MEGA JOURNAL OF CASE REPORTS

OPEN ACCESS

Case Presentation

Compiled Date: March 22, 2024

Exploratory Laparotomy for Pneumococcal Peritonitis – A Case Report

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Abstract

This case report presents a 71-year-old patient, thin, without comorbidities, who underwent exploratory laparotomy due to acute abdominal pain with signs of peritonitis on physical examination, associated with leukocytosis and tomography with a small amount of free fluid in the cavity. During intraoperative the presence of pus was evident in the parietocolic drips and in the cul-de-sac, but without the presence of any injuries that would justify such a finding. The cavity was washed and the liquid collected for culture showed growth. of the bacterium Streptococcus pneumoniae, making the diagnosis pneumococcal peritonitis. The patient was treated with a regimen of ceftriaxone and metronidazole started empirically on admission and maintained after surgery, progressing satisfactorily and being discharged from hospital at the end of the seventh day of antibiotic therapy intravenous. Spontaneous bacterial peritonitis presents in patients with ascites secondary to liver disease or other causes such as neoplastic, renal or cardiac and its treatment is imminently clinical. The occurrence of peritonitis spontaneous bacterial infection in patients without ascites is uncommon and little described in the literature, with these cases being a great challenge in terms of diagnosis and management. Due to the clinical picture and laboratory tests, especially due to the finding of signs of peritonitis on physical examination, these patients are often subjected to exploratory laparotomy, showing a significant amount of intracavitary pus but without lesions that justify the cause. From the few reports available in the literature, a pattern of isolation of Streptococcus pneumoniae in the cultures of these cases,

such as the patient described in this work. The pathophysiology is little understood and the clinical history does not have specific findings for the diagnosis. There is a pattern of greater occurrence of pneumococcal peritonitis in children and females, as well as some correlation to immunodeficiencies or liver disease due to various causes, but also with some frequency in patients previously healthy.

Keywords: Pneumococcal peritonitis; Laparotomy; Spontaneous peritonitis

Introduction

Spontaneous bacterial peritonitis typically occurs in patients with ascites secondary to liver disease or other causes such as neoplasms, renal, or cardiac conditions, and its treatment is primarily medical. The occurrence of spontaneous bacterial peritonitis in patients without ascites is uncommon and poorly described in the literature, presenting a significant challenge in terms of diagnosis and management, often requiring surgical intervention. This paper presents a case report of a patient with spontaneous bacterial peritonitis of pneumococcal etiology.

Case Presentation

A 71-year-old, thin patient with a history of previous lower limb venous insufficiency and no other comorbidities was referred to the University Hospital of Florianópolis due to a three-day history of progressively intense upper abdominal pain, predominantly on the right side, associated with vomiting of food content. The patient denied changes in bowel habits, urinary symptoms, or respiratory symptoms. On physical examination, vital signs were stable, and diffuse guarding and rebound tenderness were noted in all abdominal quadrants, with no other significant findings. Laboratory tests showed a white blood cell count of 18,240 cells/μL (with 4% bands), C-reactive protein level of 312 mg/dL, with no abnormalities in liver injury markers, canalicular enzymes, or bilirubin. Gasometry and electrolytes were normal, as well as the red blood cell count. Upper abdominal ultrasound revealed a gallbladder with thin walls and usual capacity, containing material suggestive of biliary sludge, with no hepatic or biliary tract abnormalities. Total abdominal computed tomography showed a small amount of free perihepatic fluid, without other findings.

Empirical treatment with ceftriaxone and metronidazole was initiated, and exploratory laparotomy was indicated due to a picture of peritonitis requiring clarification. Intraoperatively, signs of diffuse peritonitis were evident, with the presence of thick, purulent fluid in the paracolic gutters and cul-de-sac. There was no ascites present. The cavity was meticulously examined for pathologies and then thoroughly irrigated. Colonic diverticula were noted without signs of inflammation. There were no pathological findings involving the cecal appendix, gallbladder, small or large intestine, or any other structures to justify the presence of pus in the cavity.

The collected fluid showed the growth of Streptococcus pneumoniae bacteria in culture, confirming the diagnosis as pneumococcal spontaneous peritonitis. During the postoperative period, it was discovered that the patient had a 30-year history of alcohol consumption, with an average intake of around 60 grams of alcohol per day over the last ten years, but without signs of hepatopathy or ascites. The patient showed

satisfactory progress in the postoperative period and was discharged from the hospital after completing the empirically instituted intravenous antibiotic therapy regimen, with scheduled outpatient follow-up.

Discussion

Pneumococcal peritonitis is an uncommon and poorly understood condition, as well as an unusual manifestation of Streptococcus pneumoniae infection. This entity represents an atypical presentation of invasive pneumococcal disease. Risk factors and pathophysiology are not well established due to limited case studies. This entity can be divided into three groups: primary pneumococcal peritonitis associated with hepatopathy, including cirrhosis, hepatitis B or C, and chronic kidney disease on peritoneal dialysis or nephrotic syndrome; pneumococcal peritonitis with genitourinary focus in young women; and secondary or tertiary peritonitis associated with gastrointestinal disease or post-surgical conditions. There is some degree of immunodeficiency associated with the manifestation of this entity, and there are reports of its occurrence in children. Some of the cases reported in the literature are likely nosocomial in origin and may be precipitated by gastrointestinal bleeding.

Due to the clinical presentation and laboratory findings, particularly the presence of signs of peritonitis on physical examination, these patients are often subjected to exploratory laparotomy, revealing a significant amount of intracavitary pus, requiring copious lavage of the cavity, but without lesions justifying the infection. From the few reports available in the literature, there is a pattern of isolation of Streptococcus pneumoniae in cultures from these cases, as observed in the patient described in this report.

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Citation of this Article

Gregory CP, Fedrizzi ER, Garcia MC, Minussi GK, Ramos GP, de Paiva Bertoli PH, Cecconello GL and Nassif TM. Exploratory Laparotomy for Pneumococcal Peritonitis – A Case Report. Mega J Case Rep. 2024;7(3):2001-2004.