Hasnia Awol, 5yr Girl

Referred to ZMH

Referred to TASH

Sent back to ZMH

TODAY

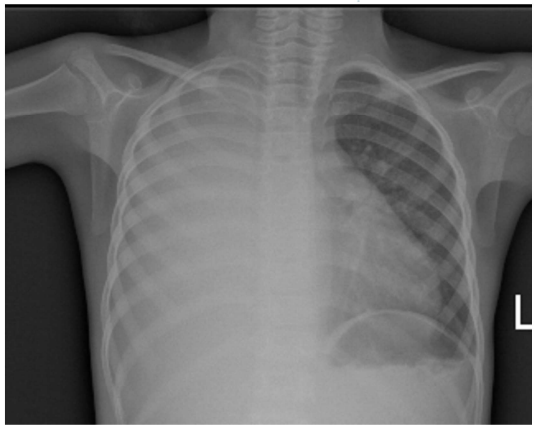
9/11/11	16/11/11	28/11/11	9/12/11	11/12/11	15/12/11	16/12/11	21/11/12	24/12/11

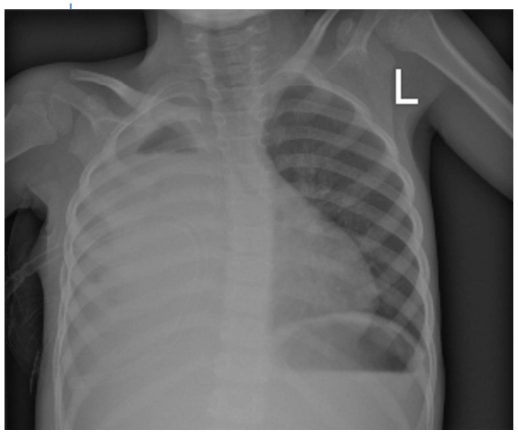
Diagnosed to have PPE Started IV antibiotics

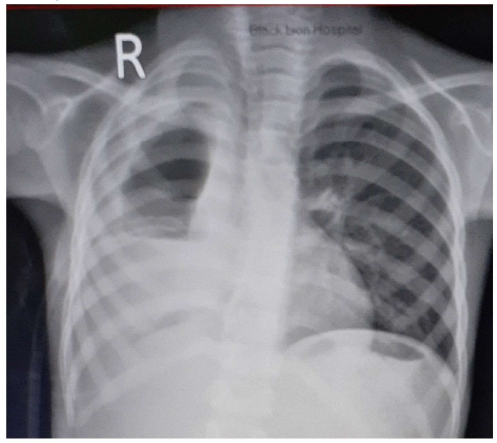
Chest tube inserted

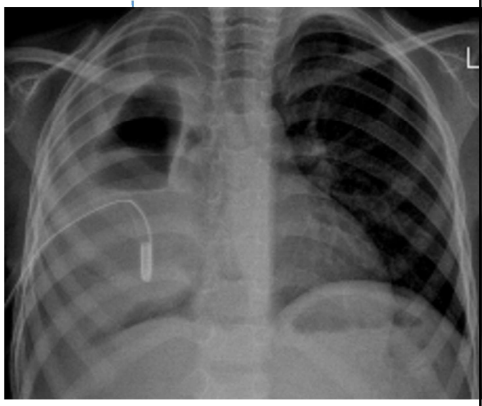
tube manipulated

Ultrasound guided drain









Decision making in the treatment of Empyema thoracis

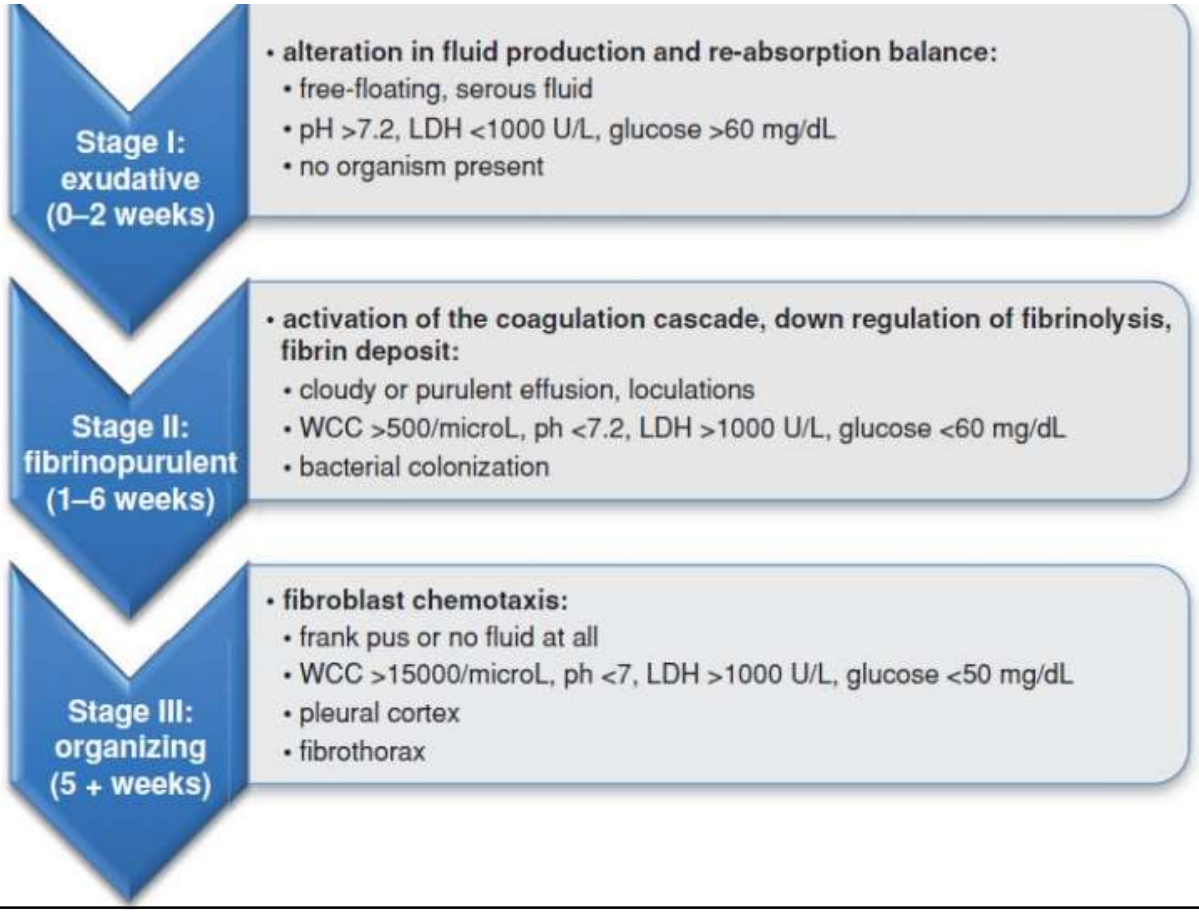
5 min talk

By Samuel N., M.D.

The problem…

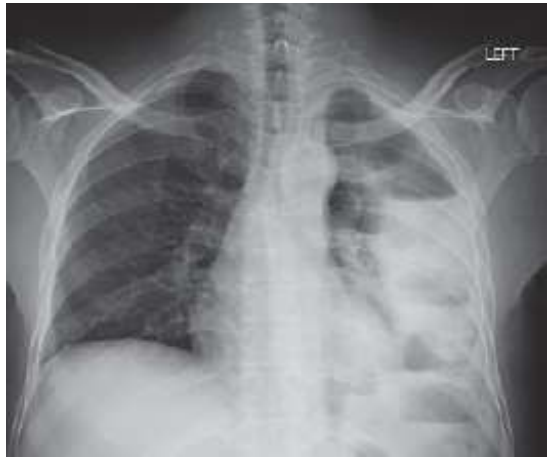
- Overall incidence is increasing world wide both in adult and pediatric
- Decision making with regard to treatment is complex and not well standardized
- Up to 20% may require surgery
- Consider 3 things
  - Stage of empyema
  - Cause of empyema (**primary** or secondary)
  - Condition of the patient

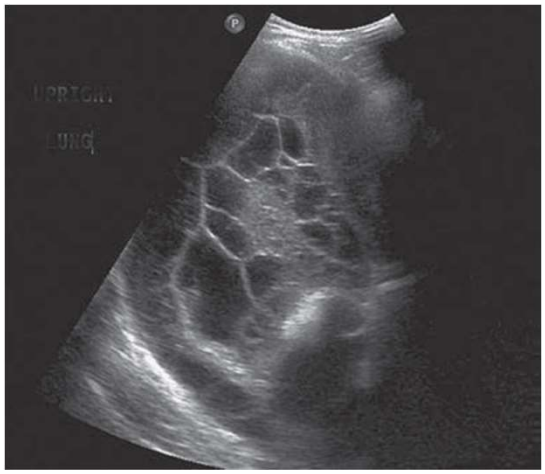
A 3 step dynamic process

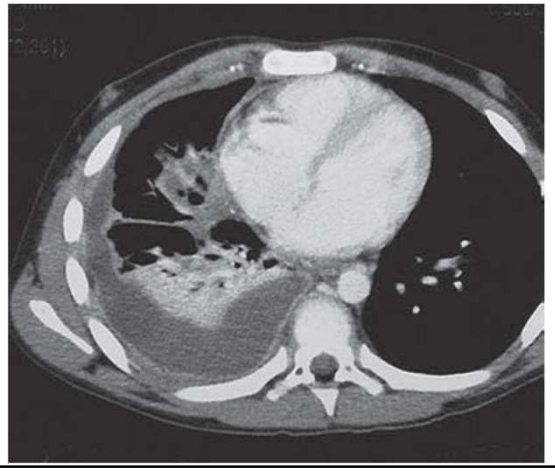


The Role of imaging

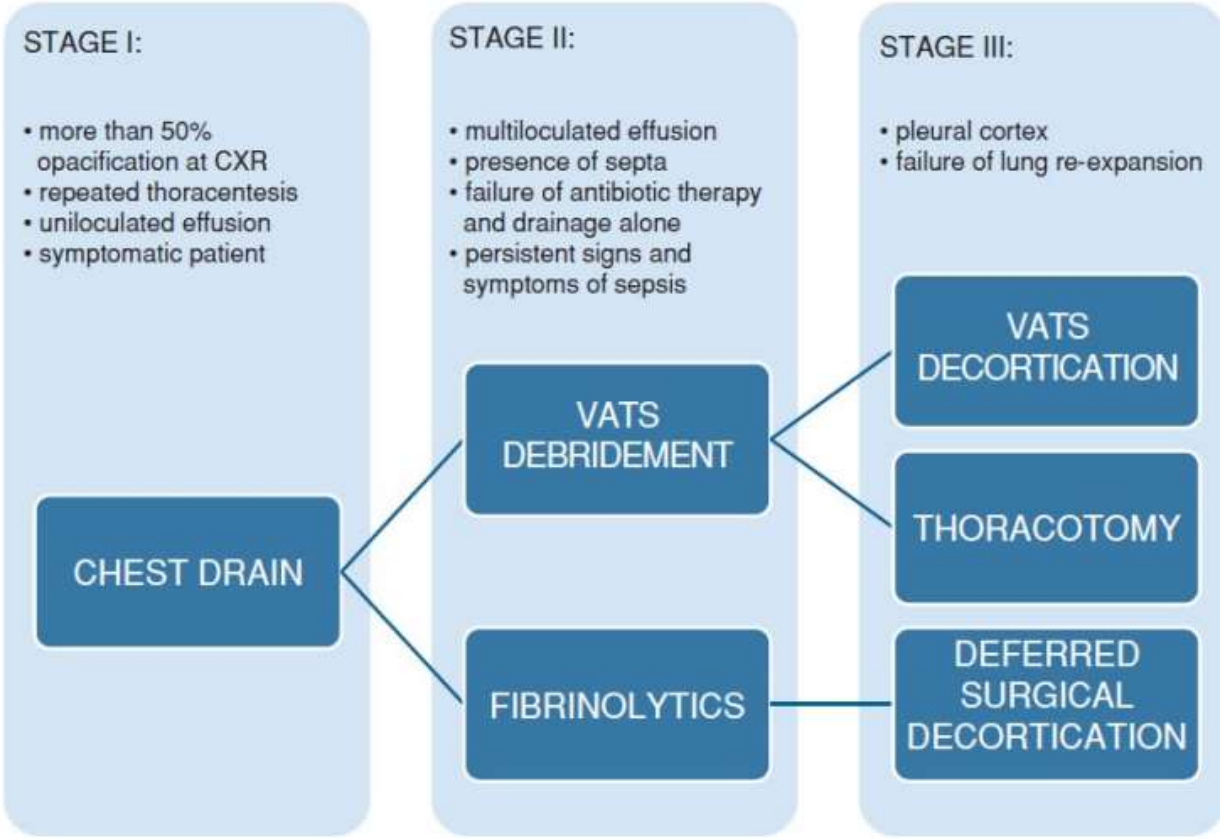
X-ray	Ultrasound	CT scan (contrast)
-presence of effusion	-loculation	-pleural thickening
- Estimate amount	- *Evaluate type of fluid* - *Quantify amount of fluid* - *Image guided drain*	- *Detect parenchymal abnormalities* *- Image guided drain*

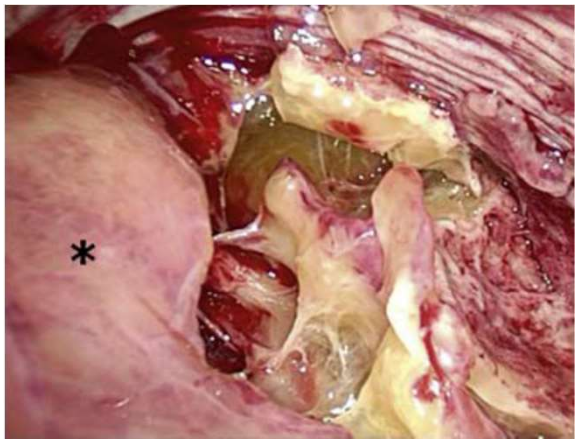






Decision making





*Tube thoracostomy has failure rate of 40%. In later stages US/CT guided is more effective

Decision making: Fibrinoytic Vs VATS

presence of septations within the effusion on CT or US scan images is a marker of possible failure of chest drain

- **image-guided drain + fibrinolytics** (chemical debridement)
  - Enzymes (streptokinase, TPA) are instilled to facilitate drainage
  - ? Studies show no difference to VATS debridement
- **VATS debridement** (mechanical debridement)
  - More invasive and more expensive
  - ***To facilitate early recovery when fibrinolysis is not feasible**
  - *if there is unsatisfactory resolution in sepsis (after fibrinolysis)

- If patient continues to be ill after clearing the pleural space, it is due to persistent pneumonia or parenchymal necrosis (not surgical)

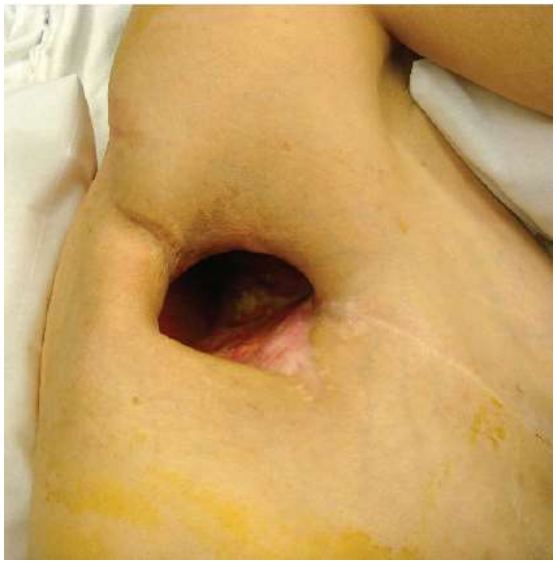
Decision making: The need for decortication

The development of a chronic pleural cortex or a fibrothorax should be rarely seen in modern practice except in extreme neglect

- over invasive measures based on radiologic parameters alone should be avoided
- actual chronicity may not become apparent until VATS assesment
- the term "decortication" is used inaccurately, when the procedure actually described is a "debridement"
- the need for decortication is less than traditionally assumed (lung may remodel the empyema cavity and re-expand)
- Delaying decortication (after debridement and antibiotic to control infection) is also technically easier

Other procedures for empyema

- **Empyemectomy**
  - *Going extrapleurally and removing the empyema cavity*
  - technically challenging but prevent contamination
- **Thoracostomy**
  - *Small rib resection and creation of stoma*
  - for the patient who can't tolerate surgery
- **Open window thoracostomy (Eloesser flap)**
  - *Resect segment of ribs & suture skin flaps to empyema cavity.*
  - For secondary empyema (after pulmonary resection), TB empyema
- **Modified Clagett procedure**
  - *1st stage - Open pleural drainage (window), muscle flap to close BPF*
  - *2nd stage - filling space with antibiotic solution, secondary closure*
  - *Also for secondary empyema*



In conclusion…

- Modern management of empyema should center on “prevention rather than cure” and minimally invasive measures should be encouraged
  - *Image guided drainage*
  - *Fibrinolytics*
  - *Close monitoring and Early VATS debridement*

Can prevent progress to chronic stage