Tropical Pyomyositis In A Temperate Region

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Citation

L Tomona, M Madariaga. *Tropical Pyomyositis In A Temperate Region*. The Internet Journal of Infectious Diseases. 2004 Volume 4 Number 2.

Abstract

A classical case of tropical pyomyositis in a diabetic patient returning from a trip to Manila is presented. The importance of considering this diagnosis in areas of temperate climate is emphasized. A brief description of the etiology, stages, diagnosis and treatment of the condition is provided.

INTRODUCTION

Pyomyositis is a pyogenic intramuscular infection which occurs with relative frequency in tropical countries. The diagnosis is rarely considered in temperate areas.

CASE HISTORY

A 55 year-old Caucasian male with history of type II diabetes mellitus, on insulin treatment, presented to a hospital in Omaha, Nebraska (latitude: 41°N) after returning from a trip to Manila, Philippines. Two weeks before hospital admission, he developed severe pain in the left ankle and was clinically diagnosed as having gout. In Manila, he received a prescription for oral prednisone, which provided temporal relieve of his symptoms. By the time he was able to return to Omaha, he was having daily fevers associated with chills and sweats, hyporexia, diffuse myalgias, mild shortness of breath, headache and backache. Because of his multiple symptoms, his primary physician ordered a variety of tests including a chest X-ray, CT scan of the head and an MRI of the lumbar spine, all of which were non contributory. Blood cultures obtained at admission revealed gram-positive cocci in clusters and the infectious disease service was consulted.

On examination, the patient was febrile, tachycardic and exhausted. The examination of his lungs, heart and abdomen was unrevealing. His left ankle and right thigh were both tender to touch, although there was no frank erythema or associated swelling. The patient had leukocytosis (white cell count $22.6x10^9$ cells/L), mild anemia (hemoglobin: 11.6mg/dl), hyperglycemia (glucose: 343 mg/dl), elevated sedimentation rate (94mm/h) and elevated creatine kinase (645 U/L). His blood cultures grew Staphylococcus aureus oxacillin sensitive.

With the suspicion of tropical pyomyositis an MRI of the left ankle and the right thigh were obtained and confirmed the presence of muscular abscesses in both areas (Figures 1 and 2).

Figure 1

Figures 1 & 2: A multiloculated fluid collection is identified in the superficial aspect of the vastus lateralis muscle. This demonstrates peripheral contrast enhancement and is consistent with an intramuscular abscess. This extends throughout the length of the thigh.

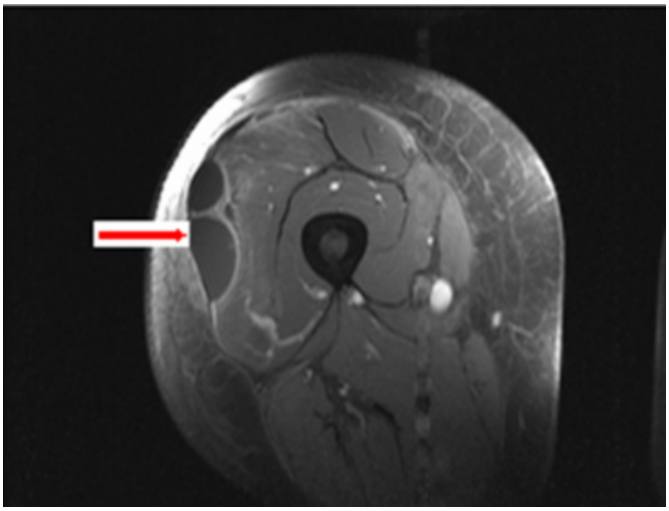
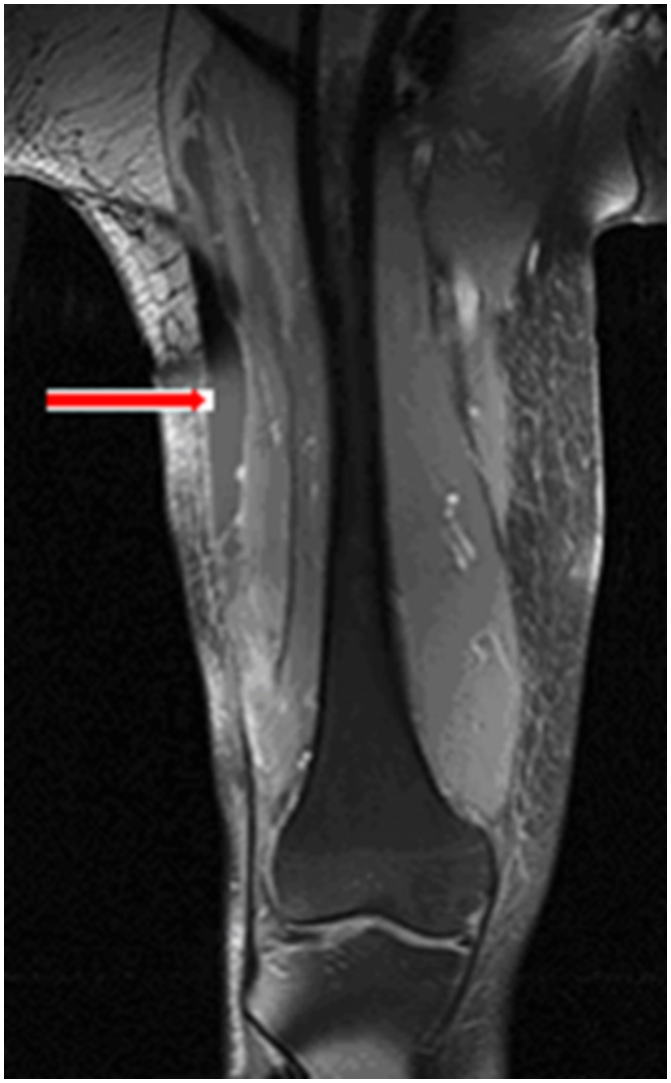


Figure 2



Prompt treatment with IV oxacillin and percutaneous drainage followed by open incision and drainage were instituted. Intraoperative cultures grew the same species of S. aureus. A transesophageal echocardiogram did not show evidence of vegetations and repeated blood cultures were clear following treatment. The patient did not have risk factors for HIV and refused to be tested for it. The patient did well and fully recovered.

DISCUSSION

Pyomyositis is a pyogenic process predominantly affecting large muscles of the lower extremities and the psoas muscle. The disease is intriguing since skeletal muscle is ordinarily resistant to infection. Although the disease occurs more frequently in tropical countries, cases among non-travelers have been described in temperate areas.

Pyomyositis may represent up to 1%-4% of all hospital admissions in some tropical countries, however less than 300 cases have been described in the United States[1] (a third of them in patients infected with HIV.

In tropical countries, pyomyositis has been related to trauma, nutritional deficiencies, and parasitic infections whereas in non-tropical countries other risk factors have been identified: HIV infection, malignant diseases, diabetes mellitus and dermatomyositis.[2,3] Our patient's risk factors included minor trauma (he was supervising a construction project in Manila and recalled minor injury in his feet) and being a diabetic. The triad of muscle inflammation, leukocytosis and elevated erythrocyte sedimentation rate in a diabetic patient should suggest the diagnosis of pyomyositis.[4] Staphylococcus aureus is the organism most commonly isolated in pyomyositis (up to 90% of cases). Group A Streptococcus is the second most common organism (1-5%) and other pathogens are rare.[3] Blood cultures may become positive, but usually the nature of the bacteremia is transient.

The pathogenesis of pyomyositis remains uncertain. Direct damage to the muscle and immunosupression may have a direct role in the disease. Pyomyositis can be divided in 3 stages: an initial stage with tender induration of the affected muscle, but minimal local signs of inflammation (since the infection is deep) and almost absent systemic manifestations; a suppurative stage with abscess formation; and a septic phase which may cause bacteremia and metastatic abscesses.[5] MRI is superior to CT scan and ultrasound in the detection and characterization of primary lesions in pyomyositis but ultrasound is particularly useful to monitor progression from invasive phase to suppurative phase and also to guide the area of drainage.[6] MRI is also valuable in differentiating early stages of the disease (local areas of increased intensity on T2 weighted images) from muscle abscesses of later stages (rim of increased signal intensity around the abscesses on T1-weighted images).[6] The gold standard for definitive diagnosis is aspiration of pus or muscle biopsy with culture.

Early recognition of the disease may allow resolution of the disease only with antibiotic treatment, however suppurative stages always require open surgery.[2,3,4,5] Penicillinase resistant penicillins (such as nafcillin or oxacillin) are the standard of therapy and are usually kept for 2-3 weeks. Up to 60% of patients have multiple lesions which emphasizes the need to check for multiple abscess sites before initial debridement.[2]

Physicians should be aware of this condition both in

travelers coming from tropical countries and in non-travelers of temperate areas with the appropriate risk factors.

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