Case report

A case of Peritonitis with pneumoperitoneum secondary to a spontaneous rupture of splenic abscess

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Abstract:

Sponteous rupture of a splenic abscess is rare and little described in the literature. It can cause peritonitis with pneumoperitoneum. Our case illustrates this exceptional complication in a 77 year-old diabetic patient who consulted for abdominal pain with asthenia. The abdominal computed tomography showed an acute peritonitis caused by with splenic abscess. Aeoporty was also observed. He was operated but died postoperatively for severe sepsis. Our case is rare and interesting. Indeed, a splenic abscess can be the cause of peritonitis, pneumoperitoneum and aeorportie.

Keywords: Spleen, Abscess, Peritonitis, Pneumoperitoneum

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Introduction:

Splenic abscess is a rare clinical entity. Its rupture in the abdominal cavity, which is generally caused by a trauma, can cause acute peritonitis. Spontaneous rupture is very exceptional. Only some cases were reported in the literature[1,2].

We report herein a case of peritonitis secondary to non-traumatic ruptured splenic abscess in a 77-year-old patient.

Case report:

A 77-year-old diabetic man was referred to our hospital for severe abdominal pain for five days. The patient did not report a trauma history. On physical examination, the patient was tachycardic (pulse rate: 110 bpm) and tachypneic (respiratory rate: 28 breaths/min), blood pressure was 10/6 mmHg and temperature was 37°. The abdominal examination showed distension with severe tenderness. Laboratory data showed: white blood cell count 25.000/mm³, C-reactive protein level at 480 mg/l, hemoglobin level at 11.9 g/dl and creatinine level at 230 µmol/l. Chest X ray was normal and no pneumoperitoneum was found. Computed tomography of the abdomen revealed free intraperitoneal fluid with peri-hepatic, peri-gastric and peri-splenic gas bubbles. It showed also a 7×5×4 cm hypodense peripherally enhancing lesion in the spleen and major aeroportia (**Figure 1**).

No other lesions were found. A splenectomy and peritoneal toilet were performed. The patient died four hours later of sepsis. Microbiological culture was positive for *Klebsiella Pneumoniæ*. The splenectomy specimen was 12.5×8×3 cm in dimension, covered by necrotic false membranes, with ruptured area measuring 7×4.5×3.5 cm (**Figure 3**).

histopathological examination showed complete

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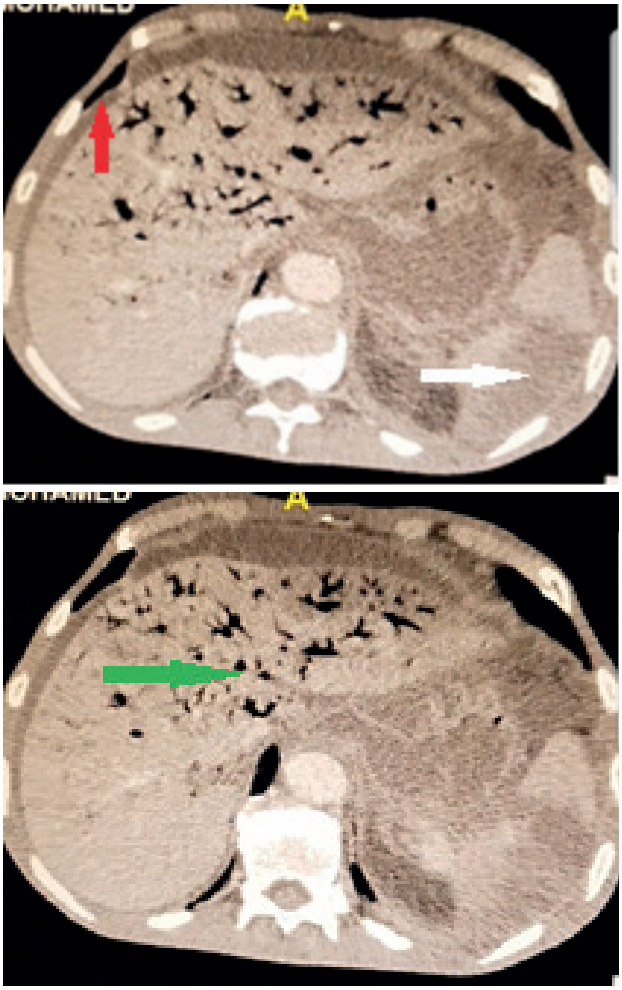

Fig. 1: Computed Tomography scan of the abdomen axshowing free intraperitoneal fluid with splenic abcess (white arrow), pneumopertoneum (red arrow) and major aeroportia (green arrow).

An emergent laparotomy was performed and showed diffuse purulent peritonitis with a ruptured splenic abscess (**Figure 2**).

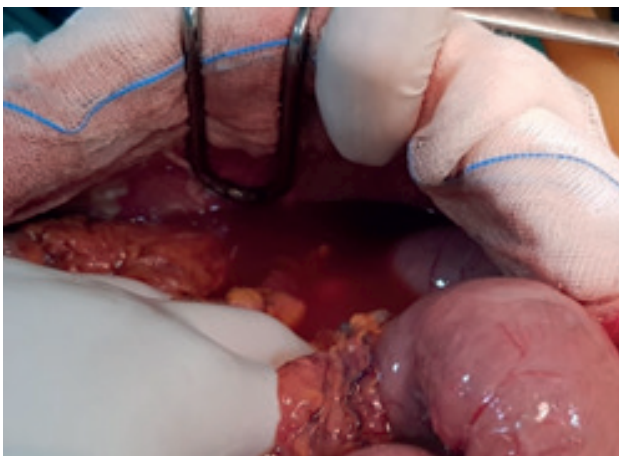

Fig.2: Intraoperative image showing diffuse peritonitis

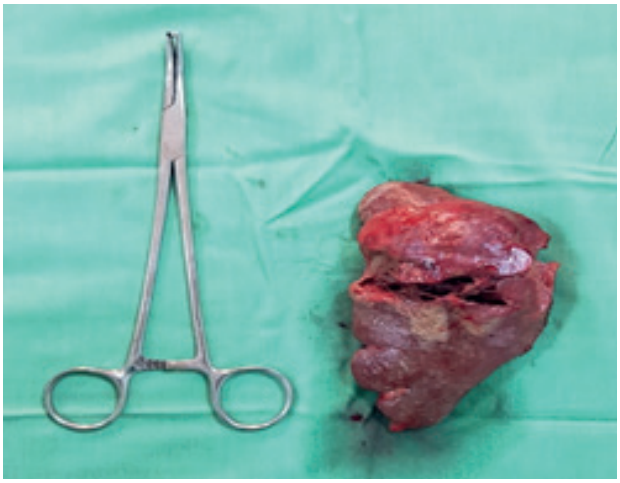

Fig.3: Splenectomy specimen image showing ruptured splenic abscess

effacement of splenic architecture with multiple neutrophilic granulocytes compatible with abscess formation. There were no malignancy signs.

Discussion:

Splenic abscess is a rare life-threatening clinical entity. Its incidence varies between 0.7% and 1.7% in the different series[1-3]. Main physiopathology mechanisms are : secondary infection of a splenic infarct, hematoma or metastasis, contiguous spread of infection and heamatogenous spread to a previously normal spleen, generally occurring in immunocompromised patients[4.5].

Clinical symptoms are non-specific[6]. Fever, left upper quadrant abdominal pain and splenomegaly may be present[1].

The most common isolated germ on bacteriological culture are Gram-negative bacilli (*Klebsiella pneumoniae, E. Coli, salmonella*) and Gram-positive cocci (*staphylococcus aureus, streptococcus)*[4,7,8].

Complications may occur and can be life-threatening. Ooi and Leong, in their review of 287 patients with splenic abscess reported in the literature from 1987 to 1995, revealed that the most common complication was rupture into the peritoneal cavity, occurring in 6.6% of cases (19 patients). Overall mortality was 12.4% with a disease related mortality rate of 8.5%.[4].

Rupture of a splenic abscess generally occurs after trauma. Rarely, it can be spontaneous, as in our case. Acute peritonitis due to non-traumatic rupture is exceptional[7,9]. Pneumoperitoneum secondary to ruptured splenic abscess is even rarer clinical entity with less than 10 cases reported in the literature[1].

It's generally considered as the result of ruptured hollow organs. In this case, it's due to the presence of gas-producing organisms in the splenic abscess. Ultrasound and CT scan of the abdomen are the most effective radiological modalities[10], with a sensitivity of 75-98% and 96-100% respectively[11]. CT scan not only allows to make diagnosis but may also help to determine the underlying etiology and guide eventual percutaneous drainage. In our case, CT scan had shown a major aeroportia. It's an uncommon radiological feature which carries a worse prognosis[12,13].

The treatment of a non-complicated splenic abscess is medical, consisting of antibiotic, whether or not combined with percutaneous drainage. In ruptured cases, splenectomy with peritoneal toilet are indicated, associated with adequate antibiotic therapy[6,7].

Conclusion:

Spontaneous rupture of splenic abscess is rare. It can lead to acute peritonitis and being a cause of pneumoperitoneum and aerportia.

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Authors's contribution:

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