

Primary Pyomyositis: A rare cause of Painful leg in a diabetics?

Tanveer H. Banday¹, Sadaf Bashir bhat², Shah Naveed³, Irfan Wani⁴,
Danchand⁵, Sabreen bashir bhat,
Assistant professor, Department of medicine, AIMS Bangalore.

Abstract: Pyomyositis an acute/subacute, destructive, and suppurative bacterial infection of skeletal muscle. Pyomyositis is not secondary to a contiguous infection from other areas, such as the skin, bone, or soft tissue. Common intropical climates, pyomyositis accounts for four percent of all surgical admissions in some tropical countries.

Most patients with this process have underlying immune compromised like(diabetes ,HIVetc) ,but may also affects healthy young individuals [1,2]. Most patients present with tender indurated muscle swelling that ultimately progresses to involve the overlying tissue. Muscles of the pelvic area and lower extremities are most commonly affected. An abscess of the thigh, quadriceps, and iliopsoas muscles are relatively common, but both the upper and lower body may be affected [3].

A delay in diagnosis may result in compartment syndrome, sepsis, and death. The long-term sequelae of pyomyositis include osteomyelitis of adjacent bones, myonecrosis, muscle scarring, prolonged hospitalization and significant functional impairment [4].

Keywords; pyomyositis, diabetes, leg pain.

I. Case report

We report a patient with type II diabetes 10 years in duration who presented with a painful leg. He had history of increasing pain in right thigh posterior aspect. He was unable to weight-bear and had systemic features of malaise, fever, and rigors. There was no history of trauma.

On examination patient was febrile, pulse 120 beats/min, blood pressure 120/76 mmHg, respiratory rate of 16 breaths/min. Local examination showed; On inspection - tense, and swollen right thigh. On palpation tender and indurated. There was no erythema or lymphadenopathy present. Swelling progressed over next 2 days and involved whole right lower limb just above ankle joint and proximally up to right inguinal ligament and flanks. The overlying skin was indurated. Peripheral pulsation, neurological examination was normal.

Investigation; Laboratory results showed a total leucocyte count ($10500/\text{mm}^3$) differential leucocyte count, neutrophilia (78%) with left shift, C-reactive protein 250 mg/l, and creatinine kinase 456 units/l. Blood glucose was 480 mg/dl random on day 1 of admission which was controlled within range of 110 to 140 mg/dl. Serum urea 104 mg/dl, serum creatinine 3.3 mg/dl, SGOT 32 U/L, SGPT 63/dl. X RAY knee and thigh was normal on day of admission. HbsAg, anti HCV and HIV serology was nonreactive. Two sets of blood cultures grew MSSA within 48 h. There was no suggestion of deep venous thrombosis on 2 D color Doppler. Magnetic resonance imaging of right limb showed myofasciitis in posterior and medial compartment of thigh with areas of necrosis with associated cellulitis (fig1)



Computerized tomography (CT) abdomen showed right lateral and posterior abdominal wall myofasciitis and cellulitis with extension into right hip region and left lateral abdominal wall, bilateral pleural effusion with right side basal atelectasis (fig2)



The patient was treated with antibiotics (piperacillin tazobactam, vancomycin, clindamycin) and insulin infusion for glycemic control. The tissue samples grew MSSA *Pseudomonas*, leading to a change in antibiotics to vancomycin and ciprofloxacin. He had a prolonged stay in hospital but patient was managed conservatively mostly with parental antibiotics without requiring much surgical intervention and was discharged from hospital without any complication.

II. Discussion

Pyomyositis is still probably a rare process, while transient, self-limited, vague, unexplained hip, back, and leg pain are omnipresent. Although perfectly healthy individuals can suffer from spontaneous pyomyositis, this is still generally a disease of the immunocompromised. Pyomyositis, a primary muscle infection, is probably the result of a transient bacteremia. Characteristically, muscles of the lower body are most commonly affected, such as the quadriceps, gluteal, and iliopsoas muscles. The most common organism is *S. aureus*, present in more than 75% of the cases.

Diabetes is an important contributing factor to pyomyositis by predisposing the skeletal muscle to damage [5,6] and increasing susceptibility to infections. Review of the pyomyositis literature suggests that its incidence in diabetes has increased from 8% of cases in 1971–1991 to 31% of cases in recent reports [7]. The pathogenesis of pyomyositis is confusing because intact muscle is usually quite resistant to infection. Curiously, many patients relate trauma, seemingly minor in nature. It is generally considered secondary to a bacteremia. No characteristic source or portal of entry has been identified. The pathogenesis of pyomyositis is multifactorial. Transient bacteremia with concomitant muscle damage may be a causative factor. Rarer infectious agents include *Streptococcus pyogenes*, *Streptococcus pneumoniae*, *Escherichia coli*, *Mycobacterium avium*, and gram-negative bacteria [4]. Pyomyositis progresses through three clinical stages [8]. The initial invasive stage begins with cramping and aches and a low-grade fever. Stage 2, muscle abscesses have formed and local and systemic manifestations are present. Stage 3, which is characterized by signs of toxicity and septic shock.

Routine laboratory investigations are rarely helpful. Inflammatory markers such as C-reactive protein may be elevated [3], and 50% of patients have a leucocytosis with a left shift [9]. Muscle enzyme levels are variable. Blood cultures are positive in 5–31% of cases [9]. Plain radiography is often unremarkable and mainly used to rule out primary bone lesions. MRI is the imaging modality of choice, especially in the initial stages. It demonstrates diffuse muscle inflammation and abscess formation. Ultrasonography and CT are useful in localizing intramuscular abscesses and guiding needle.

The mainstay of treatment is drainage of the abscess, coupled with prolonged antibiotic therapy. Percutaneous needle drainage may occasionally be successful, but often these patients require deep and extensive I & D. The majority of misdiagnosed patients are probably first treated as nonspecific myofascial pain or simple cellulitis, or other nonspecific soft tissue entities before the abscess is obvious.

The duration of antibiotic therapy can range from a few days to a more prolonged course, as occurred in this case. The diagnosis of pyomyositis requires a high index of suspicion and should be considered in all patients with fever and muscle pain. This is particularly important in patients with diabetes. Successful treatment requires early recognition, appropriate use of antibiotic therapy, and debridement and drainage of the affected tissues.

III. Conclusion

In conclusion we want to emphasize that pyomyositis should be considered as one of the differential of pain leg especially in diabetic patients and second these patients can be managed conservatively and complication could be prevented/minimized with early introduction of appropriate antibiotics. The next time you see a

diabetic with a vague, hard-to-describe, deep aching pain in the pelvis, hips, buttocks, or thighs, give primary pyomyositis a consideration.

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