CXR #8

WAMSS SGR 2022

Trigger

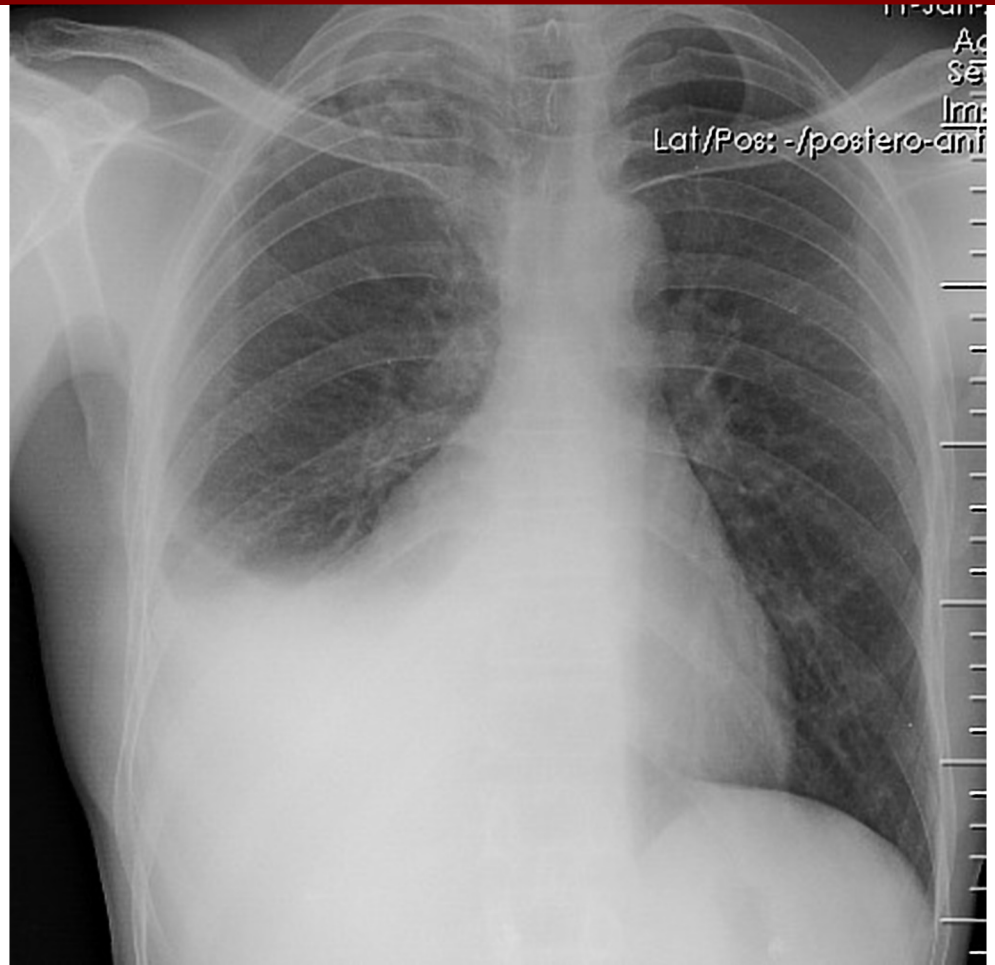
You are an intern working in the hepatology department at SCGH. Mr. Fairgood, a 63M is an inpatient who presented from home two days ago with a one week history of melaena, identified on oesophagogastroduodenoscopy (OGD) to be secondary to oesophageal varices, on a background of alcohol-related cirrhosis. His wife is a pharmacist and helps look after Mr. Fairgood, takes care of household duties and manages his medications.

He has a history of a previous episode of alcohol induced hepatic encephalopathy and has abstained from drinking for 5 years, but drank half a carton of Carlton Dry a day for 15 years prior.

Mr. Fairgood complains to you of chest pain and a dry, non-productive cough that has been going on the past three days of his admission. Mr. Fairgood is oriented to time, person and place, and shows no signs of encephalopathy. His abdomen is distended and caput medusae is present.

You decide to order a PA CXR.

Task: Interpret the CXR and provide a working diagnosis.


Lat/Pos: -/postero-ant

Details and demographic	PA CXR of a 63M presenting with chest pain and a dry, non-productive cough
RIPE/Quality	Rotation : No rotational artefact
	Inspiration: Adequate inspiratory effort
	Projection: PA
	Exposure: Adequate exposure
Airways and lung fields	Trachea is equidistant between the two clavicles, suggesting no tracheal deviation Opacification of the right lower zone tracking along the lateral chest wall with a meniscus noted
Bones and soft tissue	No obvious fractures or soft tissue abnormalities
Cardo-mediastinum	Cardiothoracic ratio within normal limits (0.42 to 0.5)
Diaphragm	Right costophrenic angle blunting
Everything else	No free gas under the diaphragm No equipment
Interpretation	In summary, this is a PA CXR of a 63M presenting with chest pain and a dry, non-productive cough following melaena secondary to oesophageal varices on a background of alcohol-related cirrhosis. Right lower zone opacification with a meniscus and right costophrenic angle blunting is present. My working differential is a **right sided pleural effusion**. A rare aetiology of pleural effusion is **hepatic hydrothorax**. This is when ascites permeates from the peritoneal cavity through the diaphragm because the pressure in the pleural space is lower than the pressure in the peritoneal cavity. It affects the right lung in approximately 85% of cases (Garbuzenko et al, 2017). It is important to note that a hepatic hydrothorax is a diagnosis of exclusion.

Follow-up Questions

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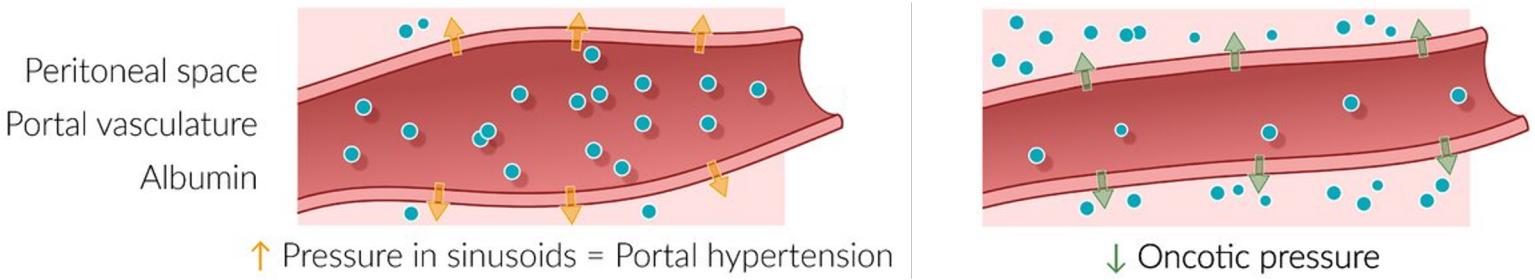
1. Outline the pathophysiology of ascites in a patient with cirrhosis.

2. How is ascites classified to identify its aetiology? List 5 aetiologies of ascites.

3. How is ascites managed?

Question 1

- Portal hypertension -> increased hydrostatic pressure
- Hypoalbuminaemia due to cirrhosis -> decreased oncotic pressure



https://www.amboss.com/us/knowledge/Ascites/

Question 2: Classification

- SAAG = Serum-Ascites Albumin Gradient
- SAAG = (albumin in serum)-(albumin in fluid)
- Broadly classified into high SAAG ascites and low SAAG ascites
    - Similar to pleural effusion being classified by Light's Criteria
- High SAAG (≥11)
    - Ascites due to portal hypertension
    - Increased hydrostatic pressure
    - 'Transudate' is an outdated term
- Low SAAG (<11)
    - Ascites due to hypoalbuminaemia and/or increased vascular permeability
    - Decreased oncotic pressure
    - 'Exudate' is an outdated term

Question 2: Aetiology

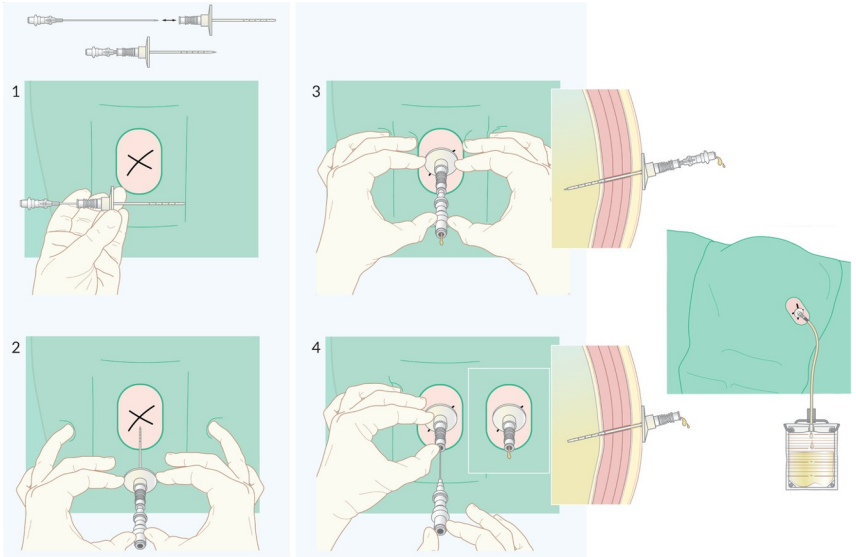
- High SAAG (≥11) (aetiologies of portal hypertension)
  - Prehepatic: splenic or portal vein thrombosis
  - Hepatic: cirrhosis, alcoholic liver disease (ALD), liver metastases
  - Posthepatic: right heart failure, constrictive pericarditis, Budd-Chiari syndrome
- Low SAAG (<11)
  - Nephrotic syndrome
  - Malignancy e.g. ovarian cancer
  - Infections e.g. tuberculosis
  - Pancreatitis

Question 3

- Treat underlying disease (important!)
- Sodium restriction
- Fluid restriction
- Regular weights

If Required

- Spironolactone +/- frusemide if severe (only if aetiology is high SAAG or it is ineffective)
- Paracentesis (see diagram)
- Transjugular intrahepatic portosystemic shunt (TIPS) to relieve portal hypertension



Thank you!

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