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A RARE CASE OF SECONDARY FUNGAL PERITONITIS & PYONEPHROSIS IN NASH RELATED LIVER CIRRHOSIS

Gastroenterology

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ABSTRACT

Background: Spontaneous Bacterial Peritonitis (SBP) is a frequent complication in decompensated liver cirrhosis, while secondary fungal peritonitis (FP) associated with pyonephrosis is rare. **Case:** We report a 55-year-old female with diabetes, hypertension, and NASH (Non-Alcoholic Steato Hepatitis) related cirrhosis, who presented with abdominal distension and shortness of breath. Initial ascitic fluid analysis suggested SBP, but despite broad-spectrum antibiotics, the patient's condition worsened. Further investigations revealed right pyonephrosis with perinephric collection. Ascitic and urine cultures grew Candida albicans, and Anidulafungin therapy was initiated. Clinical and laboratory improvements were noted after antifungal treatment, confirming fungal peritonitis secondary to Pyonephrosis. This case highlights the importance of considering fungal peritonitis in cirrhotic patients, particularly in those unresponsive to antibiotics. Risk factors for fungal infections include ICU admission, recent antibiotic use, immunosuppression, and gastrointestinal bleeding. **Conclusion:** Early recognition and antifungal therapy are crucial for improving prognosis in such complex cases of cirrhosis complicated by fungal peritonitis.

KEYWORDS

Candida albicans; Antifungal Agents; Intensive Care Units; Ascites; Liver Cirrhosis/complications.

INTRODUCTION:

Spontaneous Bacterial Peritonitis (SBP) is the most common complication of Decompensated liver cirrhosis while secondary fungal peritonitis with Pyonephrosis is a rare and unknown complication. Fungal Peritonitis (FP) management is difficult as no typical clinical picture exists.1

CASE REPORT:

A 55 year old female with known Diabetes, Hypertension, and NASH (Non-Alcoholic Steato Hepatitis) related liver cirrhosis presented to the Emergency department of our hospital with a history of abdominal distension and shortness of breath for 14 days. She was initially admitted to an outside hospital for 10 days, where she was diagnosed with moderate ascites with acute kidney injury with deranged liver function tests(Total bilirubin: 1.30, Aspartate transaminase (SGOT) 62.5, Alanine transaminase (SGPT) 26.7, serum urea 54, serum creatinine 1.32). 1.5 litres of ascitic fluid was tapped which on analysis showed White Blood Cells (WBC) 300, 285 lymphocytes, protein 1.47, Adenine deaminase (ADA) 9.30. She was given broad spectrum antibiotics. On presentation to our hospital, she was tachypneic, had tachycardia and required oxygen by nasal prongs. 3 liters of ascitic fluid was tapped, and analysis showed WBCs 8480 with neutrophil predominance (Table 1). Her antibiotics were escalated due to SBP. An increase in WBC count despite intravenous antibiotics pointed towards a secondary cause. She had fever and worsening of renal and liver functions (Total bilirubin 0.70, SGOT 51, SGPT 136, Serum creatinine 1.79, Hb 7.1, WBC 10000). Her abdominal CT (Computerized Tomography) scan revealed right pyonephrosis with perinephric collection and proximal hydroureter (Fig 1a, Fig 1b) for which cystoscopy with DJ stenting was done. Ascitic fluid culture showed growth of Candida albicans. Anidulafungin was started. Her HIV status was negative. Urine culture also showed Candida albicans growth. However, blood culture was sterile. 10 days later a repeat ascitic fluid analysis showed decrease in WBC count with a negative ascitic fluid culture (Table 1). The patient also showed clinical improvement and got shifted out of Medical ICU (Intensive Care Unit) with stable vitals. The patient was discharged from the hospital a few days later.

Parameters	Day 1	Day 10
Appearance	Hazy	Slightly Hazy
Colour	Pale Yellow	Pale Yellow
Proteins	1.9	2.1
WBC Count	8480	80
Neutrophils	96	40
Lymphocytes	0	27
RBC Count	160	60
Culture	CANDIDA ALBICANS	NO GROWTH

Table 1: Ascitic Fluid Analysis/Presentation Day 1 vs Day 10 of Anti-Fungal Treatment

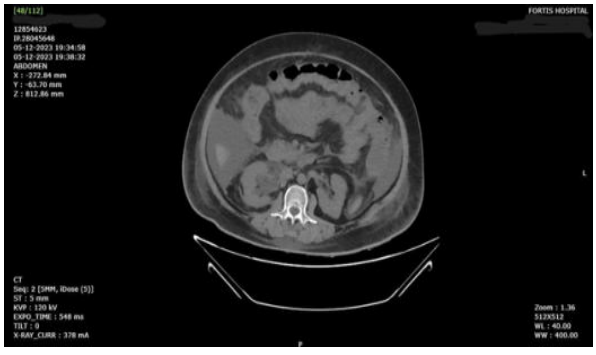

Fig 1a: NCCT Abdomen showing right pyonephrosis with perinephric collection with proximal hydroureter

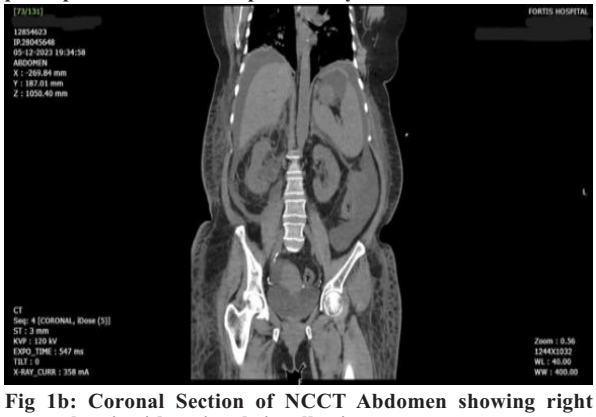

Fig 1b: Coronal Section of NCCT Abdomen showing right pyonephrosis with perinephric collection

DISCUSSION:

Fungal peritonitis secondary to pyonephrosis is very rare and

unknown. Usually, secondary peritonitis is polymicrobial, as the gut is the usual source of infection. However, there are very few case reports of pyonephrosis leading to secondary peritonitis. In our case, the secondary peritonitis was found to be of fungal origin, which is very rare in liver cirrhosis and has a graver prognosis2 3. Risk factors for fungal peritonitis in cirrhotic patients include ICU admission, abdominal surgery, recent antibiotics, malnutrition, immunosuppression, patients on peritoneal dialysis or a recent history of Gastro intestinal bleeding 2.

CONCLUSION:

Hence, Secondary Fungal Peritonitis should be considered in patients with liver cirrhosis who are not improving on empirical antibiotic therapy for SBP.

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