Ruptured splenic abscess as a cause of acute abdomen: Report of two cases and review of literature

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INTRODUCTION

When treating patients for an acute abdomen, physicians usually suspect the more common causes of peritonitis such as ruptured appendicitis, perforated diverticulitis, perforated peptic ulcer or ruptured abdominal aortic aneurysm with hemoperitoneum. Ruptured splenic abscess is rarely considered in the differential diagnoses. Herein we report our experience treating two patients with ruptured splenic abscess presenting as an acute abdomen.

CASE REPORTS

CASE #1

An 82-year-old diabetic man was admitted with severe abdominal pain of twelve hours duration. He had previously had coronary bypass and aortic valve replacement. He also had an operation for perforated peptic ulcer. The patient had atrial fibrillation. The patient’s temperature was 38.2 degrees C. The abdomen was distended, diffusely tender and silent. The patient was felt to have generalized peritonitis. WBC was 13.6 x 10^9/L. CT scan showed vascular calcifications, free intra-peritoneal fluid and a subcapsular splenic fluid collection.

Laparotomy showed diffuse peritonitis. After exploration of the rest of the abdomen for a source of perforation was negative, attention was turned to the left upper quadrant where free rupture of a splenic abscess was found. Cultures of the spleen and peritoneal fluid grew Propionibacterium acnes. Splenectomy was performed and the patient recovered.

CASE #2

A 74-year-old diabetic man with a history of coronary disease and cirrhosis was admitted for chest pain, dyspnea and hyperkalemia. Shortly after admission, the patient developed severe diffuse abdominal pain and signs of generalized peritonitis. WBC was normal. An abdominal CT scan revealed a splenic abscess with small gas bubbles in both the splenic abscess and right upper quadrant. (Figure) Laparotomy showed diffuse peritoneal contamination and a ruptured splenic abscess. Splenectomy was performed but the patient died of sepsis.

DISCUSSION

Ruptured splenic abscess is an unusual cause of generalized peritonitis, yet it is one of the most serious complications of splenic abscess. Less than 100 cases have been reported. Rupture of a splenic abscess has long been recognized as a serious complication of splenic abscess. Chun’s comprehensive review of 173 patients with splenic abscess in 1980 identified generalized tenderness in 17% and peritonitis due to rupture in 10%. (1) In one of their patients, peritonitis was caused by hemoperitoneum which followed rupture of the abscess. Ooi’s review of the literature from 1987-1995 revealed that the most common complication of splenic abscess was rupture into the peritoneal cavity, which
occurred in 7% of 287 patients. (2) Phillips’ review of 39 patients with splenic abscess found 15% had peritoneal signs and 10% required emergency exploration for ruptured abscess. (3) Linos’ review of nineteen patients with splenic abscess identified only one with generalized peritonitis from rupture. (4)

Summary of Ruptured Splenic Abscesses

Figure 1

While overall mortality in patients with splenic abscess is about 12%, mortality in patients with rupture and generalized peritonitis may be 20-55%. (2, 18) Five different etiologies for splenic abscess are accepted. (2)

- Metastatic spread from elsewhere in the body
- Contiguous spread from nearby infection
- Secondary infection of splenic infarct
- Secondary infection of splenic hematoma or trauma.
- Immune compromise

The changing spectrum of bacterial isolates from splenic abscess suggests the use of broad-spectrum antibiotics until culture results are available. Many of these abscesses are polymicrobial and some are caused by gas-producing organisms. When a splenic abscess caused by gas-producing organism ruptures, a pneumoperitoneum can be seen as in one of our patients. (6,8,12,17) Fungal and Mycobacterial infections are becoming more common.

Surgeons should be aware that ruptured splenic abscess is a rare cause of an acute abdomen with generalized peritonitis. Splenic abscess is best diagnosed with CT scanning. Rupture is suggested by the development of generalized abdominal tenderness. The presence of intra-peritoneal fluid or gas in a patient with splenic abscess seen on CT scan also suggests rupture. The treatment of choice for patients with ruptured splenic abscess is splenectomy and antibiotic therapy.

References

17. Manon, NG, Braat, JA, Hueting, WE, Hazebrook, EJ. Pneumoperitoneum secondary to a ruptured splenic abscess.