# Transudative pleural effusion practical points

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The Respiratory System

# Dyspnea due to pleural effusion

- Mechanical effects:

1- expansion of chest wall and muscles of breathing

2-inversion of diaphragm

- So quickly removed by removal of fluid due to return of improved mechanics
- Improvement is seen in patients with or without trapped lung
- Pain is uncommon in transudative pleural EF

# Sonographic measurements

- Multiplying the  maximal distance between parietal and visceral pleura by 20 (mm) is used to rough estimation of the volume
- The distance less than 10 mm indicates the fluid is too small in volume to do thoracentesis

# DDX of pleural fluid

- CHF and hepatic cirrhosis  are responsible for almost all of transudative pleural effusions
- 30 % of effusions have more than one cause
- CHF is the most common contributing cause
- One cause enhances fluid entry, another cause prompts accumulation due to lymphatic obstruction (breast cancer and diuretics)

# Issues on thoracentesis

- Thrombocytopenia and coagulopathies
- Clopidogrel ( if possible D/C for 5 days
- Neither criteria of exudative effusion
- The concurrent CHF with malignant pleural effusion decrease the sensitivity of cytology analysis for malignant pleural effusion
- Indeterminate (near the cut off value)
- At this time , there is no established role for pleural manometry

# Chest CT with contrast

- The use of contrast enhanced CT to discriminate transudates from exudates is not clinically useful
- PET-CT

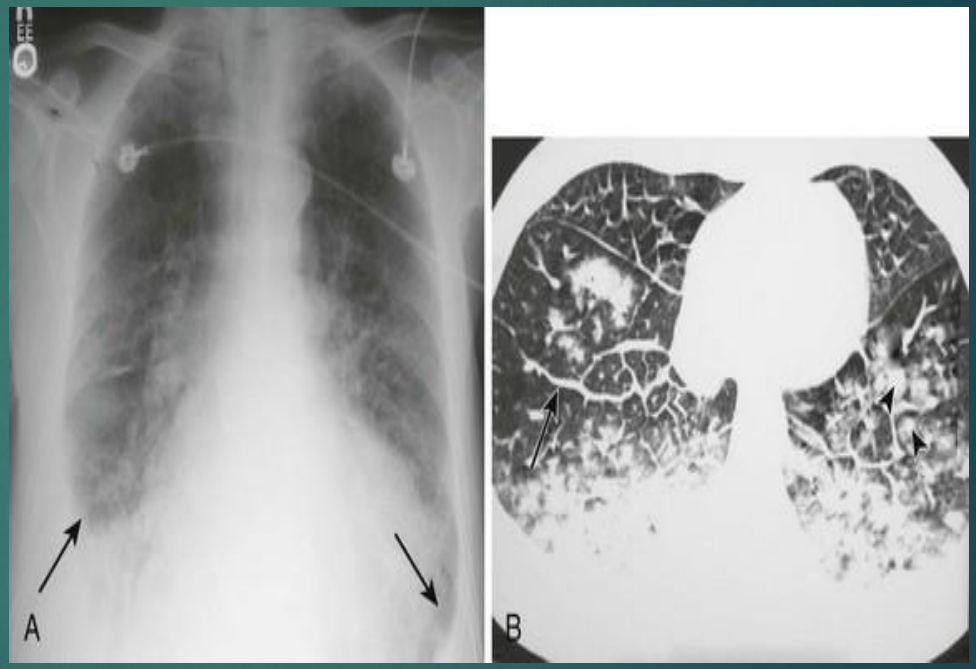
# CHF

Normal sized heart , rarely

the cause of effusion is CHF

Pleural space include 25

%of lung edema



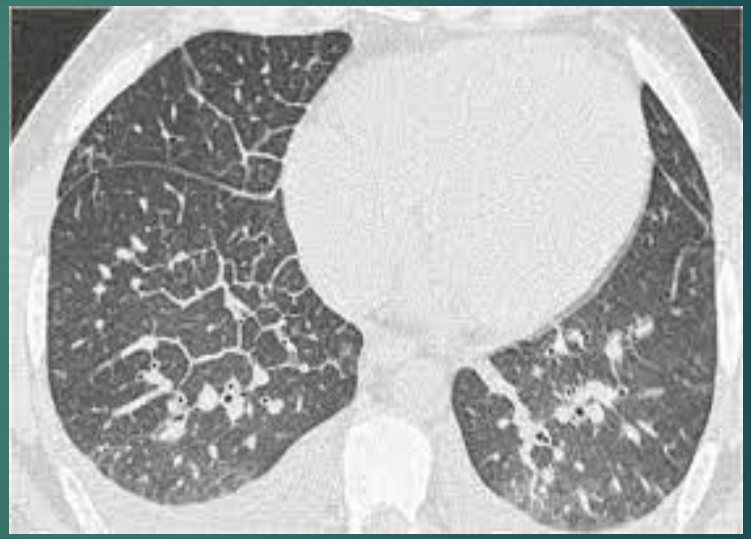
# CHF

Unilateral pleural effusion

Exclude PTE/ pneumonia

If cardiomegaly is not present, search for another cause

Relation to EF?



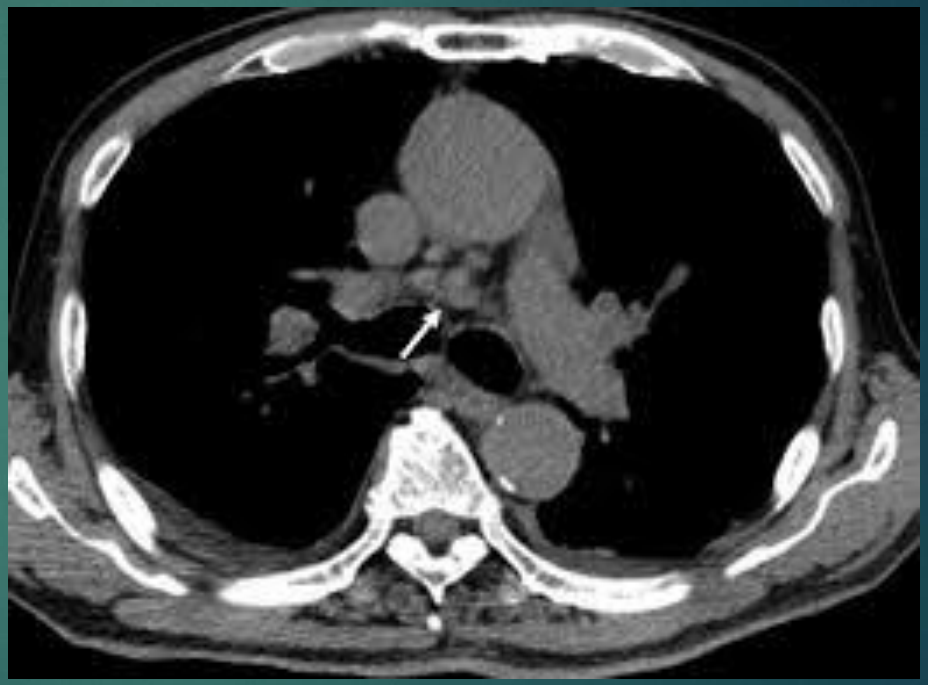
# CHF

Diuretics and repeated plural taps

Repeated taps increase pleural LDH

Diuretics decrease liver congestion and serum LDH

Persistent large pleural fluid accumulation → pleurodesis and IPC



# Hepatic hydrothorax

Often with larg amount of ascites

Rarely with no ascite

which of the following is not the pathophysiologic mechanism?

Definite diagnosis? Tc scanning

SBP,pneumonia,TB,malignancy

1-diaphragmatic defects and fenestration

2-decrased oncotic pressure

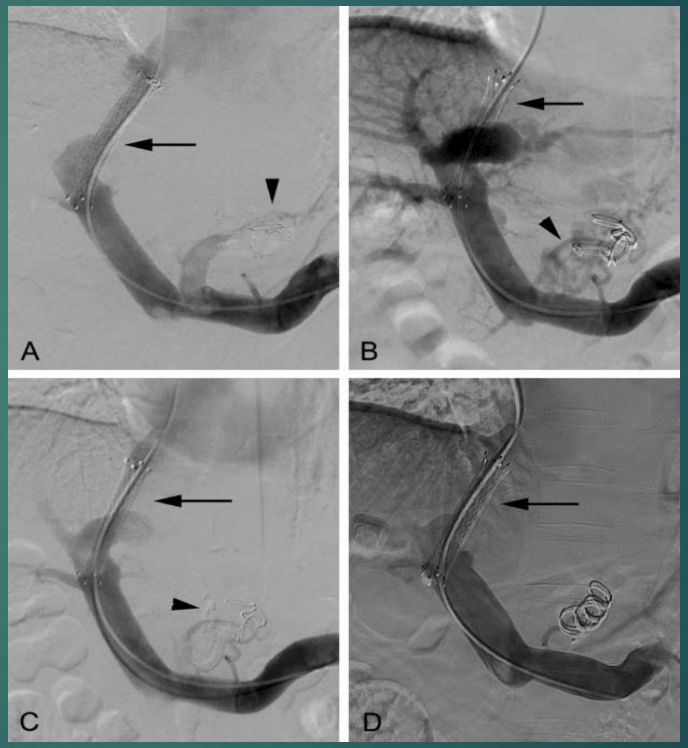
3- lymphatic connection between pleural and peritoneal cavity

# Hepatic hydrothorax

Dose chest tube drainage is useful?

Dose hepatic hydrothorax puts the patient in priority for liver transplantation ?

If recurrent and no liver transplantation is planned, the treatment of choice?



# Complications

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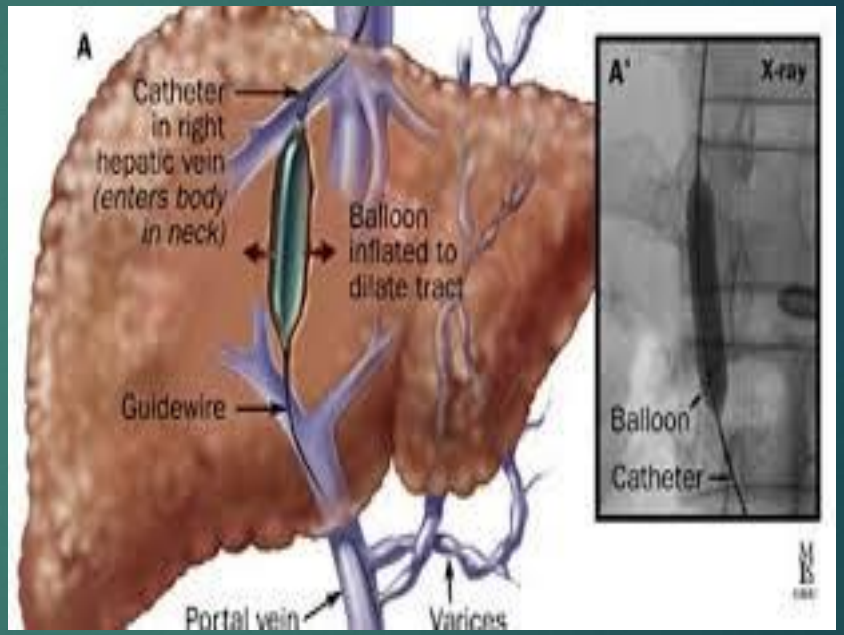
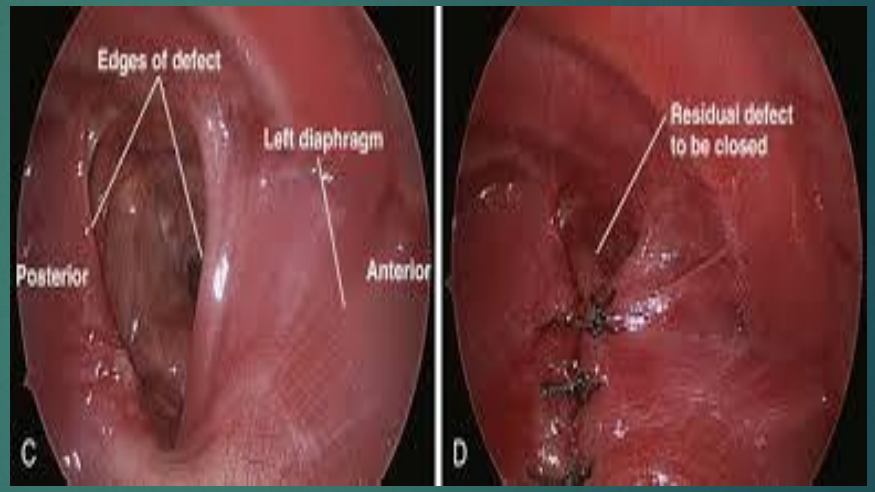


# Hepatic hydrothorax

If neither TIPS nor liver transplantation is feasible then

What about IPC?



# SB pleuritis

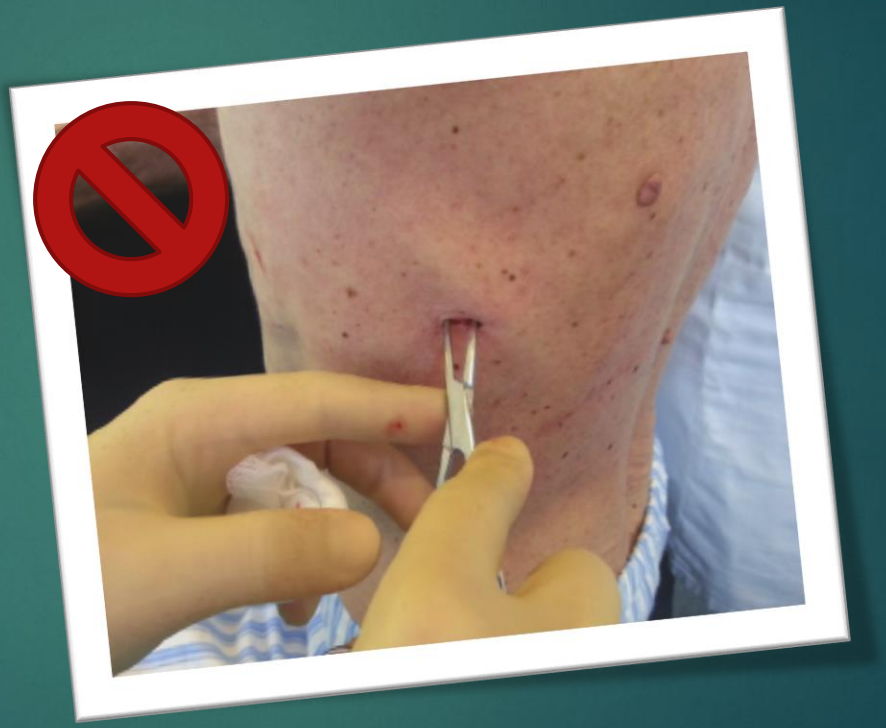
Transudate

PMN>250

And pleural fluid culture positive

No pneumonic process is present

Culture negative SBP if PMN>500



# Nephrotic syndrome

Transudates

IF it is exudate, consider

And perform CTPA

Bilateral

Recurrent and refractory :consider IPC and pleurodesis

# Peritoneal dialysis

Rt sided

Low protein <1.0 g/dl

Glucose intermediate between serum and dialysate

Best tx: thoracoscopy, closure of defects and pleurodesis

# Myxedema

Usually concomitant pericardia effusion

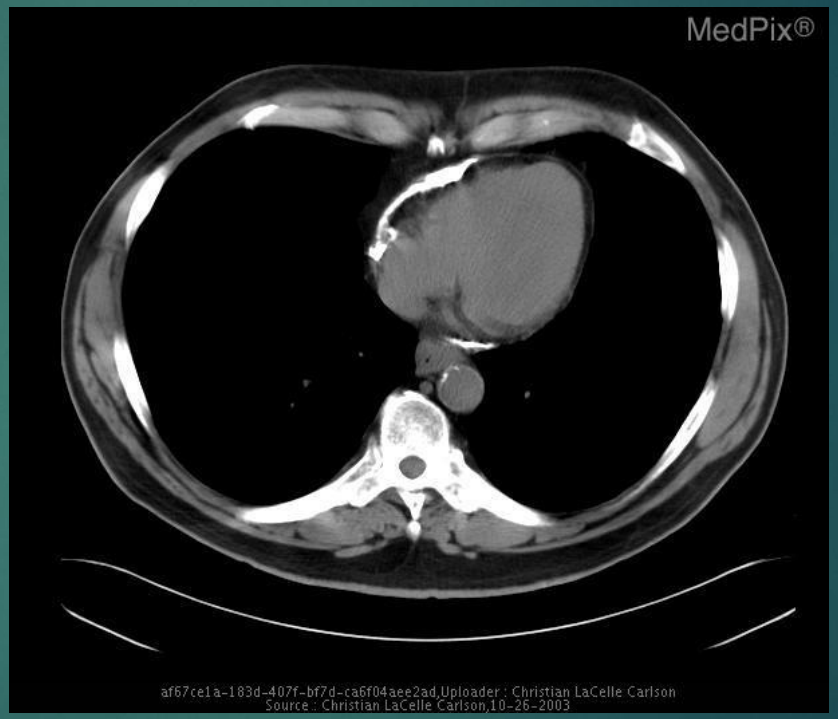
Tx of choice :hormone replacement therapy

# Constrictive pericarditis

Rt sided

Or

Bilateral



# Case presentation

52 yrs old stage iv lung cancer , bilateral pleural effusion malignant, EGFR positive, targeted therapy

Rt side and tumor size decrease significantly

But large pleural effusion on left side, transudate

# CV obstruction

Persistent large transudate

HX of prior instrumentation

Tx: relief of obstruction

Obstruction and ligation of AVF

# Very low protein transudates

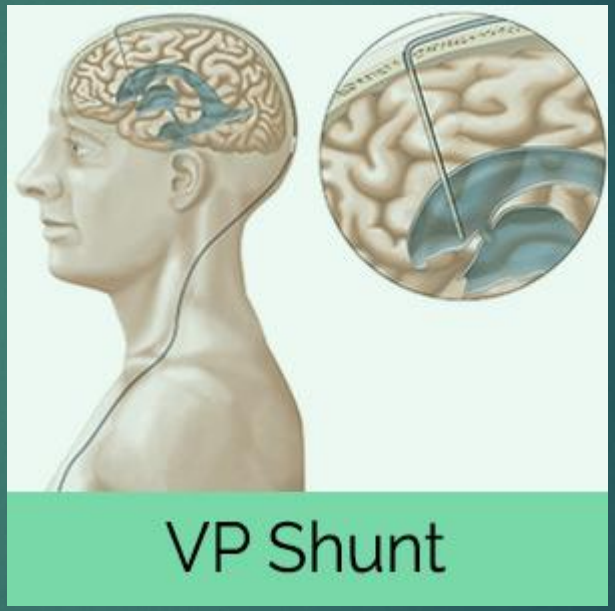
Urinothorax(creatinine)

Subarachnoid pleural fistula(beta-2 transferrin)

The role of NIV,

Surgical repair

Iatrogenic (underreported)



# Other cause of transudates

Amyloidosis

PTE

Cancer (extrathoracic)

PVOD