

## Pericarditis with Pericardial Effusion: A Rare Complication of Tropical Pyomyositis

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Received: July 03, 2018; Published: August 22, 2018

### Abstract

Tropical Pyomyositis is a disease seen in the tropics with *Staphylococcus aureus* being the common etiology. Difficulty in the diagnosis of the disease is due to its unfamiliarity among clinicians, atypical presentations and other differentials.

Massive pericardial Effusion in terms of purulent pericarditis is a rarer manifestation which is discussed in this case. Aspiration of pus from muscles and its culture sensitivity is usually diagnostic. Radiological Investigations like USG, computed tomography, MRI aid in the management. Cloxacillin is the treatment of choice. Treatment of gram negative or anaerobic organism should be instituted whenever indicated. There is an excellent prognosis, if the physicians are familiar with such pathological manifestations.

**Keywords:** Tropical Pyomyositis; Pericardial Effusion; Purulent Pericarditis; MRSA

### Introduction

Tropical pyomyositis, a disease regularly observed in tropical nations, is characterized by suppuration inside skeletal muscles, presenting as single or numerous abscesses. *Staphylococcus aureus* is the most common etiology. 20% - 50% of cases involve muscle trauma, these include the quadriceps, glutei, pectoralis major, serratus anterior, biceps, iliopsoas, gastrocnemius, abdominal and spinal muscles [1-3]. Tropical pyomyositis is reported as sporadic cases in India due to misdiagnosed cases. Whereas increasingly reported cases from temperate regions are secondary to better diagnostic modalities. Here we present a case of tropical pyomyositis with an atypical presentation and a rarer complication of massive purulent pericarditis.

### Case Report

#### History and Examination

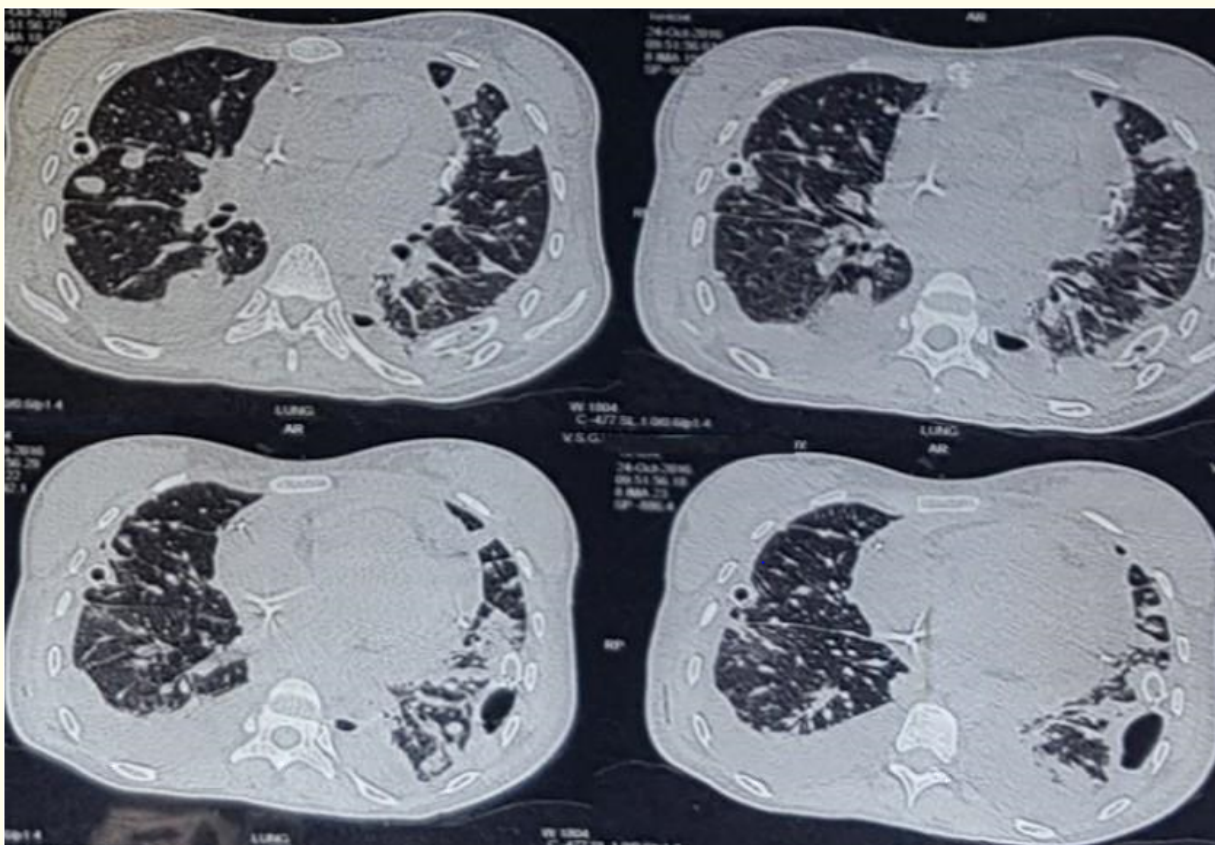
19-yr old female, a diagnosed case of dengue fever presented to our tertiary care centre with complaints of high grade fever, malaise, night sweats, anorexia, Anasarca for 15 days. The patient also developed Cough with expectoration and orthopnea since 5 days. The patient developed Complaints of pain around left knee region after 2 days of admission. No Complaints of chest pain, generalized rash, burning micturition, altered sensorium, dimness of vision, double vision or bowel bladder disturbances.

On Examination she had tachycardia, raised temperature and generalized edema. Later on she developed tachypnoea which worsened over 4 days. On Cardiovascular examination heart sounds intensity was decreased. On respiratory examination air entry was decreased in bilateral lower lung fields without any abnormal breath sounds. Localised tenderness was present at left knee region adjacent to patella above tibial tuberosity. Absence of icterus, anemia, cyanosis, clubbing, abnormal heart sounds or breath sound was found.

### Investigations

Complete blood count, renal function tests and liver function tests were ordered. On admission WBC count 27600 per microlitre (/ul) hemoglobin (Hb) 9.7 gram% and platelet count 1.5 lakh/ul progressed to WBC 56000/ul Hb 7.9G% and platelet 1.92 lakh/ul over 5 days. Other investigations Bilirubin total being 1.55 mg/dL and S ALP 270 U/L, SGPT 26 U/L, CRP 141, ESR 64 Serum albumin 1.84 g/dL. Patient's sputum for AFB as well as Sputum tb gene expert were negative for mycobacteria.

Chest x-ray showed enlarged cardiac shadow and pleural effusion. 2d Echocardiography which initially showed 1.1 cm of rim of effusion progressed to 3.7 cm rim of effusion with fibrinous strands and septation suggestive of pericardial effusion. Usg showed Moderate pleural effusion and moderate Ascites. HRCT thorax confirmed Pericardial effusion, Bilateral pleural effusion with cavitory nodules in both lungs (Figure 1) which is also depicted on a CECT of the thorax (Figure 3). Local part Usg left lower limb (LL) showed large ill-defined collection with thick moving echoes in subcutaneous and intramuscular plane suggestive of loculated abscess. Massive Pericardial Effusion evident on CECT Thorax coronal section (Figure 2).



**Figure 1:** HRCT Thorax cross section showing Bilateral Pleural effusion with Fibrobronchiectatic changes and Pulmonary Nodules.

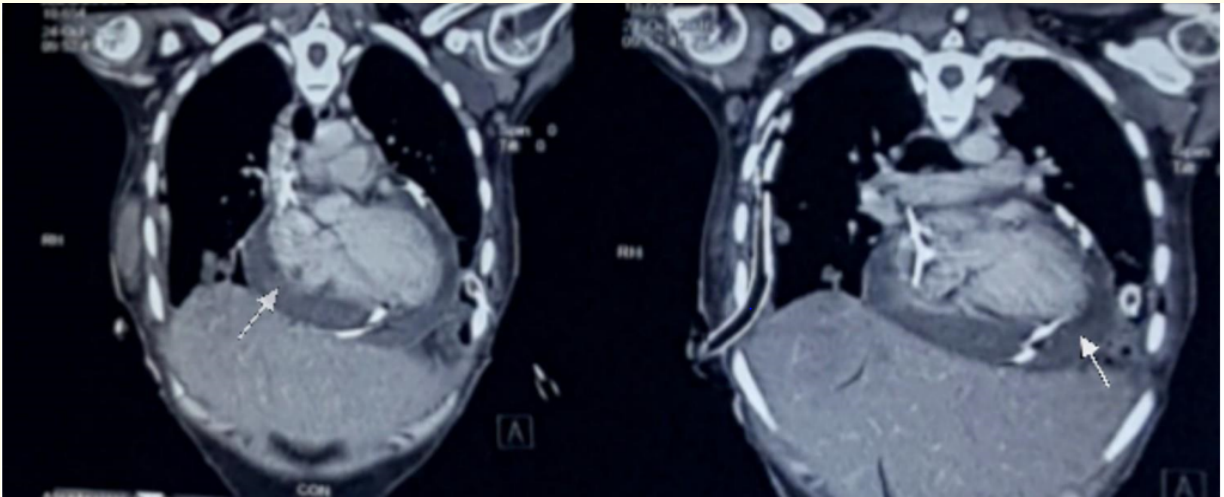


Figure 2: Massive Pericardial Effusion evident on CECT Thorax coronal section.

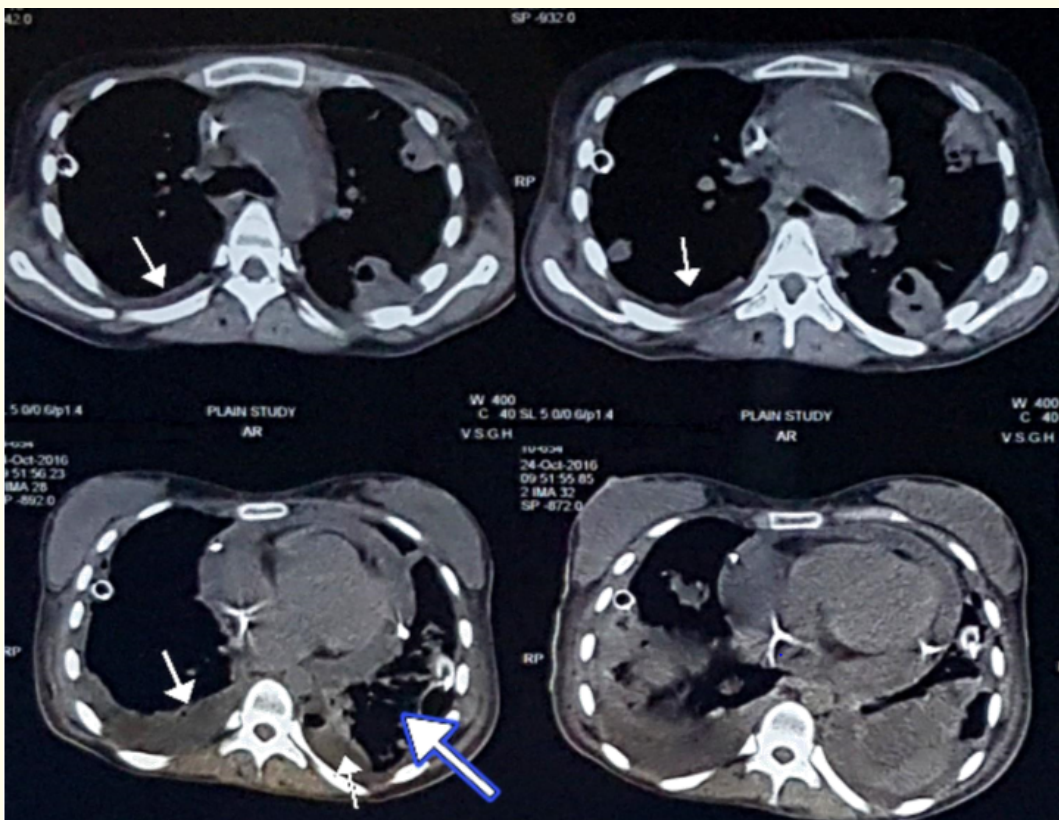


Figure 3: Cross section of the CECT thorax showing bilateral Pleural effusion with cavitary nodules.

Serum ANA and ANCA were negative and Rheumatoid factor 20.4 IU/mL. Pericardial effusion was purulent and 1.5 litre pus drained. Pleural Fluid showed WBCs 2000 cells/cumm (80% PMN), Sugar < 5 mg/dL, Protein 3.97 mg/dL, Many RBCs in fluid. Fluid ADA level were within normal limits as well as negative TB gene expert. Culture and sensitivity of Pleural fluid and Left LL loculated pus came positive for MRSA.

Patient was treated with Linezolid and doxycycline along with Incision and drainage of Left LL loculated pus with regular dressing. Pericardiocentesis was followed by drain tube insertion for pericardial effusion along with bilateral intercostals drainage tube for pleural effusion. Human Albumin were given intravenously to correct hypoalbuminemia. With recovery drainage tubes were removed. WBC decreased to 10600/ul after 15 days of admission and patient remained afebrile. The patient improved and got discharged with modified rankin scale (mrs) of 5 and NYHA grade 1 dyspnoea. Follow up chest x-ray as well as 2D echo after 4 weeks showed absence of pleural and pericardial effusion.

### Discussion

Pyomyositis is a purulent infection of skeletal muscle that arises from hematogenous spread, usually with abscess formation and is seen commonly in the tropics. Males appear to be more commonly affected than females [1-3].

Initial stage 1 is characterized by crampy local muscle pain, swelling, and low-grade fever. Mild leukocytosis and induration of the affected muscle may be present. A deep abscess may not be discretely palpable, but the muscle may have a “woody” texture on palpation. Fluctuation is not present, and aspiration of the muscle will not yield purulent material. Only 2 percent of patients present at this stage [4].

Stage 2 occurs 10 to 21 days after the initial onset of symptoms and is characterized by fever, exquisite muscle tenderness, and edema [5]. A frank abscess may be clinically apparent, and aspiration of the affected muscle typically yields pus. Marked leukocytosis is usually present. More than 90 percent of the patients present at this suppurative stage [4]. Stage 3 is characterized by systemic toxicity. The affected muscle is fluctuant. Complications of *S. aureus* bacteremia such as septic shock, endocarditis, septic emboli, pneumonia, pericarditis, septic arthritis, brain abscess, and acute renal failure can occur [4]. Rhabdomyolysis has also been described. Our case came to the tertiary care hospital in stage 2 and progressed into stage 3. Similar cases have been reported by AA Musa, *et al.* from Nigeria [6], Khurram Akhtar, *et al.* from Pakistan [7] and Karna SK, *et al.* from India [8]. However etiology behind Pulmonary cavitary nodules could not be identified since common autoimmune as well as infective etiologies were ruled out. *Staphylococcus aureus* is responsible in around 90% of cases. Group A streptococcus accounts for another 1 - 5% of cases Rare causes incorporate Group B, C and G *Streptococcus*, *Pneumococcus*, *Haemophilus* spp., and Gram negative bacilli [9].

### Conclusion

Most patients with tropical pyomyositis are otherwise healthy without underlying comorbidities. Predisposing factors for pyomyositis include immunodeficiency, trauma, injection drug use, concurrent infection, and malnutrition [10] which in our case was infection and malnutrition. The disease most commonly affects lower extremity muscles but can involve any muscle group.

Massive pericardial Effusion in terms of purulent pericarditis is a rarer manifestation. Diagnosis is confirmed by aspiration of pus from muscles or biopsy. Investigation modalities like USG, computed tomography, MRI are also very useful in diagnosis. Drainage of pus is a part of management. Cloxacillin remains treatment of choice [4]. Treatment of gram negative or anaerobic organism should be instituted whenever indicated. Physicians should become more familiar with this potentially life threatening but curable infective disease entity since the Prognosis remains excellent if promptly treated.

### Conflict of Interest

The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.



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**Volume 14 Issue 9 September 2018**

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