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Case report

Constrictive pericarditis complicating a case of staphylococcal pyomyositis – A rare presentation in immunocompetent patient

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ABSTRACT

Tropical pyomyositis is a subacute, deep, suppurative infection of muscles and soft tissue region affecting predominantly immunocompetent young males. Atypical presentation with other system involvement is seen in immunocompromised patients, rarely in healthy adults. The incidence of cardiovascular complications has been reported in a few case reports only. We present here a case of 14 year old boy presenting with constrictive pericarditis as a direct result of pyomyositis. Cardiac MRI revealed pericardial thickening with a thick loculated collection along the right atrium and right ventricle chambers suggestive of early constrictive pericarditis. The pus aspirated from the abscess tested positive for *Staphylococcus aureus*. Patient was treated intensively with parenteral antibiotics and the abscess was drained surgically. We highlight the importance of timely diagnosis of the condition to prevent development of serious sequelae, thereby reducing associated morbidity and mortality.

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1. Background

Pyomyositis, also known as tropical myositis, is an infection of single or multiple group of muscles resulting in formation of suppurative abscesses. The disease is predominantly seen in immunocompetent young males, however, atypical presentation has been seen in immunocompromised hosts. *Staphylococcus aureus* is the most common causative organism. Incidence of tubercular pyomyositis is very rare. Diagnosis of the condition requires recognition of symptoms and signs and high degree of suspicion. Untreated cases can develop complications affecting different organ systems. The incidence of cardiovascular complications has been reported in a few case reports only. Surgical debridement and drainage along with parenteral antibiotics is the preferred treatment. We present a case of 14 year old immunocompetent boy presenting with right leg pyomyositis complicated by constrictive pericarditis.

2. Clinical presentation

A 14 year old boy presented to the emergency room with complaints of swelling on the right leg since 7 days. It was insidious

in onset, gradually progressive, was associated with redness and induration. Swelling was associated with pain which was aggravated by movement. This swelling was followed by low-moderate grade fever of 3–5 days which was intermittent in nature. Patient also gave history of left sided chest pain of 2 days duration which was dull-aching in nature, continuous and aggravated with inspiration. This was followed by shortness of breathing more in supine posture and with exertion. It was not associated with any palpitations, diaphoresis or syncope. This was associated with malaise and lethargy. However, there was no history of myalgia, periorbital swelling, rash, any visual complaints, insect bite, cough, expectoration, anorexia or weight loss. There was no history of similar complaints in the past, intramuscular injections, trauma to leg, sore throat or skin infections, pulmonary tuberculosis in the past, or any other systemic illness. There was no history of tuberculosis in the family, similar complaints in the family members.

On examination, patient was of thin built, malnourished. He was febrile with temperature of 100.4 °F, tachycardic (pulse 104/min) and BP of 108/70 mmHg. There was presence of pallor, however icterus, clubbing, cyanosis, lymphadenopathy, oedema were absent and jugular venous pressure was not raised. Local examination of the right leg revealed swelling in right calf region – 4 × 9 cm², associated with tenderness, increased temperature and erythema. There were no gangrenous or trophic changes or skin erosions, no abnormal venous dilatations. Distal pedal pulses were palpable equally on both sides. There were no insect bite marks or

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rash. Cardiac examination revealed pericardial rub, normal S1 and S2, with no murmur. Chest examination revealed pleural rub present on left mammary, infra-axillary, infra-scapular region. Rest of the systemic examination was normal.

3. Investigation

Routine complete blood profile revealed haemoglobin of 9.9 g/dL, total leucocyte count of 12,400/cumm which was predominantly neutrophilic (N65, L35), platelet count of 1.20 lacs/cumm. Liver function panel and renal profile was in normal range. Erythrocyte sedimentation rate was 42 mm/h (0–15 mm/h). C-reactive protein and rheumatoid factor were negative. Anti-streptolysin O titre was negative (<200 Todd units). Throat swab was sterile. Urine routine microscopy was normal and there were no active sediments present. Blood cultures were negative. Chest X-ray was normal. Electrocardiogram showed T wave inversions in lead II, III, aVf and V3 Creatine kinase was 526 with iso-enzyme MB 16. Ultrasound (USG) of right lower limb swelling showed multi-loculated hypoechoic collection in intramuscular compartment in right calf predominantly upper calf with mass depth of 1.9 cm suggestive of abscess. Patient was undertaken for USG-guided needle aspiration of collection which was consistent with frank pus and showed 15–20 pus cells on microscopic examination with total cell count of 800 cells which was neutrophilic (N100%). Gram stain and culture of the pus grew *S. aureus*. Sample of the pus was also sent for TB-polymerase chain reaction (PCR) analysis. Two-dimensional echocardiography was done and revealed presence of effusive constrictive pericarditis. Cardiac magnetic resonance imaging (MRI) was planned which revealed pericardial thickening with a loculated thick walled peripherally enhancing pericardial collection on right side along the right atrium and right ventricle chambers, with mild pressure effect suggestive of early constrictive pericarditis (Fig. 1). However, no fluid could be obtained by pericardiocentesis. Anti-HIV, HBsAg, anti-HCV antibodies were negative.

4. Differential diagnosis

A provisional diagnosis of right calf pyomyositis with left sided pleuro-pericarditis was made with *S. aureus* as the inciting agent. Another possibility of tubercular aetiology was kept in view of high disease incidence in the area.

5. Treatment

The abscess was surgically drained and debrided. Based on the drug sensitivity of pus aspirate, patient was started on a course of intravenous vancomycin and clindamycin. After 2 weeks of antibiotic therapy, the fever had resolved, calf swelling was reduced in size. However, dyspnoea had not resolved. On examination, JVP was raised 8 cm above sternal angle. There was absence of pulsus paradoxus. Cardiac examination was normal with no pericardial and pleural rub. Echocardiography was repeated and revealed presence of thickened pericardium with normal biventricular function. The awaited TB-PCR turned out to be positive for mycobacterium tuberculosis. In view of evidence of early constrictive pericarditis and positive TB-PCR, patient was provisionally started on anti-tubercular therapy along with oral steroids, awaiting the BACTEC radiometric culture report. The antibiotics were also continued in view of short disease duration. After 2 weeks, blood culture for tuberculosis by BACTEC radiometric culture and LJ medium reports came out negative. Subsequent echocardiography (week 6 of treatment) examination showed no evidence of constrictive pericarditis which was further confirmed by cardiac MRI having no evidence of thickened pericardium or fluid collection (Fig. 2).

6. Outcome

The patient was treated with intravenous antibiotics for a duration of 4 weeks followed by 2 weeks of oral antibiotics. A course of 2 week of anti-tubercular therapy was given initially which was later discontinued in absence of any microbiological evidence of mycobacterium. Patient's dyspnoea also settled. He is on follow-up for last one year after the disease incidence and showed no signs of residual disease or worsening of symptoms or new symptoms.

7. Discussion

Pyomyositis is suppurative infection of large skeletal muscles resulting in single or multiple abscesses. It is predominantly a disease of tropical countries, and hence is also referred to as tropical pyomyositis or myositis tropicans. However, in India, the disease is not widely reported with few sporadic cases [1].

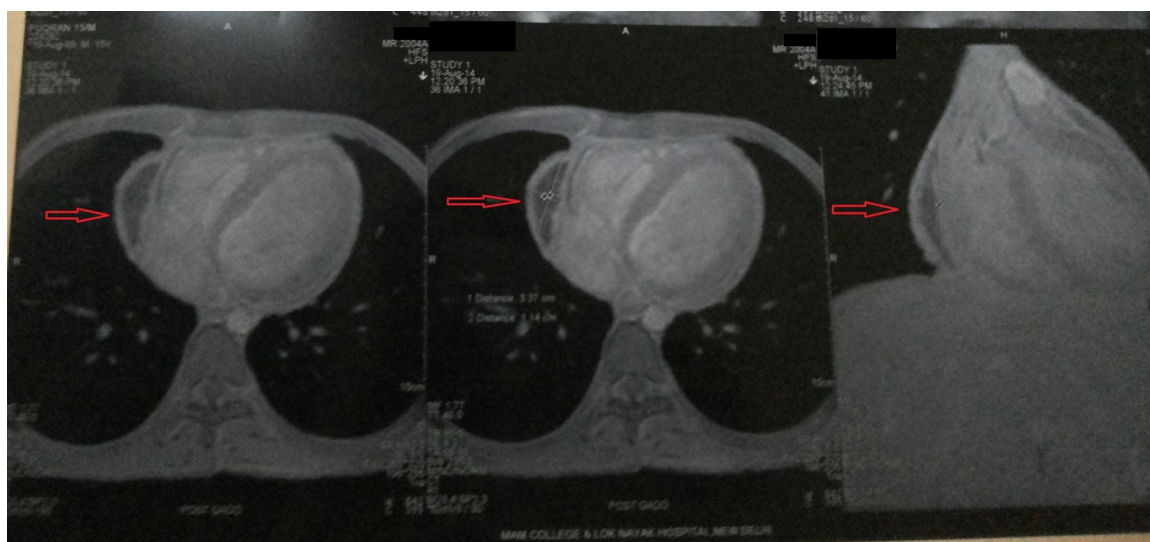


Fig. 1. Cardiac MRI showing pericardial thickening with a loculated thick walled peripherally enhancing pericardial collection on right side (arrow) along the right atrium and right ventricle chambers.

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