



Infective Endocarditis Presenting as Acute Abdominal Pain

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Splenic infarction and abscess resulting from infective endocarditis are unusual. This paper reports a rare case of a young male presenting with symptoms of left upper quadrant pain and fever. Infective endocarditis complicated by splenic infarction and abscess was diagnosed by transthoracic echocardiography. Computed tomographic scan of the abdomen and two separate blood cultures showed *Streptococcus viridans*. However, the culture of mitral valve vegetation showed no growth, which may have been due to the pre-operative empiric antibiotic therapy in the previous week. The patient was successfully treated with mitral valve replacement and intravenous antibiotic administration.

Key words: infective endocarditis, splenic infarction, splenic abscess, acute abdominal pain

INTRODUCTION

Splenic infarction is a rare disorder that may present as acute abdomen.¹⁻² Many etiologies can lead to splenic infarction, with most being related to vascular or haematologic abnormalities, or infections.³ It is estimated approximately five percent of patients with splenic infarction will develop a splenic abscess. However, splenic abscess is rarely reported in the literature as a complication of left-sided infective endocarditis.⁴⁻⁶ In this case, a previously healthy young man who was diagnosed as infective endocarditis with splenic infarction and abscess is reported. He underwent successful operative treatment and adequate antibiotic treatment and was discharged uneventfully.

CASE REPORT

The patient, a 29-year-old male, was healthy in the past without previous disease history. Seven days before this admission he suffered from abdominal pain over the left upper quadrant, fever and general malaise.

His upper respiratory tract and urinary tract revealed no abnormal findings. On examination, the patient's body temperature was 38.4°C; pulse rate 111/min; and blood pressure 139/89mmHg. Systemic examination revealed a holosystolic murmurs Grade 3/6 at the cardiac apex. His laboratory test disclosed leukocytosis (white cell count: 17,400/ul; neutrophil: 81.7%) and CRP:10.39 mg/dl. Abdominal computed tomographic scan revealed multiple wedge-shaped hypodense areas with a peripheral enhanced hypodense area of spleen, and spleen infarction as well as a abscess being impressed (Figure 1a and 1b). The transthoracic echocardiography demonstrated severe mitral valve regurgitation with vegetation on the mitral valve (1.2*0.9cm) (Figure 2). Further, two separate blood cultures showed *Streptococcus viridans*. At first, antibiotic treatment with intravenous oxacillin 2.0grams every 6 hours to him for one week was prescribed, but his septic signs, including fever, tachycardia, and leukocytosis persisted. Surgical intervention with mitral valve replacement by St. Jude 33mm metallic valve was performed for him. After surgery and a 4 week course of antibiotic treatment with intravenous oxacillin at 2.0 grams every 6 hours, he was discharged uneventfully without any complications.

DISCUSSION

Acute abdominal pain is one of the most common conditions confronting the emergency department, but in some rare cases it can be attributed to splenic infarction.² Clues related to splenic infarction or abscess may be obscured, and the diagnosis is quite challenging, even for

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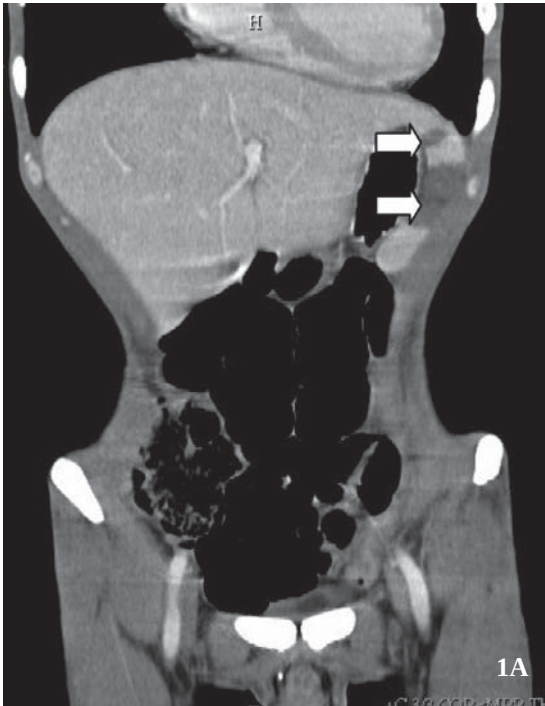


Fig. 1a CT with contrast of the abdomen shows multiple wedge-shaped and nonenhancing hypodense areas (arrows), with splenic infarction being noted.

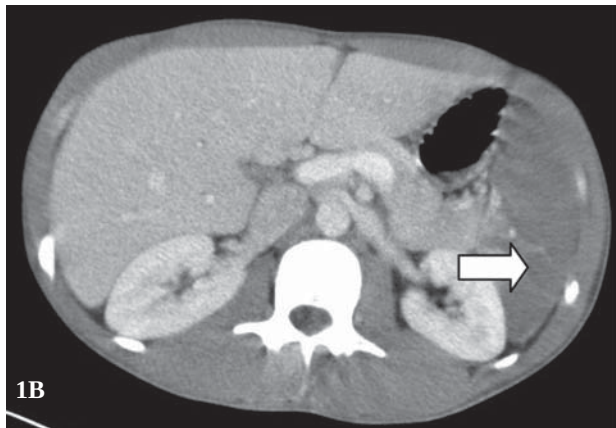


Fig. 1b CT with contrast of abdomen shows separated cystic lesion which is peripheral enhanced with relatively low attenuated appearance of spleen (arrow), with splenic abscess being impressed.

experienced physicians or surgeons. For every patient diagnosed with splenic infarction, a scrutiny of the possible source of emboli should be carried out.

Occlusion of the splenic artery or its branches due to emboli or thrombi is the main cause of splenic infarction. Splenic abscess develops via one of two possible mecha-

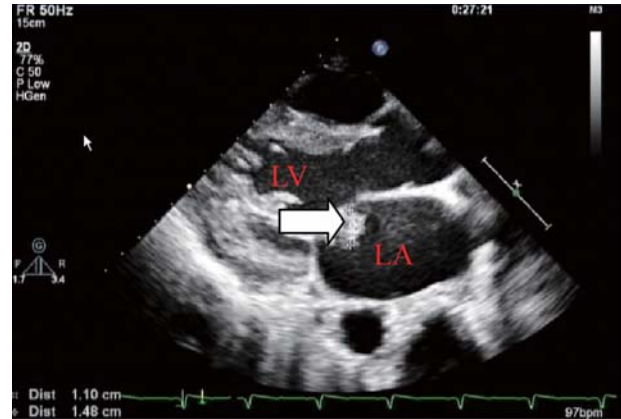


Fig. 2 Transthoracic echocardiography demonstrated a large section of vegetation on the anterior leaflet of the mitral valve (1.2*0.9cm) (arrow).

nisms: either due to bacteremic seeding of an infarcted splenic zone, secondary to embolic vegetations, or more directly through seeding of the spleen by infected embolic vegetations of the heart valves.⁶

Due to the findings on abdominal computed tomographic scan revealing a septated cystic lesion in the spleen with relatively low attenuated and cystic appearance, splenic abscess was impressed instead of splenic infarction. At first, drainage of splenic abscess was considered, but the patient's left upper quadrant pain subsided following antibiotic treatment. After the operation, the patient's symptoms improved and some previous reports demonstrated splenic abscess could only be cured by antibiotic therapy,^{1,7} and drainage of the splenic abscess including aspiration was not carried out.

The incidence of splenic abscess during endocarditis is less than 2% in a recent report.⁸ It is difficult to differentiate from splenic infarction as they share similar symptoms and signs.⁹ Abdominal CT or MRI should be arranged to confirm the diagnosis if there is a clinical suspicion.¹⁰ The treatment of choice for splenic abscess resulting from infective endocarditis has been antibiotics, splenectomy, and valvular surgery in cases of failed medical treatment.¹¹

In summary, for every patient diagnosed with splenic infarction or abscess, scrutiny regarding the possible source of septic emboli should be carried out. When clinical symptoms of fever and left upper quadrant abdominal pain are noted, infective endocarditis with vegetative formation and septic emboli should be kept in mind and a detailed investigation is necessary to verify the underlying etiology.

DISCLOSURE

The authors declare this study has no conflict of interest.

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