

# Splenic Abscess Associated with Infective Endocarditis Treated Successfully with Medical Management: A Rare Clinical Outcome

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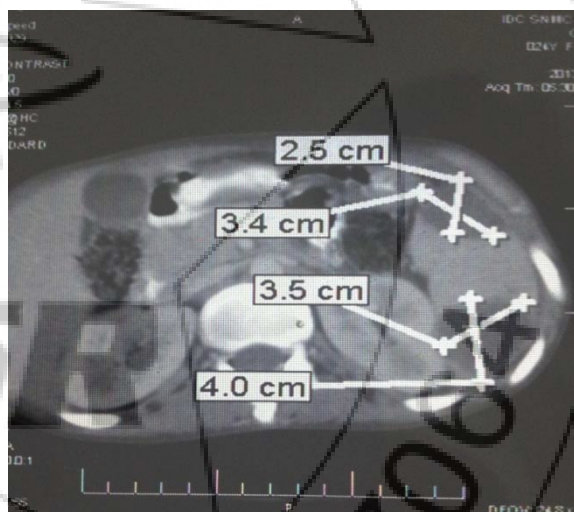
**Abstract:** Splenic abscess is a rare clinical finding, with a reported prevalence between 0.14% and 0.7% in various autopsy series.<sup>1,2,3</sup> Splenic abscess usually occurs in patients with underlying disease such as diabetes, haemoglobinopathies, immunodeficiency, malignancy and infective endocarditis<sup>4</sup> or with history of intravenous drug abuse. Infective endocarditis is often complicated by splenic abscess and is usually successfully treated by splenectomy and valve replacement. Splenic abscess, not associated with infective endocarditis usually requires splenectomy and only a few cases have been treated conservatively but those associated with infective endocarditis requires mandatory splenectomy and till date only a single case has been reported that has been treated successfully with medical management.<sup>5</sup> We represent here a case that has been successfully treated medically and has been doing well on follow-up of 9 months.

**Keywords:** splenic abscess, infective endocarditis, streptococcus viridans, splenectomy .

## 1. Case Report

A 24 year old female presented with complaints of fever mild to moderate grade, intermittent, relieved on medication with no specific diurnal variation since 8 months. Patient also complains of generalised body weakness, palpitations off and on since 2- 3 months. There was no history of burning micturition, bleeding from any site, and no history of intramuscular injections, antitubercular treatment and chest pain. On examination pallor was present, there was no icterus, pedal oedema, lymphadenopathy, cyanosis or clubbing. Her B.P was 92/64 mm of Hg in right arm supine position and pulse rate was 102 /minute. On auscultation chest was clear, a systolic murmur and a mid-diastolic rumbling murmur was present over the apex. Spleen was palpable and liver was not palpable. On routine investigations her haemoglobin was 5.5 g/dl, Total leukocyte count (TLC) was 15800/mm<sup>3</sup> with neutrophilic predominance (85%), Erythrocyte Sedimentation Rate (ESR) was 51 by Westergren's method, serum total bilirubin was 0.8 mg/dl, creatinine was 0.7 mg/dl. Her serum Na and K were 137.4 and 4.7 meq/L respectively. SGOT and SGPT were 34 and 26 IU respectively. On echocardiographic examination she was found to be a case of Rheumatic heart disease and was having severe mitral regurgitation, severe mitral stenosis, trace tricuspid regurgitation with dilated left atrium.

On echocardiography, single large vegetation was seen over anterior mitral leaflet. Vegetation was freely mobile attached to the tip of mitral leaflet and was of around 2 cm<sup>2</sup> in area. Left ventricular systolic movement was normal. And a provisional diagnosis of Rheumatic heart disease with infective endocarditis was made.



CT scan showing multiple splenic abscess

Blood culture was sent and empirical treatment with broad spectrum antibiotics Ceftriaxone 1gm IV 12hourly and Gentamicin 80 mg IV 12 hourly was started. On further evaluation ultrasound of abdomen was done and spleen was found to be enlarged with multiple hypoechoic areas with internal debris scattered throughout the parenchyma suggestive of multiple splenic abscesses were seen. On computed tomography of abdomen multiple 5-6 non-enhancing hypodense lesion measuring 4x3.5, 3.4x2.5, 3.3x2.9, 2.7x1.8cm suggestive of abscesses were seen. Patient was kept on Ceftriaxone and Gentamycin for 5 days but there was no improvement in symptoms and ultrasound guided splenic abscess aspiration was done and was sent for culture and sensitivity testing. Streptococcus viridans was found on culture with sensitivity to Amoxicillin -Clavulanic acid and Levofloxacin. Patient was then started on Amoxicillin Clavulanic acid 1.2 gm IV 8 hourly and Levofloxacin 500 mg IV once a day. On 10 th day onwards there was dramatic improvement in symptoms, fever started subsiding and radiological decrease in size of abscesses.

Antibiotics were continued for 1 month. On repeat ultrasound after 25<sup>th</sup> day multiple abscesses were in the resolving phase. After one month of stay at hospital patient underwent mitral valve replacement. After 6 months a repeat ultrasound was done and abscesses were not present at all.

Currently patient is completely asymptomatic and after 9 months, ultrasound abdomen does not reveal any sign of splenic abscess. Echocardiography shows prosthetic valve in situ with no leakage and no vegetations.

## 2. Discussion

Infective endocarditis is often complicated by splenic complications like abscess. Infective endocarditis is the most common condition that predisposes a patient to splenic abscess.<sup>6</sup> Streptococci has been found to be the most common cause next being Staphylococci, Mycobacteria. Brucella, Candida, Salmonella are other rare causes. Most cases of splenic abscesses are due to bacteremia or fungemia coupled with endocarditis, urinary tract infections, pancreatitis, gastrointestinal tract infections etc. The possible pathogen(s) are determined by primary focus<sup>7</sup>. Symptoms suggesting splenic abscess are abdominal distention, pain in abdomen, shoulder and left flank region.<sup>8</sup> Recurrent or persistent fever and abdominal tenderness with splenomegaly often not assessable are the usual features.<sup>9</sup> Endocarditis has 10 to 20 % incidence of associated splenic abscess. Patients with infective endocarditis often develop splenic abscesses secondary to bacteremia induced seeding of spleen or through the development of septic microemboli. Septic emboli cause splenic infarct that later converts in to frank splenic abscess.<sup>10,11</sup> Splenic abscess usually presents with abdominal pain but could be incidental finding on ultrasound and computed tomography of abdomen. As splenic abscess is found in 3- 5 % of cases of infective endocarditis, a high index of suspicion is required to make the diagnosis in a patient with infective endocarditis. Computed tomography is the best imaging technique to diagnose splenic abscess with specificity and sensitivity ranging from 90 to 95%.<sup>12</sup> A splenic abscess on CT appears as a focal lesion of low attenuation and after intravenous contrast injection shows peripheral enhancement. To differentiate between splenic infarcts and abscesses can be difficult.<sup>13</sup> Generally, splenic infarcts are well-defined, wedge-shaped defects seen on periphery with the apex toward the hilum and the base towards the capsule. Treatment of splenic abscess with infective endocarditis with antibiotics alone has always been unsuccessful.<sup>5</sup> Robinson et al published a study including 564 cases with infective endocarditis out of whom 27 patients developed splenic abscess and out of them only 3 had apparent splenomegaly.<sup>14</sup> During the period of 20 years of their study they found out that none of the patient treated without splenectomy could survive. This study showed that patients with infective endocarditis and splenic abscess, splenectomy must be done as a prerequisite for successful treatment of infective endocarditis with or without valvular surgery.<sup>15</sup> Percutaneous computed tomography guided aspiration of the abscess has shown improvement initially but on the long run it also fails to be definitive measure in patients receiving prosthetic valve.<sup>16</sup> Surgical treatment is treatment of choice for patients of Splenic abscess associated with infective

endocarditis.<sup>13</sup> If the patient's general condition permits, it is recommended to perform splenectomy before valve replacement surgery to prevent reinfection of the valve prosthesis<sup>17</sup>. A number of reports have demonstrated the poor outcome with medical therapy, and splenectomy followed by valve replacement has been the preferred treatment for such cases. Till date only a single case of splenic abscess with infective endocarditis that has been treated successfully with antibiotics has been published.<sup>5</sup>

## 3. Conclusion

Patients with infective endocarditis and splenic abscess are usually treated with splenectomy followed by valve replacement, however close monitoring and culture directed antibiotics can help in managing such patients conservatively and a course of antibiotic can be tried in these patients before directly considering them for splenectomy.

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