Case Report

Scrotal Abscess: A Rare Presentation of Complicated Necrotizing Pancreatitis

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Abstract

Acute pancreatitis is characterized by activation of digestive enzymes inside the pancreas. In severe pancreatitis, necrosis of pancreas and surrounding tissues may occur. Acute necrotizing pancreatitis commonly presents as pancreatic abscess occasionally with systemic complications. Rarely, necrotic tissue may be drained from scrotum due to retroperitoneal extension of necrotic process. Here, we report a case of acute necrotizing pancreatitis in a 29-year-old man who presented with severe abdominal pain, nausea and vomiting. A computerized tomography (CT) scan confirmed necrotizing pancreatitis with multiple abscesses spreading bilaterally in the pelvic cavity. Several surgical operations were performed, including necrosectomy and drainage. Subsequently, the patient developed a scrotal abscess, which was drained surgically. The patient's condition was complicated by pleural effusion, acute respiratory distress syndrome, colocutaneous and scrotal fistulas, and incisional hernia. It seems that the scrotal abscess is a very rare complication of necrotizing pancreatitis.

Keywords: Acute Necrotizing, pancreatitis

Cite this article as: Mirhashemi S, Soori M, Faghih G, Peyvandi H, Shafagh O. Scrotal Abscess: A Rare Presentation of Complicated Necrotizing Pancreatitis. *Arch Iran Med*. 2017; **20(2):** 124 – 127.

Introduction

Acute pancreatitis is characterized by activation of digestive enzymes inside the pancreatic acinar cells and the subsequent systemic release of proinflammatory cytokines.[1] About 5–10% of patients with acute pancreatitis develop necrosis of the pancreatic parenchyma, the peripancreatic tissue or both. The necrotic tissue can remain sterile or become infected, which is associated with higher morbidity and mortality.[2] Acute pancreatitis is frequently related to local or systemic complications. Local complications include acute peripancreatic fluid collection, pancreatic pseudocyst, acute necrotic collection, walled-off necrosis, gastric outlet dysfunction, splenic and portal vein thrombosis, and colonic necrosis. Systemic complications of acute pancreatitis are defined as exacerbation of pre-existing co-morbidities such as coronary artery disease precipitated by acute pancreatitis, and implicate pulmonary, cardiovascular, gastrointestinal, renal, and central nervous systems, as well as skin.[2,3] Here, we present a very rare case of scrotal abscess as an unusual complication in a patient with severe necrotizing pancreatitis.

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Accepted for publication: 21 December 2016

Case report

A 29-year-old man was admitted to our center with severe generalized pain in the abdomen and a history of laparoscopy and lower midline laparotomy with impression of peritonitis due to complicated appendicitis which occurred a few days before in a regional hospital, which unfortunately failed to find the source of pathologic condition. The patient was a heavy smoker and alcohol drinker. He was referred to our center where a diagnosis of acute pancreatitis was made for him. Vital signs on admission were: heart rate 140 beats per min, respiration rate 30 per min, blood pressure 100/65 mmHg, and oral temperature 39.5°C. Laboratory findings were as follows: Hemoglobin 13.5 g/dL, white blood cell count 18000/mm^3, platelet count 90,000/mm^3, blood urea nitrogen 80 g/dL, creatinine 1.4 g/dL, blood amylase 800 U/L. Blood sugar and serum Na^+ and K^+ were in normal ranges. On chest X-ray, consolidation and air bronchogram were observed in the base of the lungs on both sides. Abdominopelvic CT scan confirmed necrotizing pancreatitis with multiple abscesses spreading bilaterally in the pelvic cavity. (Figure 1) The testes were of normal size and heterogeneous parenchymal echo with some hypoechoic areas, suggestive of testicular edema. (Figure 2) The scrotal wall was thicker than normal, with gaseous and calcified areas indicative of Fournier's gangrene.

A midline laparotomy was carried out through which pancreatic and retroperitoneal necrotic tissues were debrided (Figure 3). Retroperitoneal abscesses were drained, and the abdominal and pelvic cavities were lavaged. Afterwards, four drainage catheters were inserted in place, the omentum was sutured to the anterior abdominal wall to secure the small bowel from contamination, and the abdomen was closed with only skin sutures. Following

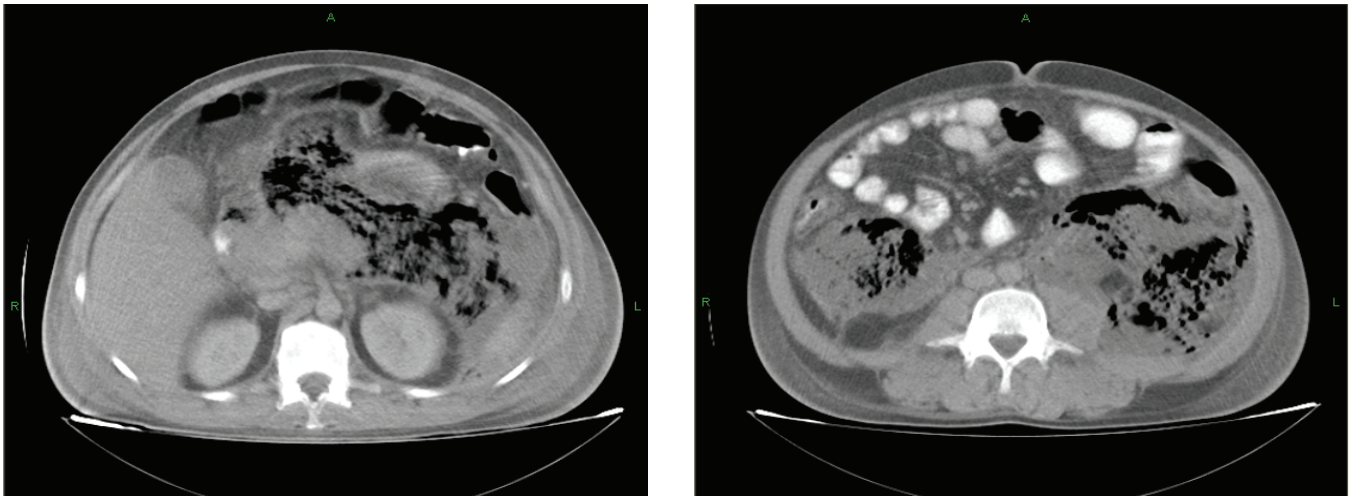

Figure 1. Pancreatic necrosis with retroperitoneal extension. Arrows show gas formation in tissues.

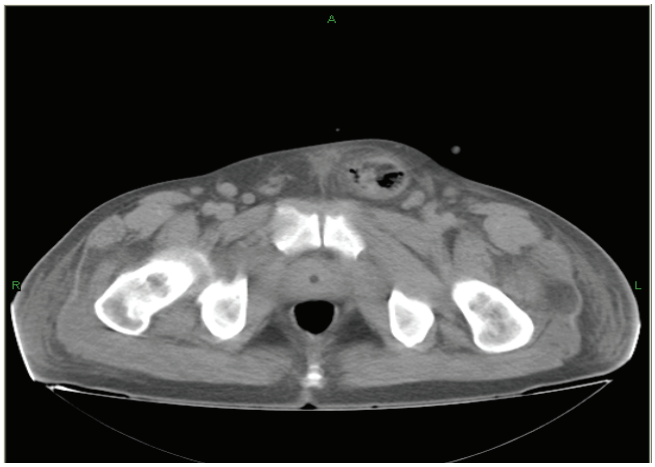

Figure 2. Gas extends from left inguinal canal to testis.

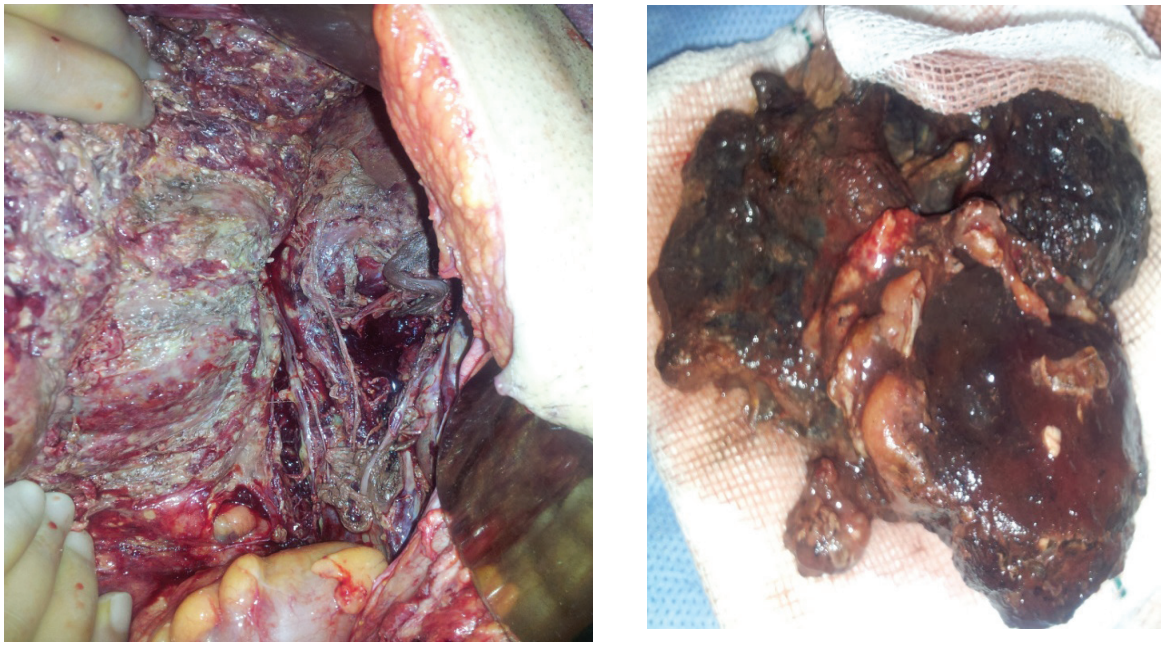

Figure 3. Retrocolic soft tissue necrosis (white arrow) and debrided pancreas.

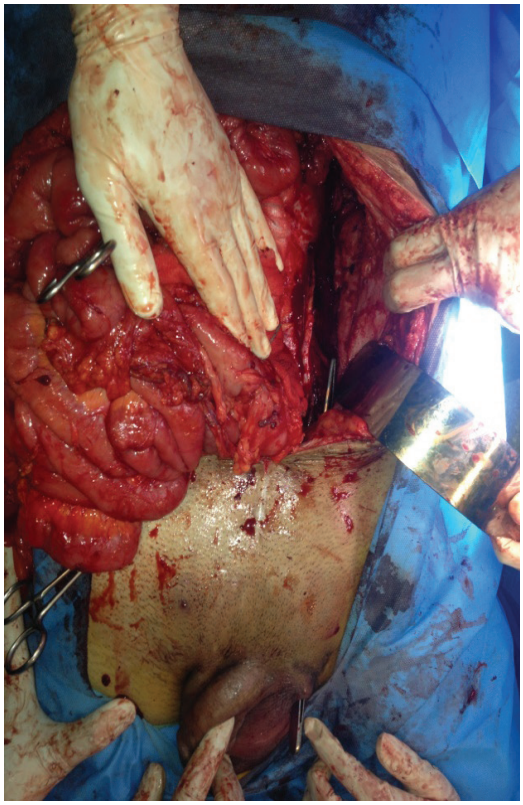

Figure 4. Scrotal fistula originatig from retroperitoneal abscess cavity.

the operation, the patient was transferred to the intensive care unit (ICU) where a tracheal tube was placed for him owing to extensive implication of pulmonary parenchyma and subsequent reductions in arterial PO_2. Additionally, the patient's condition aggravated due to development of a left-sided pleural effusion. Therefore, a chest tube was inserted to drain transudative fluid. Furthermore, fluid resuscitation, and total parenteral nutrition were prescribed for the patients. Two days later, the patient underwent another laparotomy where accumulated fluid was drained, devitalized tissues especially in paracolic gutters of both sides were generously removed, and the abdominal and pelvic cavities were irrigated copiously with normal saline. The patient returned to the ICU with endotracheal tube, and remained in a decreased level of consciousness for 22 days. During this time, he developed severe acute respiratory distress syndrome (ARDS); therefore, tracheostomy was performed for him. In addition, an abscess was detected in his left scrotal sac. Consequently, he was operated under general anesthesia for scrotal abscess and approximately 200 mL of purulent fluid was evacuated. The patient recovered and was weaned off the respirator and discharged from the hospital in good conditions, with two low output fistulas in right and left upper quadrants with bowel secretions, especially colon discharge. He resumed oral feeding and his appetite and nutritional state improved and he began to gain weight after a while. He had a controlled diabetes mellitus.

Four months later, the patient underwent operation for two colocutaneous fistulas in the hepatic and splenic flexures. An extended colectomy was carried out and the small intestine was reconnected to the descending colon with a side-to-end anastomosis. Additionally, a scrotal fistula, originating from the retroperitoneal space (Figure 4), was drained, its tract was curreted out, and the place was washed out with normal saline. Drainage catheters were placed on the left side of the retroperitoneal space and the incisions were sutured, but the scrotum was left open. Upon resuming oral feeding, he was discharged from the hospital, but one month later a huge abscess appeared in his left retroperitoneal space that was managed by percutaneous drainage. Six months later, a giant incisional hernia was surgically repaired with mesh. Currently, the patient is in good conditions, has controlled diabetes mellitus, and takes pancreatin for better digestion.

Discussion

Acute pancreatitis comprises clinically a mild, self-limiting edematous-interstitial inflammation, and a severe type with local necrotizing inflammation and systemic complications. However, many patients initially identified with mild disease progress to severe pancreatitis over the early period of the disease.[4] Several causes of acute pancreatitis have been identified among which gallstone migration into the common bile duct and alcohol abuse have been proven as the main causes.[5] In the present case, alcohol abuse was obvious, as he mentioned a three-year history of alcohol intake up to one bottle a day.

According to Atlanta classification of acute pancreatitis, severe pancreatitis is defined as the presence of persistent (>48 h) organ failure in at least one of the respiratory, cardiovascular, or renal systems.[2] The patient presented in this report had unrelenting respiratory failure as he encountered reductions in arterial oxygen tension leading to tracheal intubation and mechanical ventilation.

Patients with severe acute pancreatitis usually have one or more

local complications such as necrosis, abscess, and pseudocyst, and they often suffer extensive peripancreatic fat necrosis, parenchymal necrosis, and hemorrhage.[2,6] Nearly all of these complications occurred in this case. Furthermore, a very rare complication, namely, a scrotal abscess, was found in this patient.

There are also other reports of distant enclosed collections in patients with acute necrotizing pancreatitis. In this regard, two cases of fatty necrosis of subcutaneous tissues and accumulation of amylase-rich fluid in inguinal canal were reported in patients initially diagnosed as having inguinal hernia but subsequently found to have necrotizing pancreatitis.[7,8] Moreover, a large right retroperitoneal and scrotal abscess was reported to be percutaneously drained under ultrasonic guide in a patient with acute fulminant pancreatitis.[9] Additionally, fat necrosis of tunica vaginalis and spermatic cord firstly diagnosed as testicular torsion has been reported in a patient with acute pancreatitis.[10]

Taken together, it seems that tissue necrosis and formation of fluid-filled collections subsequent to acute necrotizing pancreatitis may occur anatomically in locations as distant as inguinoscrotal region and rarely present as a scrotal abscess.

Acknowledgments

We would like to appreciate the support of Clinical Research Development Center of Loghman Hakim hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

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