



## Chronic Loculated Peritonitis with Fecal Drainage

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### Abstract

A 78-year-old Hispanic female with a past medical history of cryptogenic cirrhosis with ascites and congestive heart failure presented to the emergency department with abdominal pain after a fall. Patient went through multiple paracentesis procedures to remove fluid. Once *Streptococcus* and *Bacteroides fragilis* were found positive in the cultures obtained from the paracentesis, exploratory laparotomy was done to determine source infection however yielded no new additional findings. Post-operation, patient was found to have fecal matter draining in her pigtail catheter and right Jackson-Pratt drain from her abdomen, possibly due to enteric fistula formation. Patient continued to have ascites and fecal matter drainage despite interventions and antibiotics, leading to a diagnosis of chronic peritonitis.

**Keywords:** Chronic peritonitis; Peritonitis; Cryptogenic cirrhosis

### Introduction

Chronic peritonitis is a disease manifested by chronic toxemia that may be infectious or chemical. It has been shown to be prevalent in about 10% of patients with cirrhotic ascites [1] similar to our patient with cirrhosis. Clinically, patients with chronic peritonitis will present with bouts of colic due to an accumulation of exudate. This may cause a visible distension of the stomach.

Chronic peritonitis increases risk and can also be caused by infection. Infection can be from Spontaneous Bacterial Peritonitis (SBP), defined as an infection of ascitic fluid (PMN >250/mm<sup>3</sup> in ascitic fluid and positive bacterial cultures in blood, urine or sputum). The presence of SBP is typically linked to patients with cirrhosis and ascites who develop symptoms of fever, abdominal tenderness and hepatic encephalopathy [1]. Our patient of interest presented with signs, symptoms, and evidence that eventually led the diagnosis of chronic peritonitis.

### Case Presentation

The patient is a 78-year-old Hispanic female with a past medical history of cryptogenic cirrhosis with ascites, congestive heart failure, atrial fibrillation, chronic respiratory failure and type 2 diabetes mellitus who presented to the emergency department on with abdominal pain after a fall. The patient was walking on the stairs 6 days prior and fell off the second stair after a bout of dizziness, striking the left side of her body. There was no head trauma or loss of consciousness, shortness of breath or palpitations. The patient also denied any chest pain prior to the fall. Nevertheless, subsequent lower left quadrant pain ensued and worsened on Valsalva maneuver. Patient was on Lasix and Spironolactone with last paracentesis two weeks before presentation at the emergency department.

Patient's review of systems was unremarkable except for abdominal pain, her chief complaint. The patient denied any allergies and had a previous surgical history of a cesarean section. She occasionally used tobacco but denied drug and alcohol usage.

On physical examination, the patient was tachycardic with mild increased work of breathing at rest. The patient had a non-tender, distended abdomen with trace bilateral lower extremity pitting edema. All other physical exams were unremarkable.

Initial X-ray of the patient's chest showed no significant changes indicating no acute events. Following initial work up, Computed Tomography (CT) scans of the patient's abdomen and pelvis without contrast showed cirrhotic morphology of the liver with evidence of portal hypertension and moderate diffuse ascites. There was no evidence of acute intra-abdominal hemorrhage or organ damage and an indeterminate 7 mm hypodense lesion in the right lower lobe.

Based on the patient's presentation and workup, we began to consider a diagnosis of recurrent ascites secondary to cryptogenic cirrhosis or hepatorenal syndrome.

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The following day, patient had a paracentesis procedure which drained 900 cc of cloudy fluid. Patient still reported continued abdominal pain. The clinical picture remained the same as she was still able to ambulate on her own. We considered other causes of her pain upon initial management of the patient however they were lower on our differentials. Patient's electrolytes continued to remain imbalanced during this time, likely due to her having AKI. Three days later a paracentesis was performed draining 1500 cc of fluid and as she continued to be distended other procedures were done to drain 1080 and 800 cc of fluid. Bacterial cultures were drawn from the ascitic fluid which yielded positive for *Streptococcus anginosus* and *Bacteroides fragilis*.

After bacterial cultures tested positive, this shifted our reasoning to SBP. Patients with SBP typically present with severe constant pain; this pain in our patient could have been originally masked with the heavy ascitic fluid burden. Upon admission, patient was originally on Rocephin, however was switched to Zosyn for added *Pseudomonas* coverage. This was supported by the infectious disease physician on the case. Her condition did not improve despite prolonged antibiotic therapy and her pain continued to fluctuate. This led us move away from the SBP differential.

Another differential that was considered because of the patient's age and inconclusive imaging was peritoneal carcinomatosis. We ordered CA-19-9, CA-125, and CEA to gain a better clinical picture. CA-125 was found to be elevated in this patient. However, this tumor marker is not specific enough to lead to a conclusive diagnosis. This was supported the oncologist on the case.

During this time general surgery was consulted as the patient reported an increase in her baseline abdominal pain as well as a general decline in her overall health. Surgery was considered as patient had an acute abdomen. Exploratory laparotomy revealed many adhesions along with localized inflammations however no evidence of bowel perforations. Two Jackson-Pratt drains were placed on the right and left side of her abdomen. After surgery, the patient's symptoms however did not improve.

We continued to monitor her laboratory values and her vital signs however they showed no improvement. Patient showed no overall improvement leading us to a final diagnosis of chronic peritonitis. Patient was switched from Intravenous Zosyn to Augmentin PO and was transferred to hospice.

## Discussion

Ascites is the most common complication of cirrhosis, has mortality rate of 40% at 1 year and 50% at 2 years, indicating a poor prognosis [2]. There are many causes of cirrhosis and ascites, including cryptogenic cirrhosis.

Cirrhosis affects more than 600,000 people in US; cryptogenic cirrhosis likely accounts for 5% to 30% of these cases [1]. The word "Cryptogenic" originates from the Greek word "kryptos" meaning something hidden or secret [3]. Its name describes that cryptogenic cirrhosis is rare and a diagnosis of exclusion [4]. Cryptogenic cirrhosis and NASH (non-alcoholic steatohepatitis) have a high correlation. Cryptogenic cirrhosis and NASH are predominantly seen in women between 55 to 60 years of age that are obese (45% to 48%) and have diabetes (40% to 50%). Similar to our patient, who also had diabetes and obesity (BMI 30.73). Once cryptogenic cirrhosis is diagnosed, prognosis is often poor; in study by Rinaldi et al. [5] the median

survival was 60 months.

Peritoneal carcinomatosis can also be a cause for ascites. Malignant ascites is a grave prognostic sign and is associated with ovarian, colorectal, pancreatic and uterine cancer [6]. Peritoneal carcinomatosis is a type of malignancy that allows other tumors to spread into the peritoneal tissue. Common symptoms typically seen in patients with peritoneal carcinomatosis is abdominal distension, abdominal pain, fatigue, and weight gain due to fluid overload. We initially considered this differential diagnosis as primary imaging studies did not reveal a localized source of infection. The patient also had worsening abdominal distension even after numerous paracentesis. Ultimately, our team moved away from this differential when bacterial cultures came back positive for *S. anginosus* and *B. fragilis* in the ascitic fluid.

SBP is another risk associated with ascites. It is one of the leading causes of death in patients with cirrhosis. SBP is a primary cause of peritonitis; other causes include iatrogenic contamination without macro defect in the GI tract [7]. This iatrogenic contamination was also seen in our patient post laparoscopic surgery because of persistent fecal material drainage present in only one of two Jackson-Pratt drains and pigtail catheter. We had SBP high on our differential list because of our patient's past medical history of cirrhosis and abrupt onset of clinical symptoms. After our patient's paracentesis procedure, bacterial cultures were drawn from the ascitic fluid. Cultures were positive for *Staphylococcus anginosus*, which is not commonly isolated from patients who have SBP. The patient had an elevated WBC count during this time as well as being hemodynamically unstable. Treatment was initiated with IV antibiotics for SBP. The patient however did not respond to the antibiotic treatment and remained distended with diffuse abdominal pain throughout hospital course [8-9].

## Conclusion

After working through our differentials of cryptogenic cirrhosis, malignancy, and SBP, the patient was deemed to have chronic peritonitis with persistent ascites. This was a diagnosis of exclusion. Patient was stabilized and transferred to hospice care.

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