

PEDIATRIC CHEST ULTRASOUND

Ramon Sanchez
ramonsan@umich.edu

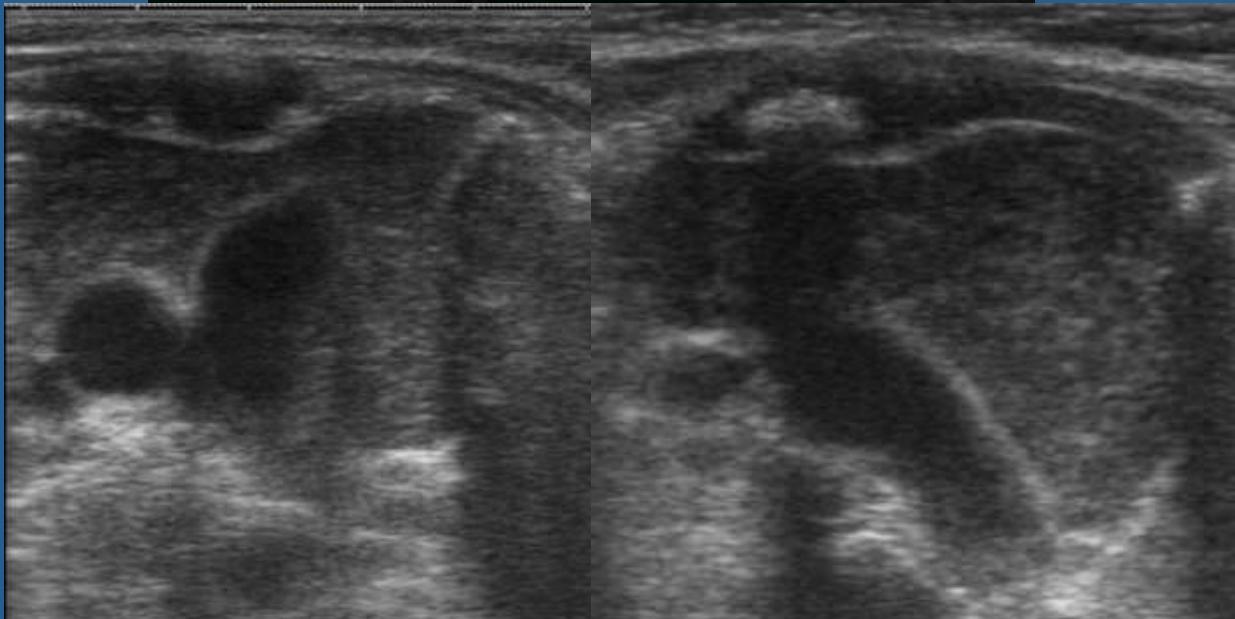
Indications

- I. Pleura
- II. Lung parenchyma
- III. Mediastinum
- IV. Diaphragm
- V. Chest wall

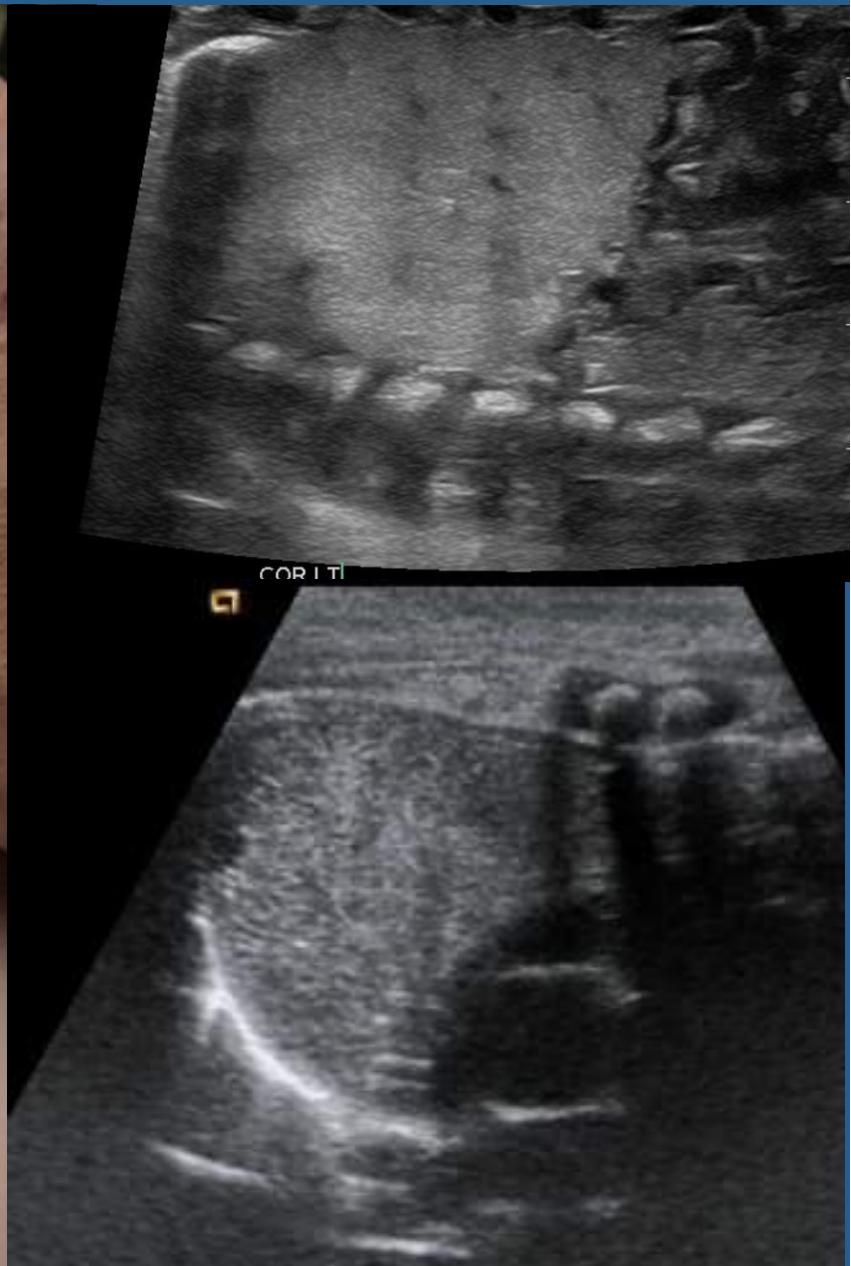
Approach

- I. Supra/trans-sternal
- II. Para-sternal
- III. Intercostal
- IV. Trans-diaphragmatic
 - I. Subxiphoid
 - II. subcostal

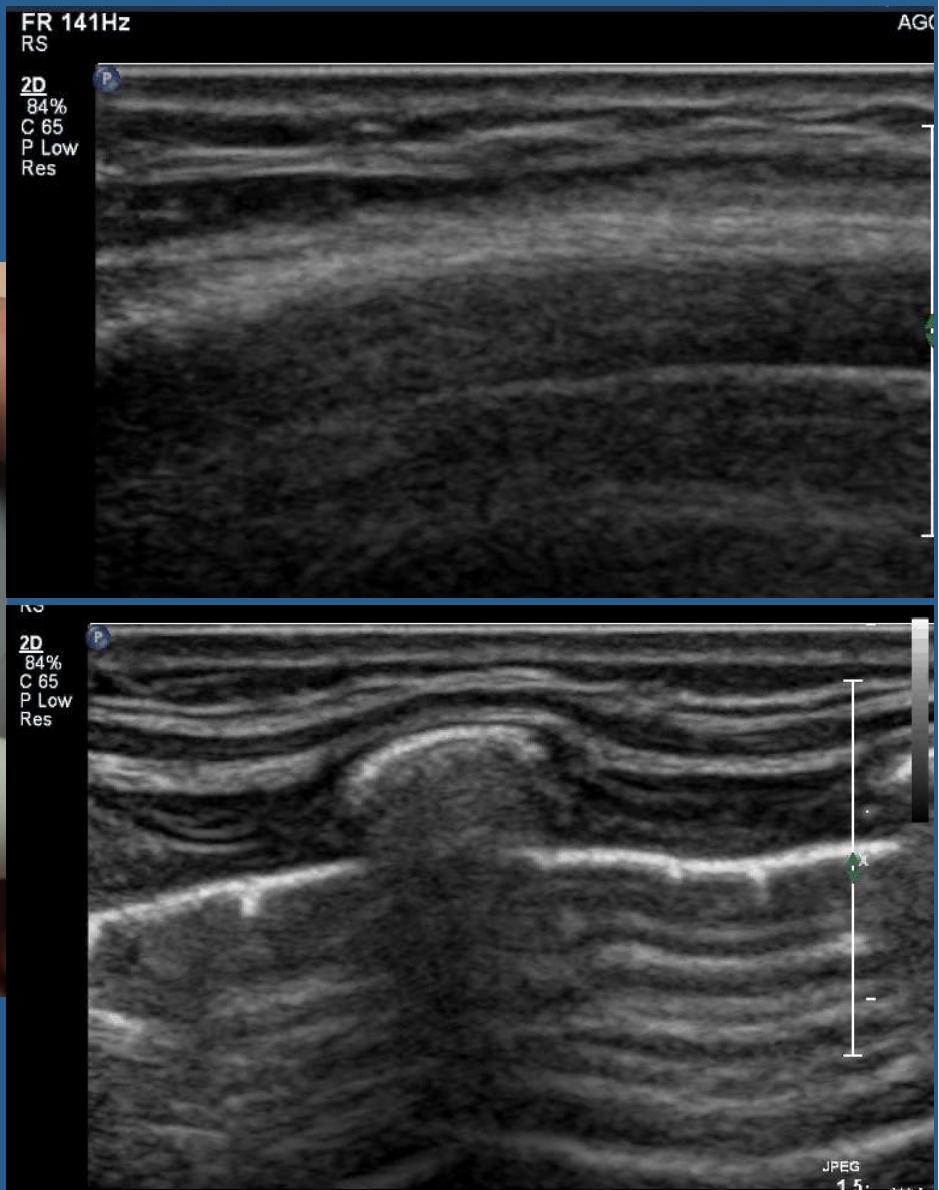
I. Supra/trans-sternal



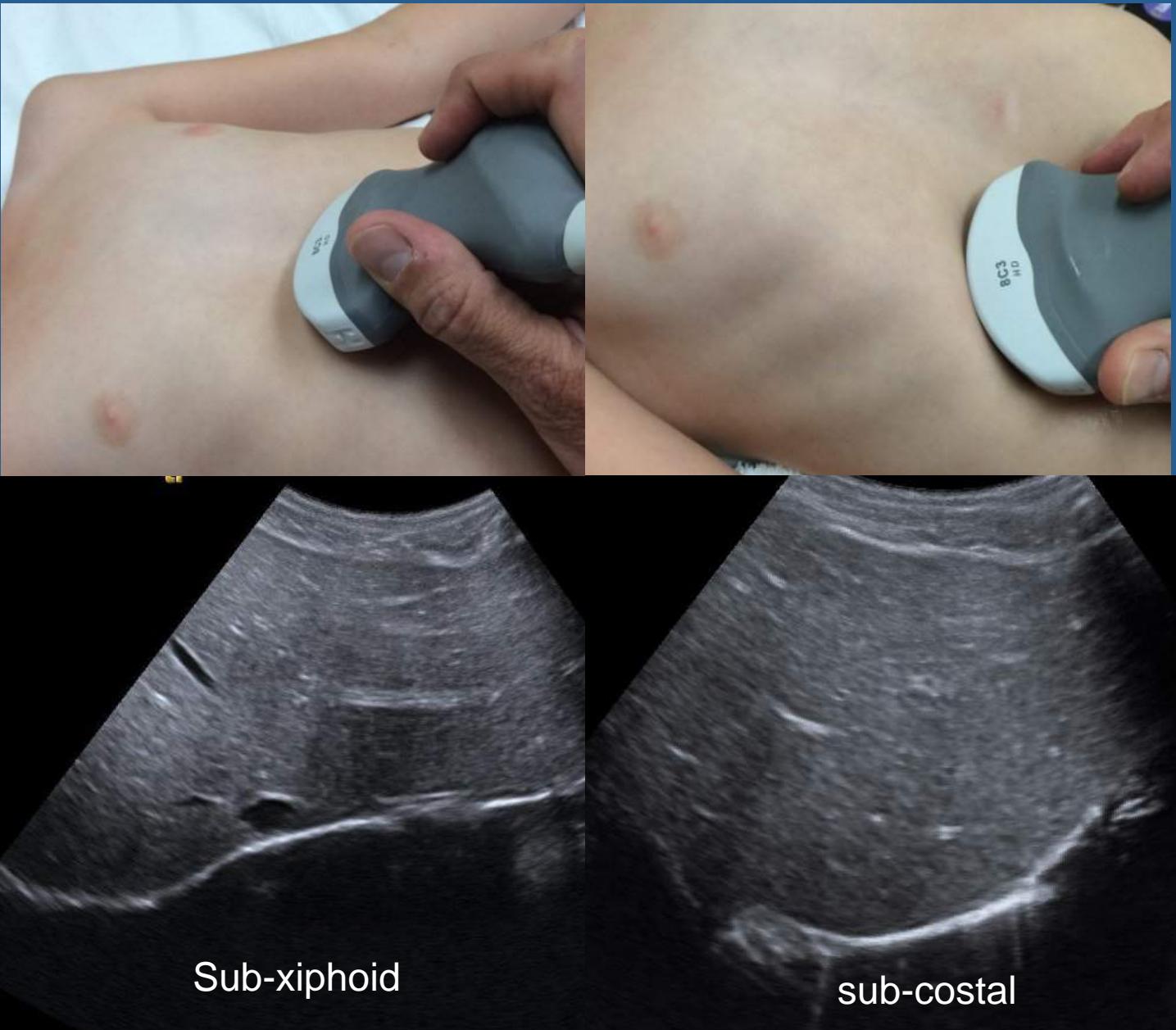
II. Para-sternal



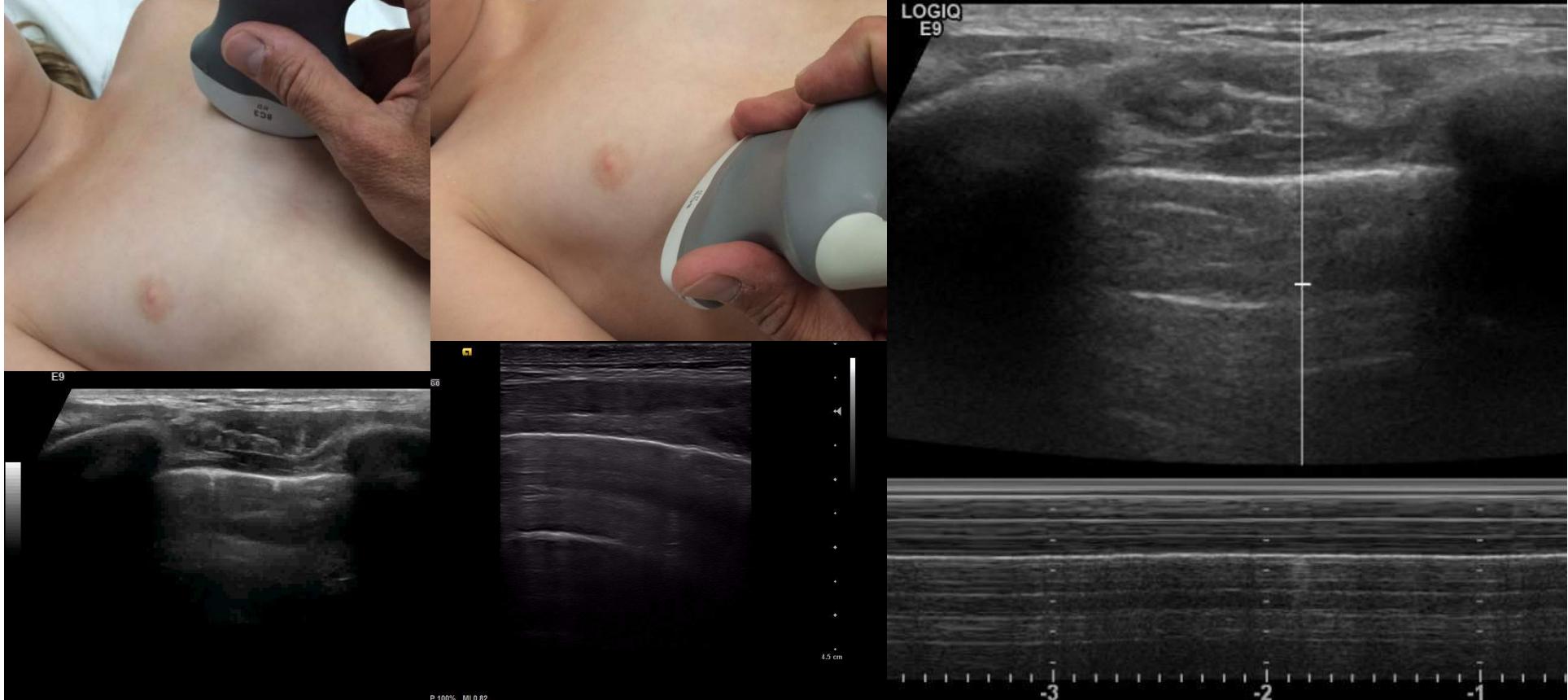
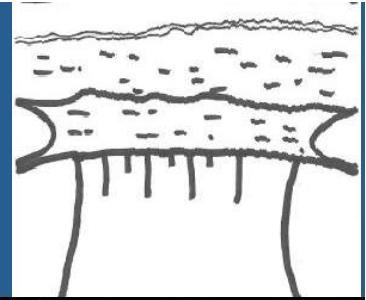
III. Intercostal



IV. Trans diaphragmatic



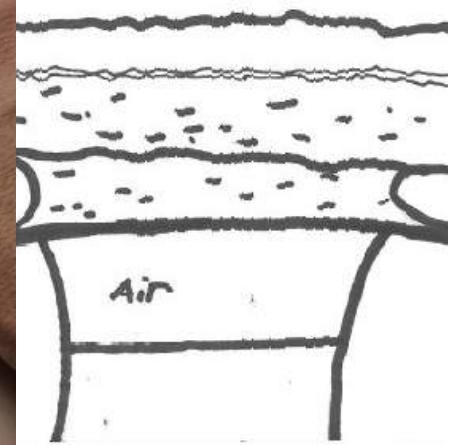
I. Normal Lung and pleura



Sliding pleura/ "ants marching" and comet tails

sand on a beach
Seashore sign

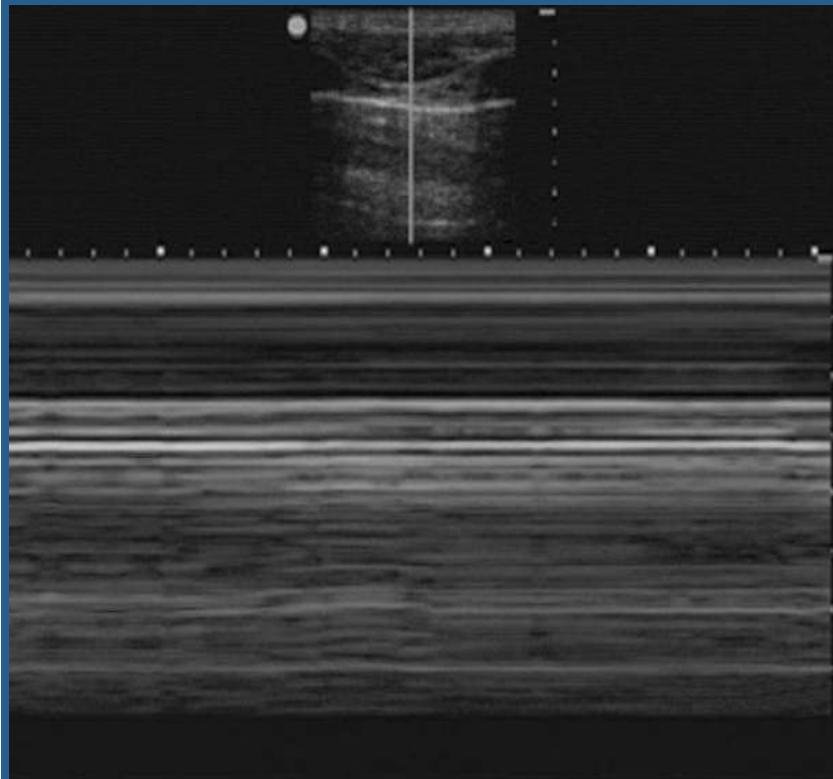
Pneumothorax



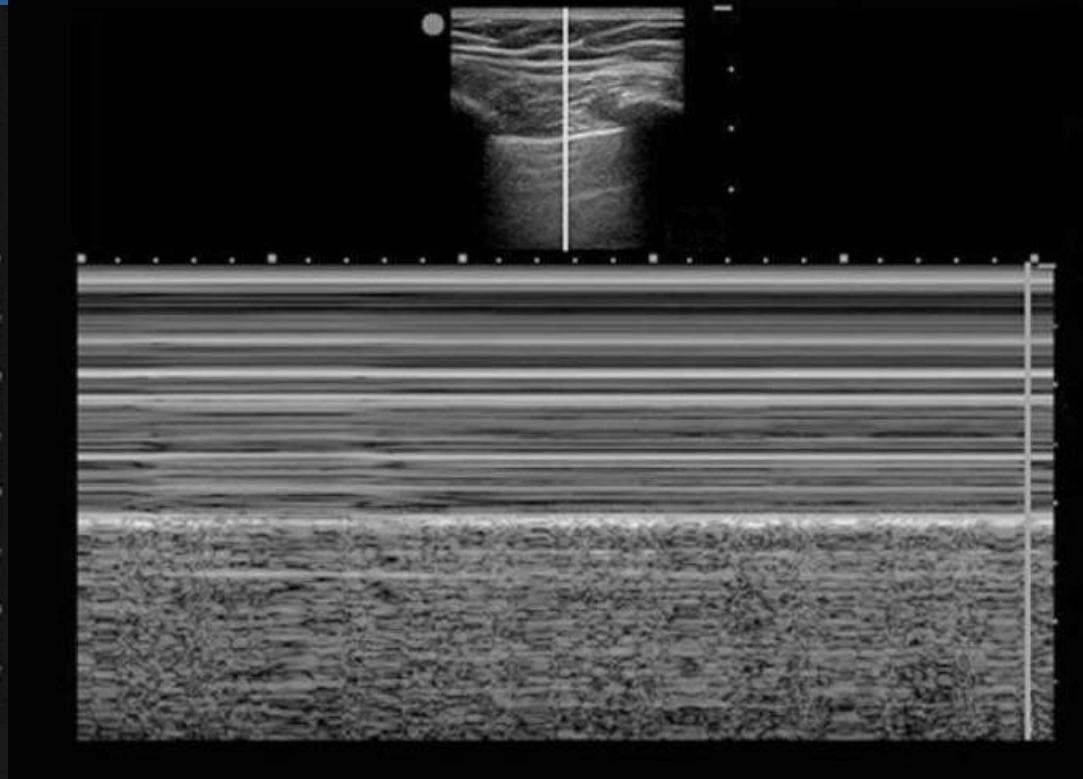
Normal: sliding and comet artifact

Pneumothorax: absent sliding sign
and comet artifacts

Pneumothorax
M mode
continued pattern of horizontal lines
“Stratosphere sign”

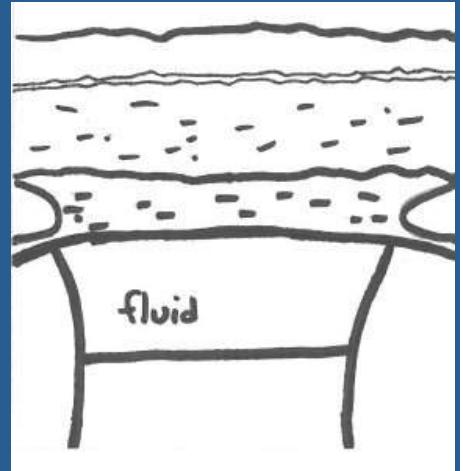


PTX: “Stratosphere or barcode sign”

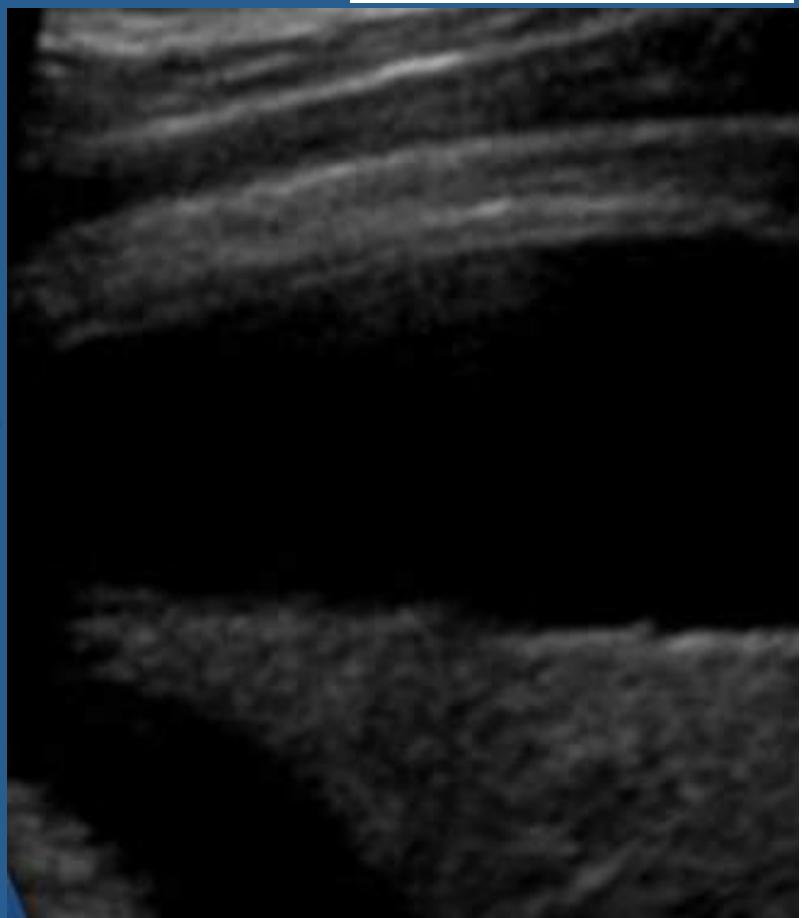


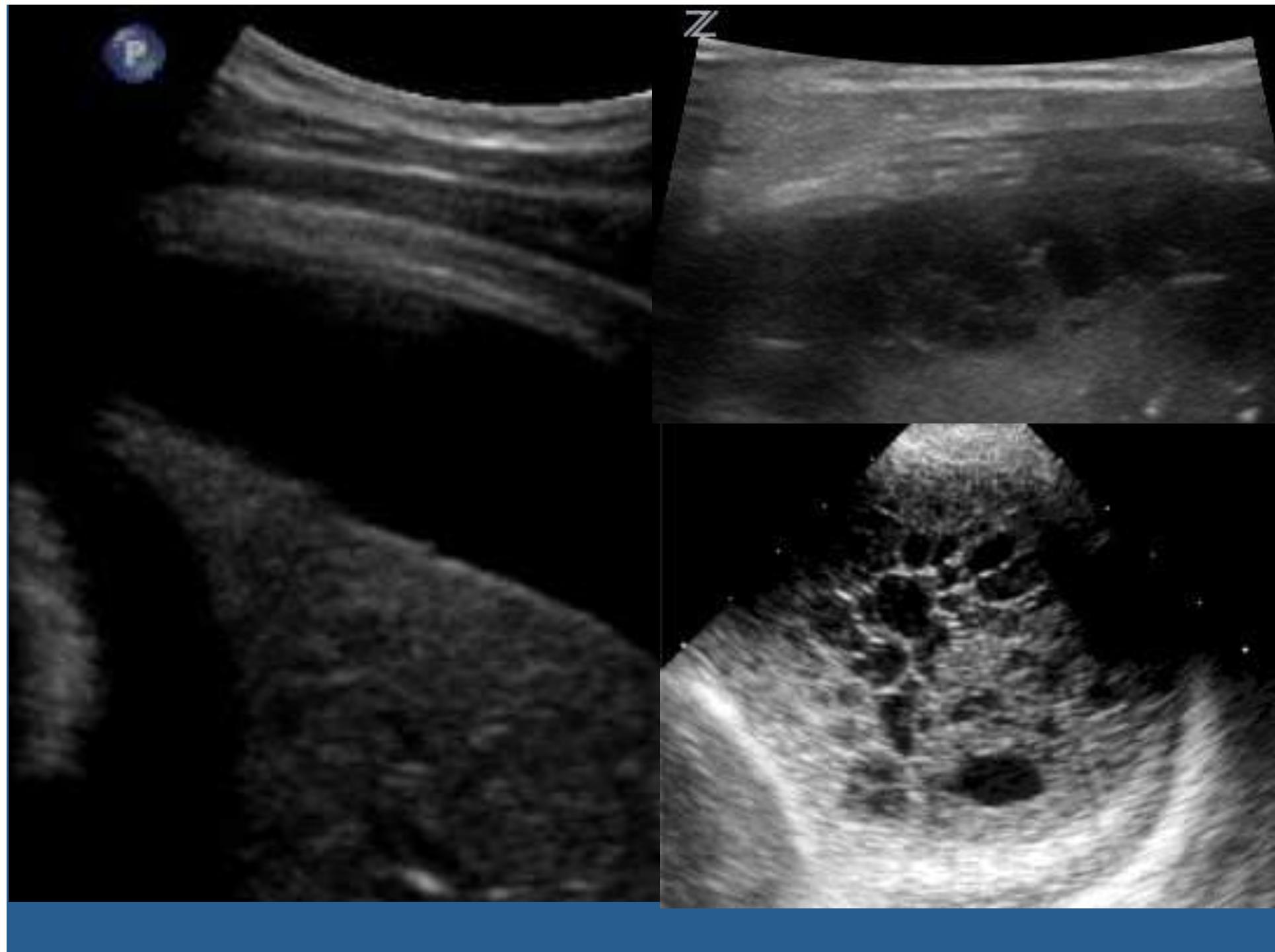
Normal: sand on a beach/*Seashore sign*

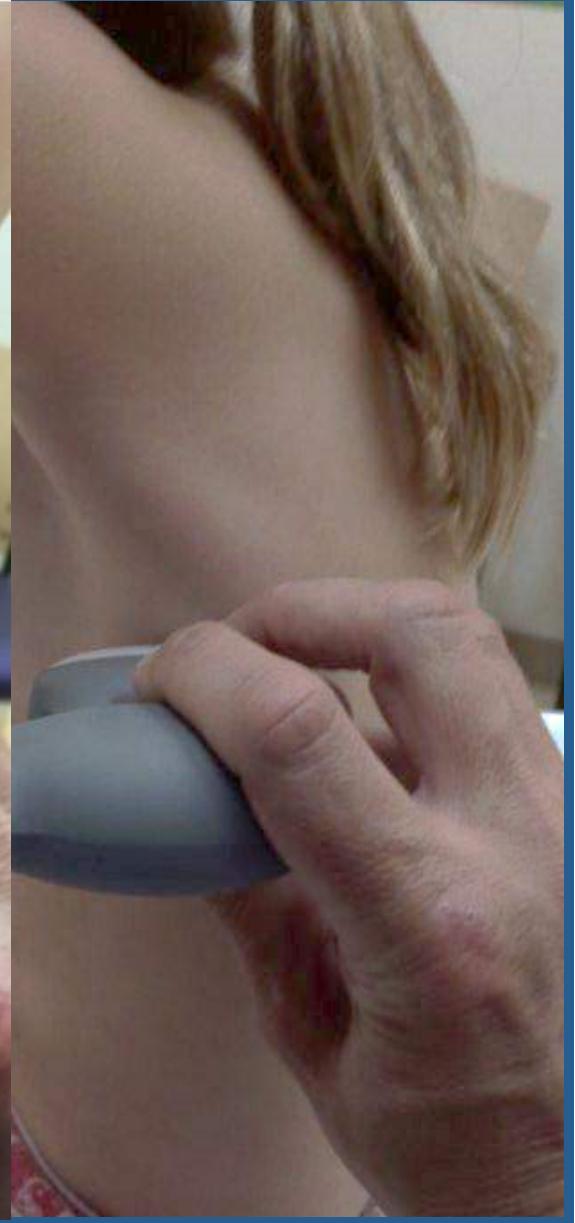
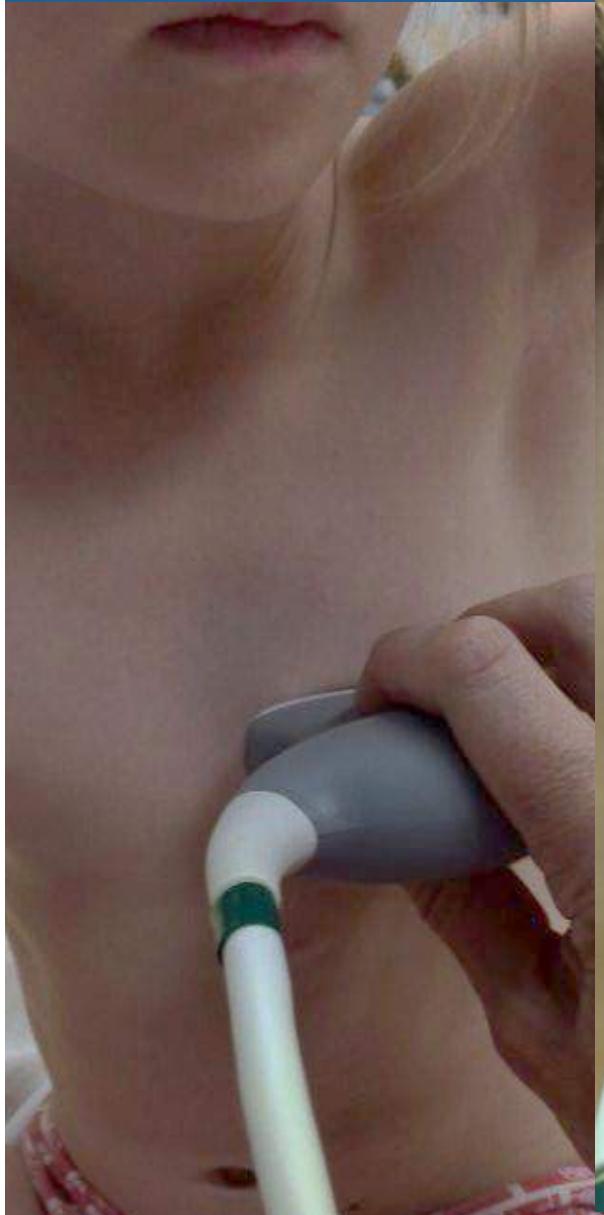
Pleural effusion

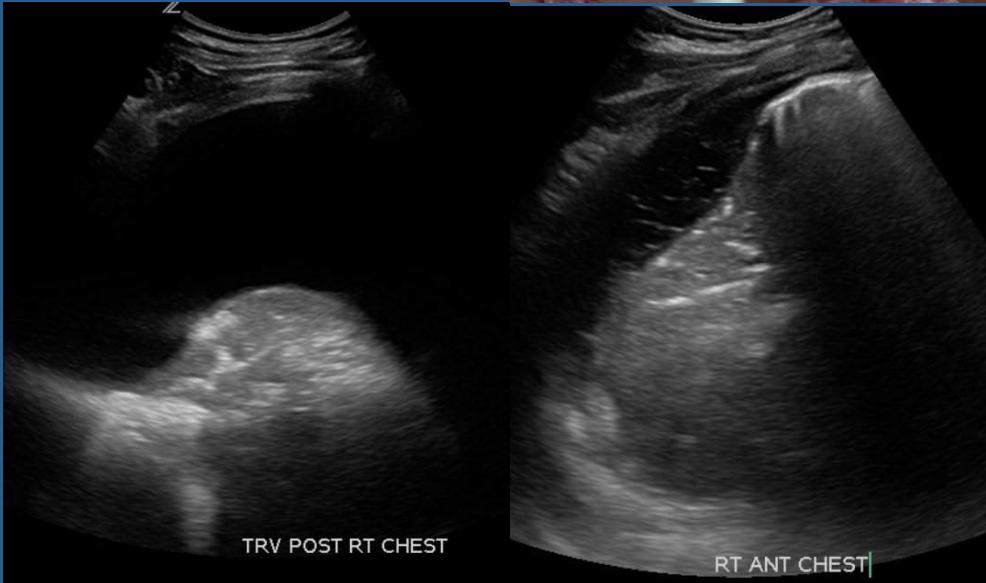
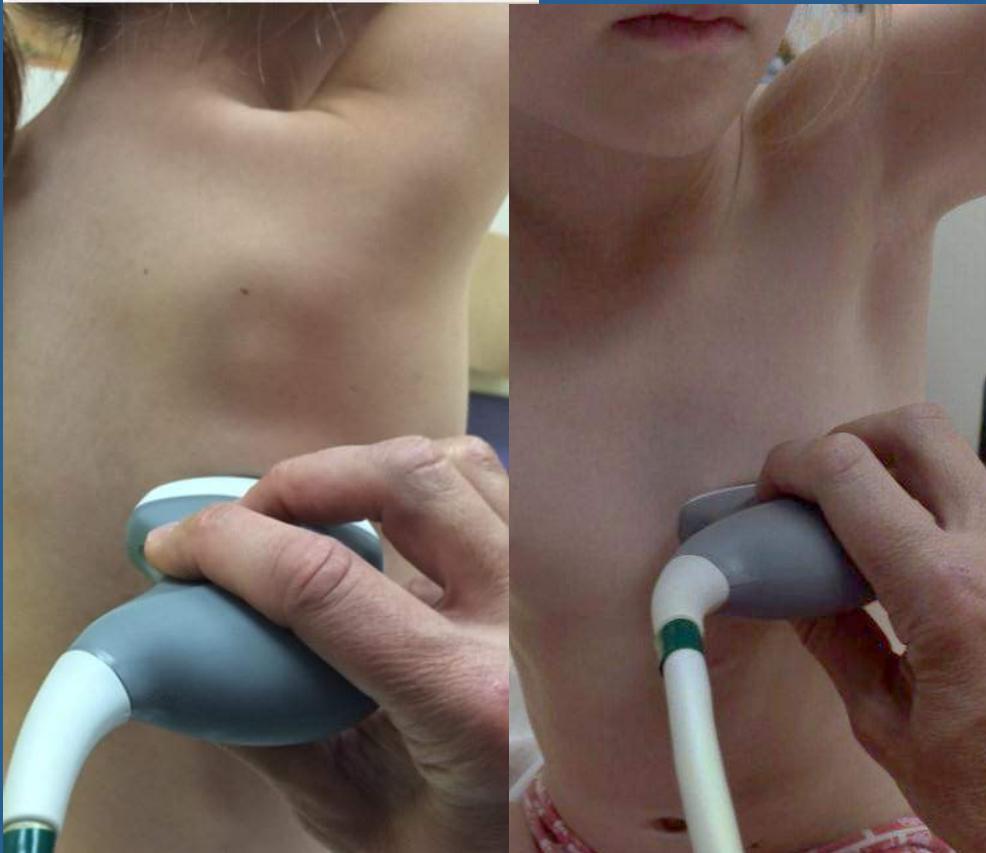


- Detection
- Characterization
- Thoracocentesis guidance



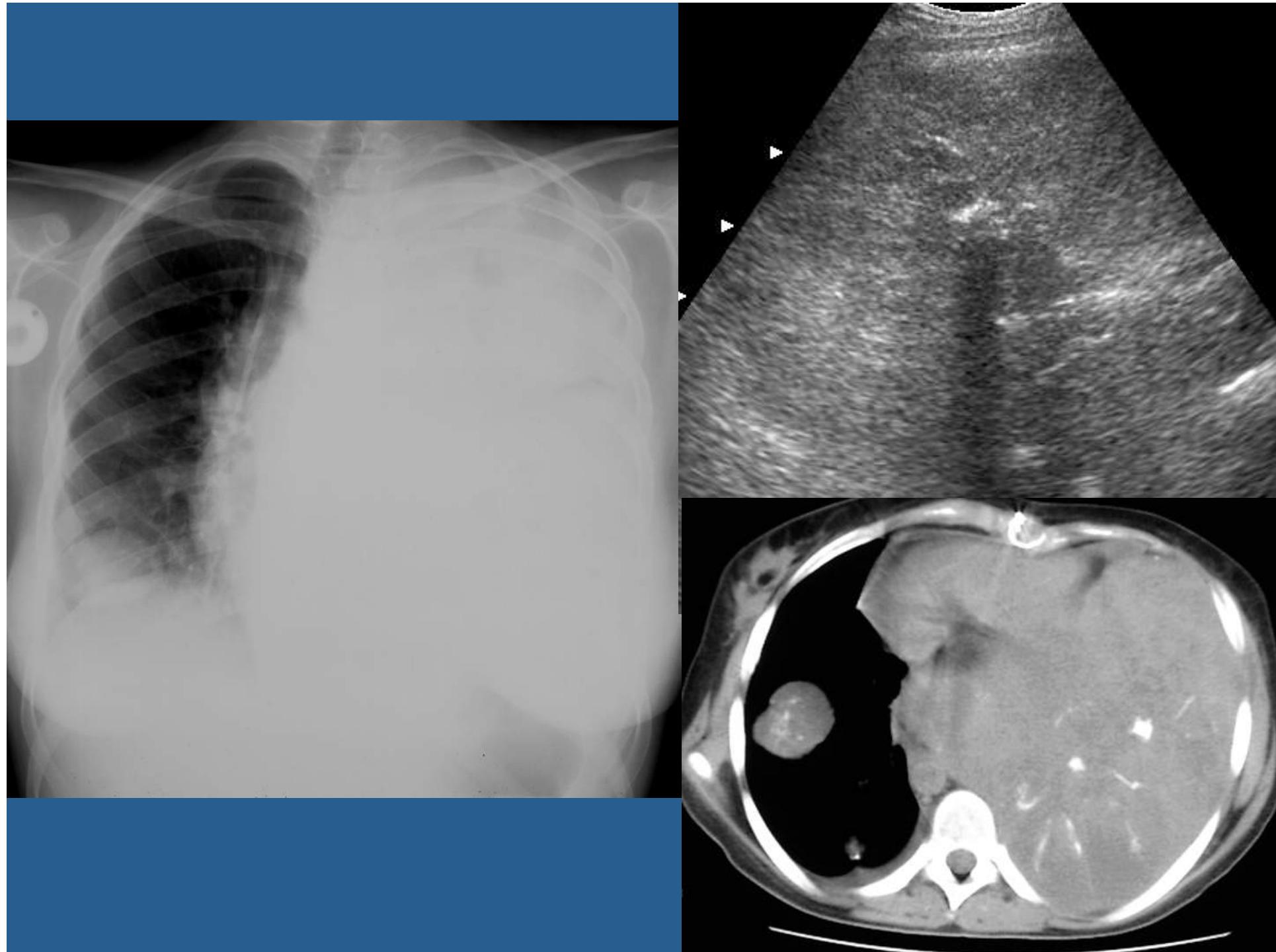


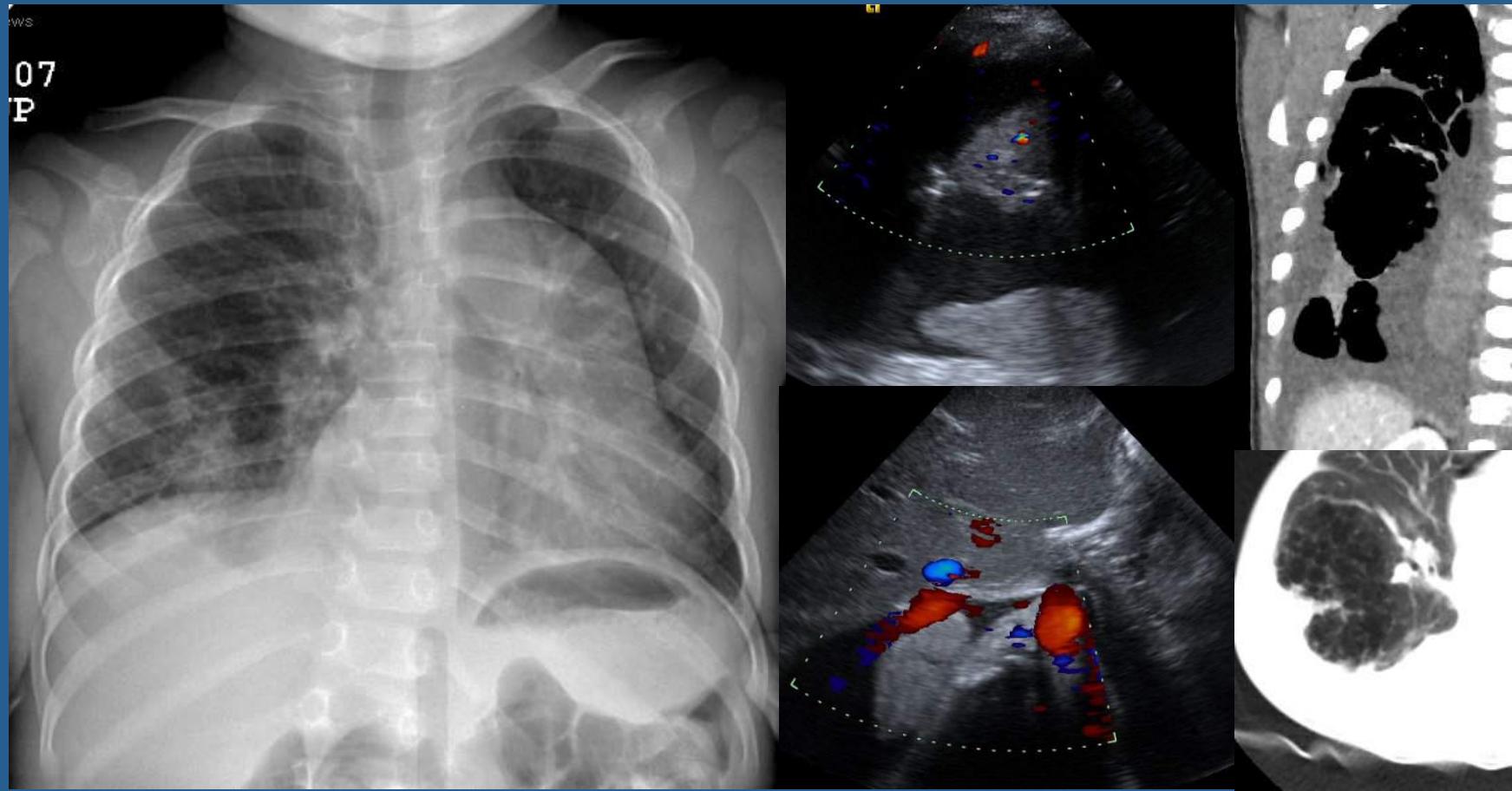




Pleural masses

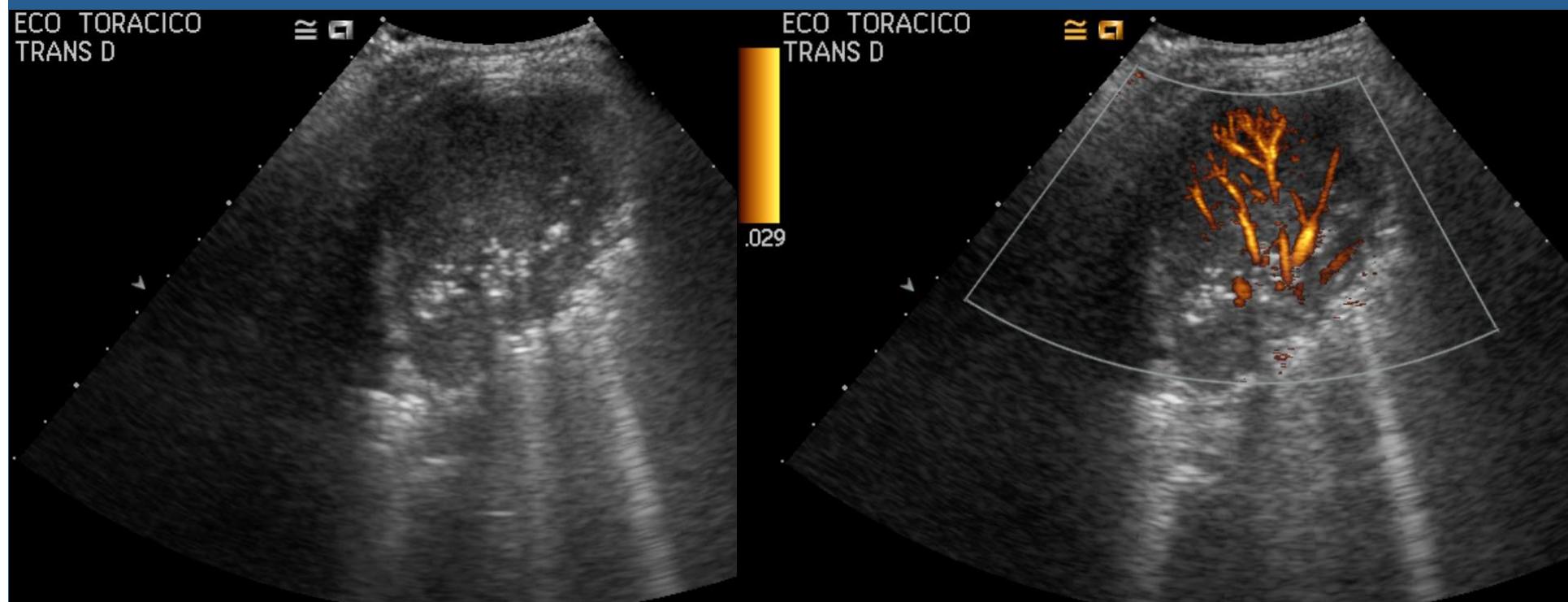


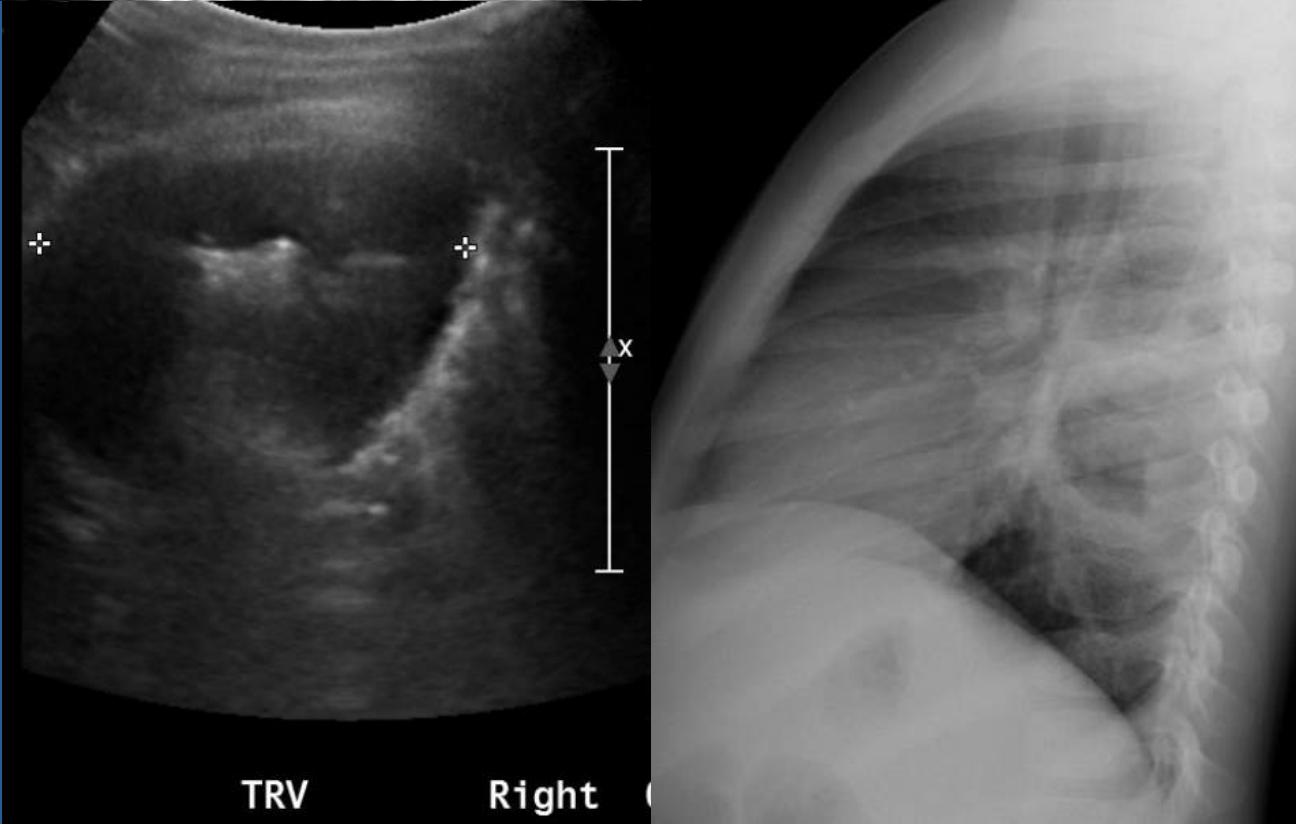
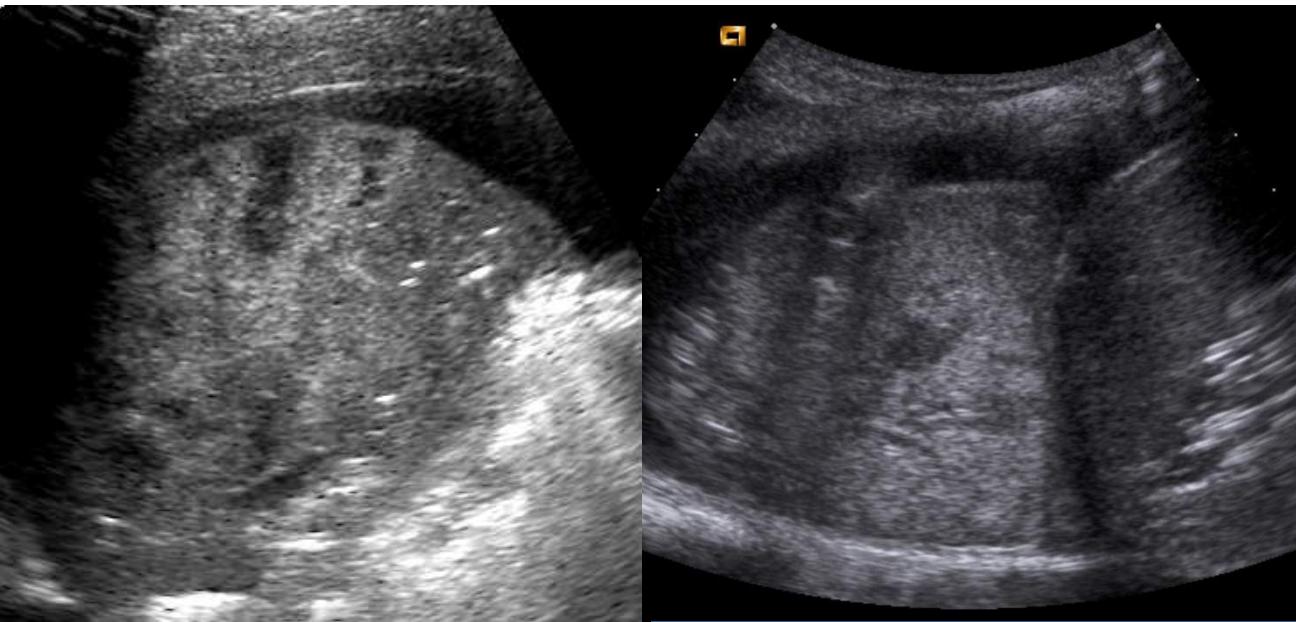


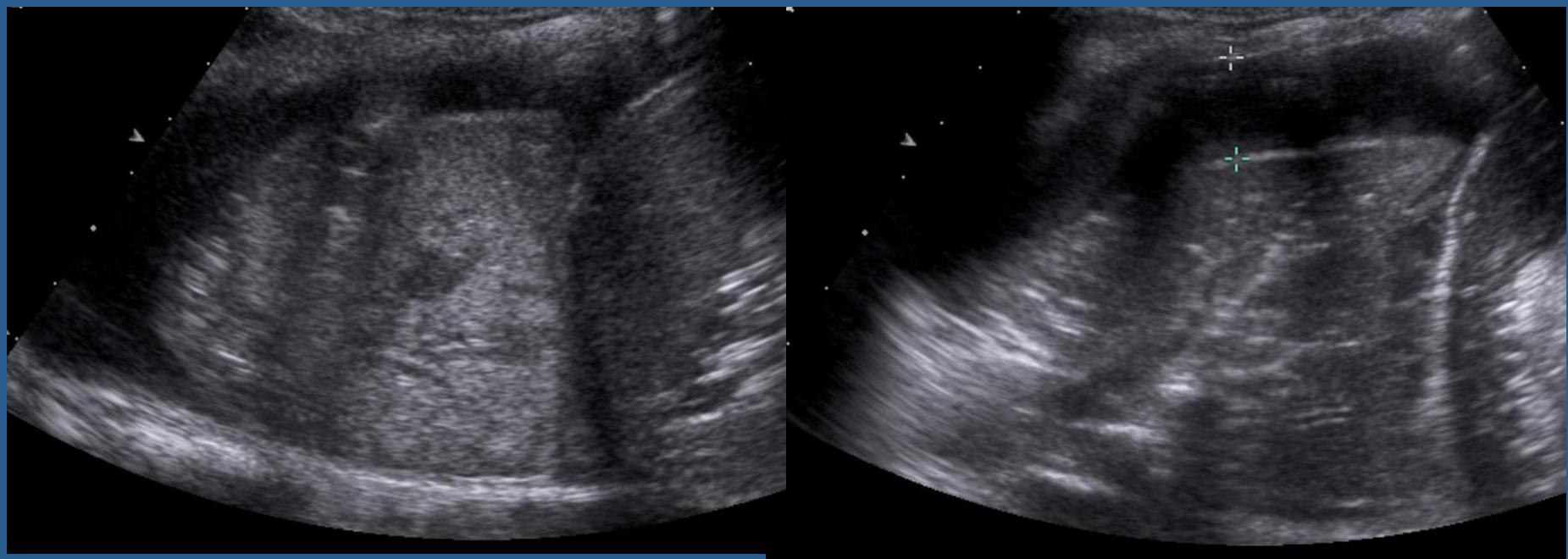


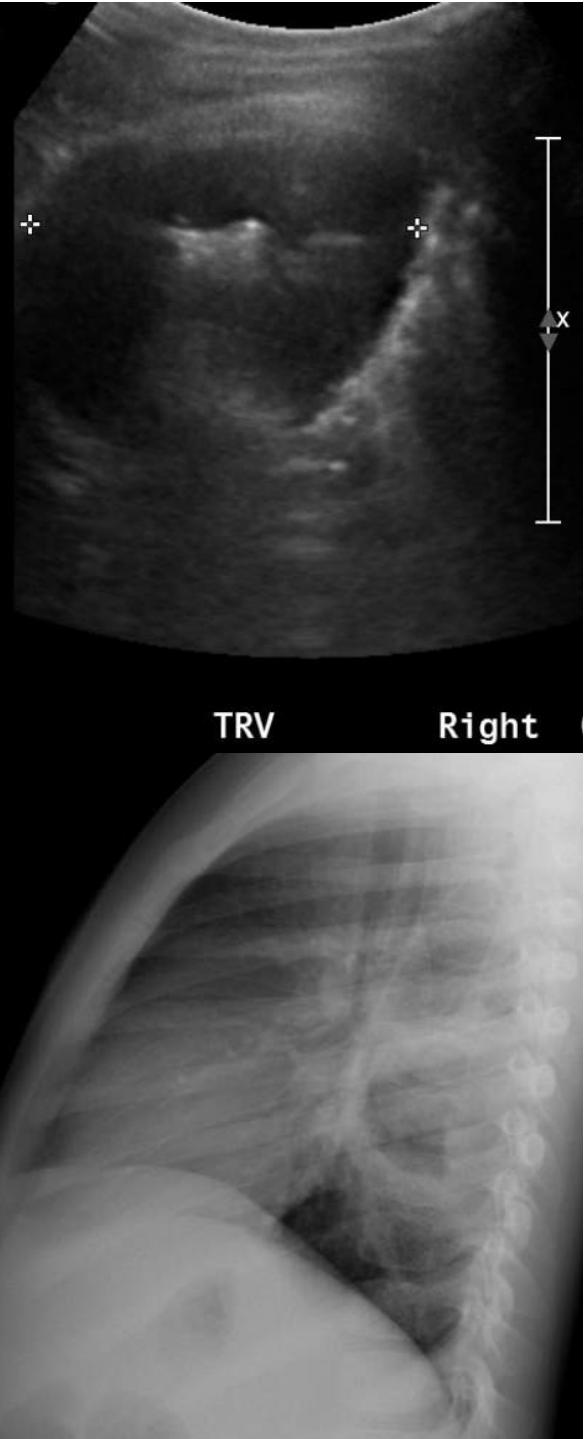
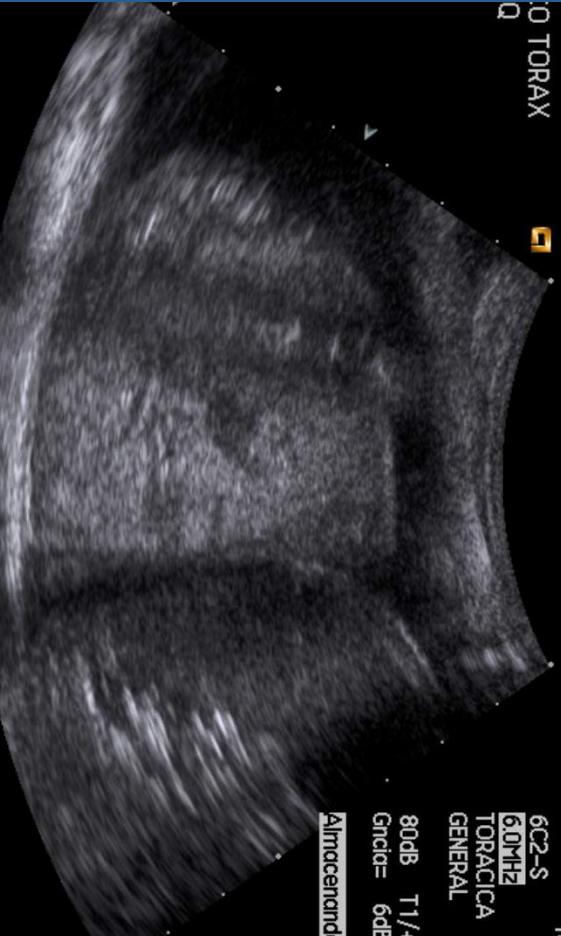
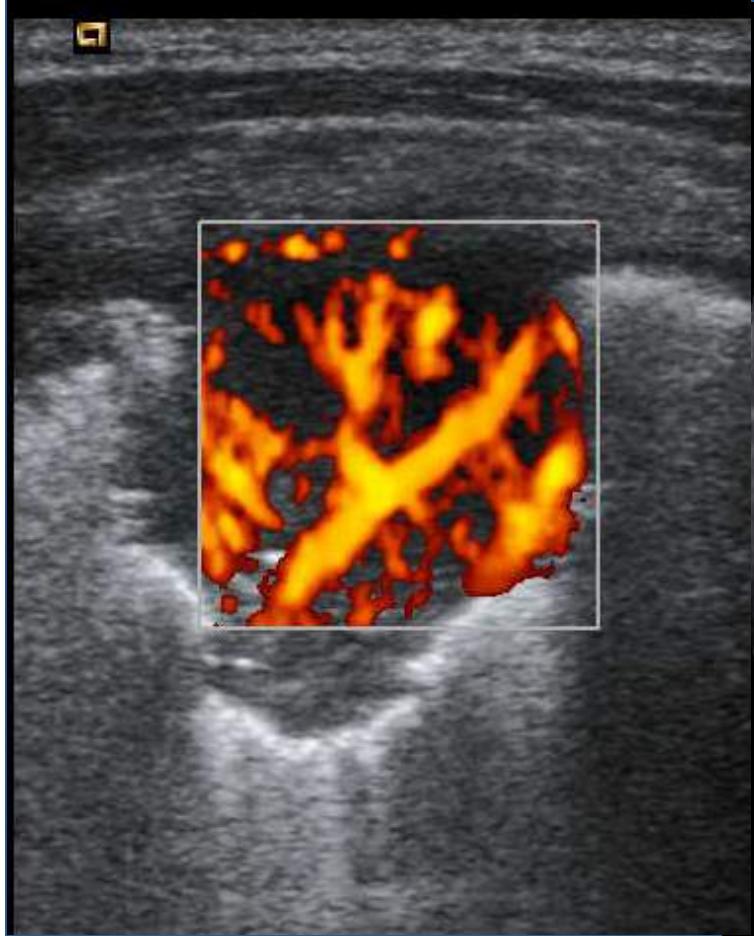
Lung pathology

- pneumonia/atelectasis
- Masses



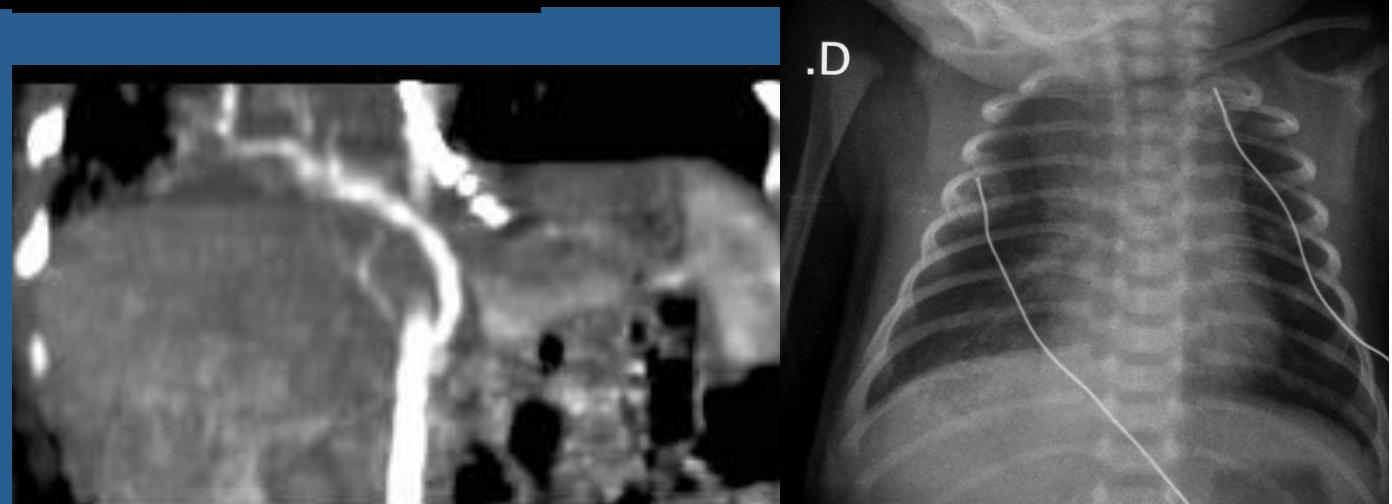


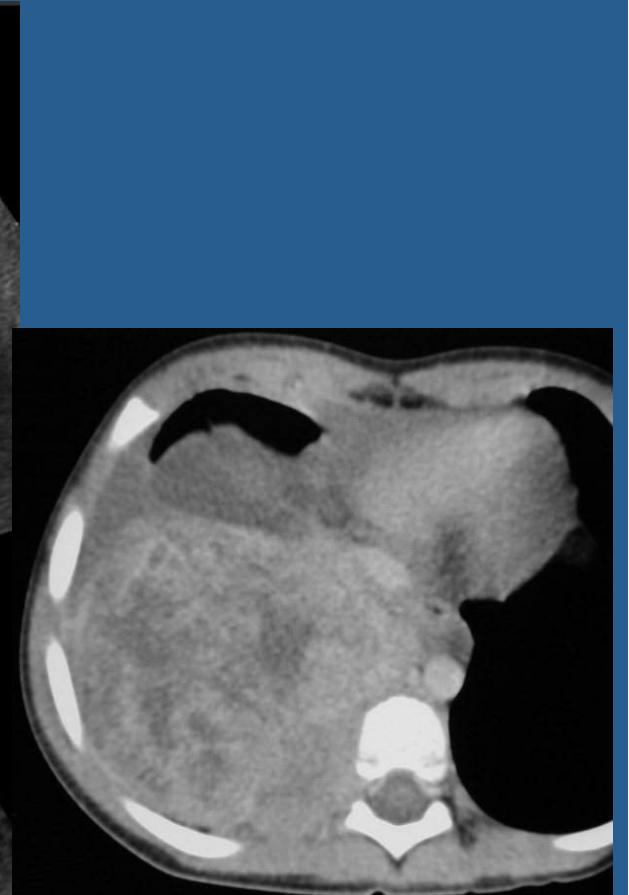
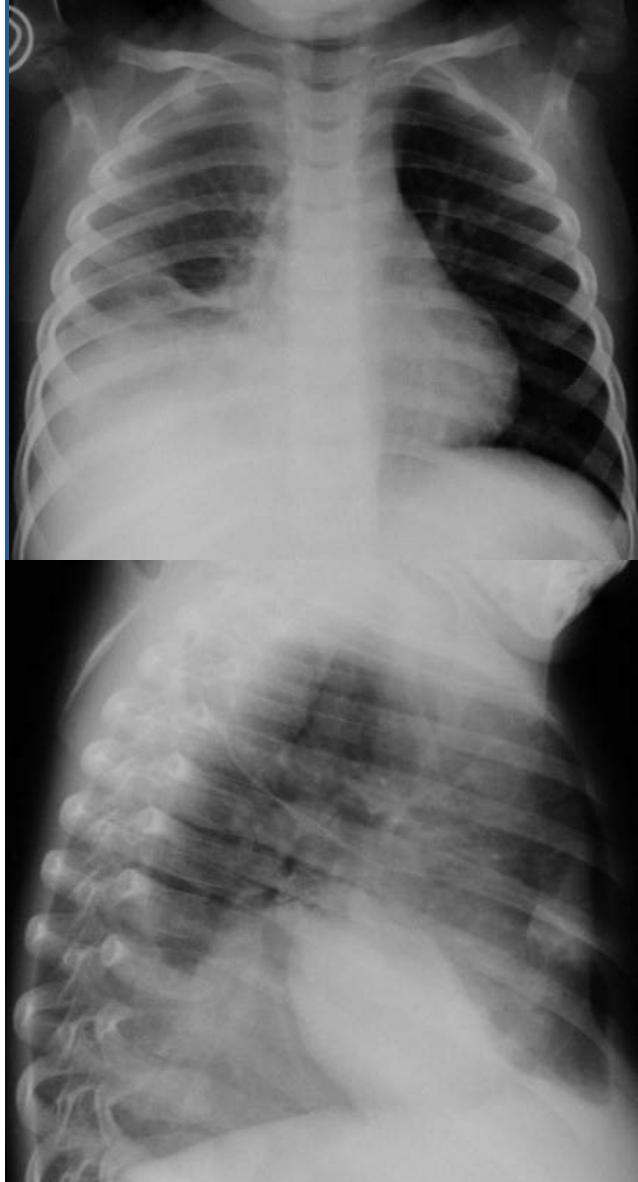




Lung masses

- Sequestration: Lung mass with systemic feeding vessel

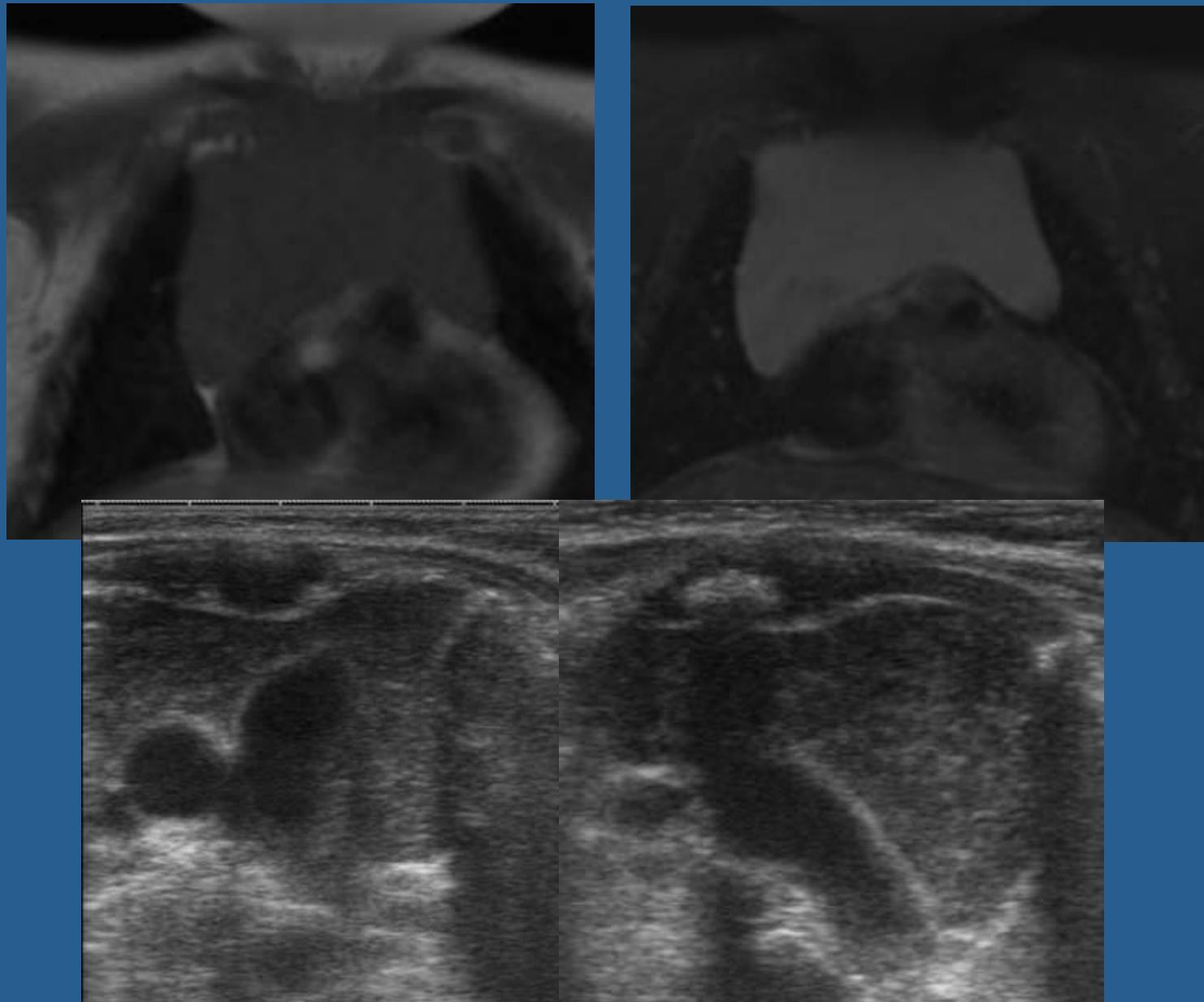




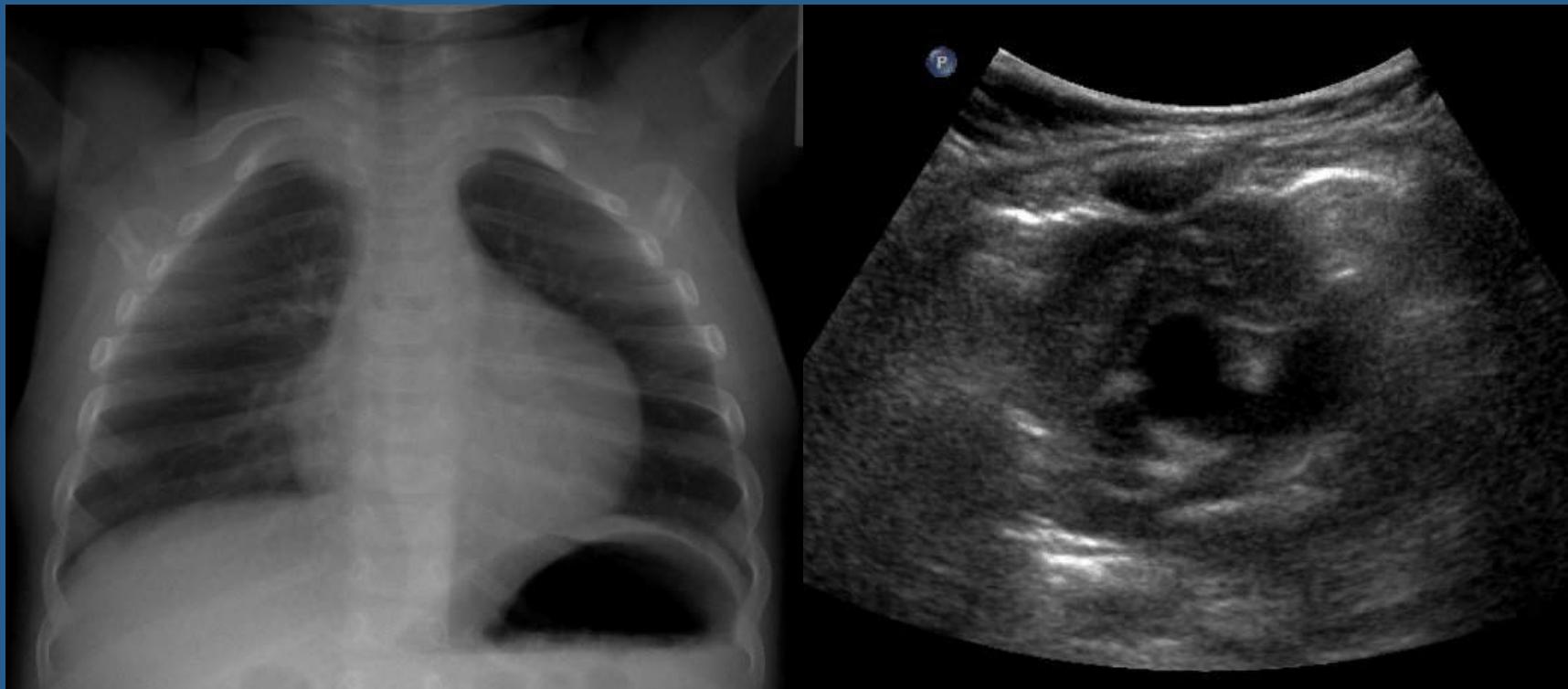
Mediastinal U/S:

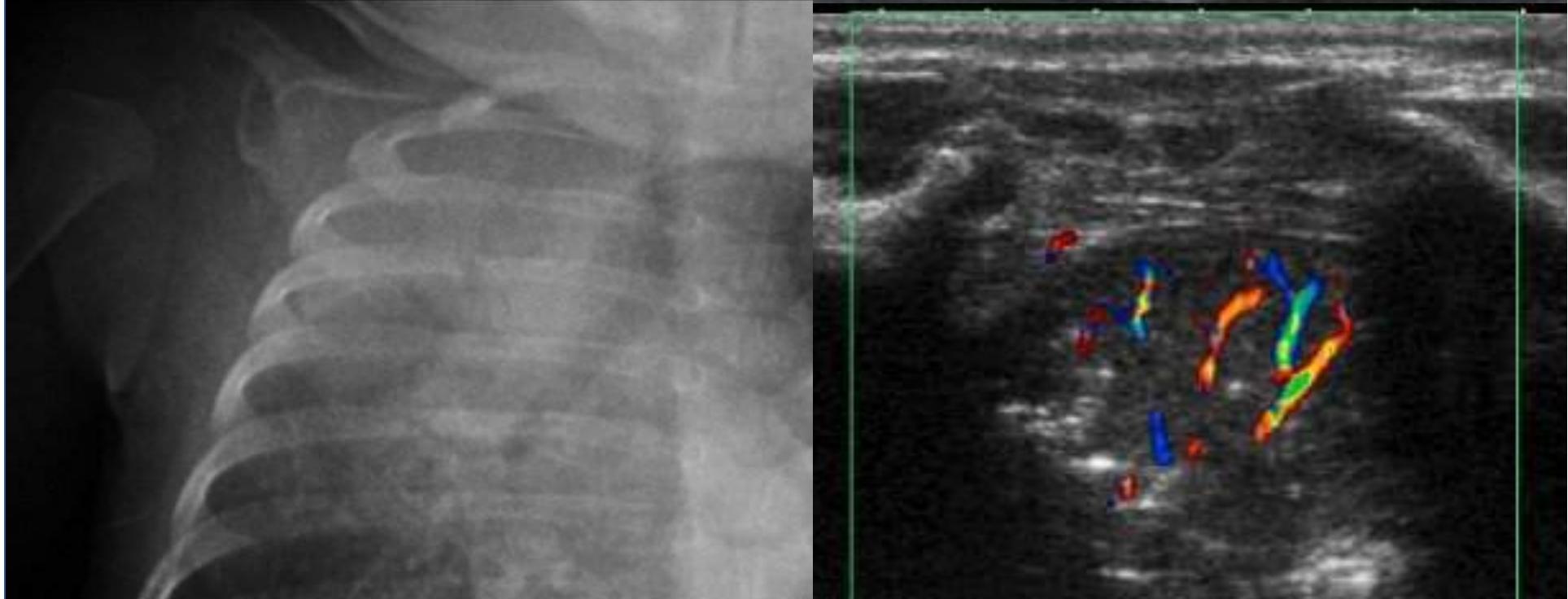
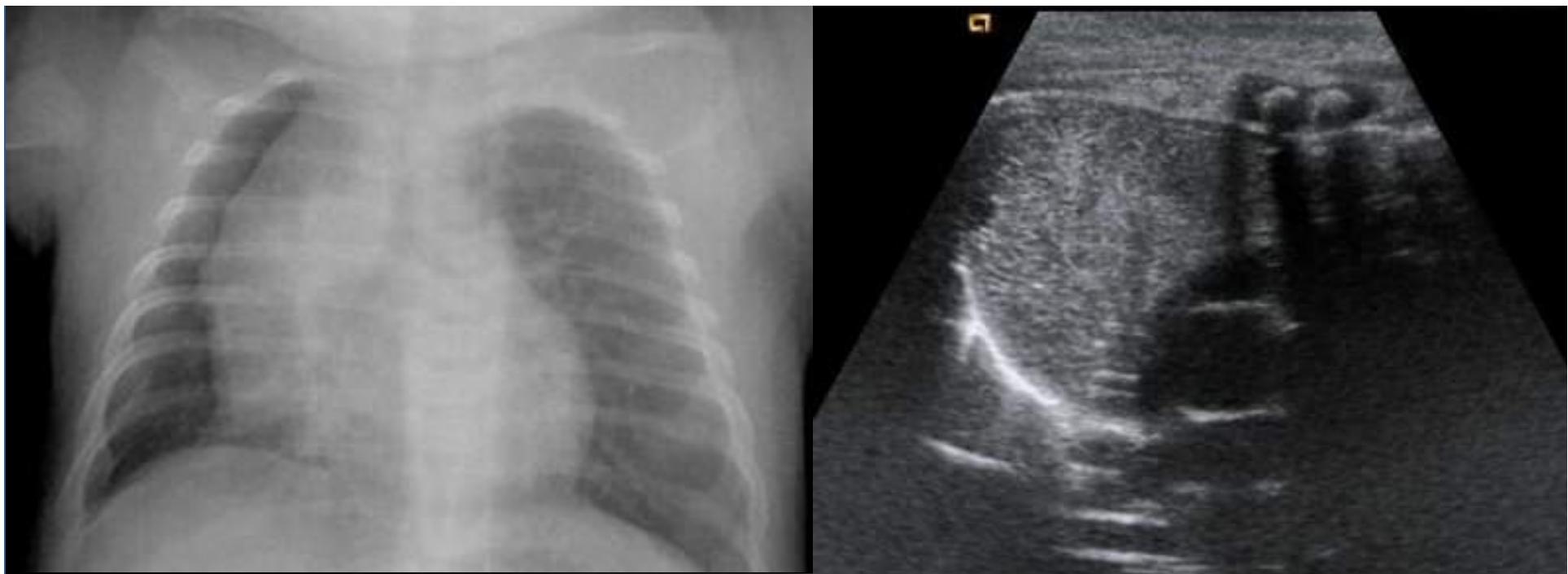
- Thymus
 - Presence
 - Cervical extension
 - Differentiation between atelectasis/ thymus/ mass
- Characterization of masses

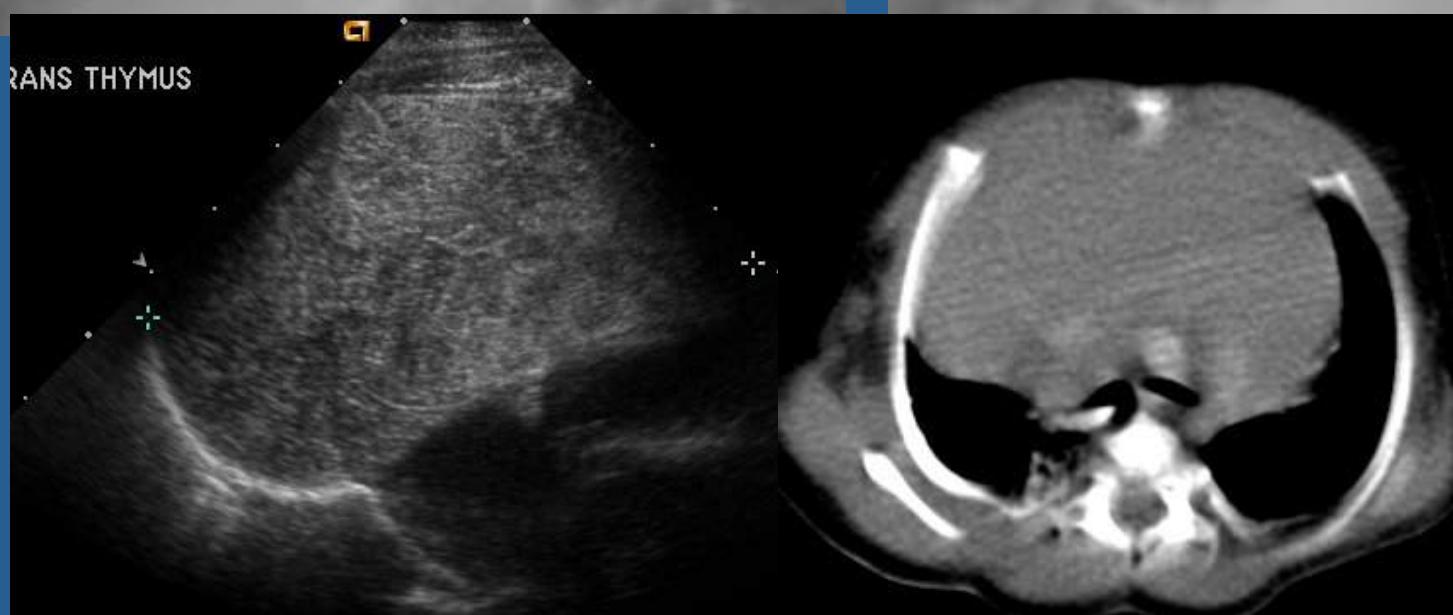
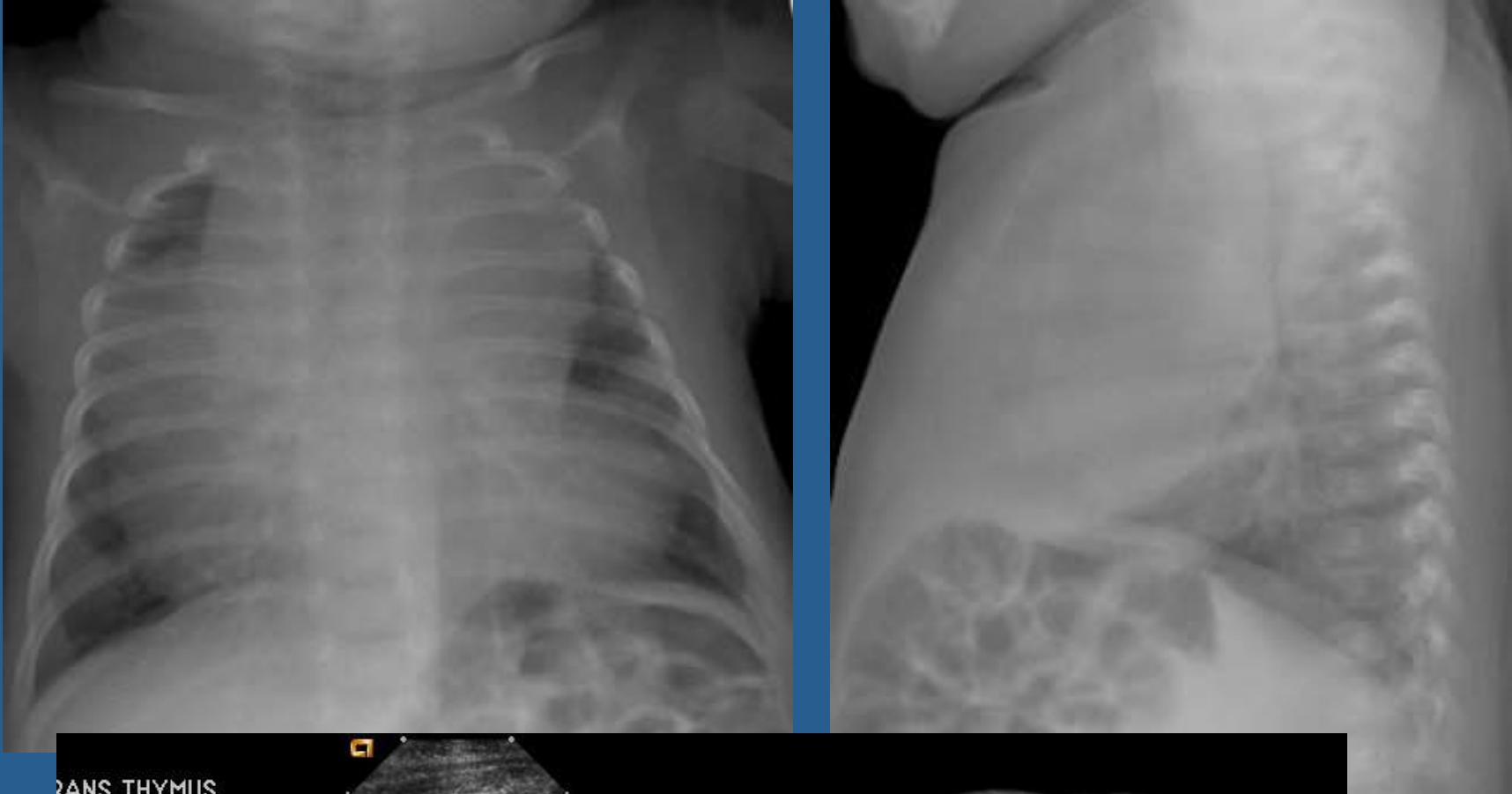
Thymus

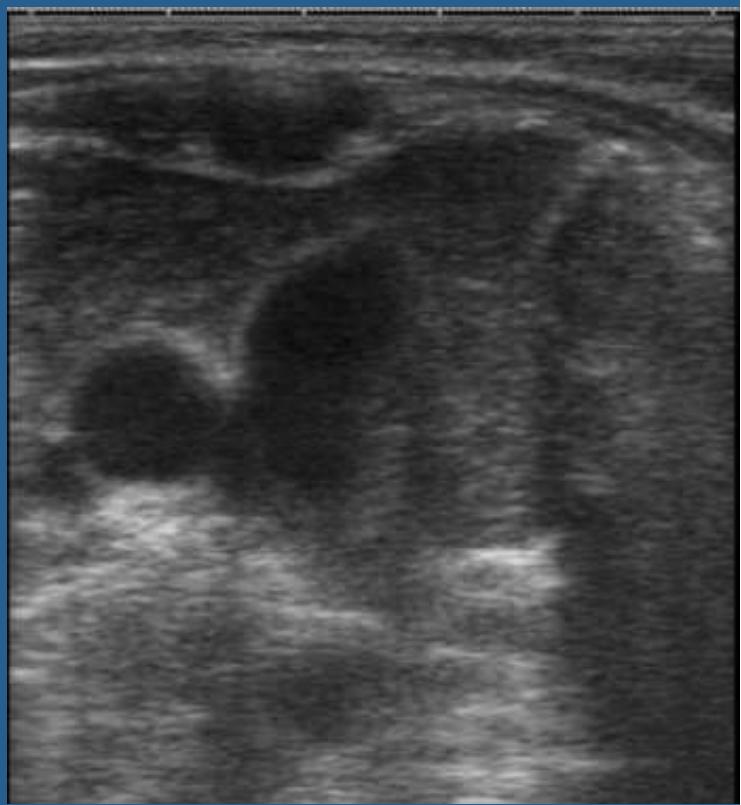


Question absent thymus on CXR

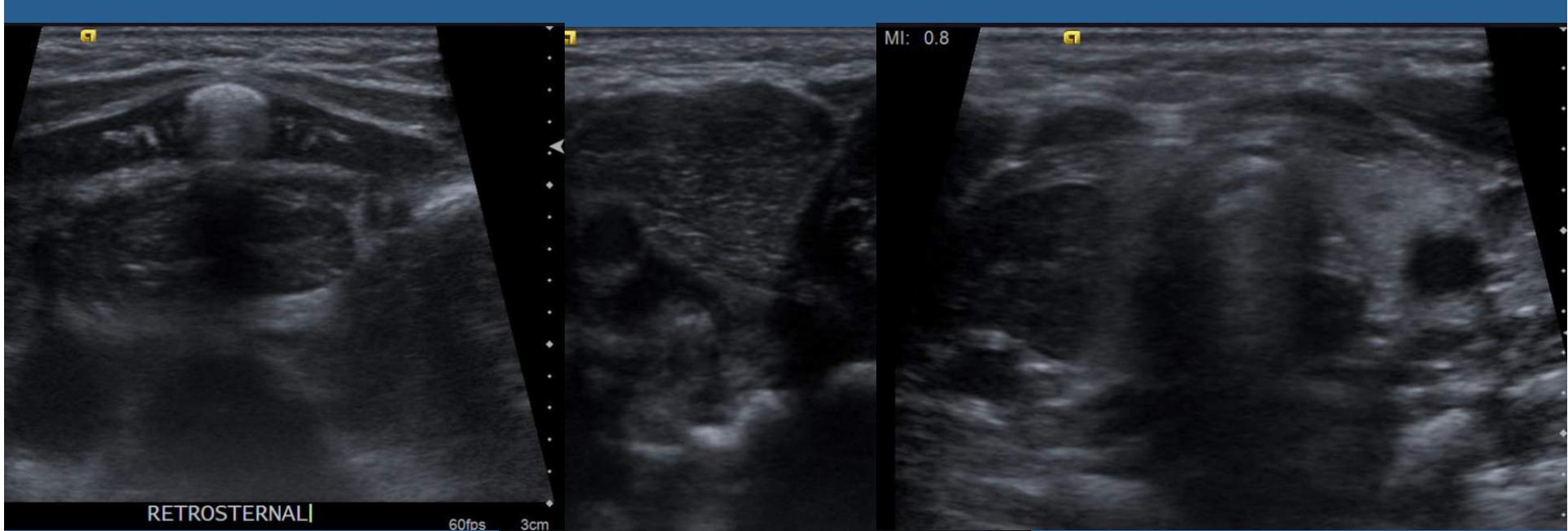


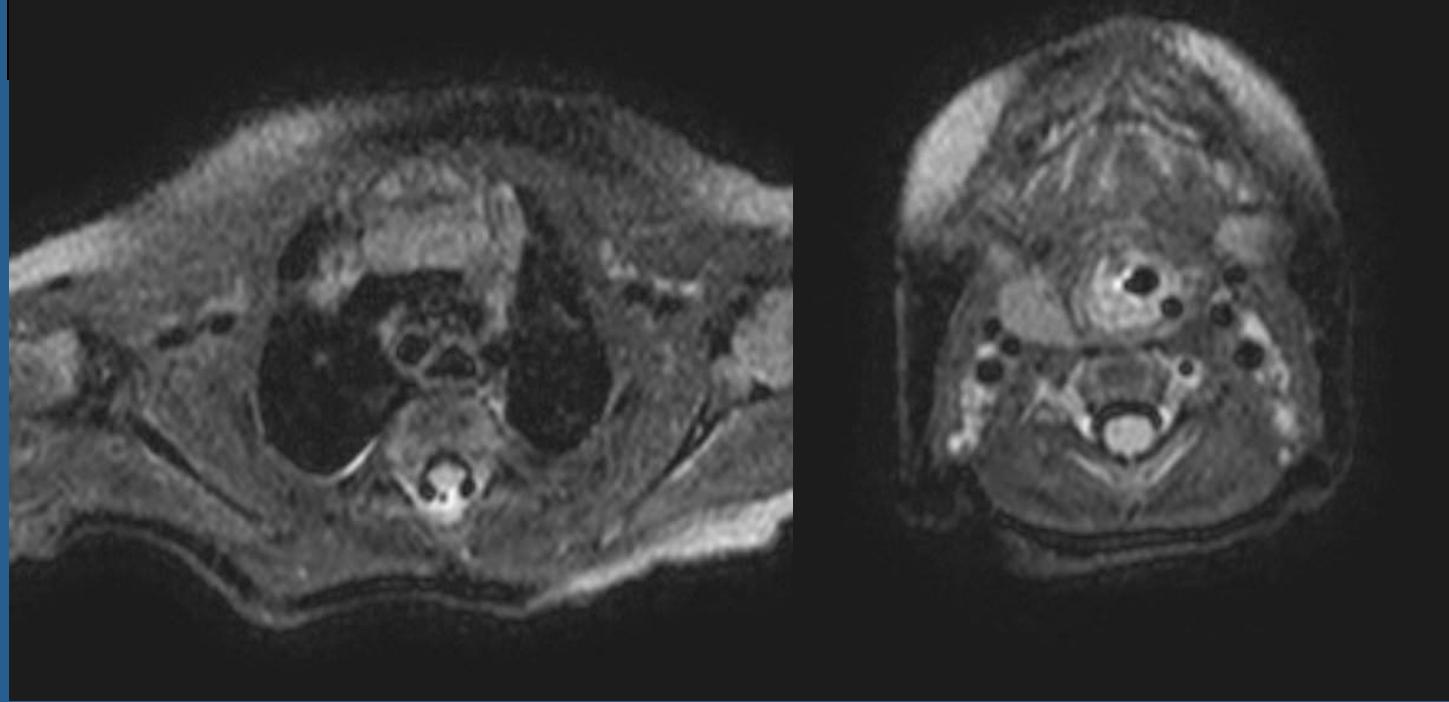
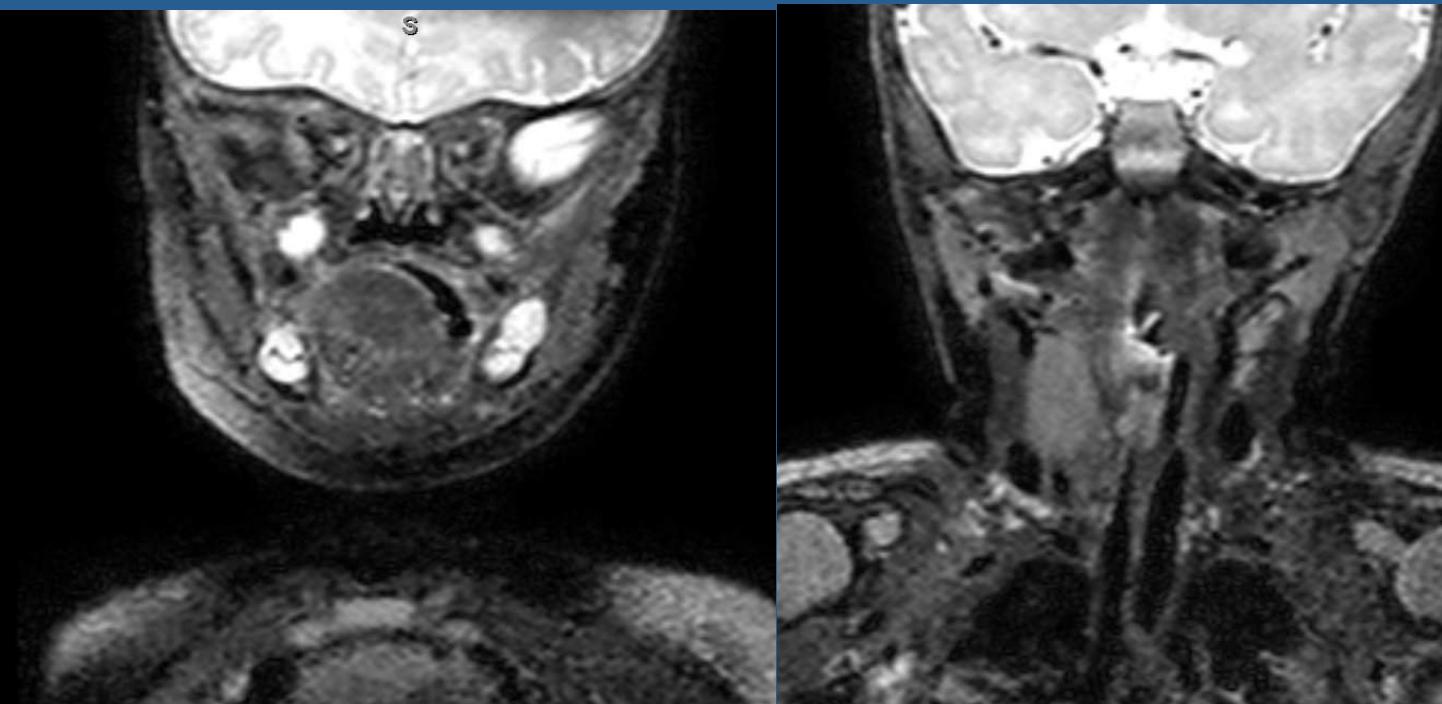


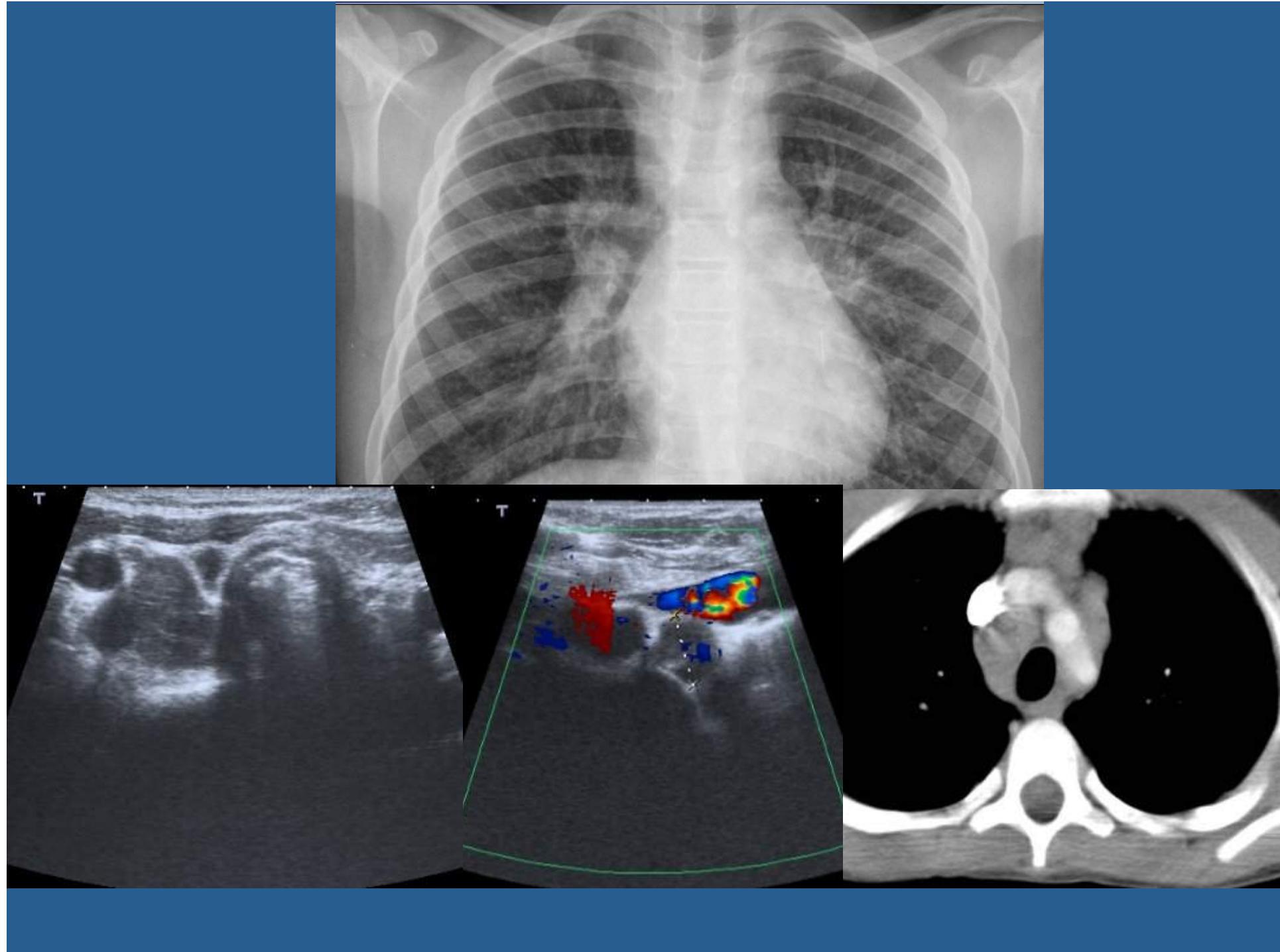


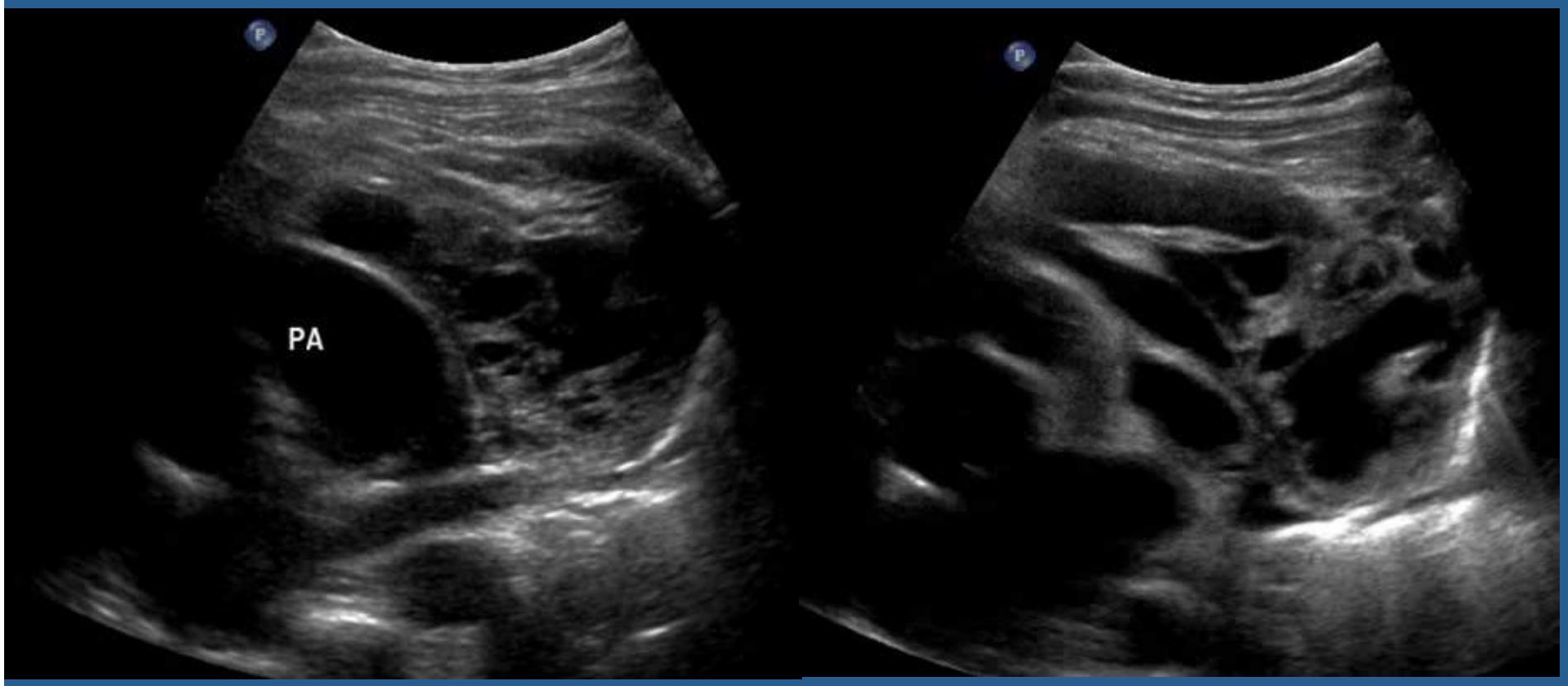




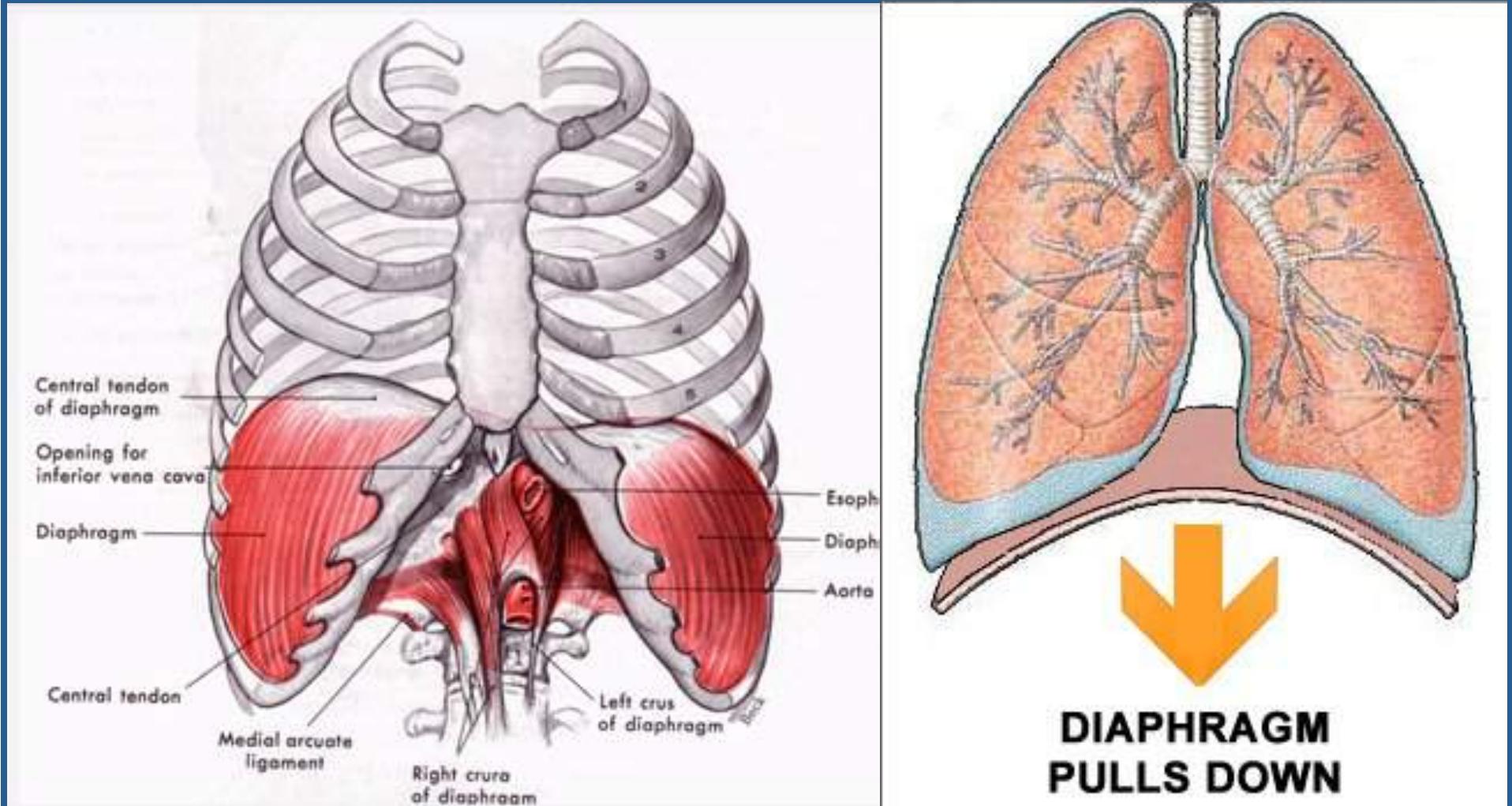




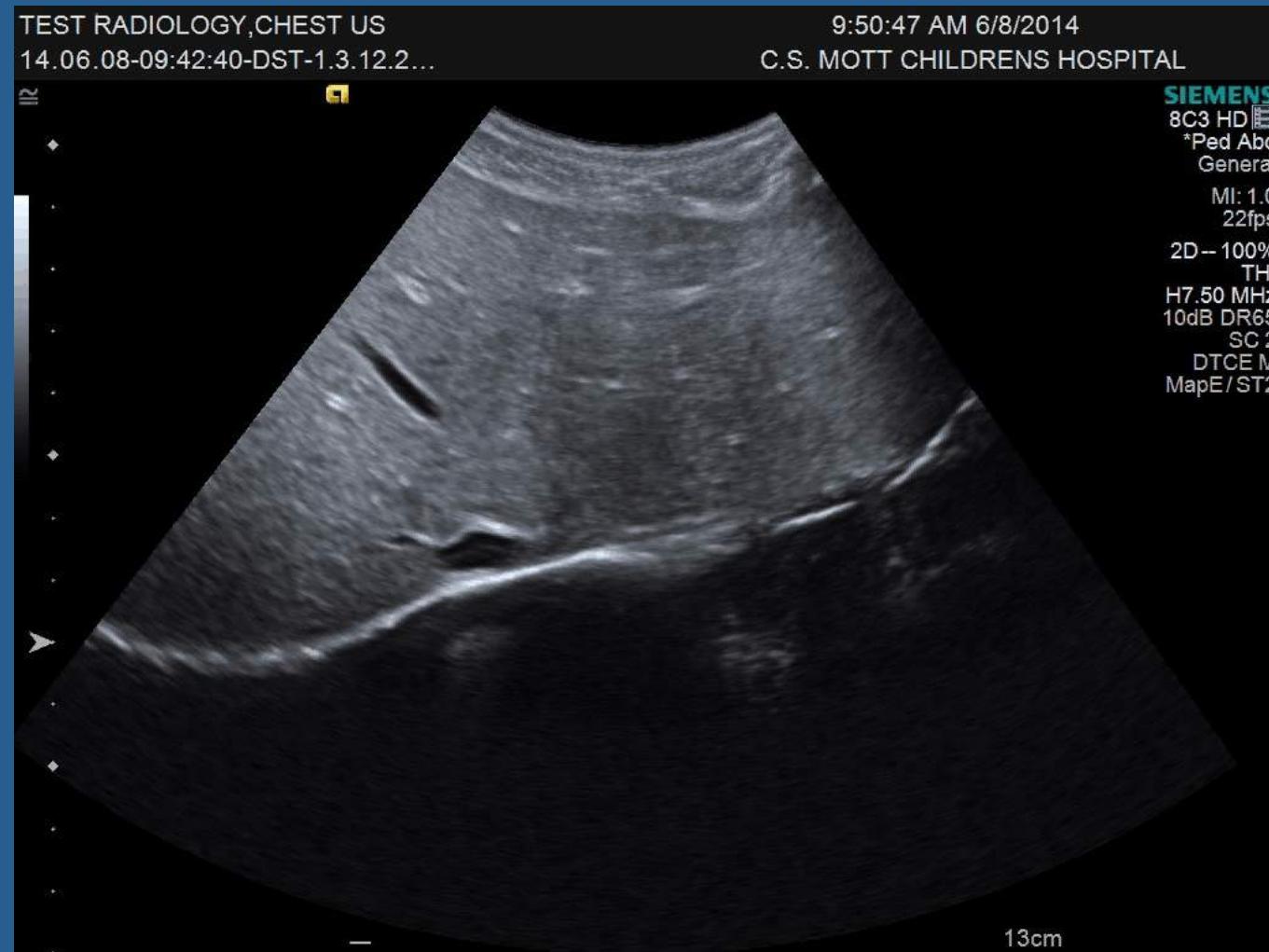




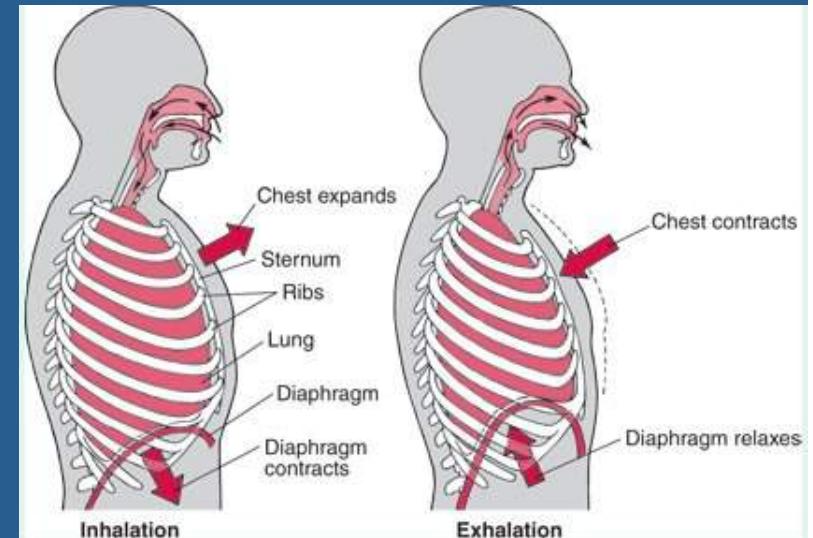
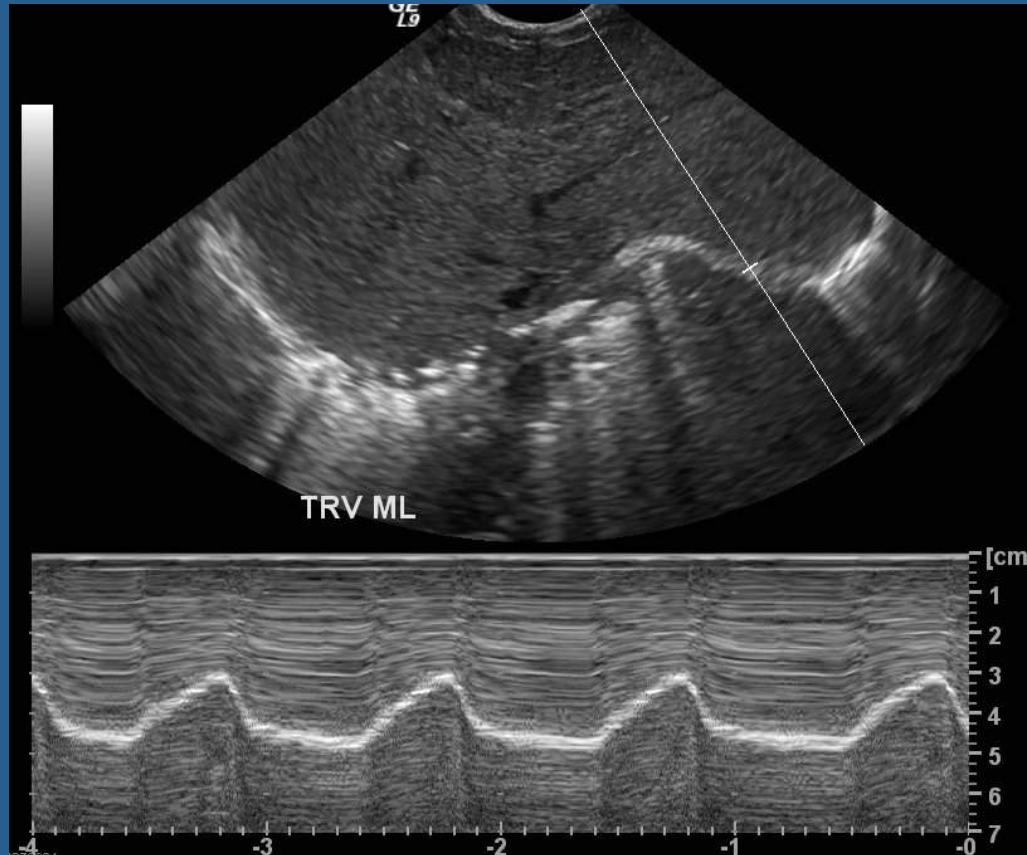
Diaphragm



US B mode



M mode



Paralysis

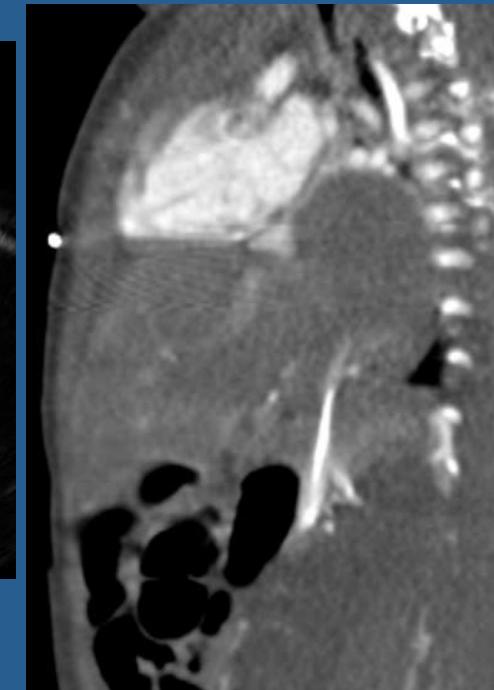
- Elevation
- Lack of motion- Paradoxical motion

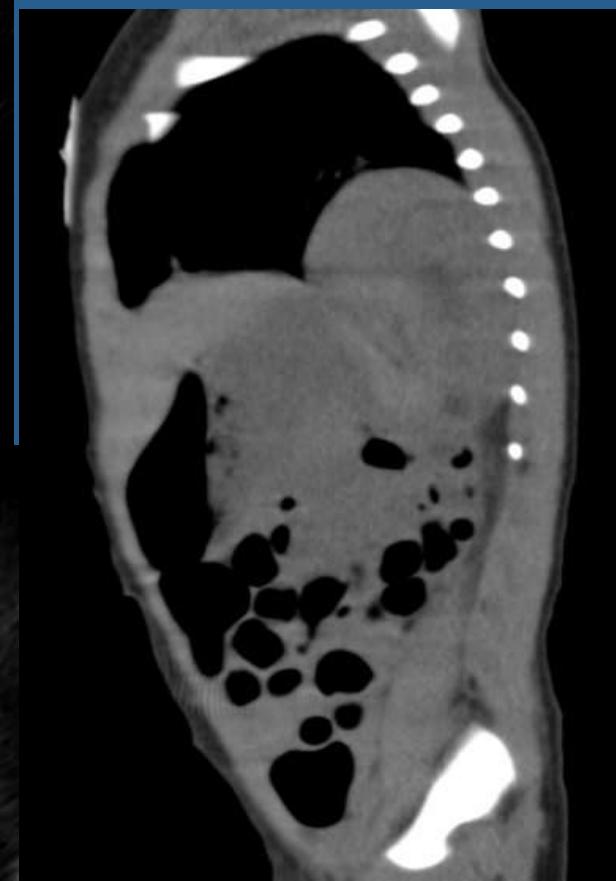
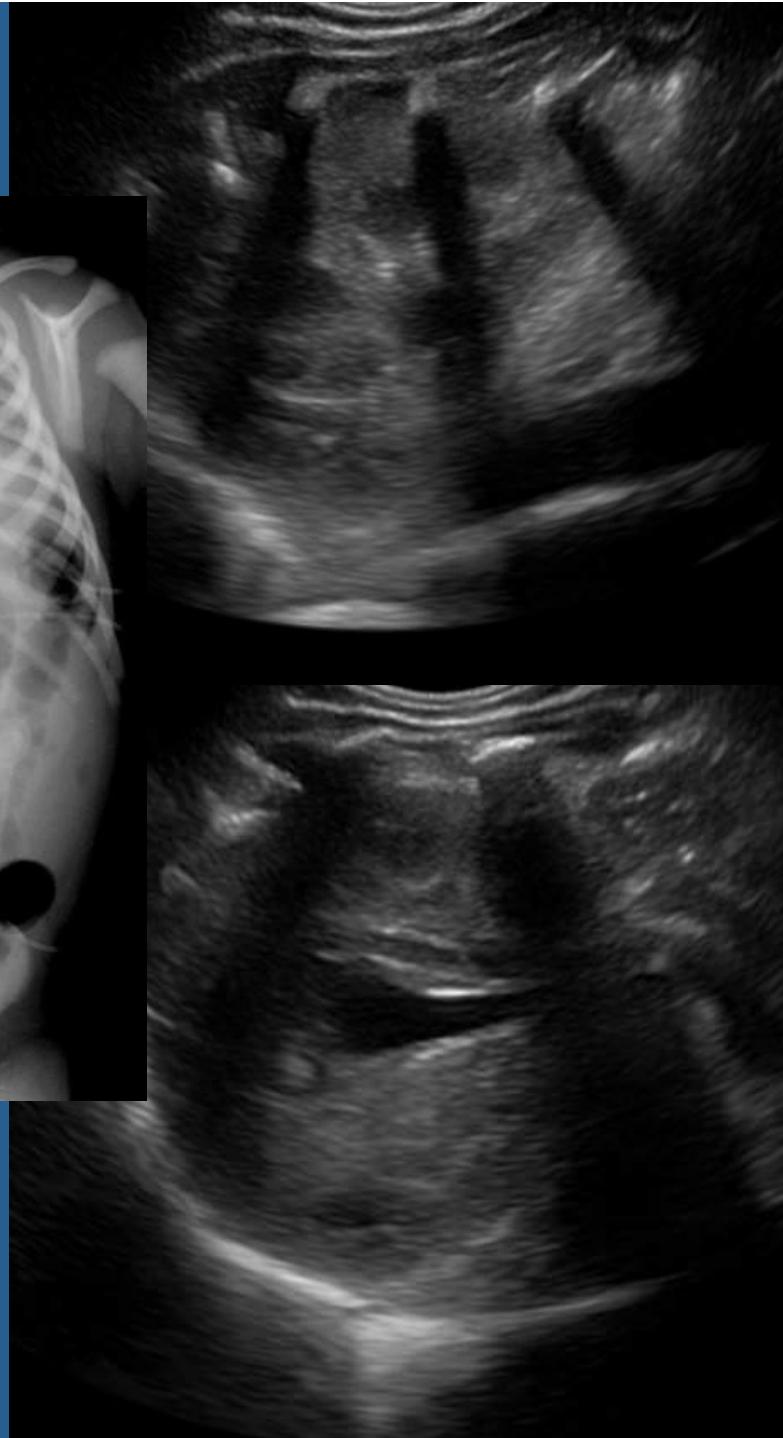


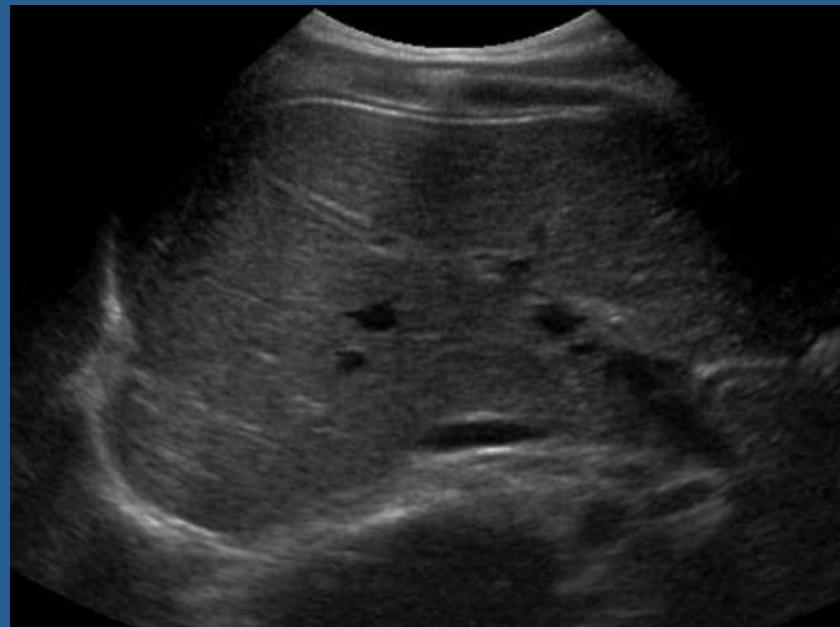
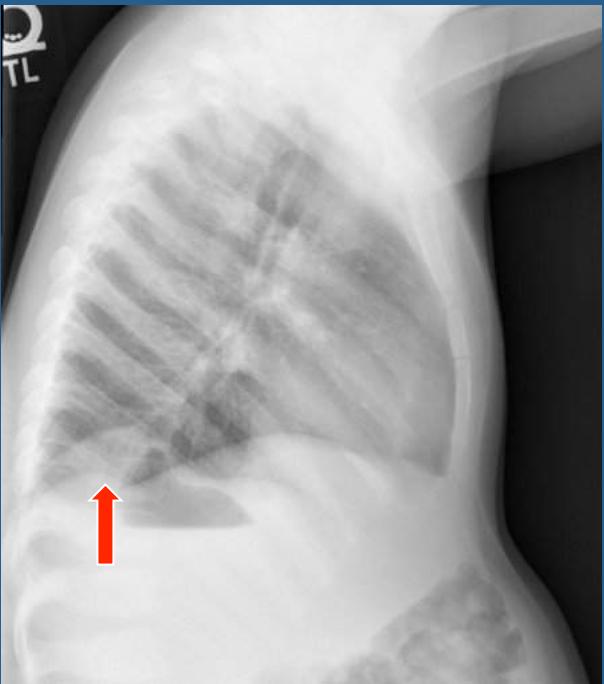
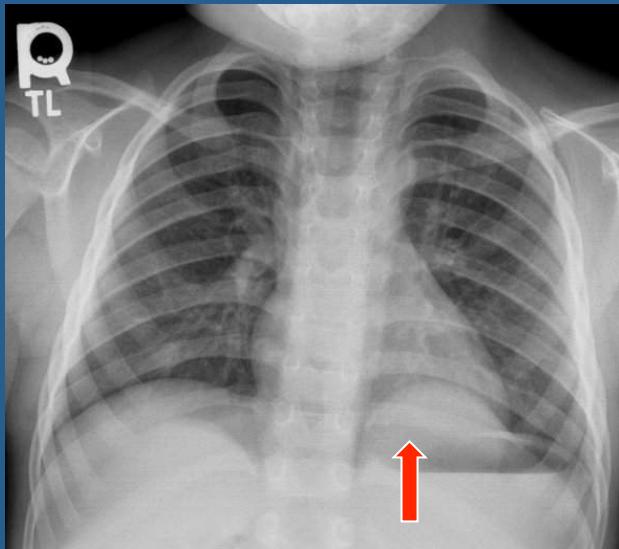


Focal defect/ event ration

- Eventration
 - congenital thinning of the diaphragm that causes a focal bulge
 - anterior aspect on the right
- Defect
 - Lack of diaphragm
 - posterior



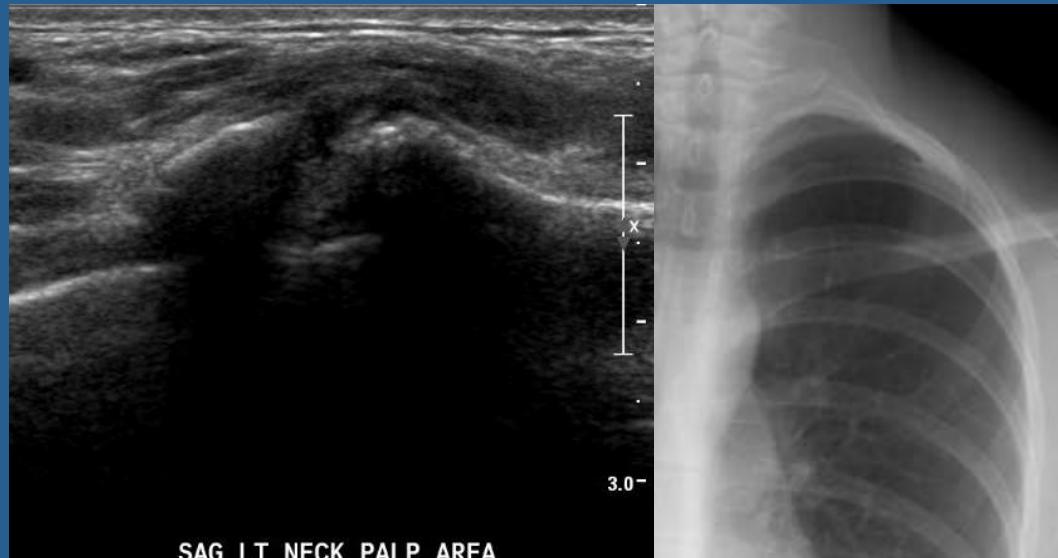
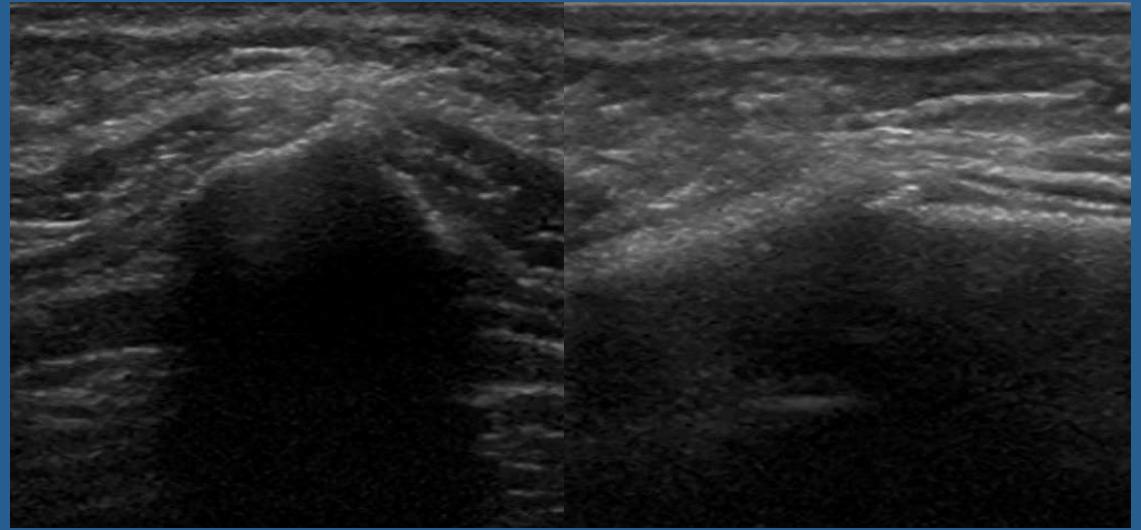
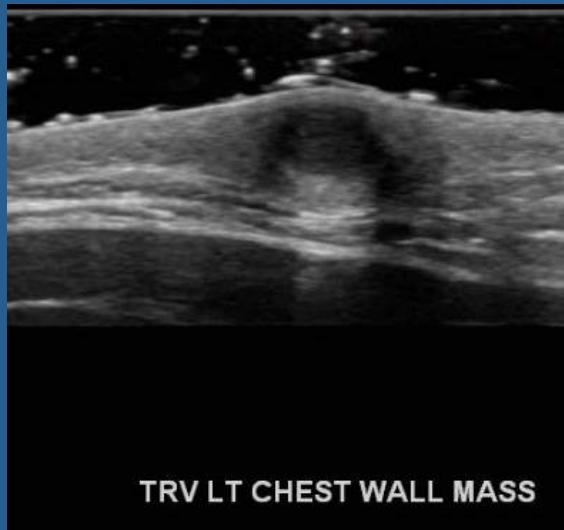


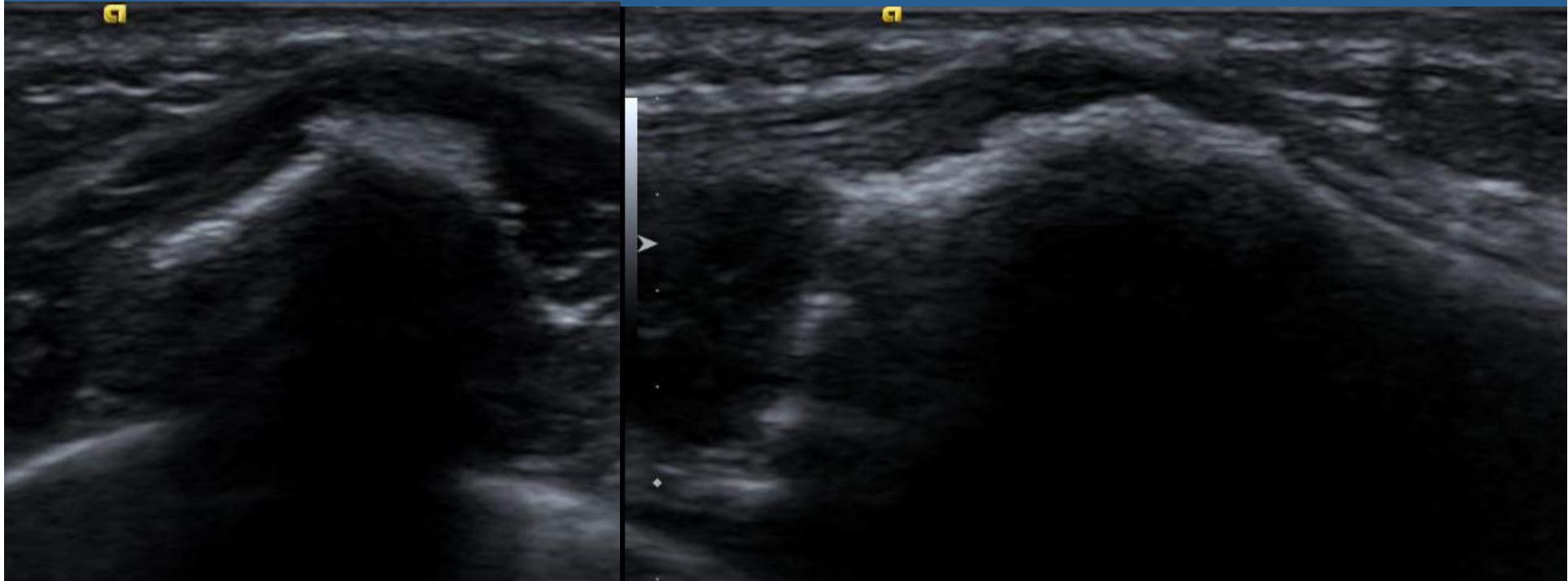


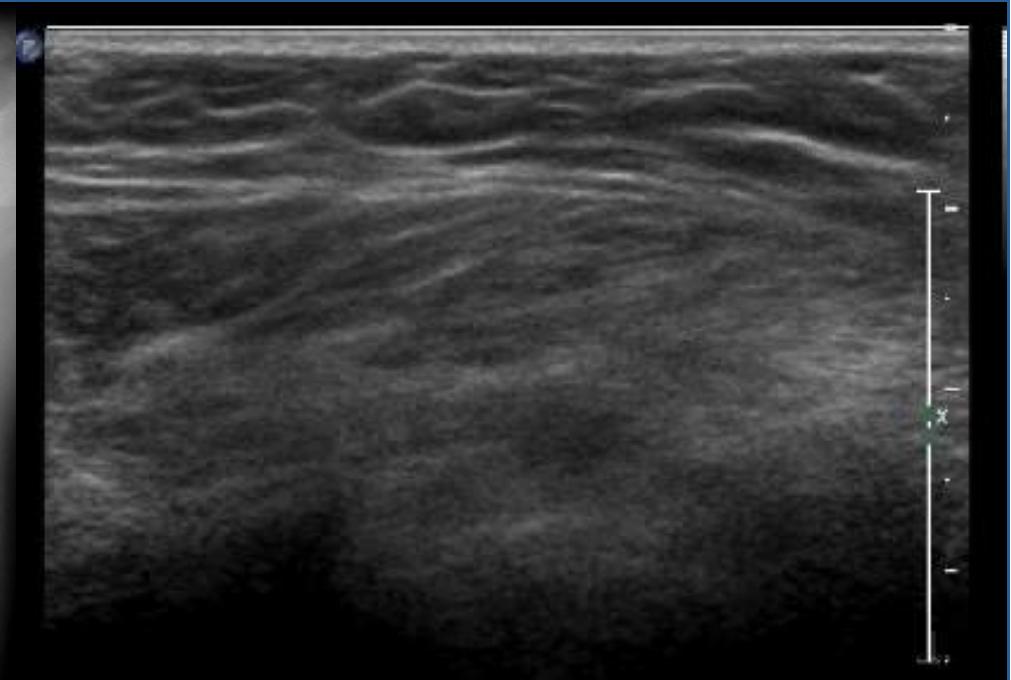
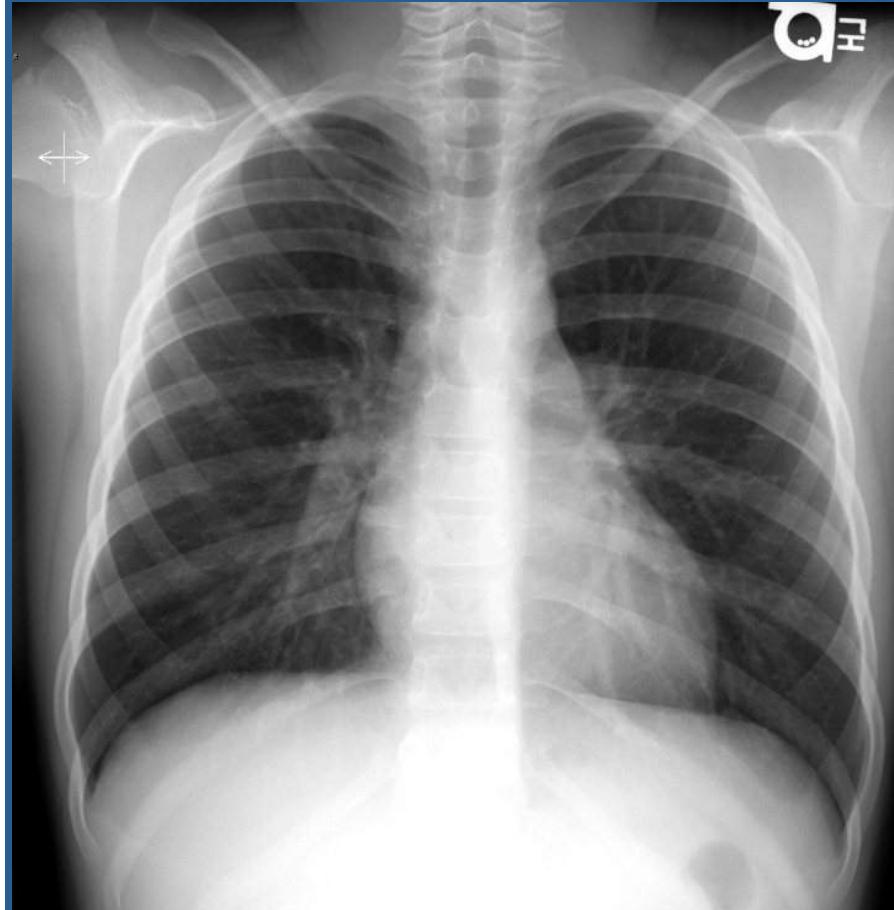




Chest wall







SAG LT CHEST W/COUGH

JPEG
4.0 - ***

