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CASE REPORT

Primary Pyomyositis Of Paraspinal Muscles: A Rare Location

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ABSTRACT:

Primary pyomyositis is a rare, sub-acute, primary muscle infection that is probably the result of a transient bacteraemia in most patients. It is rarely reported in temperate climates. The quadriceps, gluteal and iliopsoas muscles are the most commonly affected anatomic sites. A case of primary pyomyositis within the paraspinal muscles of a 30-year-old man is reported with details of diagnostic evaluation, and medical and surgical treatment of the condition. Early diagnosis and complete drainage of any abscess cavity combined with appropriate antibiotic therapy, remains the mainstay of treatment. Most patients have complete recovery, with no long term sequelae. Failure to recognize this clinical entity can lead to diagnostic delay and inappropriate management.

Key words: Pyomyositis, Para spinal abscess, tropical pyomyositis

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Introduction

Primary pyomyositis is a rare, sub acute, primary bacterial infection of the skeletal muscles. It is not secondary to a contiguous infection of the skin, bone or soft tissues.[1] [2] It is also called tropical myositis, infective myositis, pyogenic myositis, suppurative myositis, myositis purulenta tropica, epidemic abscess or bacterial pyomyositis.[2] The quadriceps, gluteal and iliopsoas muscles are the most commonly affected anatomic sites. Staphylococcus aureus is the culpable organism in more than 75% of the cases. There are three consecutive stages of the disease: diffuse muscle infection, abscess formation, and sepsis. Magnetic Resonance Imaging is the preferred diagnostic imaging modality. Early diagnosis and complete drainage of any abscess cavity, combined with appropriate antibiotic therapy, remains the mainstay of treatment.[1] [2] We report a young male patient with para spinal pyomyositis presenting as back pain.

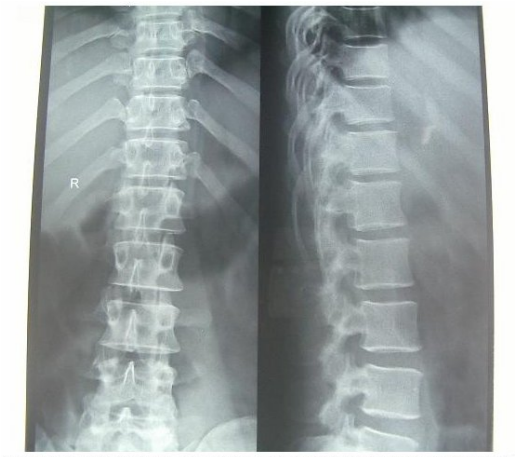
Case Report

A 30 year-old-male patient was admitted with severe back pain and high grade fever for three days. The patient was not a known diabetic, and had no prior history of trauma to the back muscles. On general physical examination, the patient was febrile, with a pulse rate of 90/min. Local examination revealed diffuse erythema with subcutaneous oedema in the right para spinal region, extending from the right scapular region to the iliac crest. There was local rise of temperature, and tenderness. Fluctuation

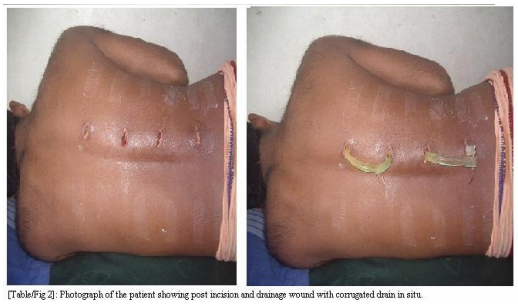
was absent. The systemic examination was unremarkable. There was no evidence of any focus of infection in the urinary tract, dental or ENT regions. His haematological examination revealed haemoglobin 11g/dl, total count 16,800/mm^3, N-84%, L-10%, E-6%, and ESR- 32mm in the first hour. Urine analysis detected proteinuria (300mg/dl). Liver function tests were normal, except for a marginal raise in the bilirubin and alkaline phosphatase levels. His blood urea nitrogen and serum creatinine were within normal limits. The peripheral smear revealed reactive neutrophilia with neutrophils showing toxic change. There were no haemoparasites detected. Serum CK-MB 12U/L. ELISA for HIV, and HBsAg were non-reactive. Ultra sound abdomen revealed 6mm calculus in the lower pole of left kidney, and mild right side pleural effusion. Musculoskeletal ultrasonography (USG) of the back revealed evidence of inter and intramuscular collection in the right para-spinal area, and USG- guided aspiration yielded pus. His chest x-ray was normal. X-ray of the thoraco-lumbar spine showed minimal scoliosis on the right side, without any bony lesions [Table/Fig 1]. Para spinal pyomyositis was drained by multiple transverse incisions under general anaesthesia[Table/Fig 2]. Pus culture isolated coagulase negative staphylococci which were sensitive to amoxyclav, gentamicin, amikacin, ciprofloxacin, cefotaxime, ceftriaxone and cefadroxil, were grown in aerobic culture media. AFB stain was negative. Histopathological examination of the curettage specimen of the abscess cavity revealed features suggestive of pyogenic abscess, without any evidence of tuberculosis.

Parenteral Ceftriaxone with Amikacin was administered for 10 days. The patient was subjected to daily cleaning and dressing of the wounds, and was discharged on oral cefadroxil for 4 weeks.

After 6 months follow up, the patient remains asymptomatic with a full range of spinal movements, without any residual disability. The repeat X-ray of his spine revealed disappearance of scoliosis.



[Table/Fig 1] X- ray of thoracolumbar spine with minimal (negligible) scoliosis on the right side.



[Table/Fig 2]: Photograph of the patient showing post incision and drainage wound with corrugated drain in situ.

Discussion

Traquair[3] credited Virchow for the earliest mention of pyomyositis; however, Scriba in 1885, was probably responsible for the first true description. Primary Pyomyositis (PPM) is a rare, sub acute, muscle infection that is probably the result of transient bacteraemia in most patients. It has been seen in all age groups, but it is most common in the first and second decades of life, with slight predominance in males.[2][4] PPM commonly manifests as a local abscess, but may also present as a diffuse inflammatory or a rapidly progressing myonecrotic process. PPM can involve any muscle group in the body: a single muscle is usually affected, although 11% to 43% of the patients have involvement of multiple sites.[4] Because of its rarity and often vague clinical presentation, it is unlikely to be considered

during the initial diagnosis. Moreover, diagnosis may be delayed if the affected muscle is deeply situated and local signs are not apparent. This delay in diagnosis may result in a compartmental syndrome,[5] extension into and destruction of an adjacent joint, [6] sepsis, and occasionally death. Lung and brain abscesses, pericarditis, myocarditis, endocarditis and renal failure have been reported. [7]

The aetiology of PPM remains unclear. The infection is believed to be a complication of transient bacteraemia, because, in the vast majority of the patients, it develops without any penetrating injuries or any other clear portals of entry.[4] The rarity of the infection is attributed to an assumed resistance of skeletal muscles to bacteraemic episodes. Trauma to the affected muscle resulting in alteration of the muscle structure has been proposed as a possible aetiology. PPM has three distinct stages, which represent a gradual progression from diffuse muscle infection to focal abscess formation, to a septic state.[2] [4]

Stage 1: Diffuse muscle infection - Local signs of inflammation are absent initially due to deep seated infection, but pain and even systemic signs of infection are present.

Stage 2: Muscle abscess formation is associated with local and systemic manifestations of infection. A tender soft tissue mass can be palpated, and the affected muscle is typically described as having a firm, wooden texture. The overlying skin is swollen, erythematous and warm. The patient may have exquisite tenderness and fluctuance of the involved area, obvious functional disability, and occasionally frank septicaemia.

Stage 3: Sepsis: It includes signs of toxicity and septic shock. This late stage of the disease is characterized by severe pain, local signs of infection and systemic manifestations of sepsis, all of which require urgent intervention. Because of its clinical manifestations, PPM has been confused with muscle strain, thrombophlebitis, cellulitis, bursitis, contusion, haematoma, Perthes' disease, septic arthritis, osteomyelitis, rheumatoid arthritis and soft tissue sarcoma. [2],[3],[4] PPM of iliopsoas or involvement of the abdominal wall, especially the right lower quadrant, may be confused with acute appendicitis and may lead to unnecessary laparotomy. [2]

Imaging studies like plain radiography is the appropriate study for the initial screening to rule out primary bone lesions such as sub-acute osteomyelitis or primary bone sarcoma that can mimic the clinical presentation of PPM. Computerized tomography provides better delineation of muscle structure than plain radiography, and therefore enables the diagnosis of the muscle abscess. Ultrasonography has also been used for the diagnosis of PPM. The typical findings are a bulky muscle with abnormal echo texture and a hypo echoic focal lesion, occasionally with internal debris and air bubbles. Magnetic resonance imaging is the most useful imaging modality for the diagnosis of PPM, as it most clearly demonstrates diffuse muscle inflammation as well as any subsequent abscess formation. Rarely is Technetium scintigraphy used. [1][2][3]
The choice of treatment for PPM depends on its stage at presentation. During the early stage of infection, the diffuse inflammatory changes can be effectively treated with antibiotics alone. Abscess formation however, requires appropriate drainage prior to the initiation of intravenous antibiotic therapy. Cloxacillin is a suitable and common choice of antibiotic. Administration of a combination of Cloxacillin and an aminoglycoside achieves a synergistic effect, and is reserved for patients who are either in a septic state or immunocompromised.Intravenous antibiotics are usually given first for a period of 7 to 10 days, followed by oral antibiotics. Usually, a first generation Cephalosporin is given for a total of 5 to 6 weeks.

The complications and long term sequelae of PPM include osteomyelitis of adjacent bones, muscle-scarring, residual weakness, functional impairment, and a depression at the site of infection, indicating a defect in the underlying soft tissues and muscle fibers.

To conclude, we had a patient with rare location of pyomyositis, since it is more common in quadriceps, gluteal and ilio-psoas muscles**.** The diagnosis of PPM should be kept in mind in such cases, to prevent its dreaded complications. Early diagnosis and drainage of the muscle abscess followed by administration of appropriate antibiotics, remains the mainstay of treatment, and leads to complete recovery without any long term sequelae.

References:

[1] Cecil M, Dimar JR 2nd. Para spinal pyomyositis, a rare cause of severe back pain: case report and review of literature. Am J Orthop. 1997; 26:785-7.
[2] Bickels J, Ben-Sira L, Kessler A, Wientroub S. Primary Pyomyositis. J Bone Joint Surg Am 2002; 84:2277-86.
[3] Hall RL, Callaghan JJ, Moloney E, Martinez S, Harrelson JM. Pyomyositis in a temperate climate. Presentation, diagnosis and treatment. J Bone Joint Surg Am 1990; 72:1240-44.
[4] Chiedozi LC. Pyomyositis. Review of 205 cases in 112 patients. Am J Surg 1979; 137:255-59.
[5] Harrington P, Scott B, Chetcuti P. Multifocal streptococcal pyomyositis complicated by acute compartmental syndrome. J Pediatr Orthop B 2001; 10:120-22.
[6] Freedman KB, Hahn GV, Fitzgerald RH Jr. Unusual case of septic arthritis of the hip: spread from adjacent adductor pyomyositis. J Arthroplasty. 1999; 14:886-91.
[7] Immerman RP, Greenman RL. Toxic shock syndrome associated with pyomyositis caused by a strain of staphylococcus aureus that does not produce toxic shock syndrome toxin-1. J Infect Dis 1987; 156:505-7.