



Supervised by : Dr Ayman Basha Presented by : ayah alqaisi Lujain manasrah









Definition of ascites

Ascites is the abnormal accumulation of fluid within the peritoneal cavity .







Portal Hypertension

- Cirrhosis (most common cause of ascites; approx. 85%)
- Liver metastases
- Budd-Chiari syndrome
- Right heart failure
- Portal vein thrombosis

Hypoalbuminemia

- Nephrotic syndrome
- Severe malnutrition
- Protein-losing enteropathy
- Acute or chronic hepatic failure





Malignancy

Peritoneal carcinomatosis, especially from ovarian, breast, bronchial, gastric, pancreatic, and colorectal carcinoma
Lymphomas with peritoneal involvement

• Liver metastases

Infection (e.g., tuberculosis, serositis) Pancreatitis







□ Progressive abdominal distention; symptoms associated with increased abdominal distention include:

- Early satiety
- Weight gain
- Dyspnea

• Diarrhea, which, if chronic, may manifest with features of malnutrition

• Abdominal pain may be present

Flank dullness: typically elicited only if > 1.5 L of ascitic fluid is present



Shifting dullness: change of resonance from dull to tympanic resonance when a patient changes from supine to lateral decubitus position.



Fluid wave test

ig. 6.17 Percussing for ascites. A and B Percuss towards the flank from resonant to duil. C Then ask the partient to roll on to their other side. In screes the note then becomes resonant.

• Wave produced by tapping one side of the abdomen in a patient in supine position

• This wave will be transmitted to the other side via ascitic fluid.







Signs of underlying disease Enlarged liver, jaundice, spider angioma, palmar erythema: signs of chronic liver disease Elevated jugular venous pressure, orthopnea, and peripheral edema: heart failure Virchow node and weight loss: abdominal or pelvic malignancy





1

Features of Ascites

- Eversion of umbilicus.
- -Abdominal striae.
- -Hernia.
- Divarication of recti and scrotal edema.
- -Dilated superficial abdominal veins due to portal hypertension.







Diagnosis





□ **Physical Exam,** as shifting dullness and transmitted thrill.

□ Abdominal Ultrasound (initial study of choice)

Indications :

- Clinical suspicion of new-onset ascites
- Evaluation for an underlying condition (e.g., cirrhosis, intraabdominal malignancy)
- Ultrasound-guided paracentesis

¬CT abdomen

Indications: to work up for the underlying cause as needed





\Box Laboratory studies

The choice of laboratory studies should be guided by the pretest probability of the suspected underlying etiology.

- 1. Complete Blood Count (CBC)
- 2. Liver Function Test (LFT)
- 3. Coagulation Panel

Ascitic fluid analysis

Sample obtained via diagnostic paracentesis Indications

 $\ensuremath{\mathbb{N}}$ All patients with new-onset ascites to identify the underlying cause

 $\ensuremath{{}^{\square}}$ Patients at risk of spontaneous bacterial peritonitis (SBP)





Routine Peritoneal Fluid Analysis

Gross appearance of ascitic fluid: can help

determine the underlying cause .

- Transparent to yellow: uncomplicated ascites
- Cloudy: infection or malignancy
- Bloody: trauma or malignancy
- Milky: chylous ascites
- Dark brown: suggests a biliary leak (e.g., gallbladder perforation)



_ Cell count and differential: A neutrophil count ≥

⁻ 250

cells/mm³ indicates spontaneous bacterial peritonitis.

Serum-ascites albumin gradient (SAAG) : can be used to differentiate **between ascites due to portal hypertension and non-portal hypertensive ascites**.

SAAG = (serum albumin) - (albumin level of ascetic fluid)



Criteria for analyzing ascitic fluid	Ascites due to portal Hypertension (transudate)	Ascites due to other causes (exudate)
SAAG	≥ 1.1 g/dL	< 1.1 g/dL
Color	Clear, opalescent	Cloudy , Bloody ,Milky Dark , brown
Cell Count And Differentiation	↓ Cell count	个 Cell count Neutrophil count > 250/µL
Protein Concentration	 ↑ Protein levels (> 2.5 g/dL) Right heart failure Early Budd-Chiari syndrome ↓ Protein levels (< 2.5 g/dL) Cirrhosis Severe liver metastases Late Budd-Chiari syndrome 	 Protein levels (> 2.5 g/dL) Peritoneal carcinomatosis Pancreatitis Tuberculosis Chylous ascites (not secondary to cirrhosis) Protein levels (< 2.5 g/dL) Nephrotic syndrome Severe malnutrition

Management

Approach

All patients

- □ Identify and treat the underlying condition
- □ Remove the fluid that accumulate within peritoneal cavity.

Medical and supportive therapy

Salt and fluid restriction

- Dietary sodium restriction: 2 g /day or 88 mEq /d (2 g of sodium = 5 g of salt
 - Fluid restriction : 1 L /day (only if serum Na+ < 125 mEq/L)

Diuretics

Monotherapy with spironolactone ,may be preferable for :

☐ new-onset ascites

☐ mild-moderate ascites

 \neg outpatients.

.

Combination therapy with spironolactone PLUS furosemide may be preferable for:

 \neg recurrent gross ascites

 \neg when faster resolution of ascites is required (e.g., in hospitalized patients).

Therapeutic paracentesis:

Indications:

- Tense or large ascites (first-line)
- Refractory ascites (can be repeated every ~ 2 weeks)
- Malignancy-related ascites
- Contraindications for diuretic therapy

Important considerations:

- Perform under ultrasound guidance to minimize complications.
- Replace albumin during or immediately after the procedure to prevent complications, e.g, postparacentesis circulatory dysfunction (PPCD) in :
 - 1 All patients undergoing large-volume paracentesis
 - 1 Patients with hypotension, hyponatremia, and/or AKI

Management of Refractory Ascites

Ascites is considered refractory if it does not respond to treatment or recures after therapeutic paracentesis despite dietary sodium restriction and high-dose diuretic.

- ☐ Rule out transient refractoriness to diuretic therapy
- ☐ ensure adherence to a low-sodium diet. Repeat large-volume
- \neg paracentesis (with IV albumin).
- □ Evaluate for invasive management options

- Transjugular intrahepatic portosystemic shunt (TIPS) -Liver transplant : patients with significant liver dysfunction and/or failed TIPS.

Thank you