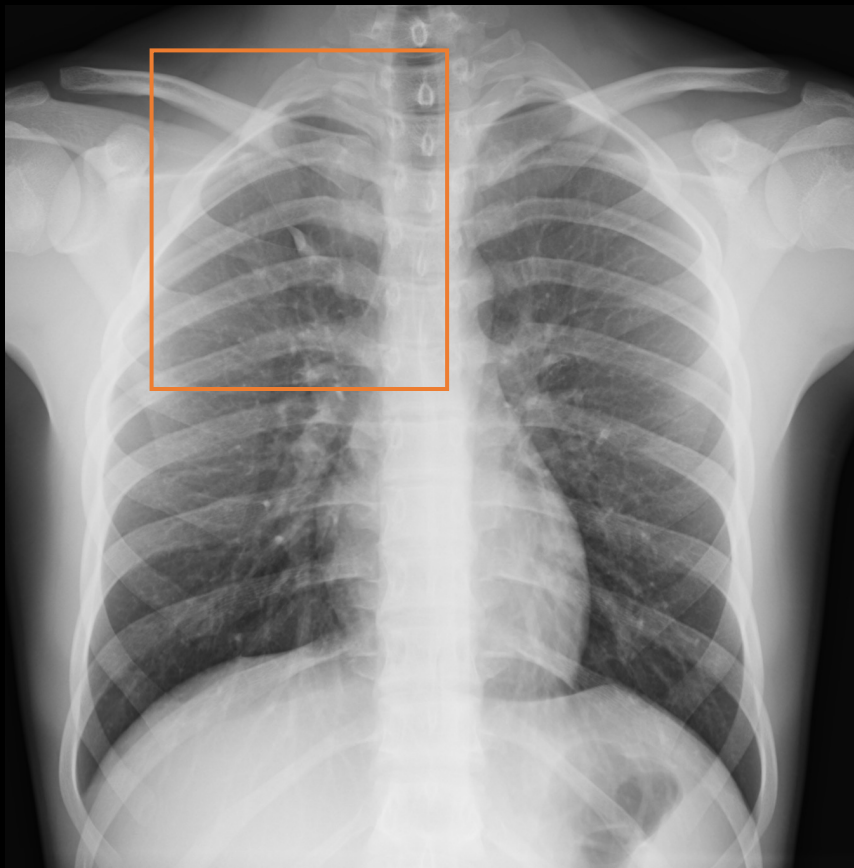
George A. Taylor, M.D.
Department of Radiology
Boston Children's Hospital
Harvard Medical School
Boston, MA

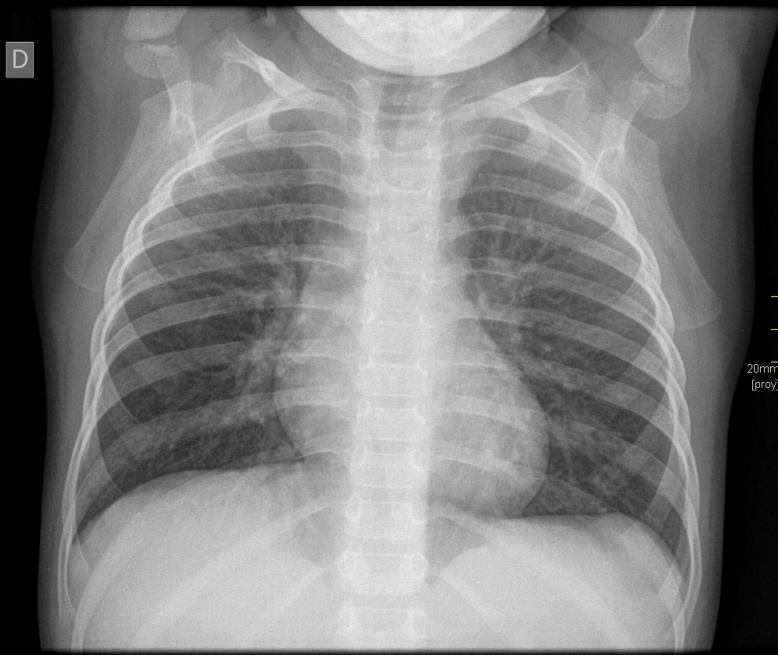


<https://www.radiologymasterclass.co.uk/tutorials/chest>

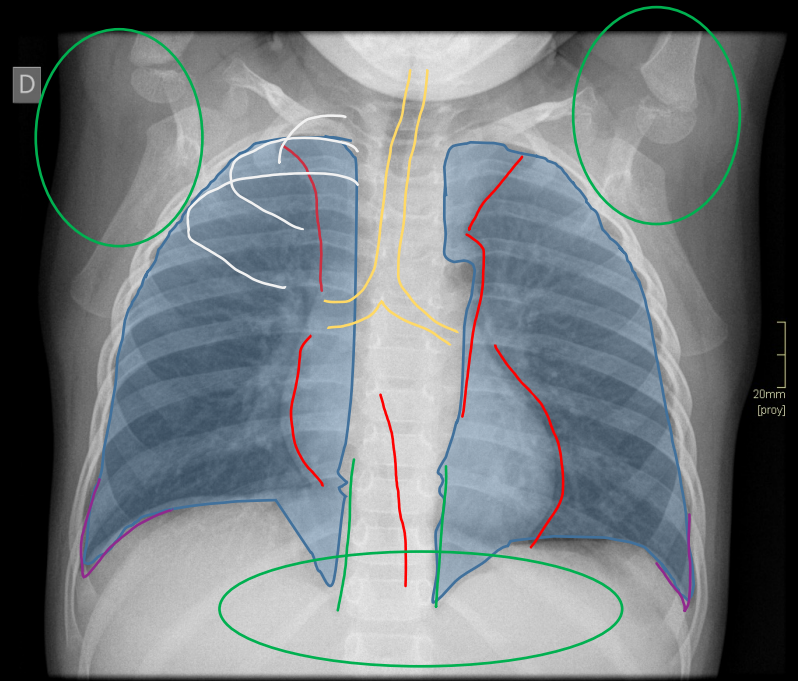
<https://www.youtube.com/watch?v=w4IMVN2GX3E>

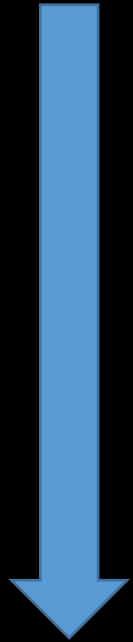
Lòbul de la àcigos





A
B
C
D
E
F





Airway

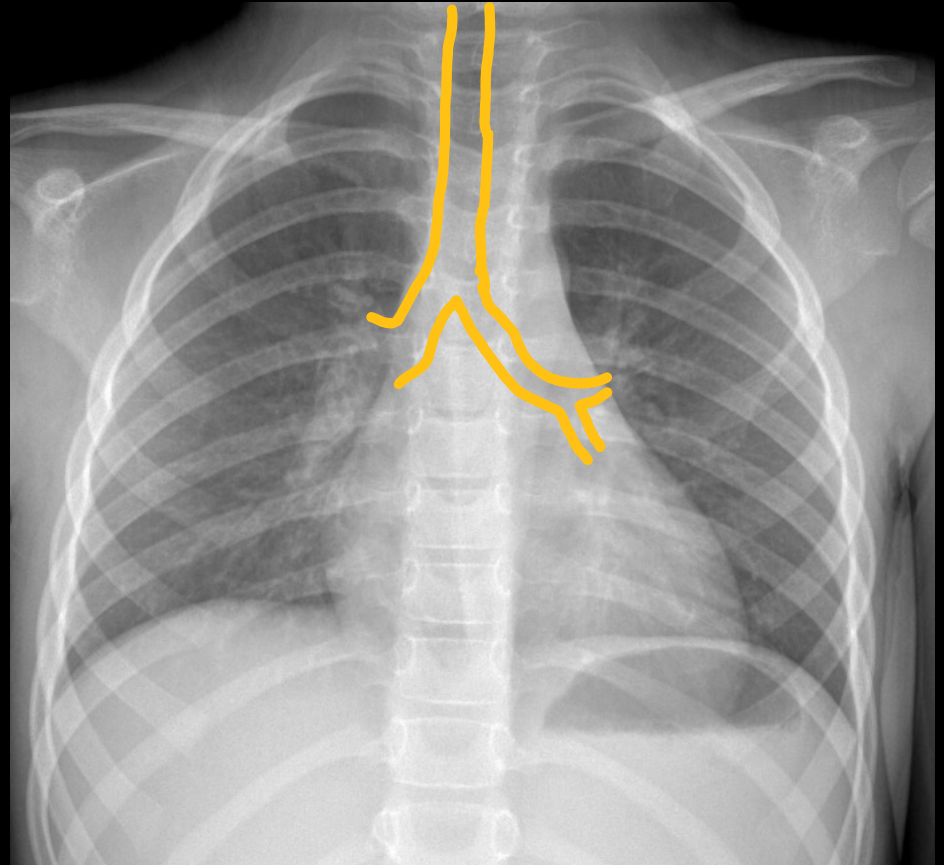
Bones

Cardiac

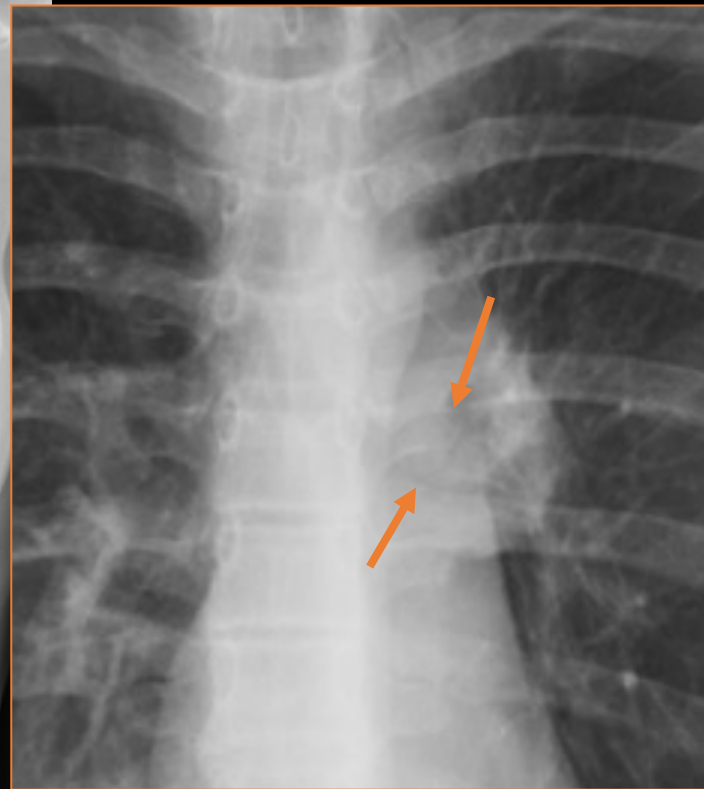
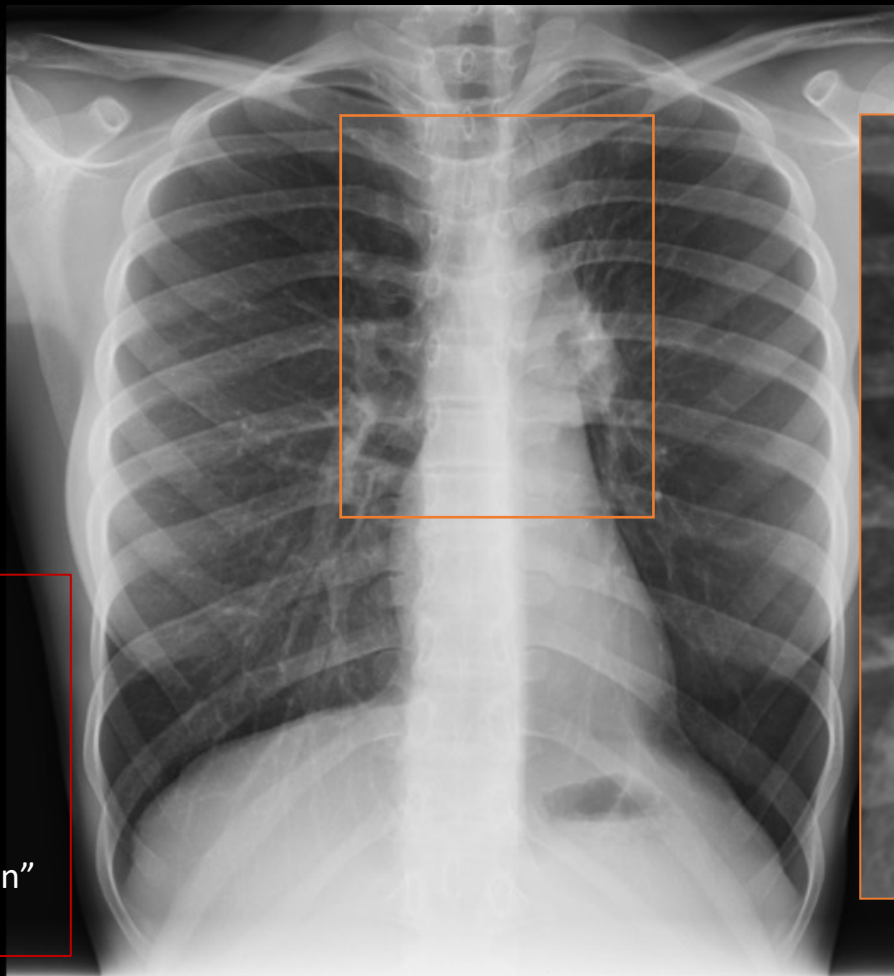
Diaphragm

Extrathoracic tissues

Fields and fissures



14 anys. Astma i hiperreactivitat bronquial sense resposta als BD



Asimetria pulmonar:
El pulmó amb menys vasos es sempre el patològic (Dr. Xavier Lucaya)
“Luftsichel sign”
“juxtaphrenic peak sign”
Col.lapse del LSE

14 yo girl with dyspnea and previous history of bronchial hyperreactivity not responsive to bronchodilators



“Luftsichel sign”
“juxtaphrenic peak sign”
Left upper lobe collapse



Axial and coronal reconstructions enhanced MDCT:
Endobronchial solid enhancing mass with Left upper lobe collapse

Endobronchial carcinoid tumour
The most common intrabronchial tumours in children and adolescents



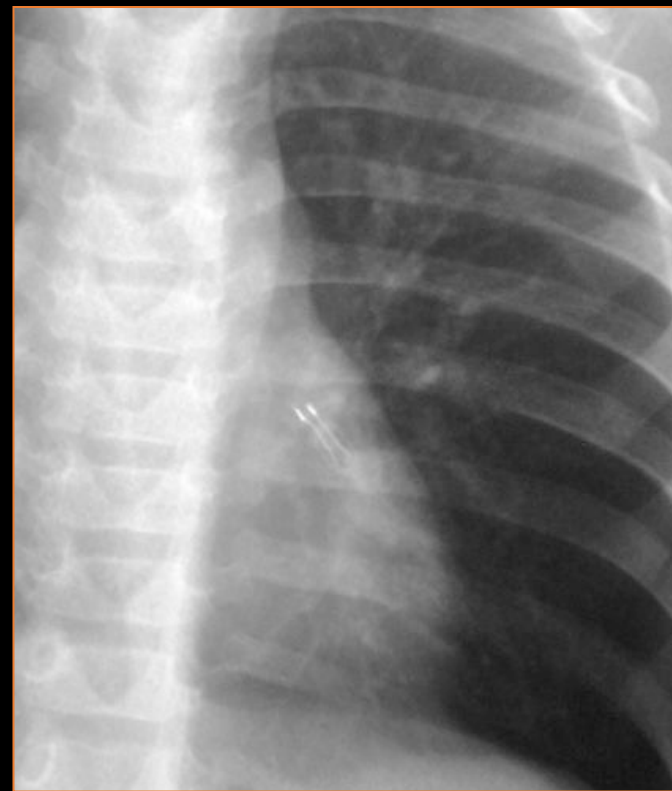
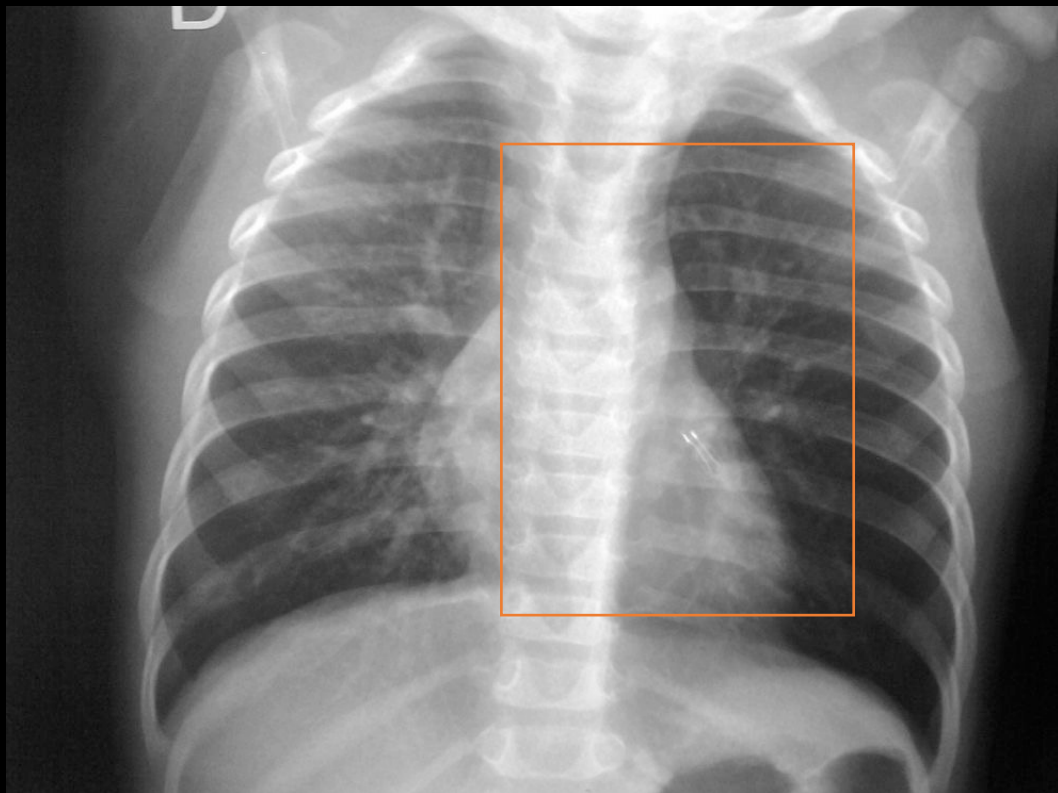


13 anys

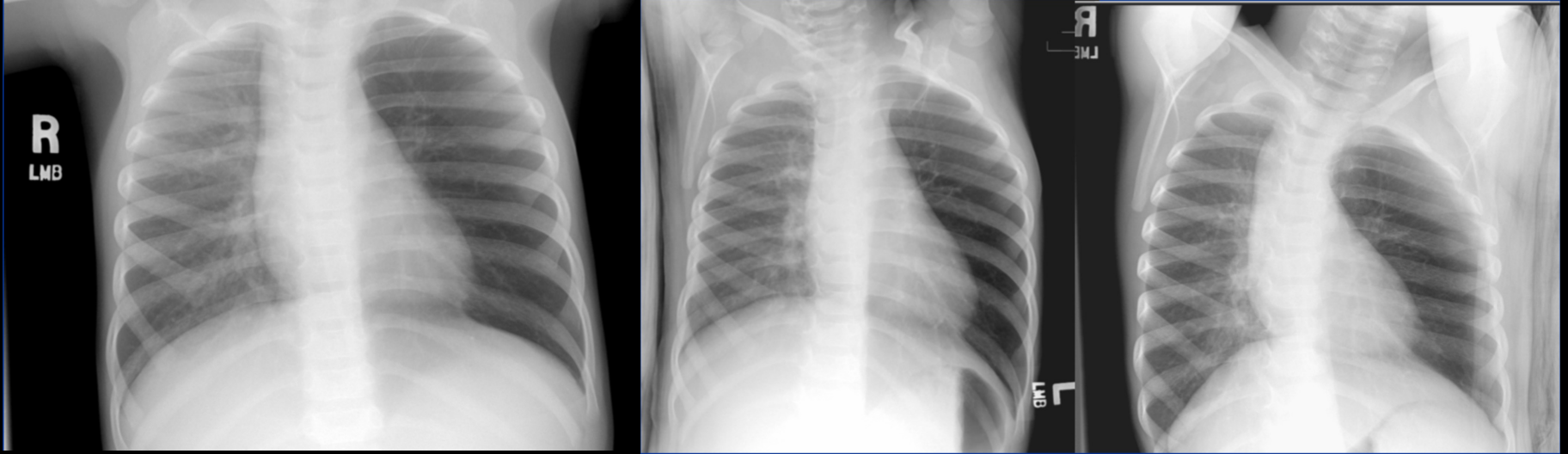
Linfoma



A

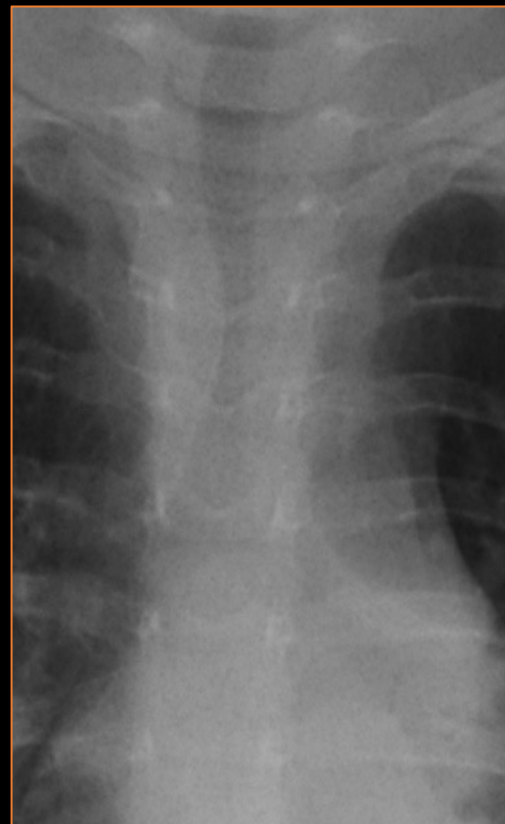
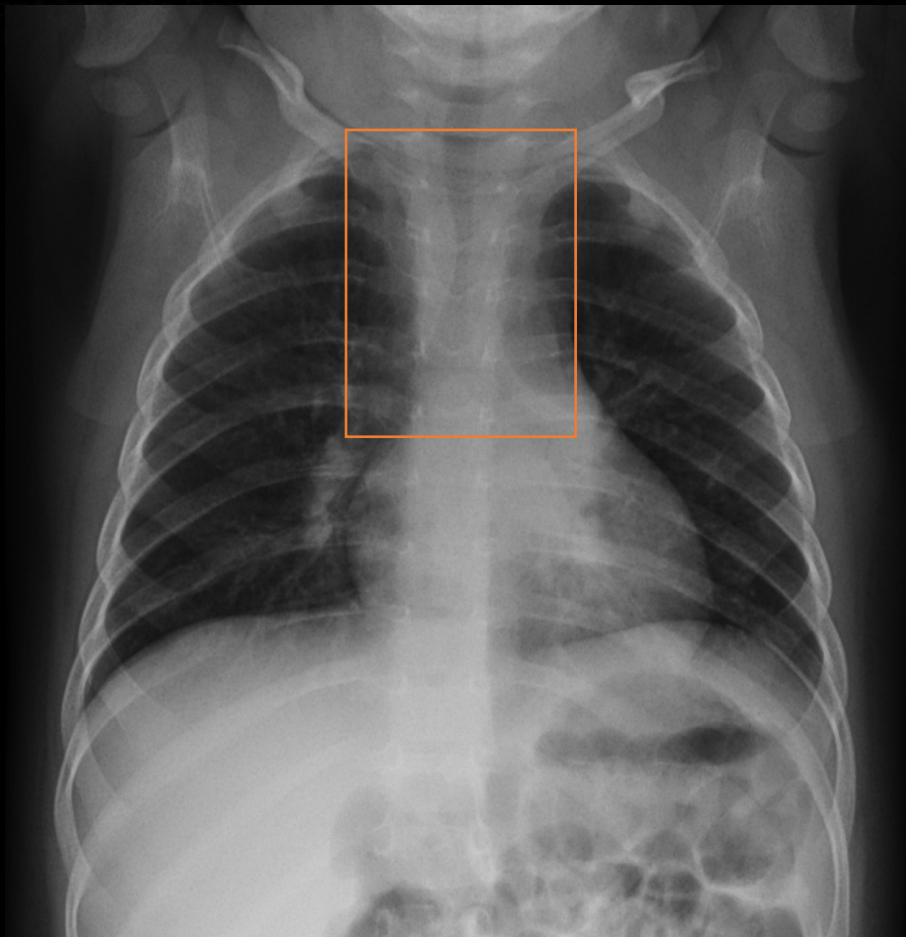


Aspiració de cos extrany



<http://www.pemcincinnati.com/blog/wp-content/uploads/2016/05/Interpreting-Pediatric-Chest-XRays-Brody.pdf>

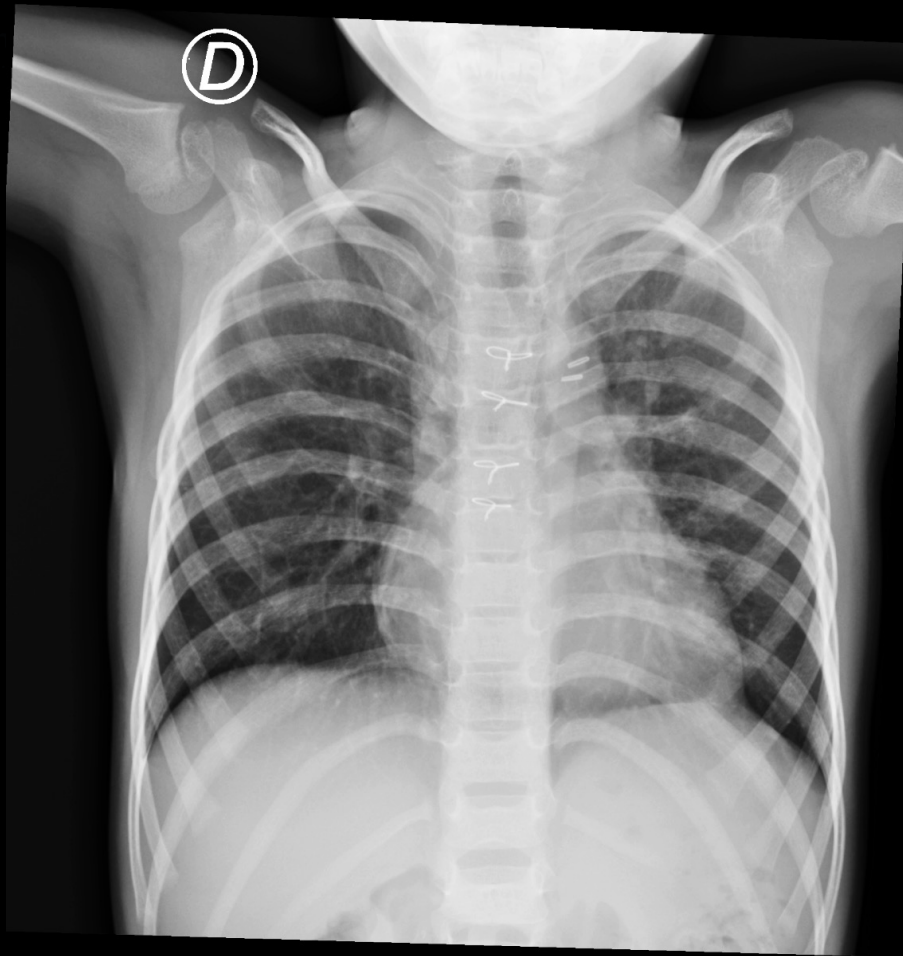
Nen de 1
any
Febre

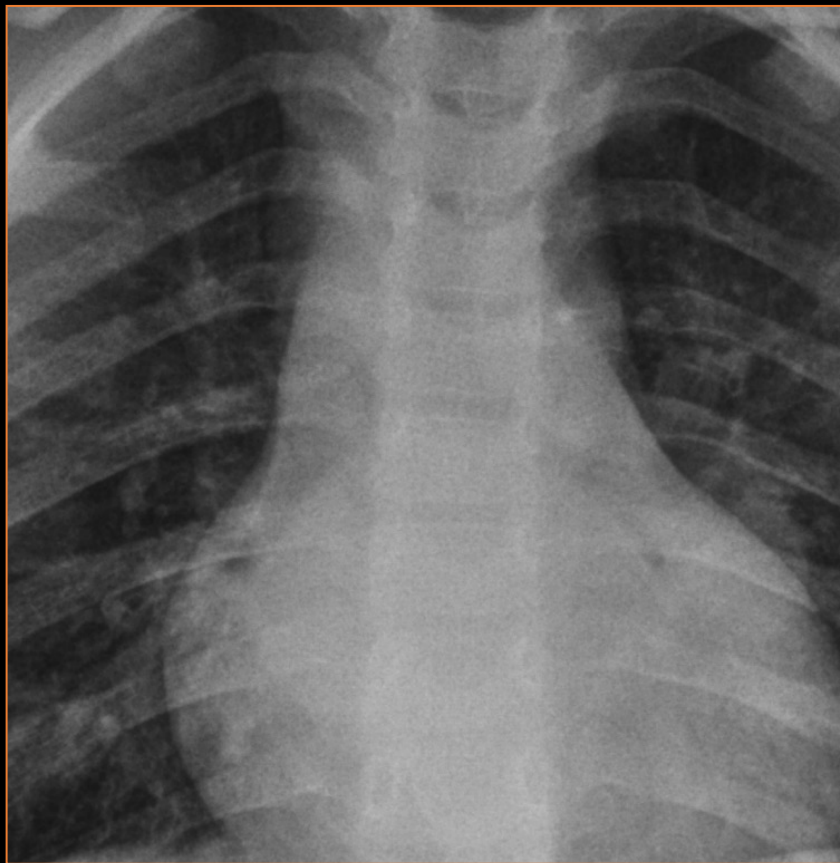
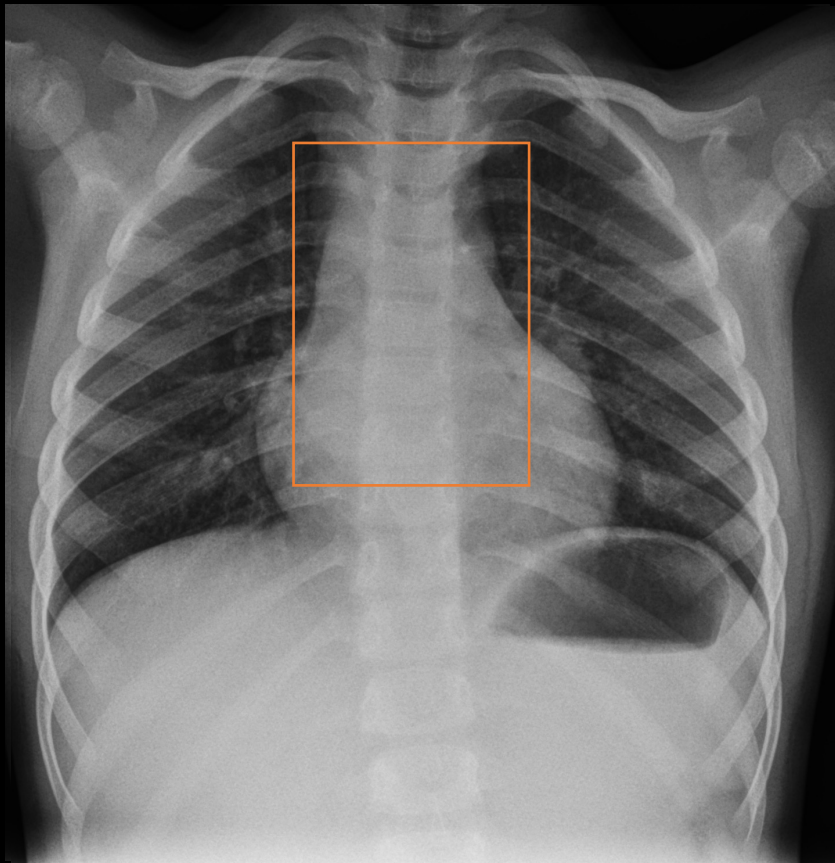


A

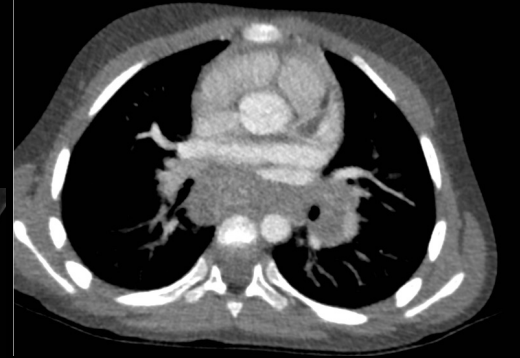
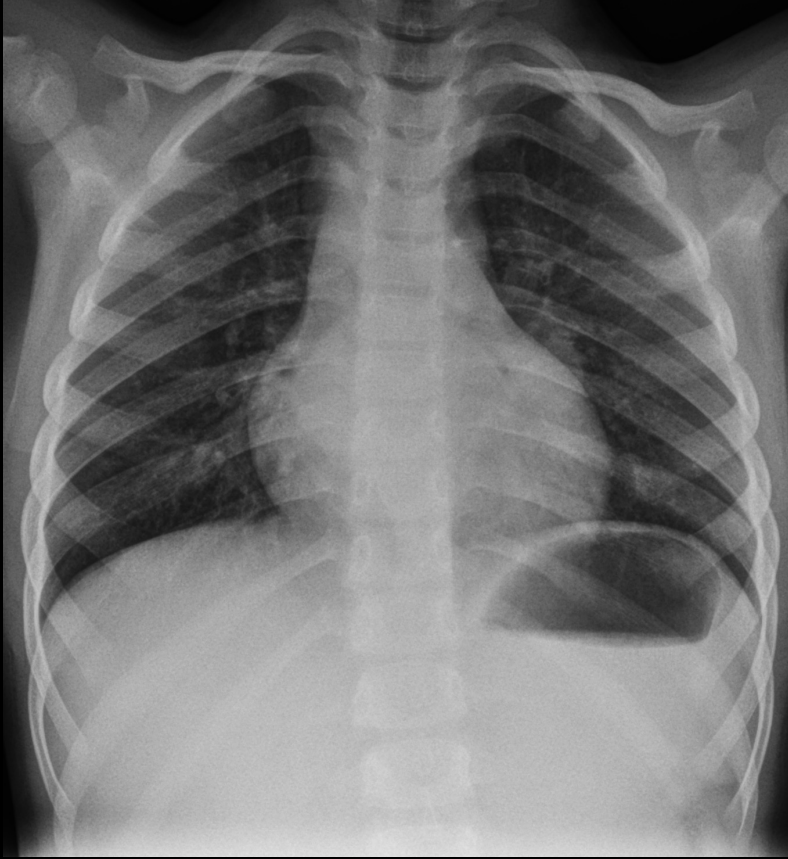
Estenosi traqueal per doble arc aortic

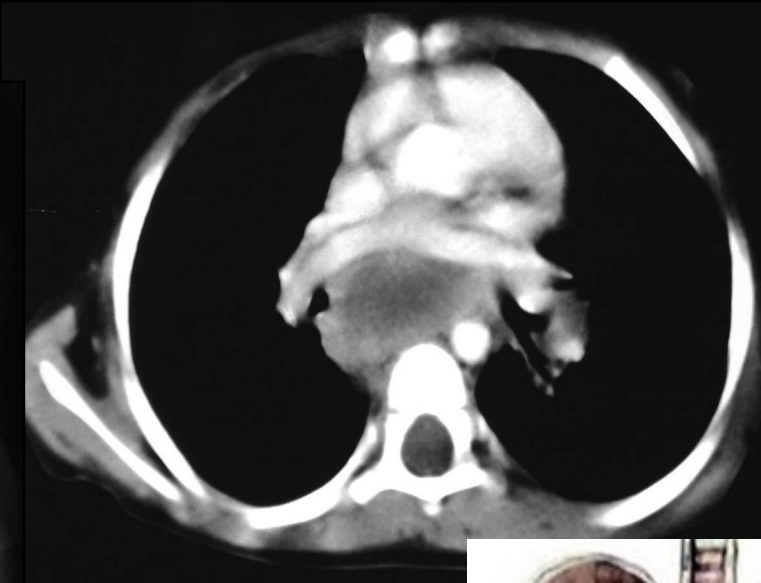
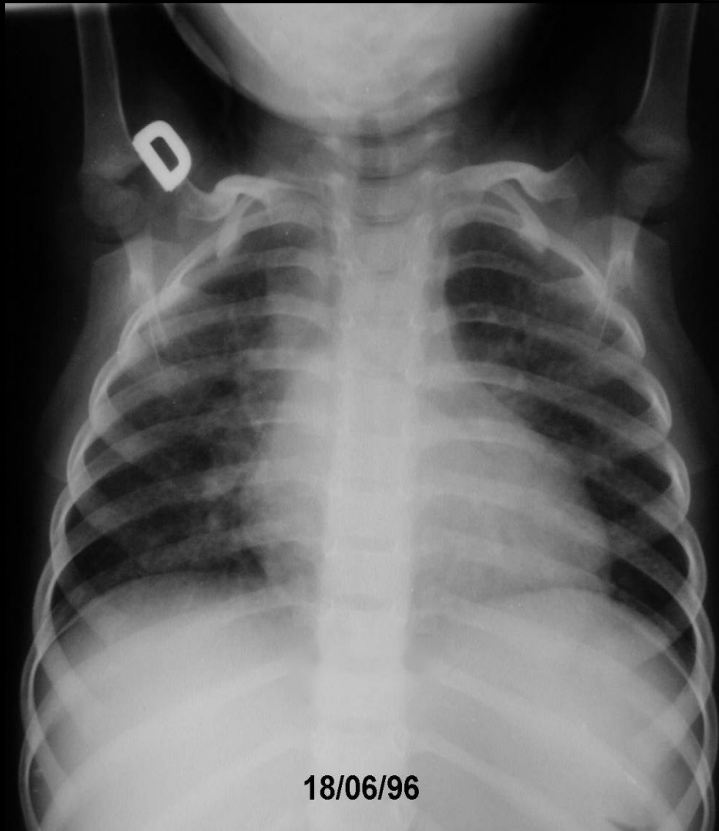


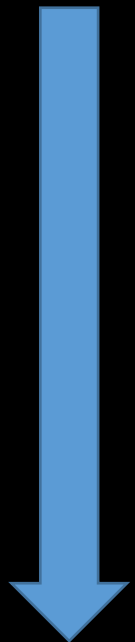




4 anys. Contacte TBC. PPD pos







Airway

Bones

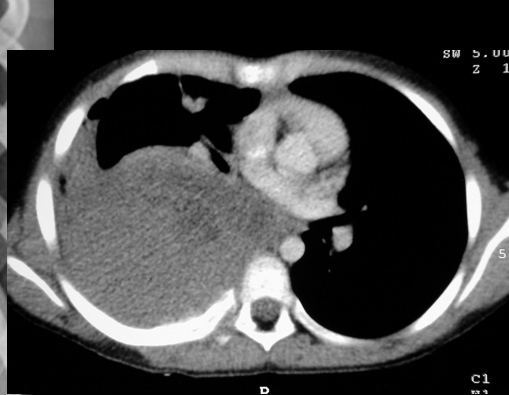
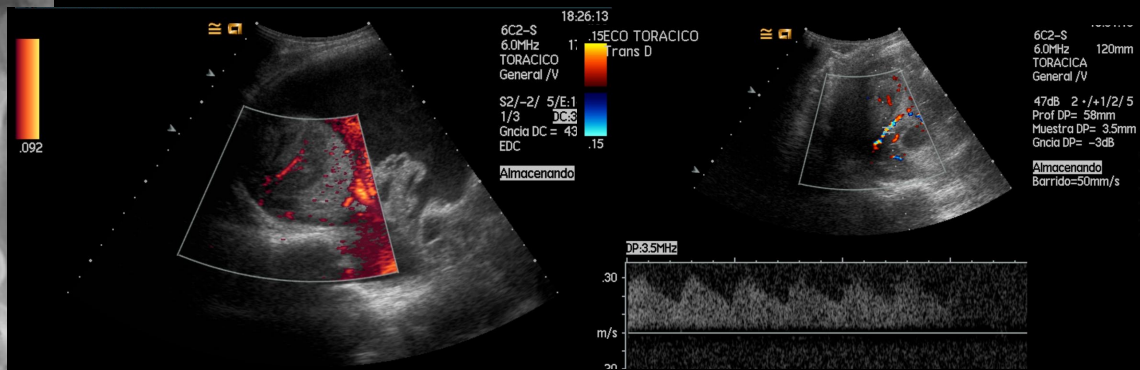
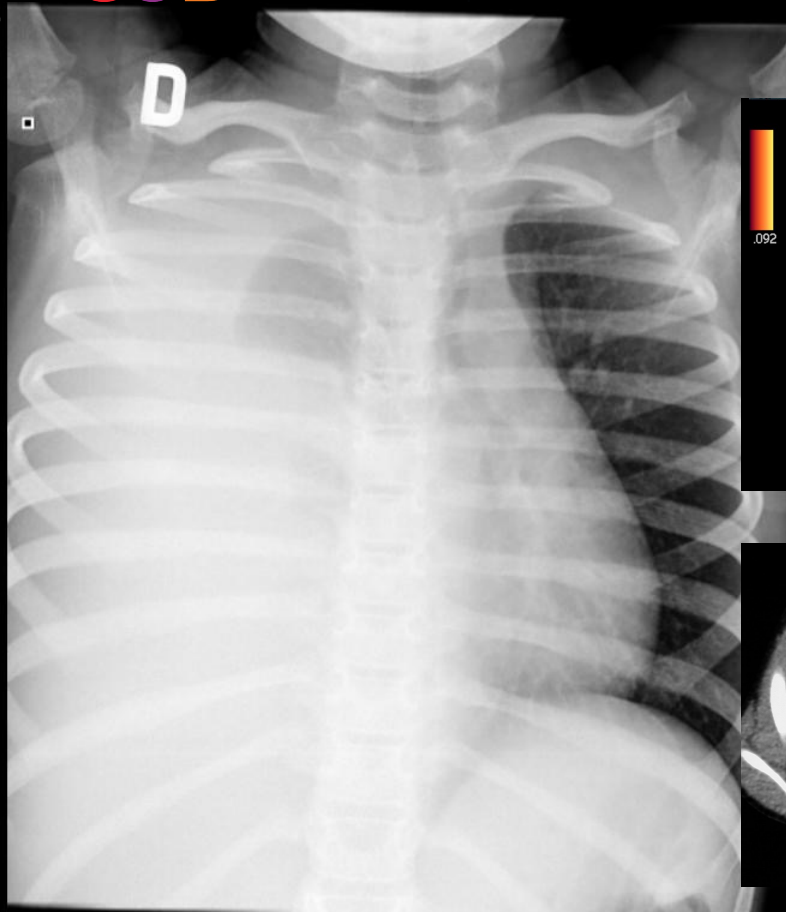
Cardiac

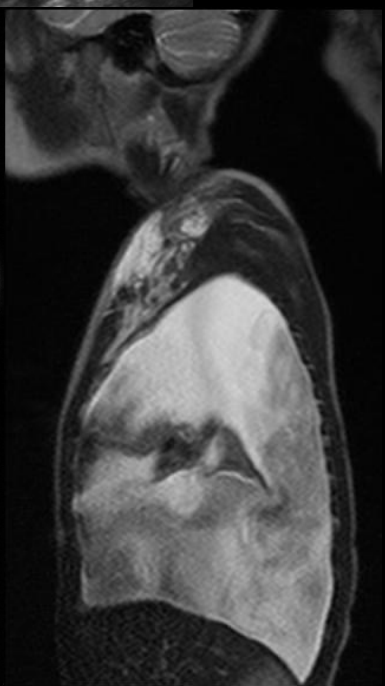
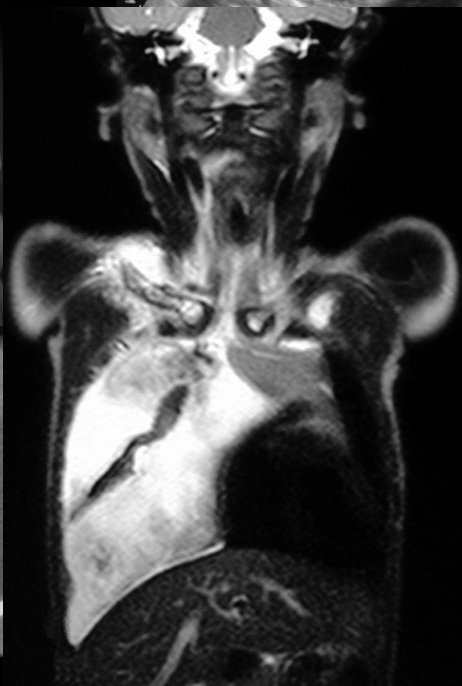
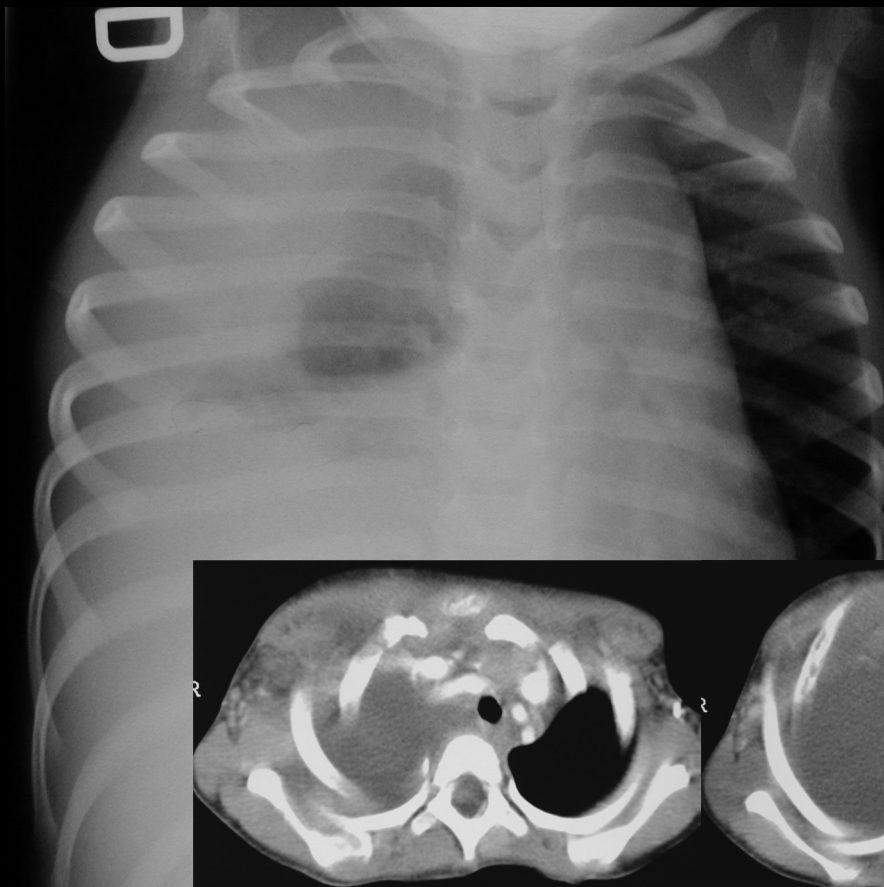
Diaphragm

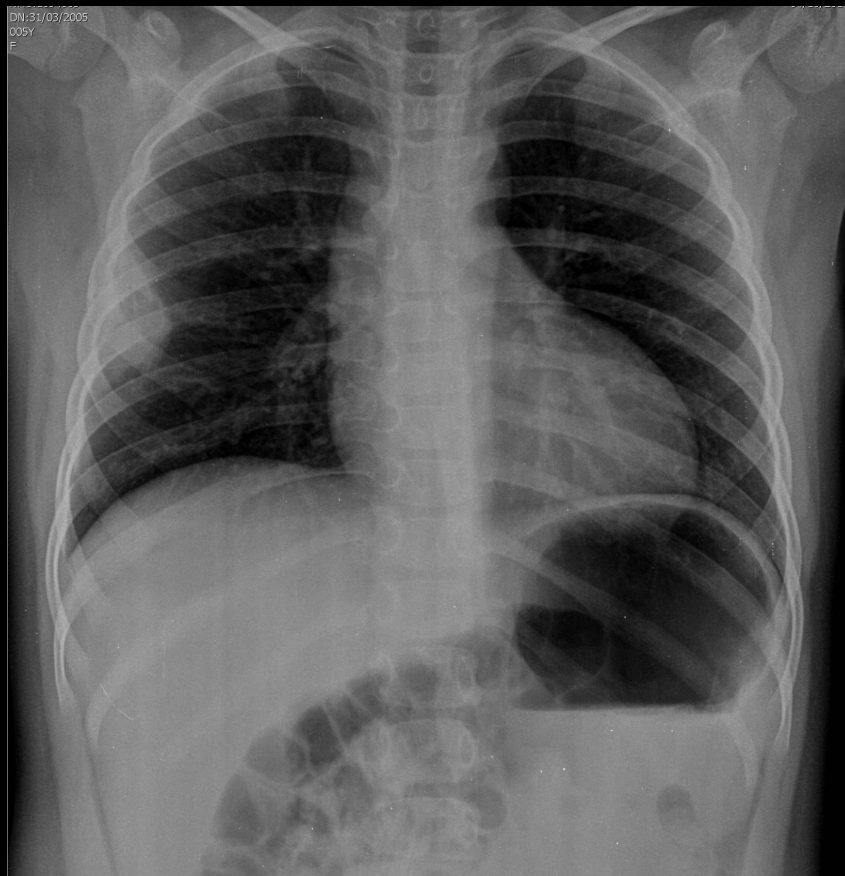
Extrathoracic tissues

Fields and fissures

Sarcoma d'Ewing





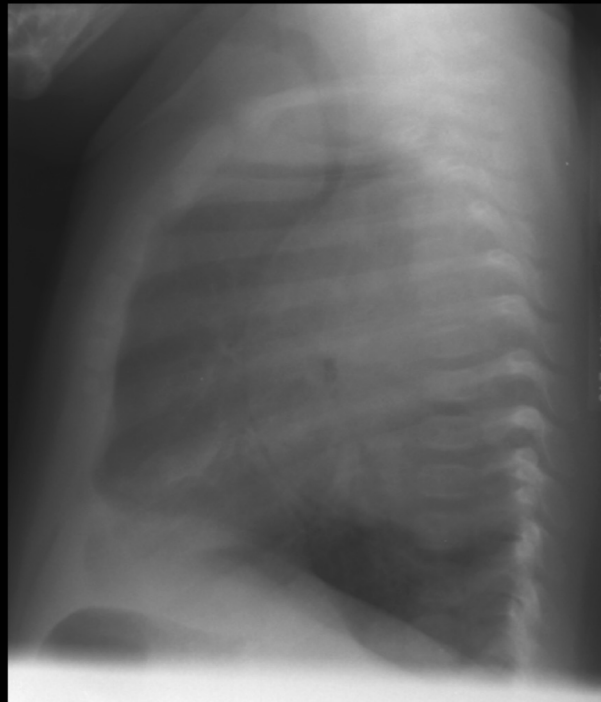
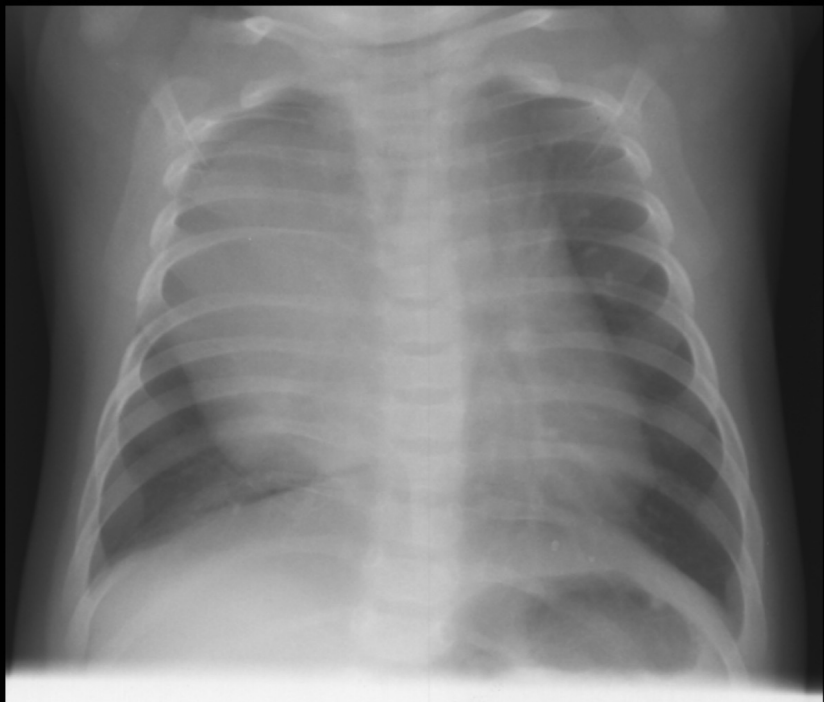


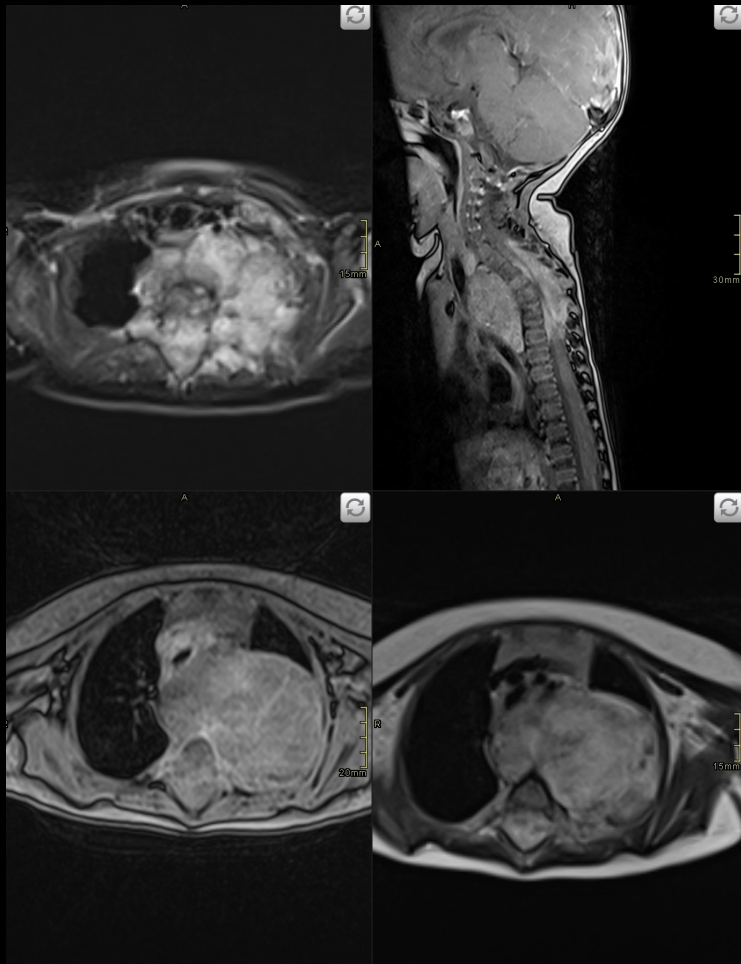
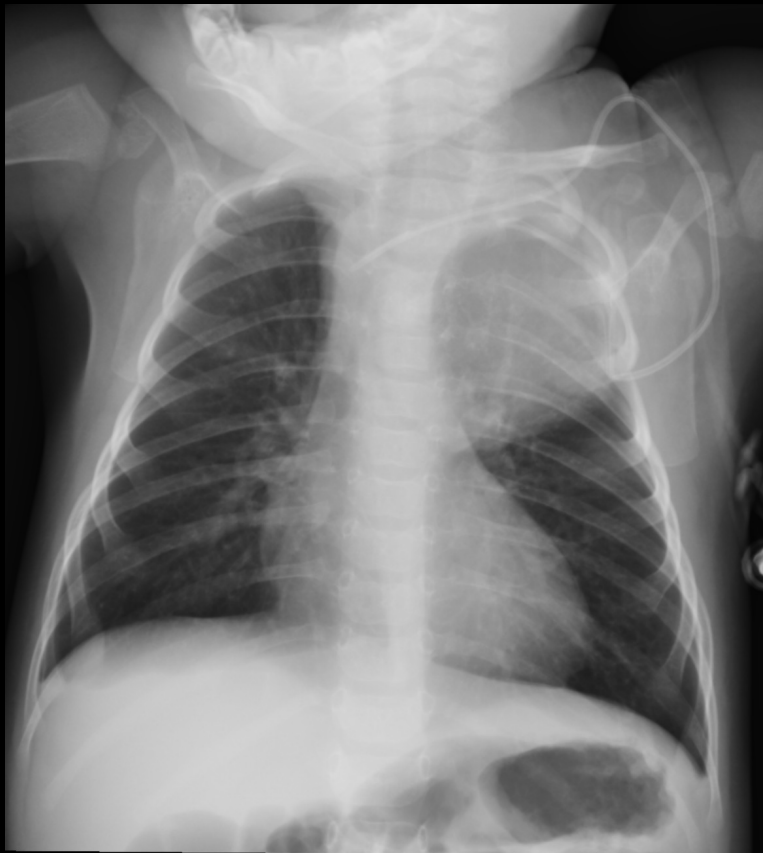
Sarcoma d'Ewing

B

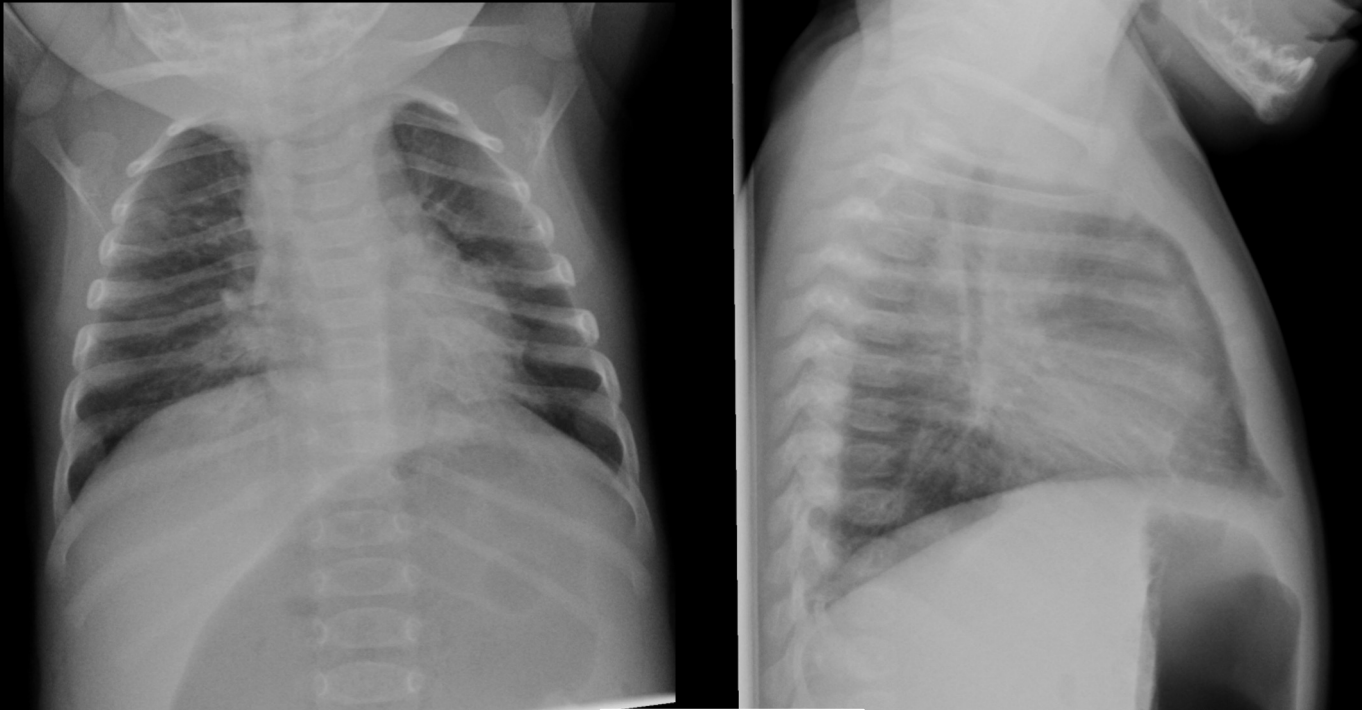


Neuroblastoma

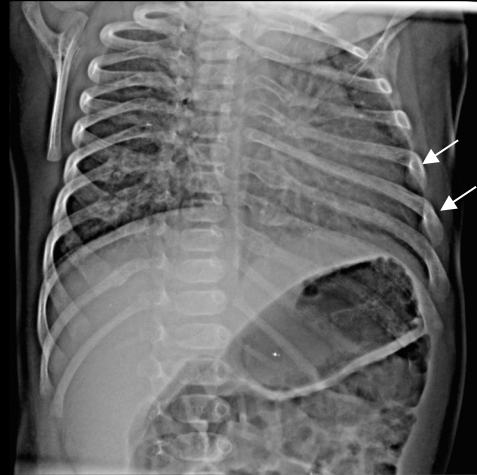
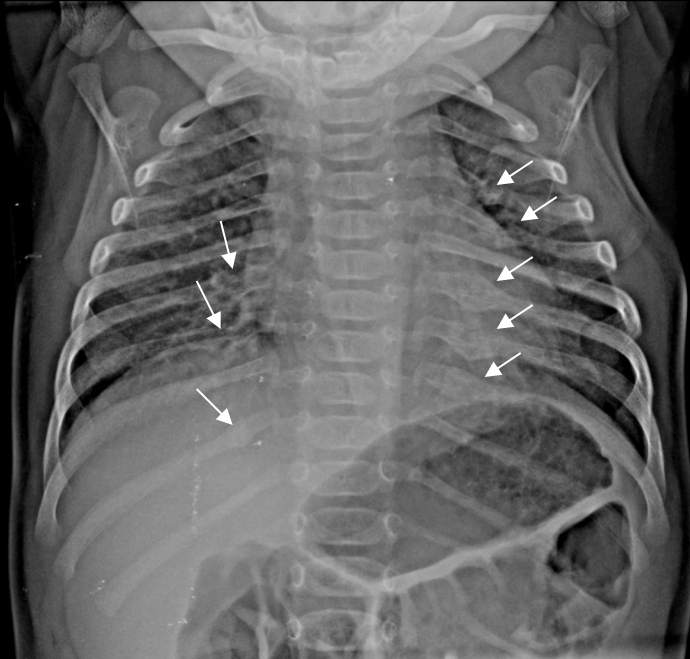




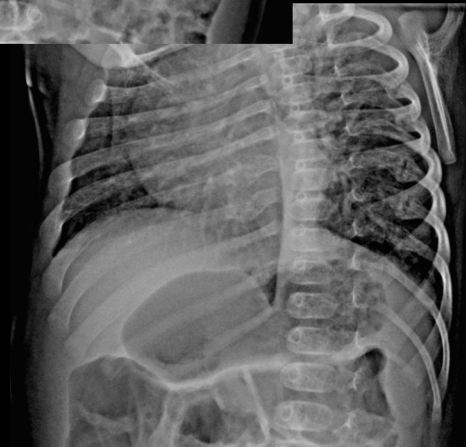
Lactante de 2 meses que es traído a urgencias por dificultad respiratoria. Sospecha clínica de bronquiolitis aguda

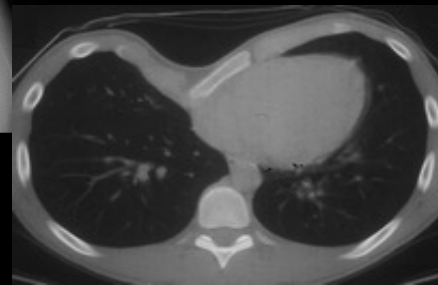
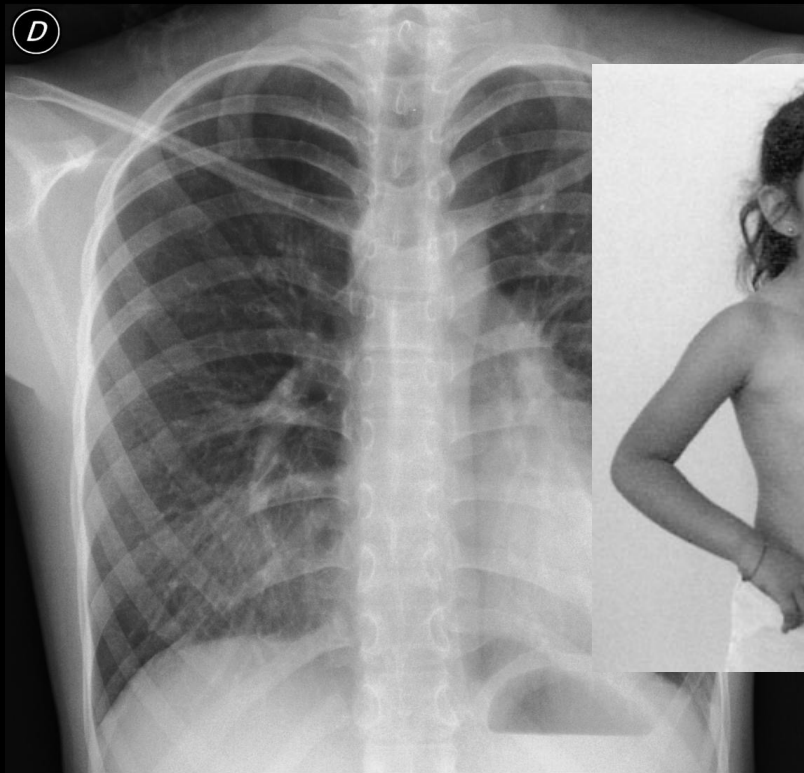


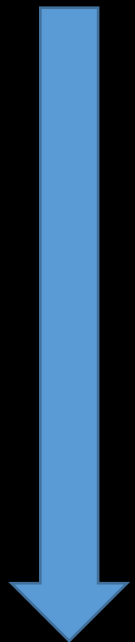
RX de torax



SO







Airway

Bones

Cardiac

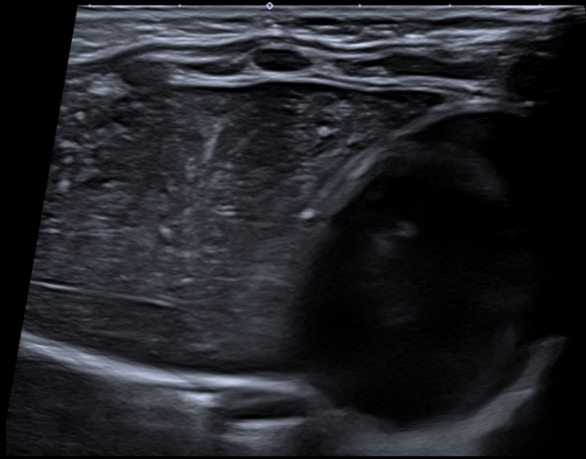
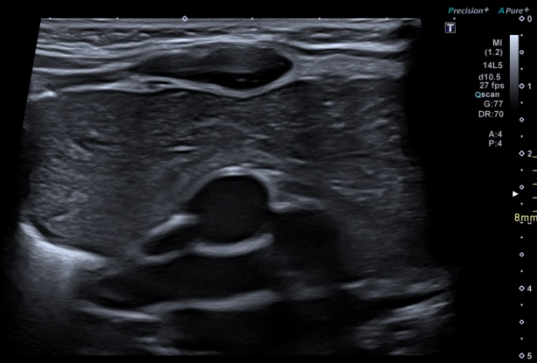
Diaphragm

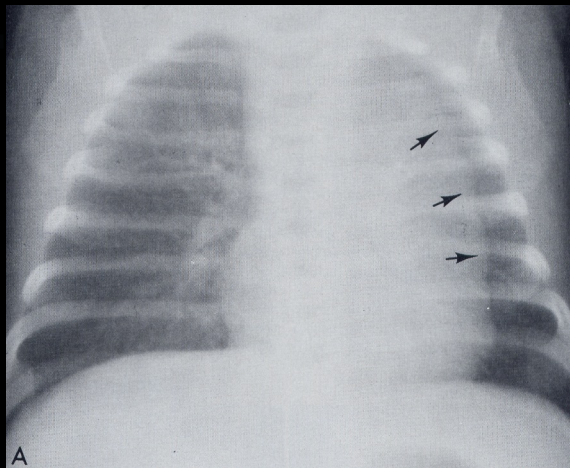
Extrathoracic tissues

Fields and fissures

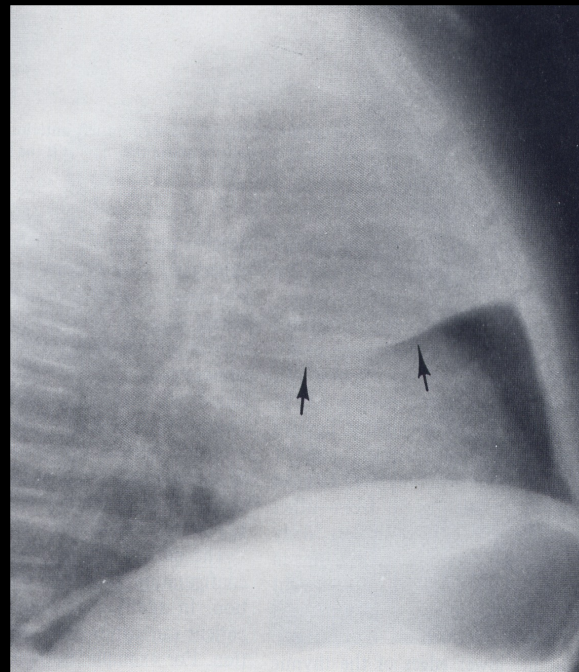
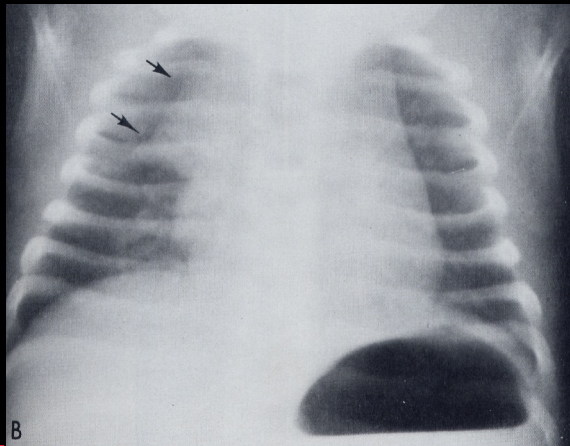


2 meses. Febre





Signe de l'ona

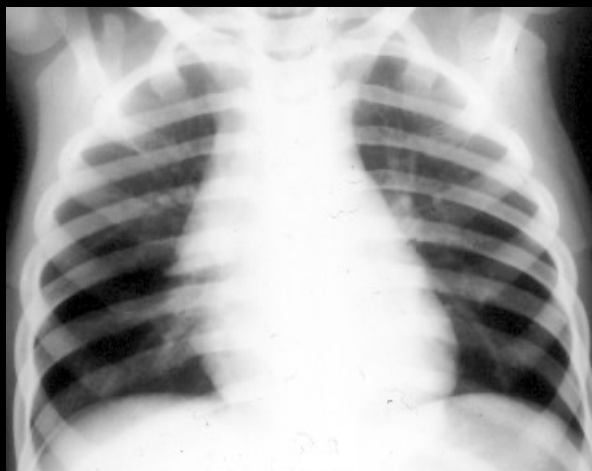


Signe de la vela



4 m.

Cortesía Dr Lucaya

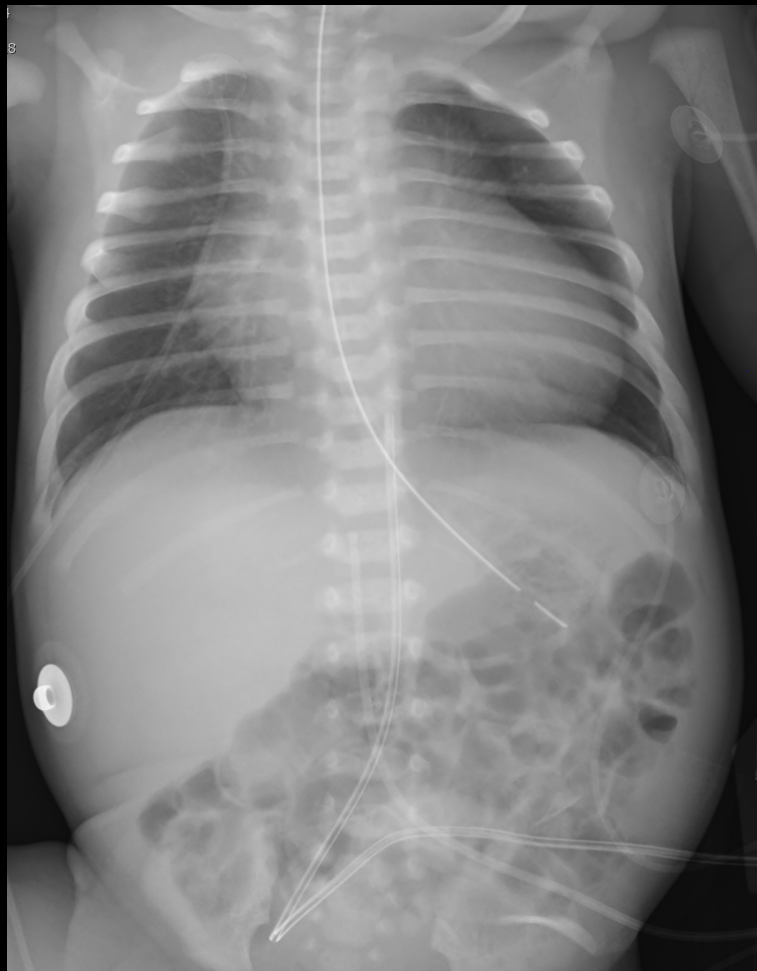


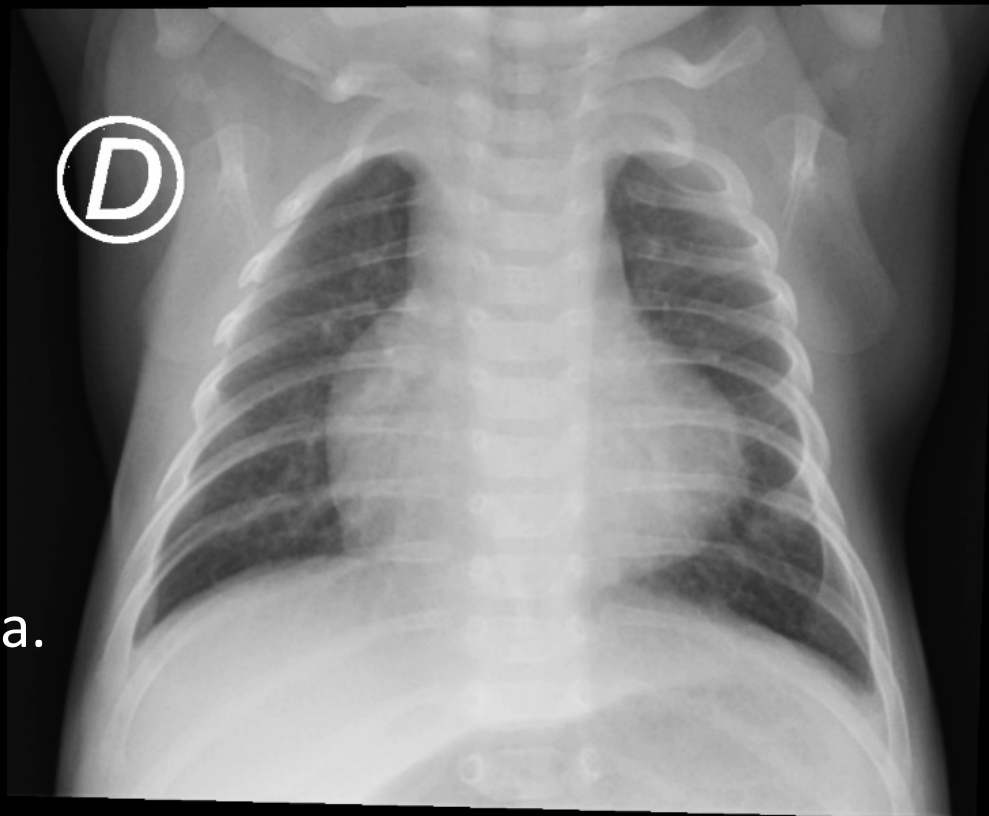
3 a.



2 d.

Cardiomegalia.
Cardiopatia
d'Ebstein

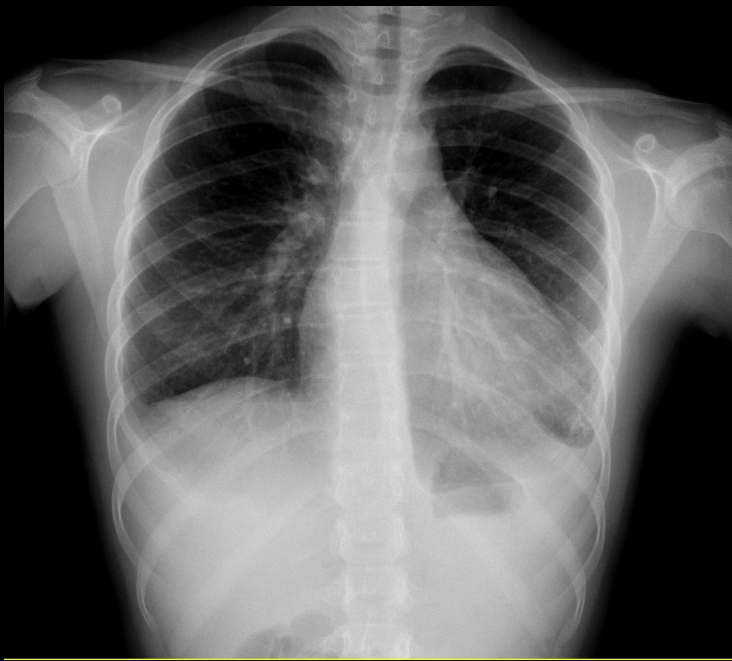




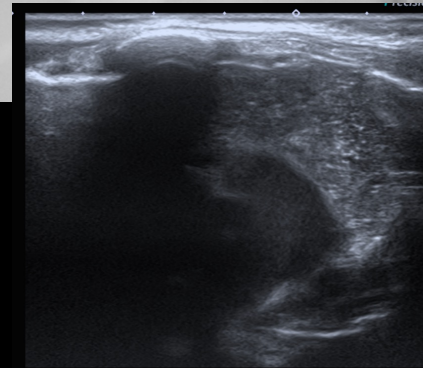
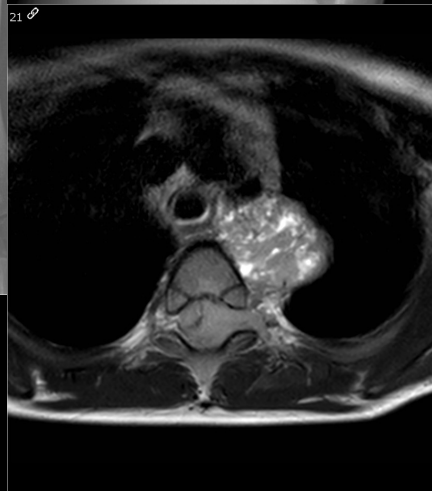
Cardiomegalia.
Tetralogia de
Fallot



Cardiomegalia i
edema
pulmonar. Canal
AV parțial

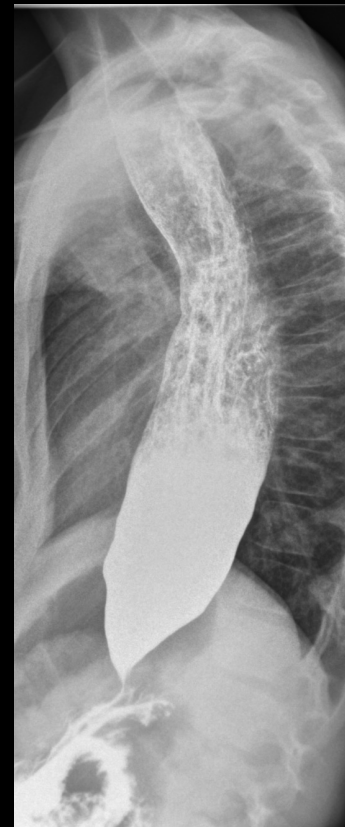
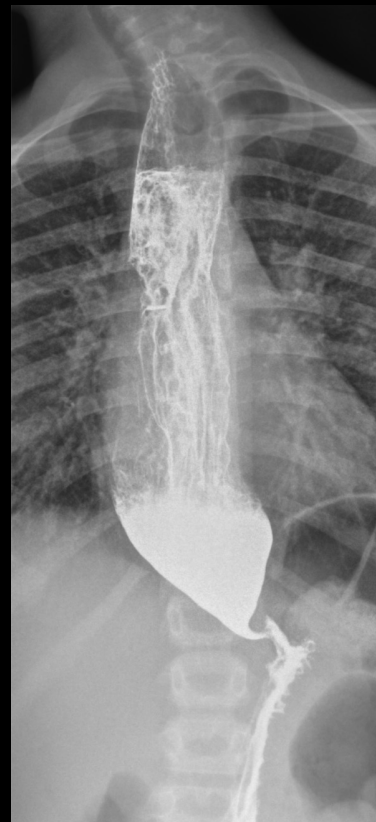
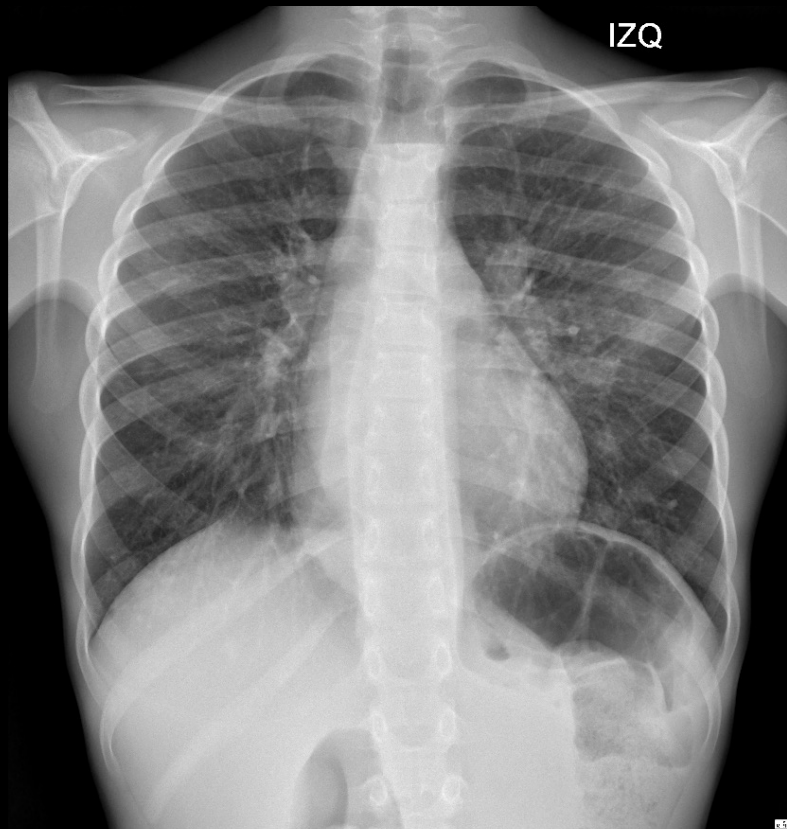


12 anys



Timus

Signe cervical toràcic
Sarcoma d'Ewing



11 anys. Tos crònica i pèrdua de pes



Hace 6 meses, dolor abdominal ocasional asociado a diarreas.

Heces hipocolicas. sin sangre.

Hace 24 - 48 horas fiebre.

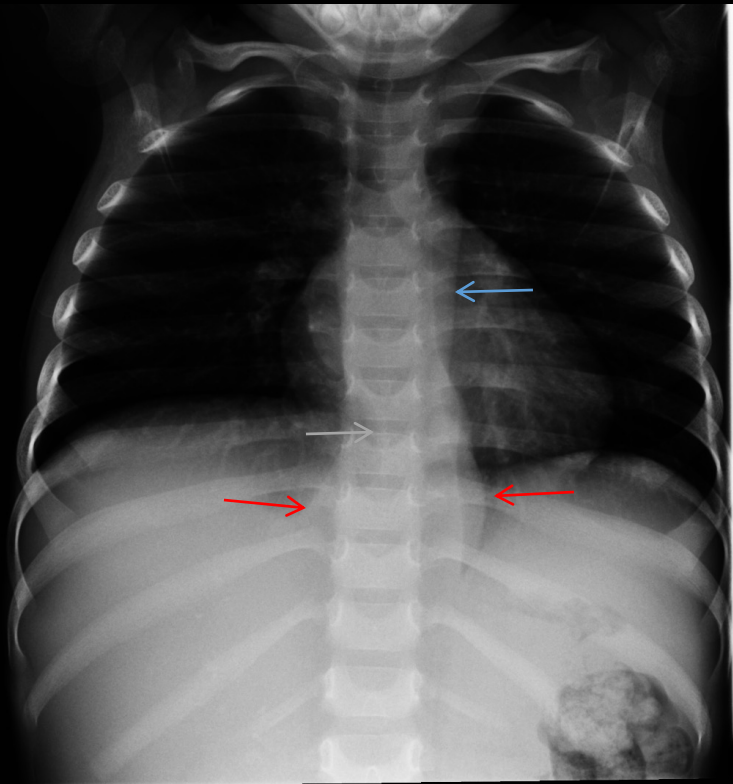
Hemoglobina 11,4 g/dl (11,5 - 13,5)

Leucòcits 4,9 Mil/mmcc (5,0 - 11,9)

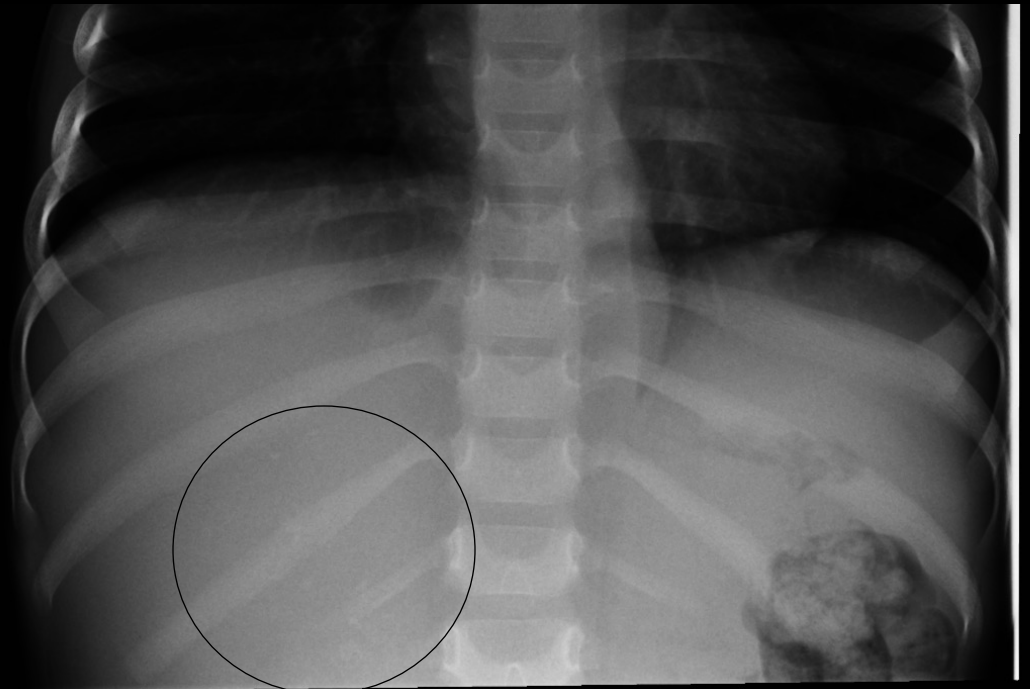
Gamma Glutamilttransferasa 27 UI/L (8 - 19)

Proteina C reactiva 98,8 mg/L (< 15)

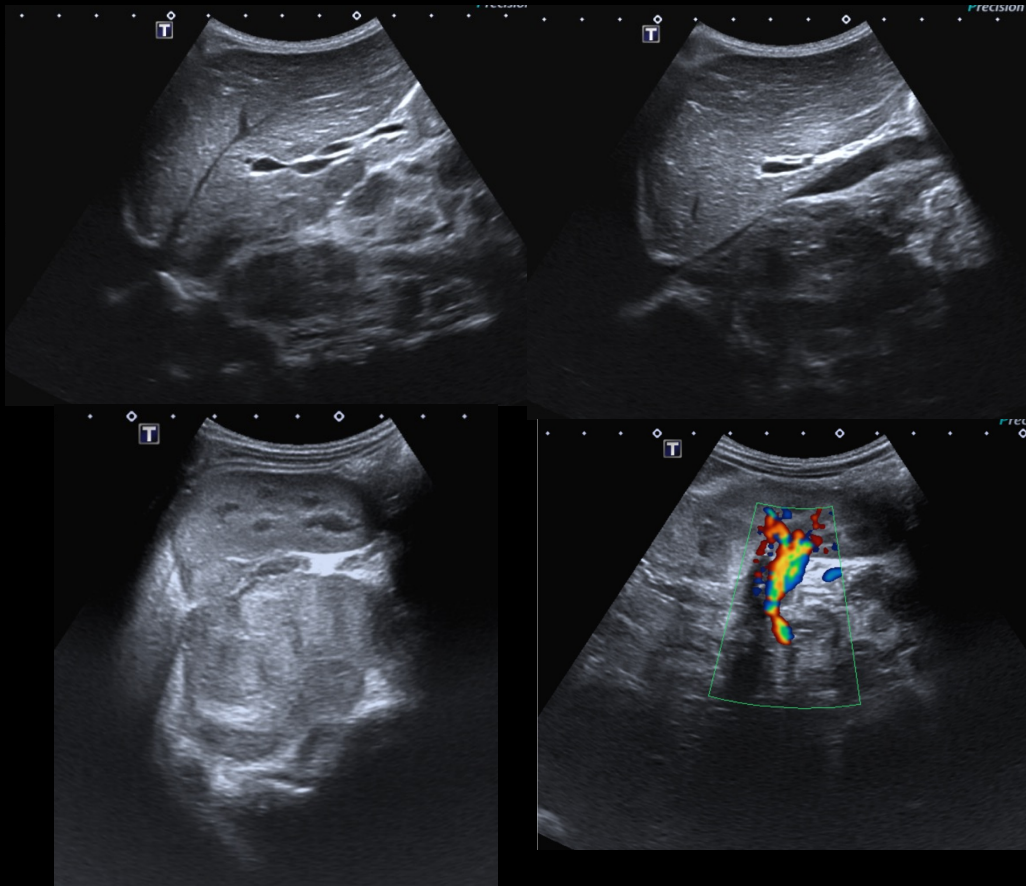
LDH 4790 (<647)



Líneas para-espinales derecha e izquierda
Línea para-aórtica
Receso pleuro-acigo esofágico



Calcificaciones puntiformes



Airway

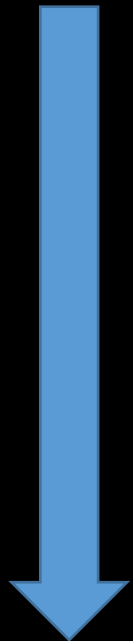
Bones

Cardiac

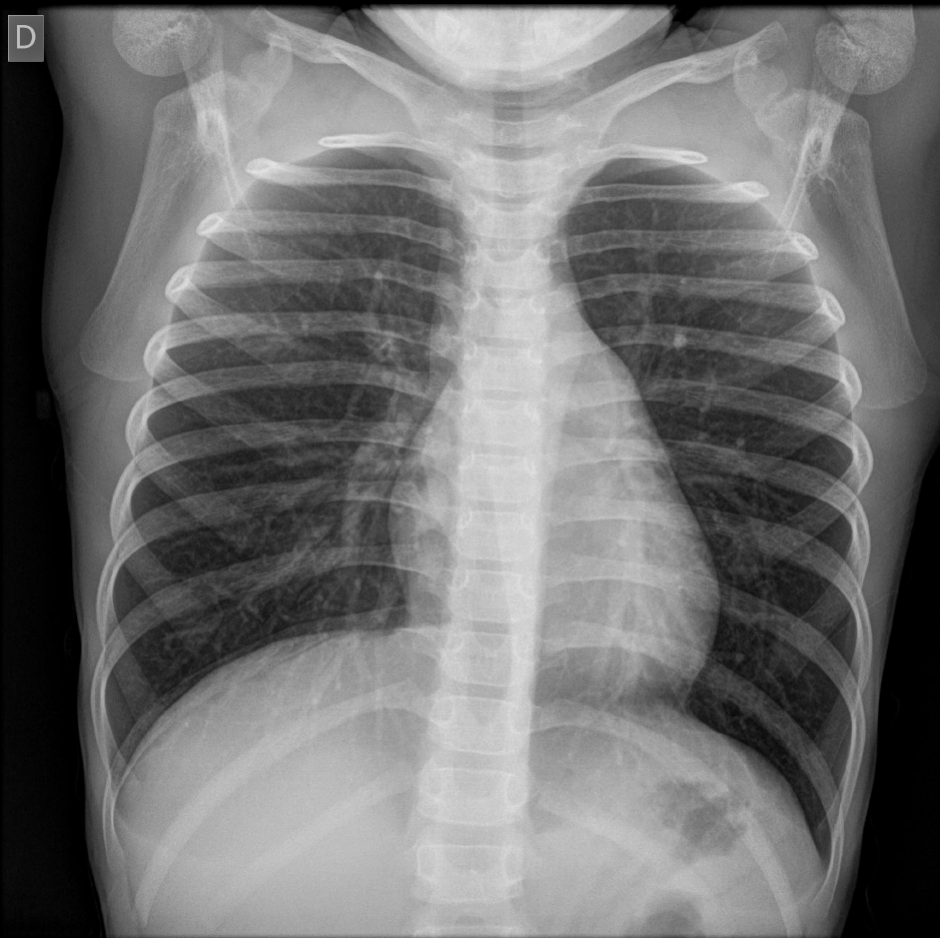
Diaphragm

Extrathoracic tissues

Fields and fissures

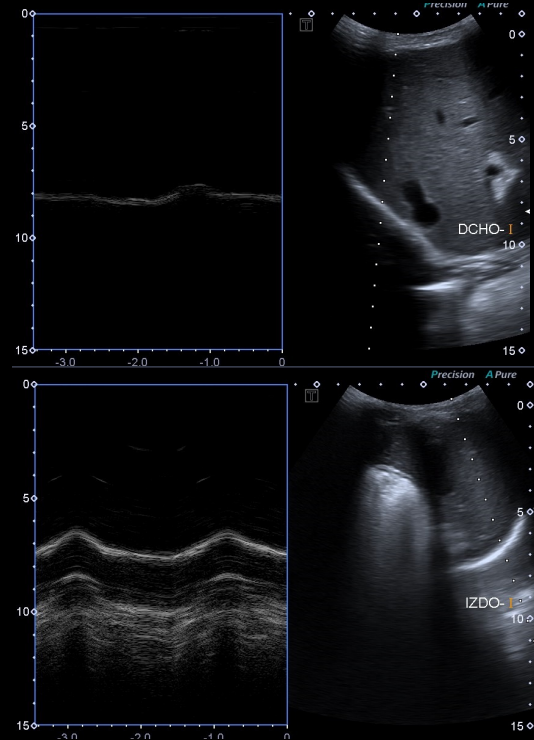


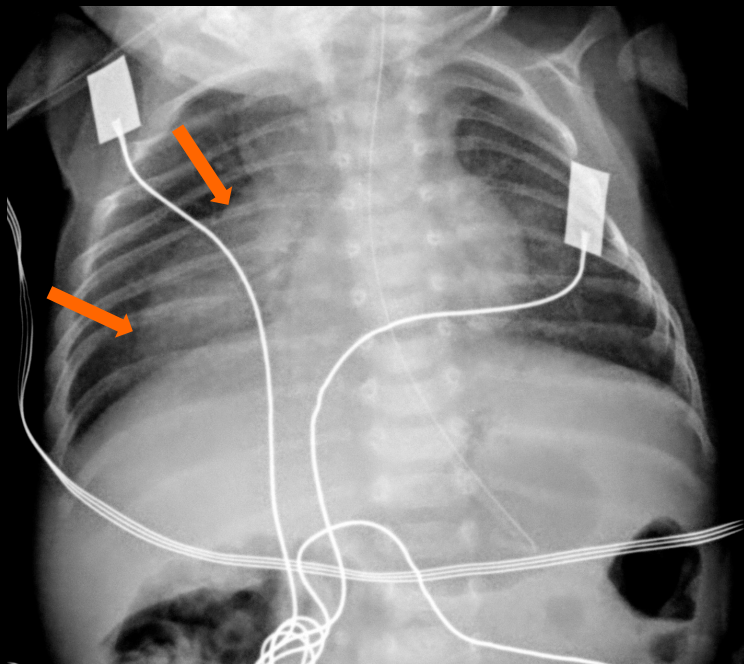
D



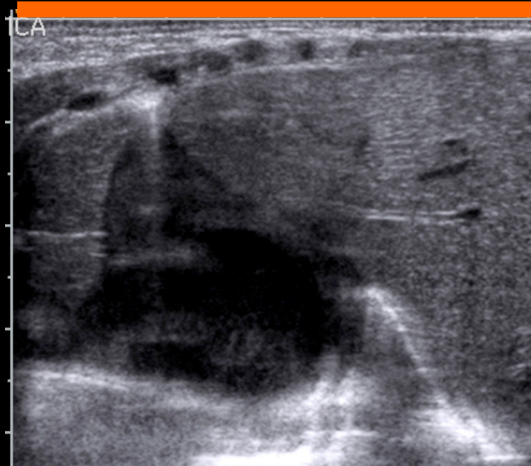
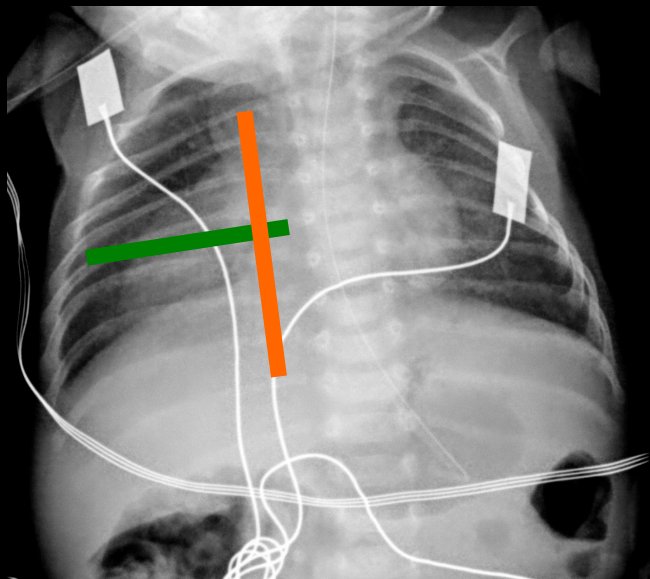
D

6 anys. Normal

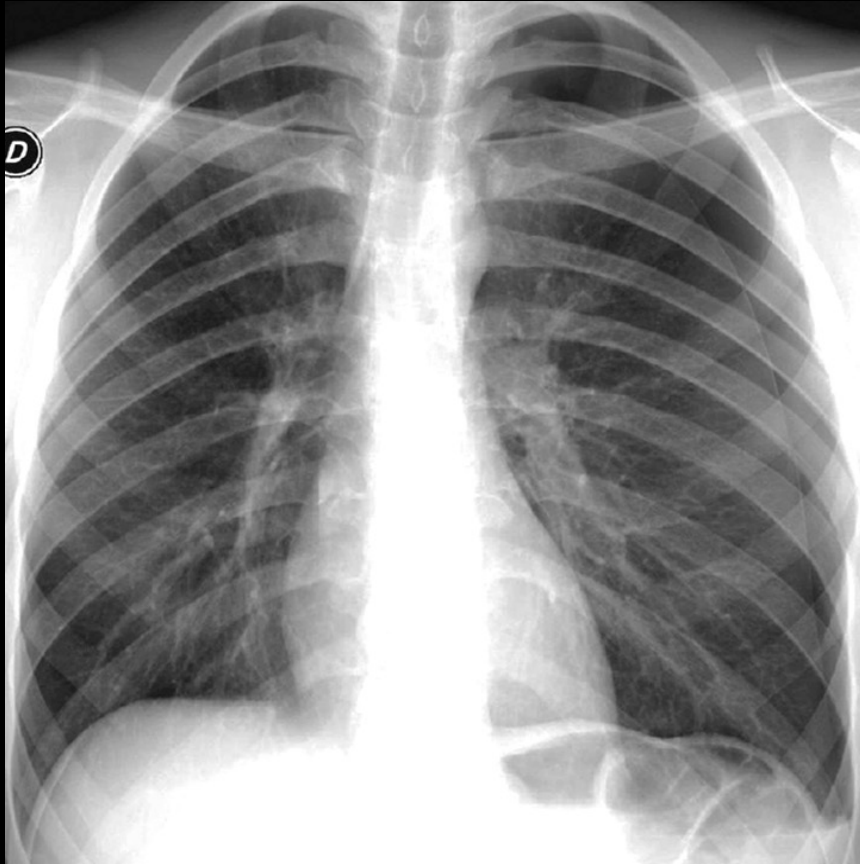




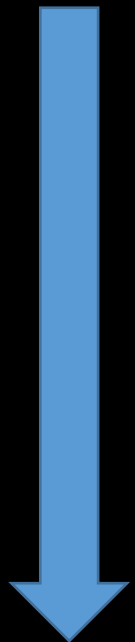
Nounat preterme.
RX de control



Hernia diafragmàtica anterior (Morgagni). 90% dretes.



“Deep sulcus sign”



Airway

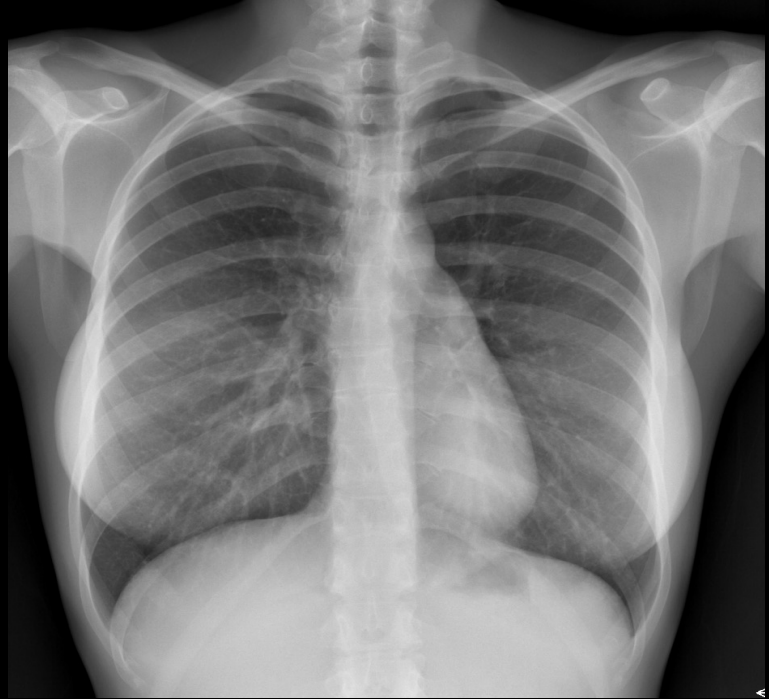
Bones

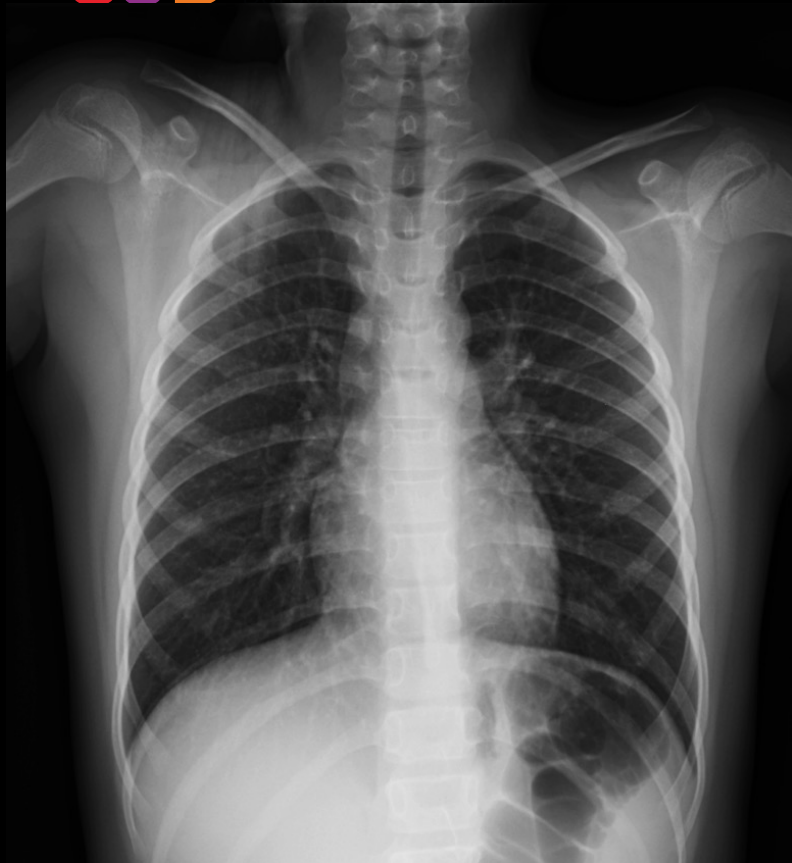
Cardiac

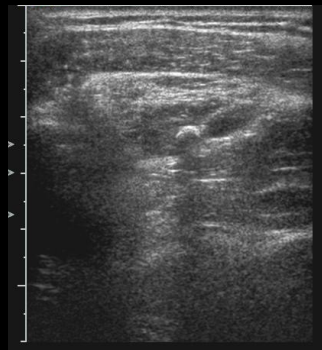
Diaphragm

Extrathoracic tissues

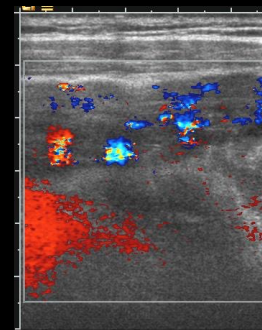
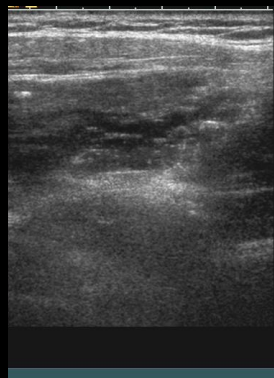
Fields and fissures

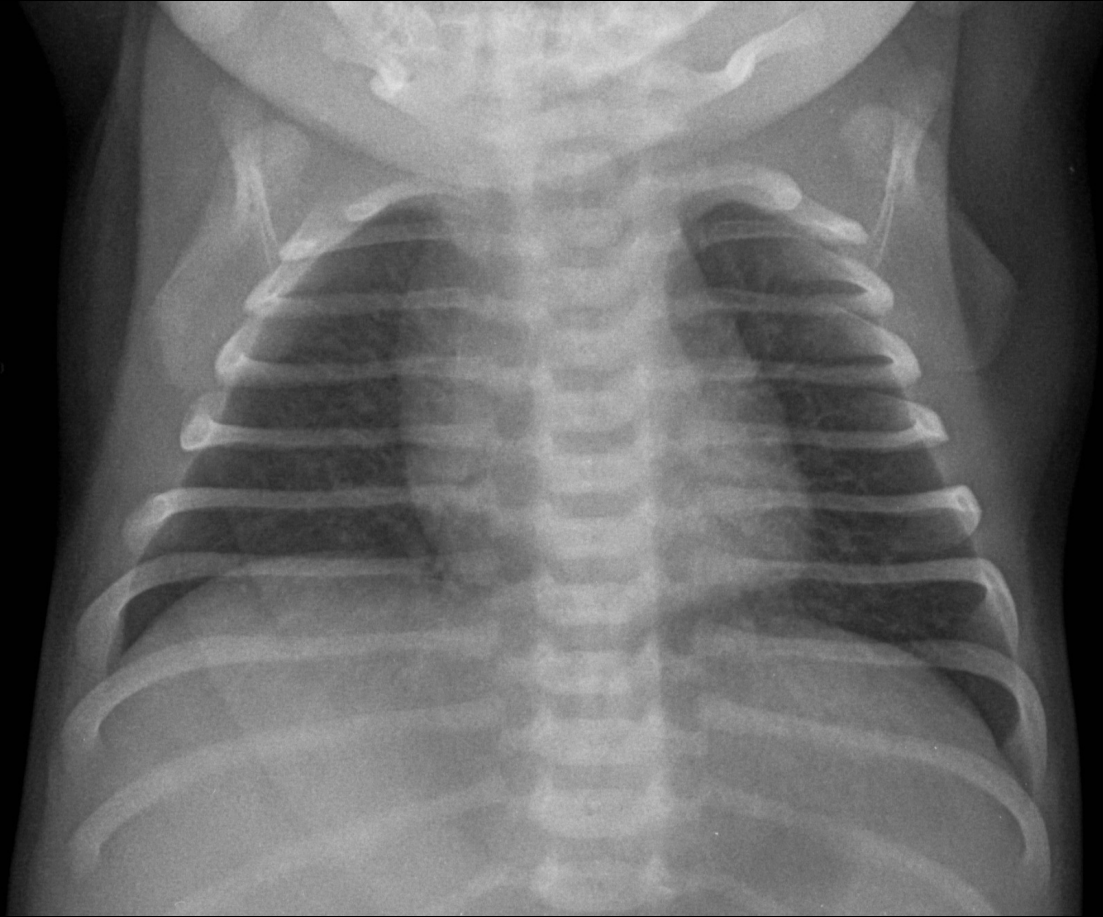


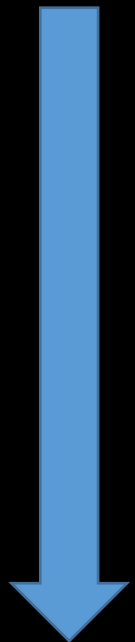




Malformació vascular
de flux lent







Airway

Bones

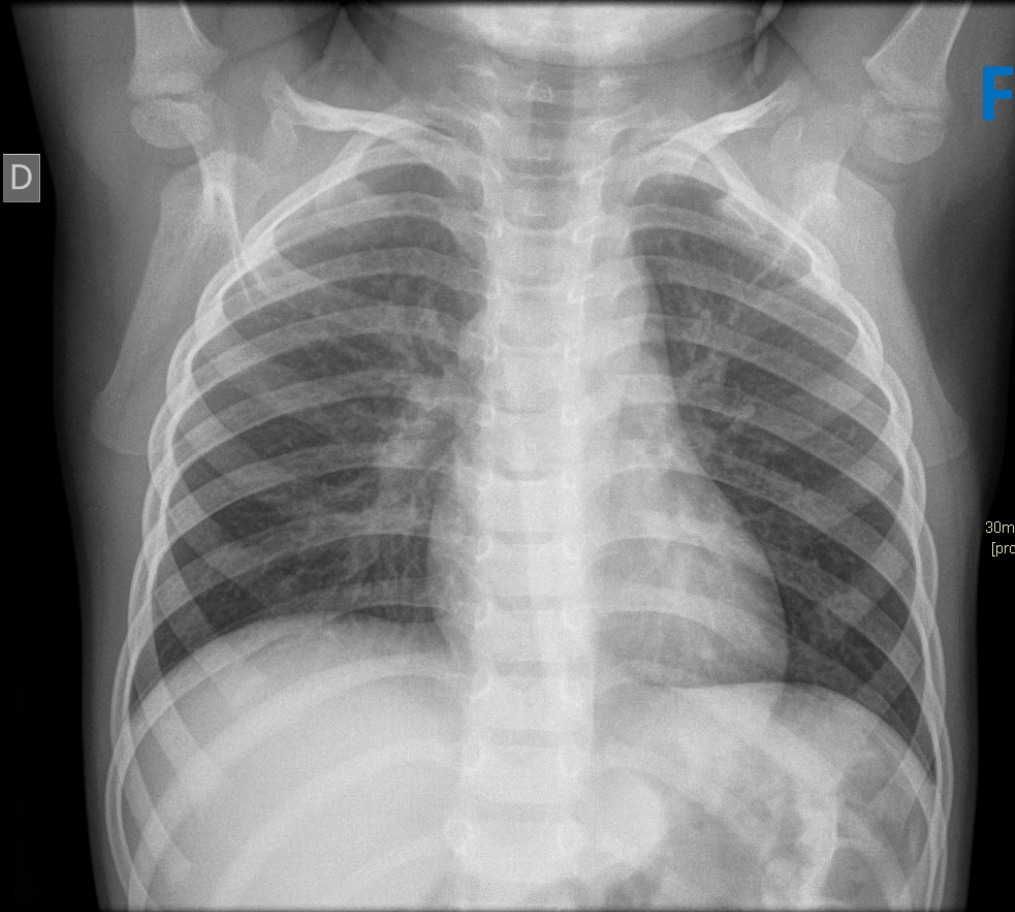
Cardiac

Diaphragm

Extrathoracic tissues

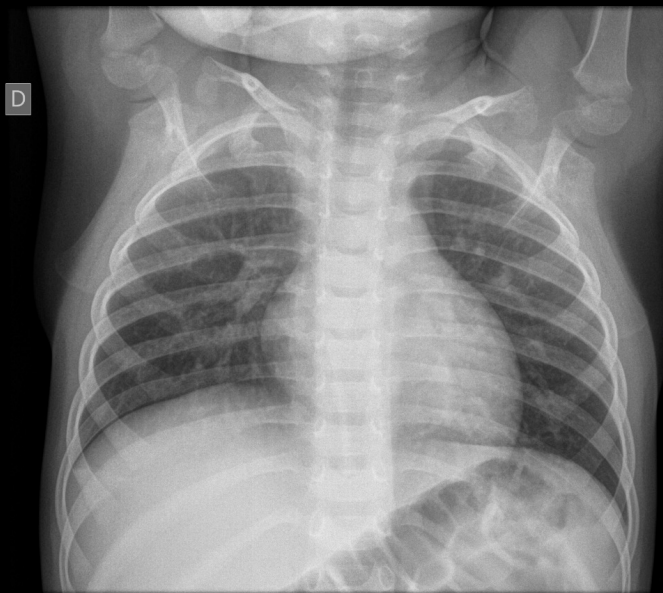
Fields and fissure

D

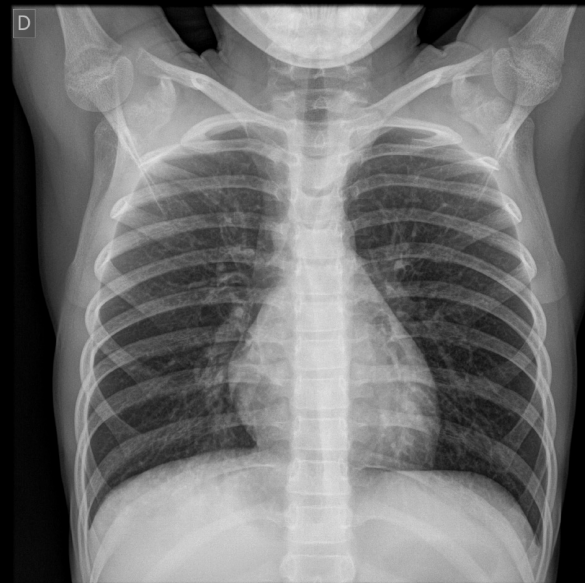


30m
[pro]

3 años.
Normal

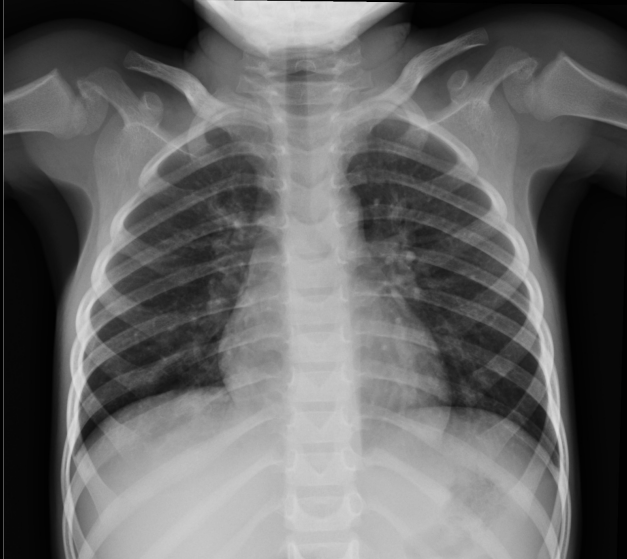


22 meses. Fiebre. Normal
(espiratortria)

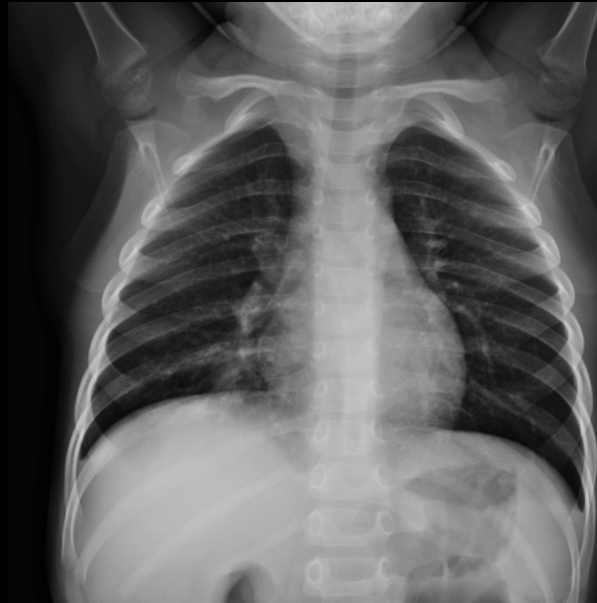


8 años Normal

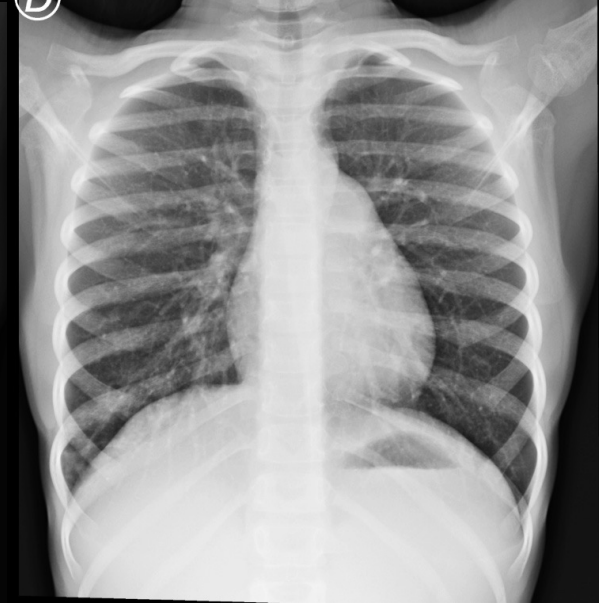
3 años. Fiebre de 5 días de evolución, con cuadro catarral asociado y ACR con crepitantes en 2/3 inferiores de pulmón derecho.



3 años. Fiebre.



7 años. Fiebre de 3 días de evolución, con cuadro catarral asociado y ACR con crepitantes en 2/3 inferiores de pulmón derecho. **F**



16 meses
Sd. Febril



Dificultad respiratoria y fiebre

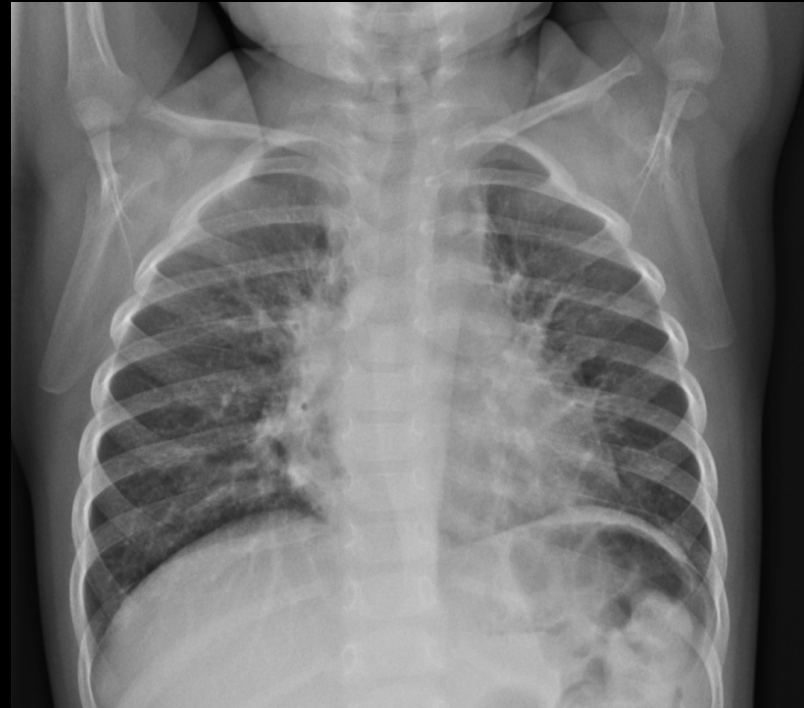
Vírica: < 2 años es el 80%.

Aumento de la trama peribronquial y
ausencia de consolidación pulmonar
focal.

Hiperinsuflación (hipertransparencia,
descenso y aplanamiento de los
diafragmas).

Engrosamientos peribronquiales.

Bandas densas perihiliares / atelectasias
subsegmentarias.



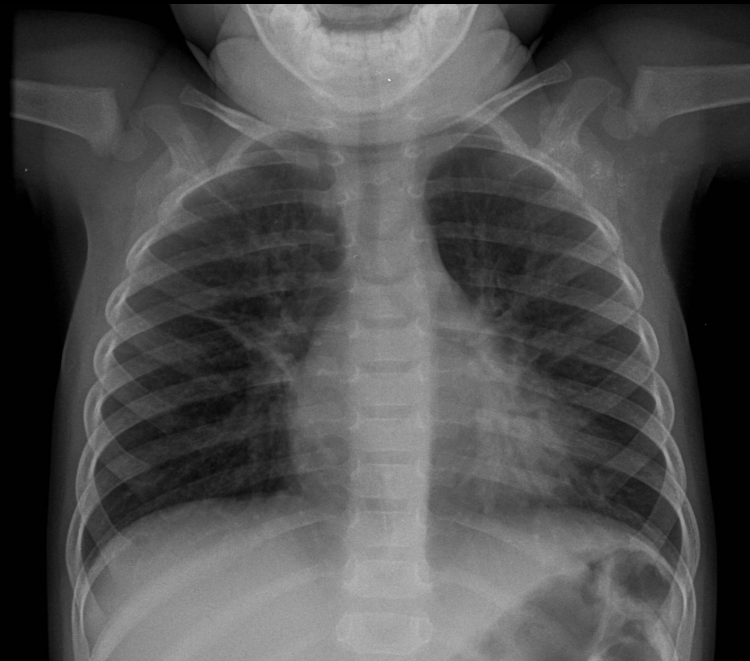
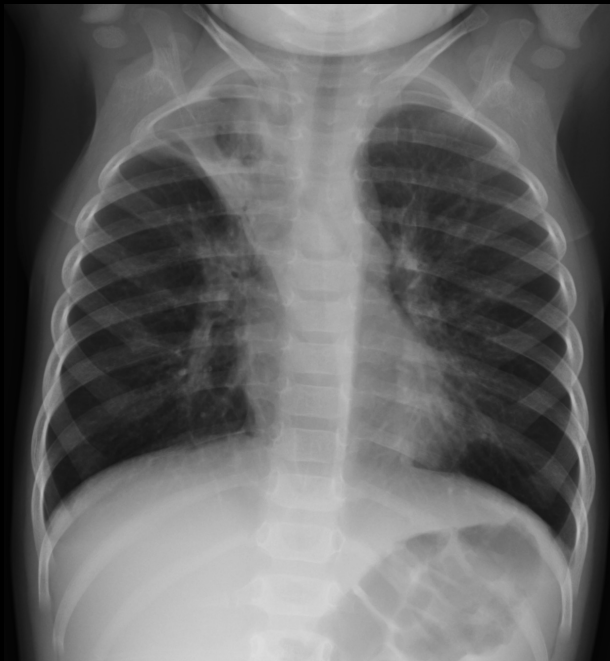
17 meses
Asimetría
auscultación y fiebre

Radiografía de Tórax AP

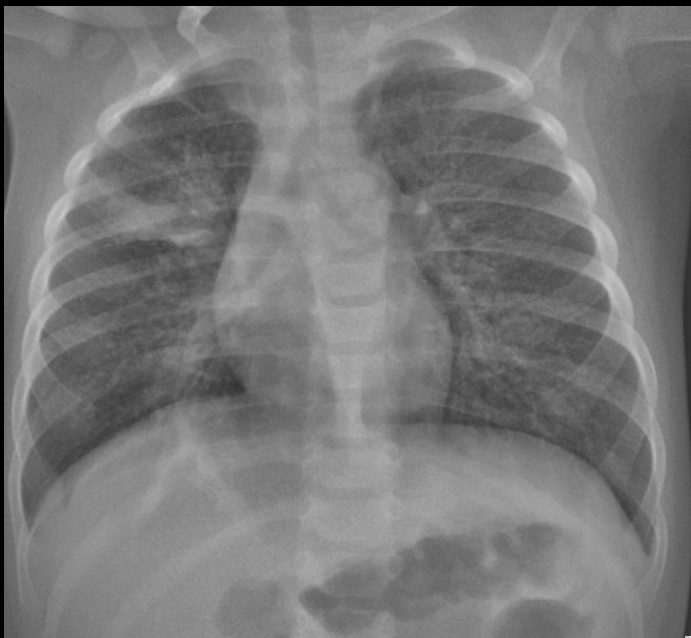
Hallazgos:

*Condensación/atelectasia en el
LSD y infiltrado en el LII.
Engrosamientos peribronquiales.
Senos costos y cardiofrenicos
libres.
Silueta cardiaca y mediastino
dentro de la normalidad.
Esqueleto óseo sin alteraciones.*

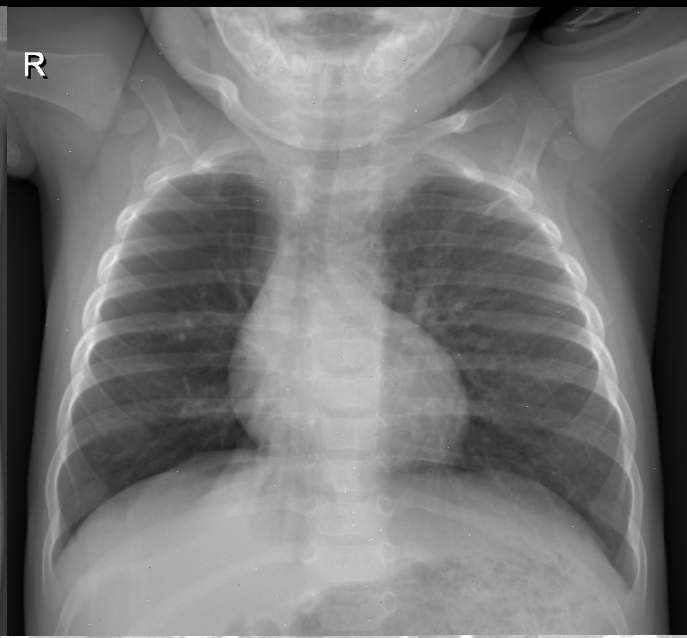
Atentamente



Control RX a las 72 horas
Pre alta

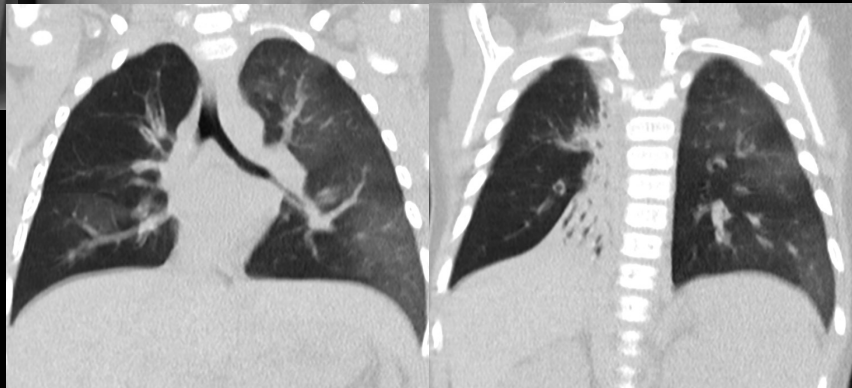


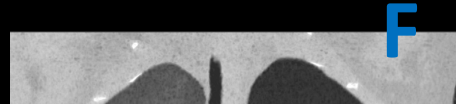
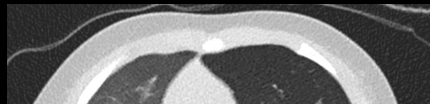
8 mesos
Adenovirus



Control
als 2 m
BO

F





Control als 3 m



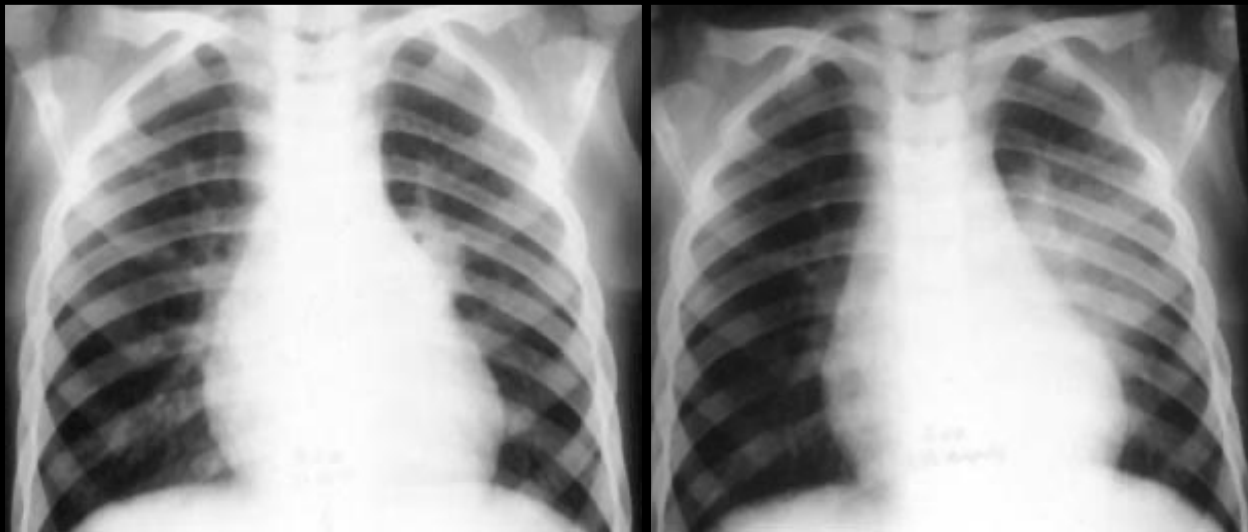
Bronquiolitis 16 m



4 días después consolidación LII
(presenta hipofonesis)

Exploració clínica : Indispensable!

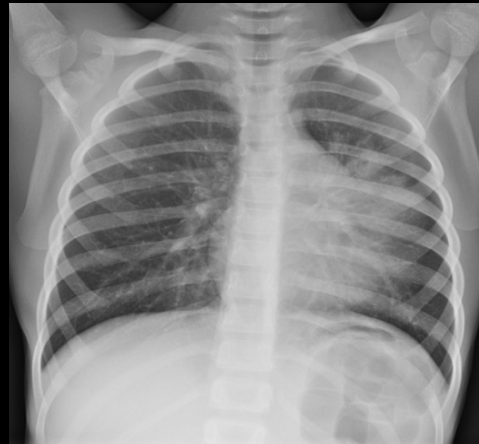
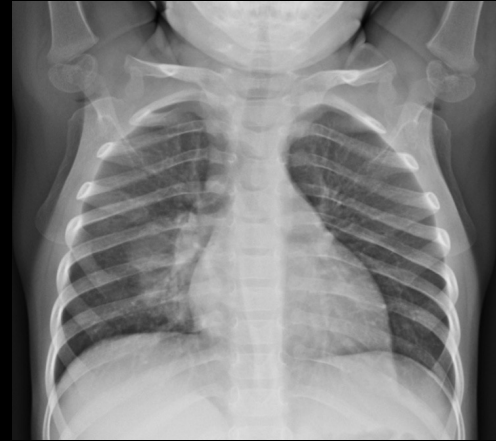
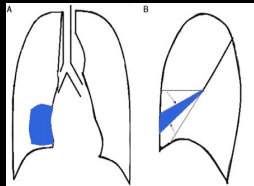
4 anys



D'ingrés

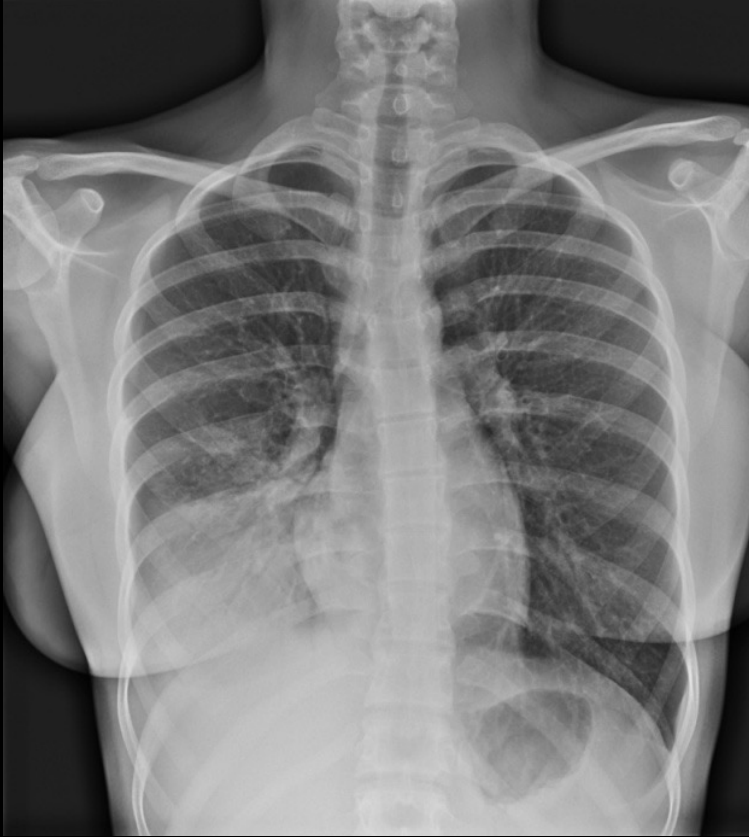
+12 horas

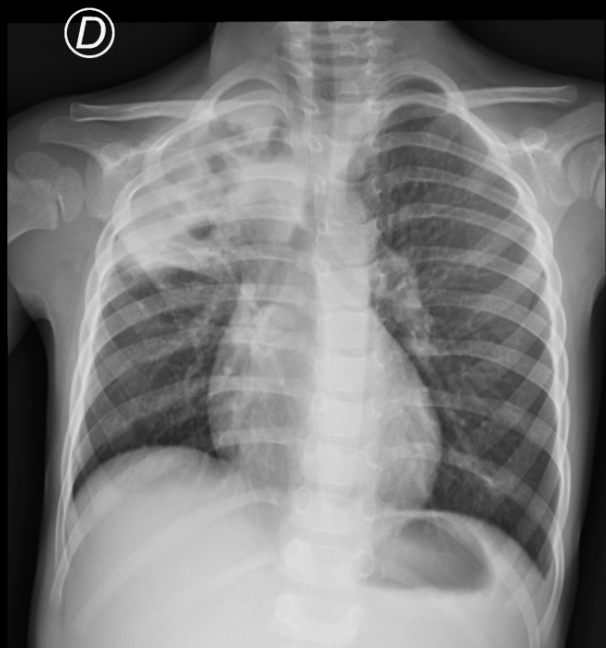
Localización de la condensación pulmonar



fiebre y dificultad respiratoria



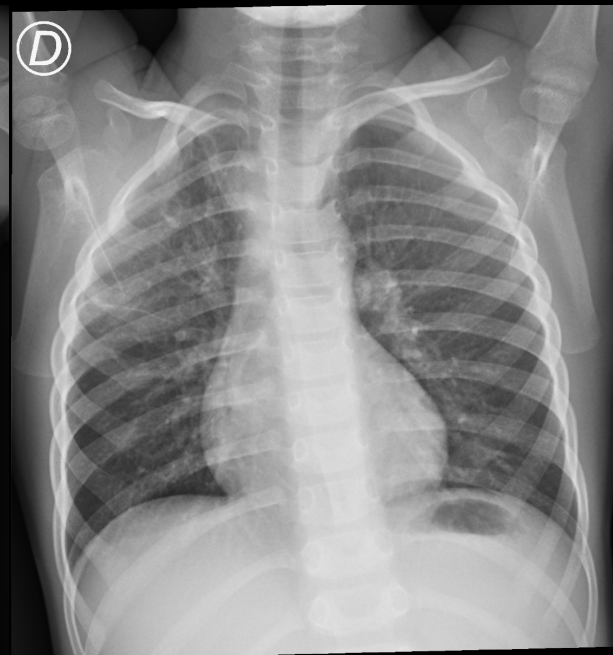




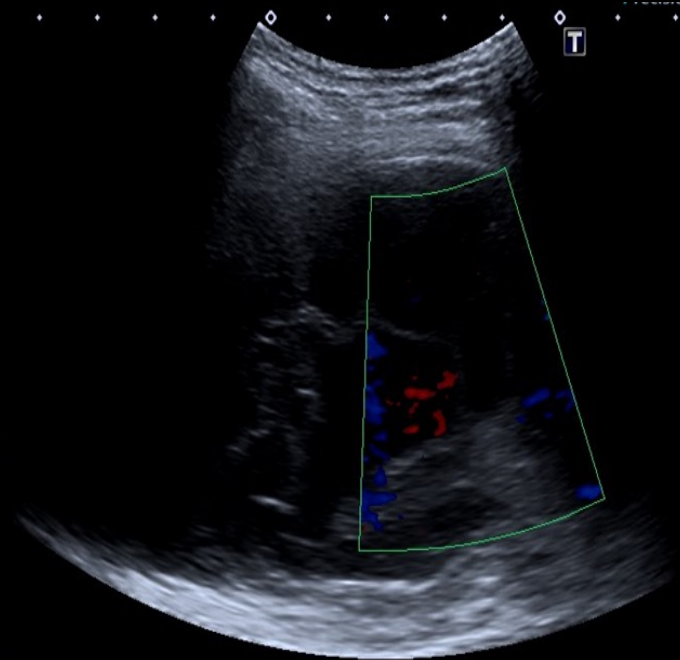
4 anys, Febre.

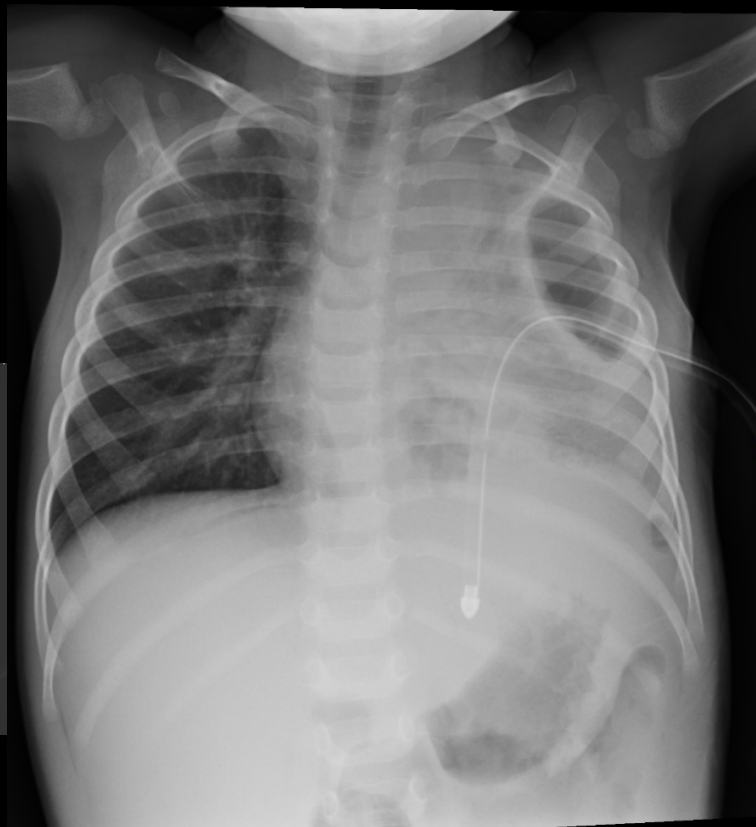
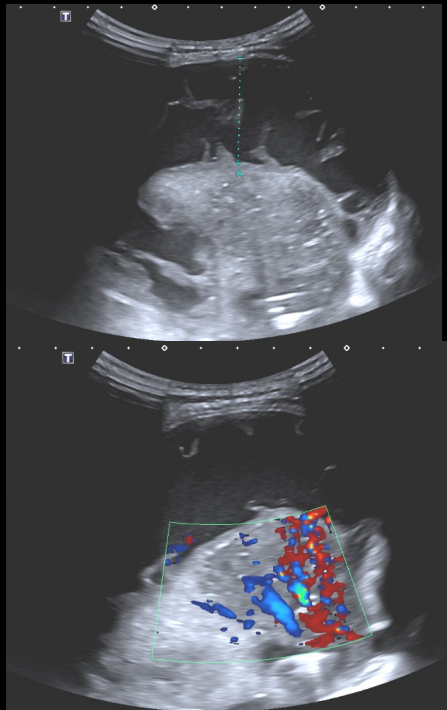
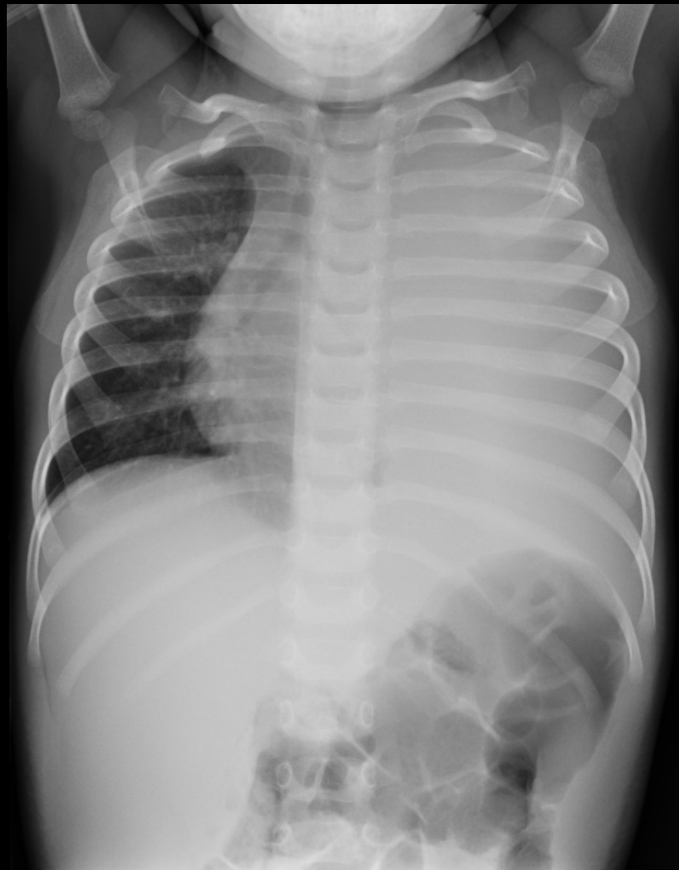


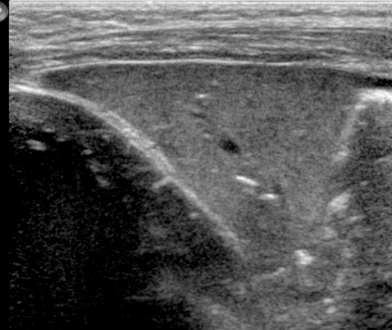
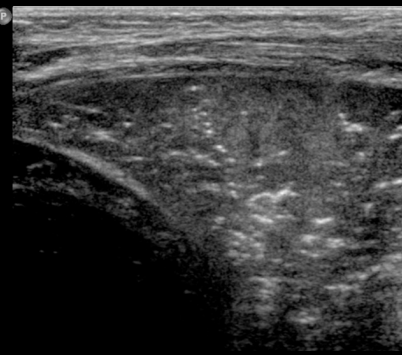
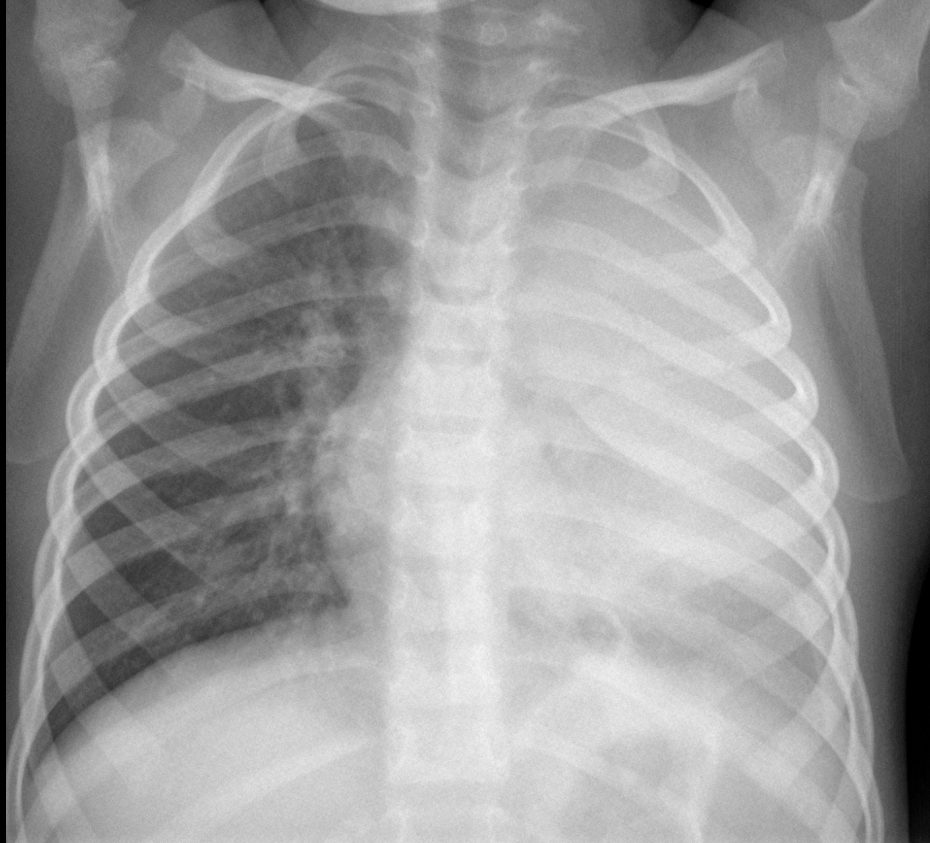
4 dies

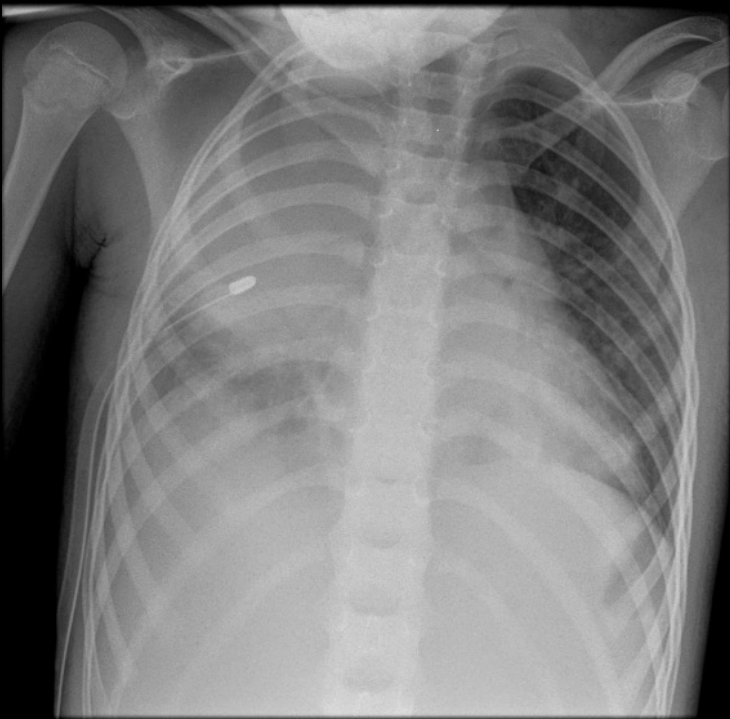


3 setmanes

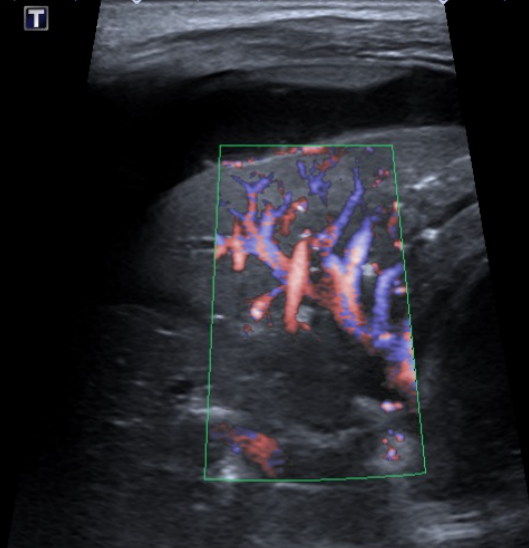
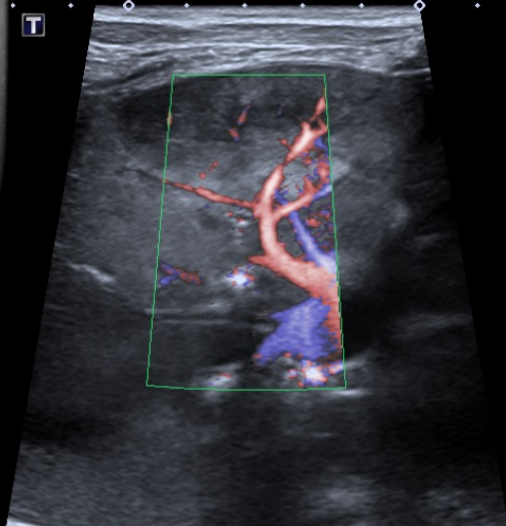
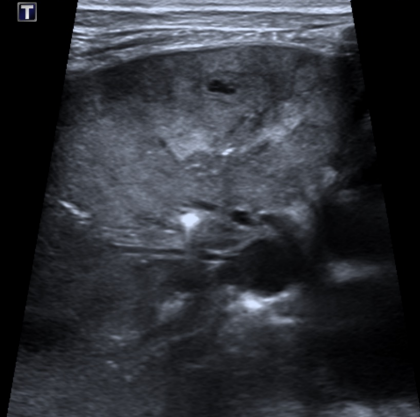




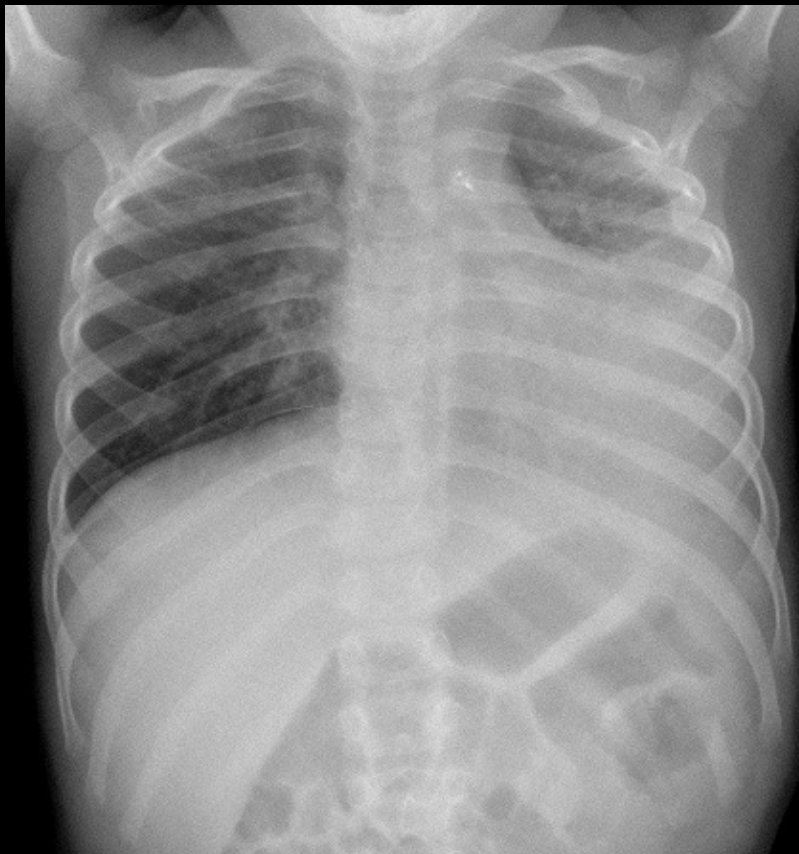


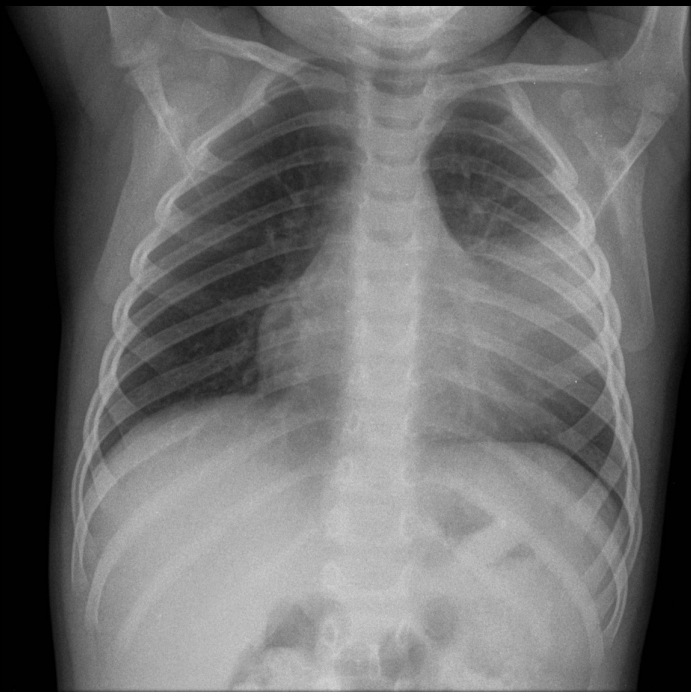


6 anys

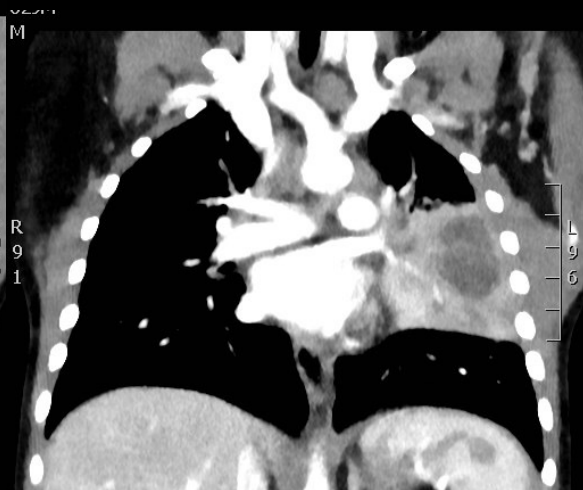
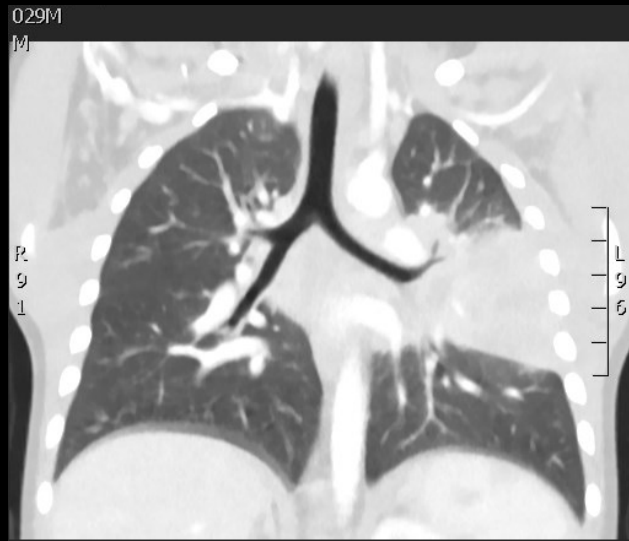


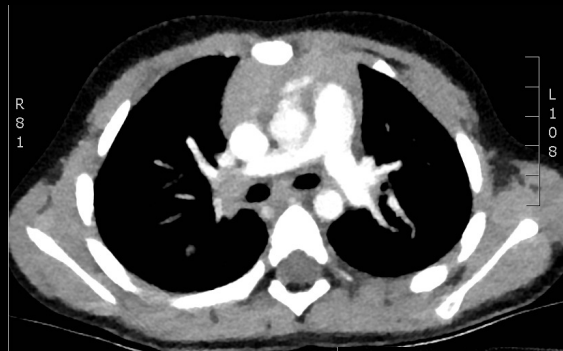
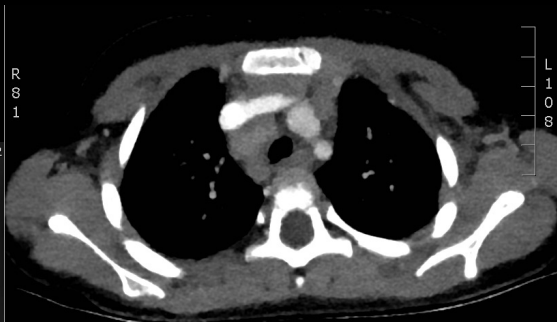
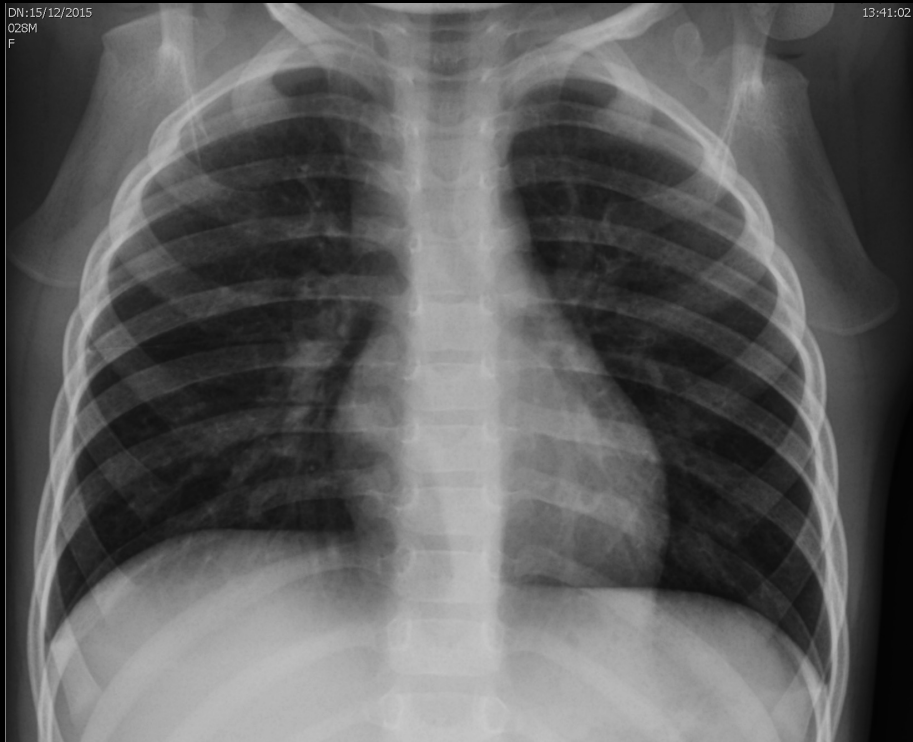
Pacient de 3
anys amb
quadre febril



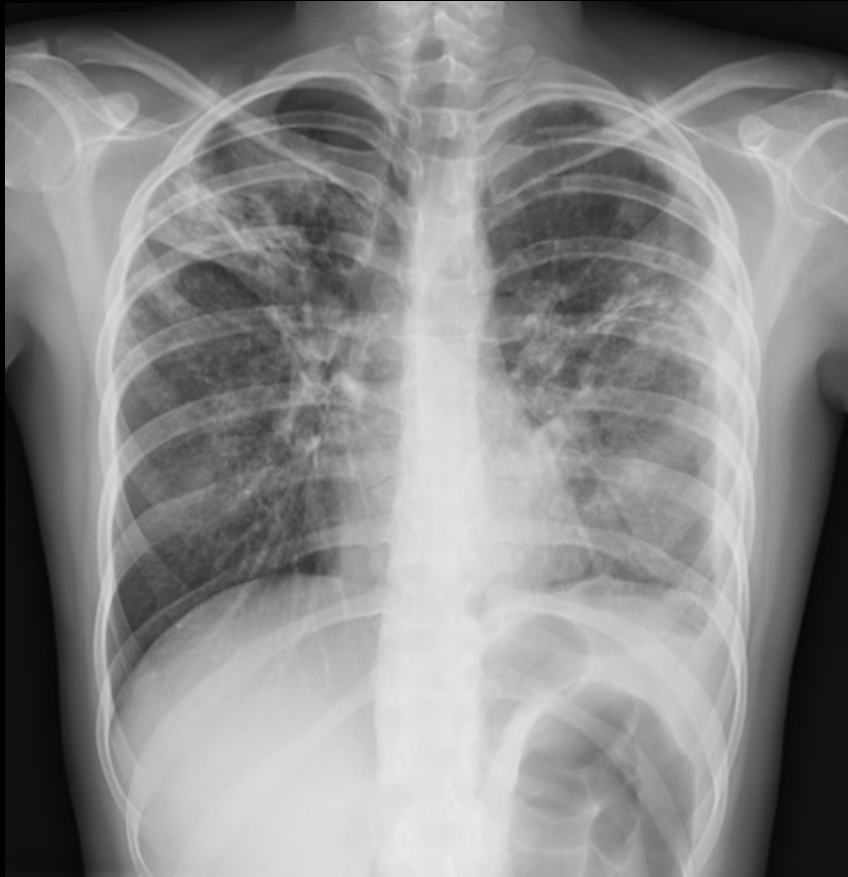


Control 1 mes

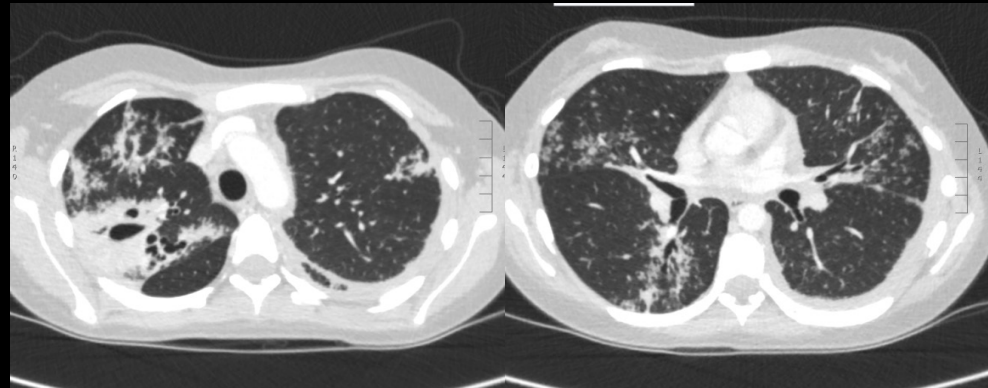


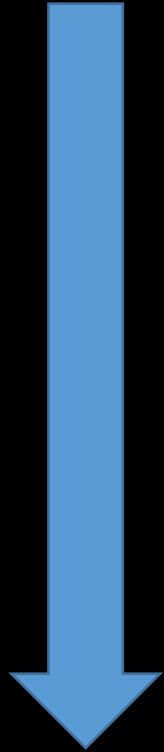


28 meses. Contacto TBC



TBC





Airway

Bones

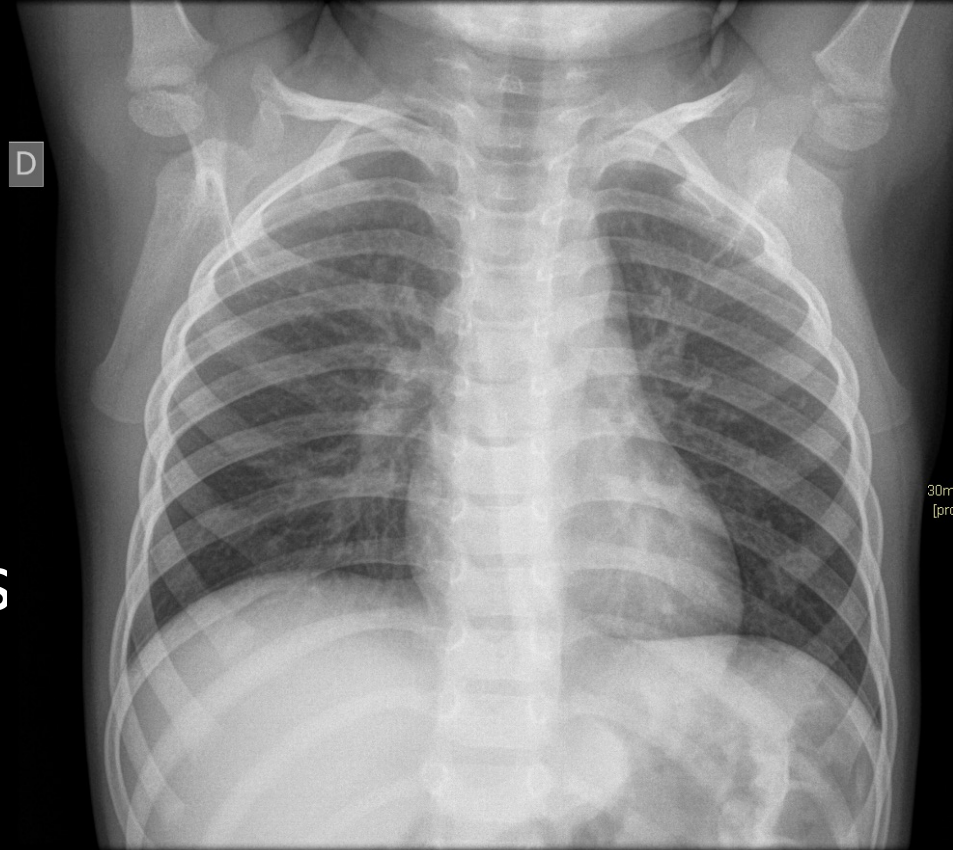
Cardiac

Diaphragm

Extrathoracic tissues

Fields and fissures

D



30m
[pro]

3 años



XVIII Edició

Actualització en l'Àrea Pediàtrica

Temes d'interès en Pediatria d'Atenció Primària

Dimarts, 24 d'octubre de 2023



Sant Joan de Déu
Barcelona Hospital

Moltes gràcies

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