Abscess of the spleen complicating infective endocarditis

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Abstract

Introduction
Splenectomy is widely known in the literature as a rare complication of infective endocarditis. Rapid diagnosis and treatment are essential as its course can prove fatal. We present a case-report of splenic abscess in patients who were initially diagnosed with infective endocarditis.

Case report
In this case the diagnosis of splenic abscess was based on the findings of the abdominal CT scan. The patient was treated by appropriate antibiotics and splenectomy with a favourable course.

Conclusion
Splenectomy is a well-described but rare complication of infective endocarditis. Immediate splenectomy combined with appropriate antibiotics and valve replacement surgery is the treatment of choice.

Introduction
Splenectomy in infectious endocarditis is a rare condition. It can be either infarction or abscess formation. The clinical picture is usually nonspecific and the diagnosis is often not initially suspected. We report a case of a patient who presented with splenic abscesses secondary to infective endocarditis cured by antibiotic treatment and splenectomy.

Case report
A 31-year-old man was consulted for a two week history of fatigue and fever of unknown origin. He had a history of mitral valve prolapse which was diagnosed 17 years previously. On physical examination the patient appeared generally ill and feverish with a body temperature of 38.5°C.

The initial blood count showed a leucocytosis (16.400 /mm3) with 85% neutrophils and a CRP of 107 mg/dl. Blood culture was positive for Streptococcus aureus. Because of clinical suspicion of endocarditis a transoesophageal cardiac ultrasound was performed. This showed vegetations of the mitral valve and massive valve regurgitation. The diagnosis of mitral valve bacterial endocarditis was made.

Treatment with intravenous antibiotics (Rocphenine combined with Vancomycine) was commenced. After 2 days of medical treatment, the fever did not subside and the CRP remained elevated. At this moment the laboratory values were: CRP 110 mg/dl and leucocytosis 18.100 /mm3 suggestive of another infectious location.

A CT scan of the abdomen was performed revealing two encapsulated hyperintense splenic collections suggestive of splenic abscesses (Figure 1).

As the laboratory values revealed a further increase in infectious parameters, our patient underwent splenectomy through a left sub-costal laparotomy. During surgery a significant splenic abscess was found and splenectomy was carried out. Patholgic examination of the resected spleen confirmed the diagnosis of a splenic abscess (Figure 1).

No specific pathogens were identified on the specimen. The postoperative course was uneventful and the patient was discharged from hospital in a good physical condition.

Discussion
Splenectomy is widely known in the literature as a rare complication of infective endocarditis.1,2,3,4 Other, less common causes include acquired immune deficiency syndrome (AIDS) and haematological malignancies.5,6,7,8,9.

The incidence of splenic abscess during endocarditis is less than 2% in a recent report splenic.10 It is difficult to be differentiated from splenic infarction as they share the similar symptoms and signs.11

Splenectomy develops via one of two possible mechanisms: either due to bacteremic seeding of an infarcted splenic zone, secondary to embolised vegetations, or more directly through seeding of the spleen by infected embolised vegetations of the heart valves.3,4 Although gram-positive cocci (Streptococcus viridans and Staphylococcus aureus) appear to be the most common causative agents, there is a wide variation of organisms.

As splenic abscess is associated with high morbidity and mortality rates, early recognition of the symptoms and prompt treatment are essential for a favourable outcome.

The following symptoms and clinical signs should arouse suspicion while treating a patient with infective endocarditis: nausea, vomiting, hiccups, back-, left flank- or left upper quadrant pain and unexplained abdominal

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distension. On chest X-ray a left sided pleural effusion or left lower lobe infiltrate may be present. However, up to 90% of patients with splenic abscess have no localized findings and persistent or recurrent fever and sepsis, in spite of adequate antibiotic treatment, are the most common clinical presentation of splenic abscess²⁵.

Any of the signs listed above should prompt further investigation. Abdominal CT scan or MRI is regarded as the technique of choice for diagnosis of splenic abscess²⁵,⁷. Surgical treatment includes splenectomy, which is often performed prior to valve replacement to prevent the reinfection of the valve prosthesis²⁵,⁹. A combined one-stage procedure is also an option. Successful one-stage procedures (splenectomy combined with valve replacement) have also been described in the literature²²,²³.

Depending on the patient’s general state and the individual preference and experience of the surgeon, a laparoscopic approach offers an effective and safe alternative to laparotomy⁶. Percutaneous drainage under ultrasonographic or computed tomography guidance is an option for patients in a poor general condition in which major surgery is contraindicated²⁵.

Adequate antibiotic treatment should accompany surgery in the management of splenic abscess. Antimicrobial regimens should therefore be based on individual blood cultures and peroperative cultures⁷.

We would like to underline the high mortality rate, not only of infective endocarditis, but also of splenic abscess in the event of delayed diagnosis. Splenic tissue is very fragile – especially if the abscess is located subcapsular – and a splenic rupture can result from minimal trauma that represents a serious fatal complication.

Therefore it is essential to maintain an elevated index of suspicion while treating patients with infective endocarditis and to perform abdominal CT or MRI in any case of vague abdominal complaints and unexplained fever. A favorable outcome depends on early diagnosis and prompt treatment.

**Conclusion**

Splenic abscess is a well-described but rare complication of infective endocarditis. Rapid diagnosis and treatment are essential as its course can prove fatal. Abdominal CT scan or MRI should be performed if there is clinical suspicion of splenic abscedation. Immediate splenectomy combined with appropriate antibiotics and valve replacement surgery is the treatment of choice.

**Consent**

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

**References**


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