

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

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Citation

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Abstract

When evaluating patients with severe acute abdominal pain, physicians and surgeons must consider common etiologies for acute abdomen such as appendicitis, diverticulitis, perforated viscus and vascular emergencies like ruptured aneurysm or bowel ischemia. In some patients, however, there is a more unusual cause of an abdominal emergency. In this article, we report two patients where an abdominal crisis was caused by rupture of a splenic abscess. Our review of the literature suggests that the risk of rupture in patients with splenic abscess is 10-20% and that the mortality rate for this condition could be greater than 50%. While there may be a role for percutaneous catheter drainage for some splenic abscesses, we conclude that the best treatment of ruptured splenic abscess is antibiotic therapy and splenectomy.

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 $13.6 \times 10^9/L$. 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

Collected Series	#Rupture/#Splenic	Individual Cases
Splenic Abscess	Abscess	Ruptured Splenic Abscess
1980 Chun (1)	17/173	1993 Pera (5) 1
1983 Linos (4)	1/19	1997 Puhakka (6) 1
1987 Nelken (7)	14/171	2001 Rege (8) 1
1997 Ooi (2)	19/287	2002 Balasubramania (9) 1
1997 Phillips (3)	4/39	2002 Yoshikai (10) 1
1998 Al-Salem (11)	2/10	2003 Ishigami (12) 1
		2004 Ulhaci (13) 1
		2007 Sithasanan (14) 1
		2007 Tappe (15) 1
		2007 Ebels (16) 1
		2009 Manon (17) 1
		2009 McClenathan 2

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.

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