Acute pancreatitis with peritoneal fat necrosis with atypical clinical symptoms

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ABSTRACT

Introduction: Acute pancreatitis (AP) is characterized by severe and persistent abdominal pain due to pancreas inflammation. This study aims to describe the diagnostic and therapeutic steps chosen to treat patients with acute pancreatitis due to cholelithiasis who have experienced necrosis of the peritoneal fat tissue with atypical symptoms using a simple examination.

Case Presentation: The patient complained of abdominal pain in the left hypochondrium. The pain was described as intermittent and sharp, without spreading, and is accompanied by nausea and vomiting, persisting for the past two weeks. The following day, the abdominal pain became more severe and persistent, especially with changes in position. Abdominal examination shows distended, defensive muscles and decreased bowel sounds. The ultrasound examination results showed that there were gallstones in the neck bladder measuring 5 mm and minimal fluid between the intestines and McBurney. Abdominal plain radiograph (BOF-LLD) results provide a ground glass appearance in the abdominal cavity. The patient underwent exploratory laparotomy, antibiotics and supportive therapy. The patient was discharged on day 9.

Discussion: Computer tomography can be used in uncertain diagnosis, and ultrasonography (USG) cannot visualize AP. However, in cases of signs of peritonitis, surgery can be used for therapy and to confirm the diagnosis.

Conclusion: Signs of peritonitis increase the urgency in this patient; prompt exploratory surgery is performed to remove the focus of infection and help confirm the diagnosis. In addition to administering antibiotics and supportive therapy, surgery can provide satisfactory results.

INTRODUCTION

Acute pancreatitis (AP) is characterized by severe, persistent abdominal pain due to pancreas inflammation that occurs annually in 13-45 per 100,000 population (Boxhoorn et al., 2020; Lee & Papachristou, 2019; Ouyang et al., 2020; Szatmary et al., 2022). The majority of risk factors for AP are alcoholism (70%) and microlithiasis (40%) (Alkareemy et al., 2020; Huang & Badurdeen, 2023). AP can progress to ischemia and tissue necrosis, often causing life-threatening infections.
Sometimes, an atypical clinical picture of AP complicates the diagnosis (Farzad Vaghef Davari & Hadi Ahmadi Amoli, 2019; Goodchild et al., 2019). The Walkowska et al. 2022 study shows that there are at least two symptoms for the diagnosis of AP, namely persistent and severe abdominal pain that is typical in the epigastric area where there is often radiation to the back. Additionally, diagnosis is supported by an increase in serum amylase or lipase at least three times the average level, and a characteristic picture found in ultrasonography (USG), computerized tomography (CT), or magnetic resonance imaging (MRI) (Chan & Shelat, 2022; Walkowska et al., 2022; Zerem, 2014). However, establishing a diagnosis of AP based on symptoms and signs is problematic because it overlaps with other diseases, especially in cases with the location and type of pain that is not typical of AP (Nadhem & Salh, 2017). Ultrasound examination as an initial supporting tool cannot depict any pathology in the pancreas (Greenberg & Hsu, 2016). This complicates diagnosis, leading to misdiagnosis, prolonging therapy, and harming the patient. Therefore, this study aims to describe the diagnostic and therapeutic steps chosen to treat patients with acute pancreatitis due to cholelithiasis who have experienced necrosis of the peritoneal fat tissue with atypical symptoms using a simple examination. This article can help clinicians establish diagnosis and therapy in similar cases.

**CASE PRESENTATION**

A 35-year-old male patient came to the emergency room at Jemursari Islam Hospital, Surabaya, complaining of abdominal pain. The patient complained of abdominal pain in the left hypochondrium. The pain is felt to be intermittent and sharp with no spreading, accompanied by nausea and vomiting, which has been felt for two weeks. The patient was treated at another hospital with the same complaint for 5 days. The patient had no history of diabetes mellitus, high blood pressure, abdominal surgery, or alcohol consumption habits. The patient has a history of gastritis. The patient has a habit of consuming the "Cap Walangkerik," which contains acetylsalicylic acid, paracetamol, and caffeine. At physical examination, generally looked sick. Glasgow Coma Scale (GCS) was composita mentis, vital signs showed blood pressure 151/98 mmHg (hypertension), pulse 112x/minute (tachycardia), respiration rate 20x/minute, temperature 36.7°C, and oxygen saturation of 97%. Examination of the head and neck showed slight jaundice. Chest examination was within normal limits. Abdominal examination showed symmetry on the right and left sides. There were no masses. On palpation, there was a pain in the area of the left hypochondrium, soeff, and tympani in 9 quadrants. There was a decrease in bowel sounds.

Leukocytes 35.48 thousand/μL, neutrophils 88.48%, platelets 489 thousand/μL, SGPT 75 U/L, albumin 3.4 g/dL. Urinalysis examination: Bilirubin +1, urobilinogen 3.2 µmol/L; Serum electrolyte examination: Chloride 91.80 mEq/L, potassium 3.1 mEq/L, and sodium 131.20 mEq/L.

From initial assessment, the patient was diagnosed as duodenal ulcer with cholecystitis. The patient was treated with sucralfate, omeprazole, and ceftriaxone. The patient was scheduled for an abdominal ultrasound examination.

The following day, the abdominal pain became more severe and persistent, especially with changes in position. Abdominal examination shows distended, defensive muscles and decreased bowel sounds. The ultrasound examination results showed that there were gallstones in the neck bladder measuring 5 mm and minimal fluid between the intestines and McBurney. The examination showed suspicion of perforation, so a confirmatory examination of plain abdominal radiography/ Buick oversized photo-left lateral pinches (BOF-LLD) was carried out urgently.
Figure 1. Ultrasound (USG) of the abdomen

The BOF-LLD photo results provide a ground glass appearance in the abdominal cavity, the flank area appears convex, the peritoneal fat appears thinned, and the psoas shadow is not visible.

Figure 2. Abdominal plain radiograph (BOF-LLD)

The patient was referred to the surgical department for an exploratory laparotomy. Exploratory laparotomy showed turbid fluid (pus ± 300 cc) in the peritoneum, fibrin with saponification throughout the viscera, and necrotic tissue in the distal part of the pancreas. Debridement of the necrotic part of the pancreas, washing of the abdominal cavity, peritoneal lavage, and intra-abdominal drain were performed. The patient's diagnosis was confirmed to be peritonitis due to biliary pancreatitis. On the 9th day, the patient was sent home without complaints; laboratory results showed normal.

DISCUSSION

AP reaches 34 per 100,000 cases in developed countries every year, 20% of which develop into moderate to severe AP with an increase in mortality rate of 20-40% (Boxhoorn et al., 2020; Kundumadam et al., 2021). In cases of pancreatitis due to gallstones, clinical symptoms of cholecystitis and pancreatitis may appear because gallstones can be complicated by both, depending on the size and number of stones. In complicated cases of pancreatitis, small stones pass through the cystic duct and into the ampulla, causing obstruction. This causes bile reflux into the pancreatic duct, causing local inflammation (pancreatitis). Lipolytic enzymes will digest pancreatic tissue and peripancreatic fat if this process continues. The breakdown of fat cells creates fat cells that can be mixed with serum potassium, called saponification. In addition, lipolytic enzymes can cause leakage of lymphatic channels and irritate peritoneal tissue (peritonitis), worsening the patient's prognosis (Boumitri et al, 2017; D'AMATA et al., 2016; Devos et al., 2020; Kundumadam et al., 2021)
Imaging can aid in the diagnosis of AP. AP is usually difficult to visualize by ultrasound due to its retroperitoneal location, which can be exacerbated by intestinal gas, obesity, and abdominal pain (Shah et al., 2022). CT scans or MRIs can help detect pathology in the pancreas, determine the severity, and diagnose complications (Chatila et al., 2019; McPherson et al., 2017). However, in this case, there were signs of emergency peritonitis (abdominal tenderness, rebound tenderness, rigidity on palpation) and infection as evidenced by the presence of leukocytosis and the BOF-LLD examination, which is an examination that can detect perforation, so we chose surgical treatment. Help establish the etiological diagnosis of peritonitis in these cases (Burrowes et al., 2020; Clements et al., 2021; Ross & Matthay, 2018).

A non-surgical therapy in AP in the last few decades has shown a reduction in mortality, but in AP, that has infected necrosis with worsening sepsis requires surgical intervention (Vengadakrishnan & Koushik, 2015). Exploratory laparotomy surgery helps visualize the entire abdomen, which conventional imaging may not delineate. Exploratory laparotomy is indicated to control infection and determine etiology in cases of diagnostic uncertainty. Administration of broad-spectrum antibiotics to prevent superinfection of necrotizing tissue is the only initial treatment because its development is not preventable (Anastasiu et al., 2021; Rahman et al., 2020; Zerem, 2014). In this case, antibiotics are given until the patient’s leukocyte levels show normal limits. Surgical therapy, in addition to antibiotics and supportive treatment, showed satisfactory results. Ideal antibiotics in cases of severe acute pancreatitis that target gram-negative bacteria and anaerobic bacteria, such as carbapenems, third and fourth-generation cephalosporins, metronidazole, quinolones, etc (Chua et al., 2017; Li Yousheng, 2021; Siregar & Siregar, 2019)

CONCLUSION
Treating AP cases with atypical symptoms presents a challenge for clinicians. Considering the patient’s condition, the selection of supporting examinations must be as judicious as possible. In cases of AP that have not been confirmed but the patient already has signs of an emergency, surgery can be an option as therapy and diagnosis, as well as providing antibiotics and supportive treatment

REFERENCES


