

The EM Educator Series

The EM Educator Series: Spontaneous Bacterial Peritonitis

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Case 1: A 55-year-old male with a history of cirrhosis and recurrent ascites presents with worsening abdominal pain and distension. He also states he has had a subjective fever with chills. Exam reveals mild, diffuse abdominal tenderness and positive fluid wave. He otherwise appears well.

Case 2: A 57-year-old female presents with a week of abdominal pain and swelling. The pain worsened the initial 2 days but then improved. However, the pain returned and is more severe. The patient has also experienced chills, rigors, and fevers the last 2 days. Exam reveals BP 108/55, HR 122, RR 23, T 38.2 C, and severe abdominal tenderness with palpation. Bedside US reveals evidence of fluid with septations and free air.

Questions for Learners:

1. What are the types of bacterial peritonitis?
2. How can patients with bacterial peritonitis present? How do the different types differ in their presentation?
3. What laboratory testing is recommended, and what should you expect to find?
4. When and what type of imaging should be obtained?
5. What is the management of SBP? Who should receive albumin?

Suggested Resources:

- Articles
 - [emDOCs SBP](#)
 - [Emergency Medicine Cases](#)
 - [REBEL EM SBP](#)
 - [CORE EM](#)
 - [REBEL EM Albumin](#)
 - [PulmCrit Secondary Bacterial Peritonitis](#)
- Journal Articles
 - [AJEM](#)
 - [EM Clin NA](#)

Answers for Learners:

1. What are the types of bacterial peritonitis?

Three variants – culture-negative neutrocytic ascites, monomicrobial non-neutrocytic bacterascites, and polymicrobial bacterascites.

2. How can patients with bacterial peritonitis present? How do the different types differ in their presentation?

- Classic triad: fever, abdominal pain and increasing ascites. **Presence of all three components uncommon**
- Symptoms
 - Fever or chills
 - Abdominal pain
 - Abdominal swelling
 - Fatigue
 - Malaise
- Signs
 - Abdominal tenderness variable
 - Typically diffuse
 - Can be mild without peritoneal signs
 - Can be severe with rebound and/or guarding
 - Abdominal distension
 - Altered mental status (from hepatic encephalopathy)

3. What laboratory testing is recommended, and what should you expect to find?

- Obtaining an ascitic fluid sample is critical in making the diagnosis
- Serum blood tests (i.e. WBC, CRP, ESR) are not helpful in making this diagnosis
- Due to variable presentations and considerable mortality associated with SBP, consideration should be made to perform paracentesis on ALL patients with ascitic fluid who are being admitted ([Gaetano 2016](#))
- Diagnostic paracentesis ([EM: RAP HD](#))
- Paracentesis (DrER.tv)
 - Ascitic fluid assays
 - Cell count
 - Look for **WBC > 250-500 cells/mm³** or **neutrophil count > 250 cells/mm³**
 - Peritoneal dialysis patients: neutrophil count > 100 cells/mm
 - pH < 7.34 more common in SBP ([Wong 2008](#))
 - Ascitic fluid gram stain (rarely positive) and culture
- If patient has fever (temp > 100°F) or abdominal pain/tenderness, **empiric antibiotics should be given** even if neutrophil count < 250 cells/mm³

4. When and what type of imaging should be obtained?

Recognize that liver patients are at risk for sepsis and dying from sepsis from any source. Do not attribute elevated lactate to the liver disease itself. Assume sepsis until proven otherwise. Have a low threshold to order imaging to rule out a secondary cause of the bacterial peritonitis as the abdominal exam in SBP can be deceptively benign.

5. What is the management of SBP? Who should receive albumin?

- Administer **antibiotics** early – **cefotaxime 2 g IV q8h** or **ceftriaxone 2 g IV**
- The AASLD recommends **IV albumin (1.5 g/kg within 6 hours of diagnosis of SBP followed by 1.0 g/kg on day 3)** in patients with a **serum creatinine >1 mg/dL or BUN >30 mg/dL or bilirubin >4 mg/dL**; it is also reasonable to consider albumin infusion in patients undergoing large volume paracentesis (>5 liters)
- Consider **pressor** support as needed, **octreotide** if renal failure present
- **Transjugular intrahepatic portosystemic shunt (TIPSS)** should be considered in patients with refractory ascites