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CASE REPORT

Literature Review and Case Report: Primary/Tropical Pyomiositis of the Gluteus Muscle in Colombia

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Abstract

Introduction: Skin infections can reach deep layers, such as muscle fascia, and are classified into necrotizing fasciitis and pyomyositis. Primary pyomyositis can develop due to hematogenous infection, being rare and its main etiology being S. *aureus*. The clinical presentation is more common in men and associated with tropical regions.

Case presentation: A 61-year-old diabetic woman presents with a deep infection in the right buttock, with fever and purulent discharge, preceded by a poorly treated ulcer on the finger. The findings suggest necrotizing fasciitis, but primary pyomyositis due to methicillin-resistant S. haemolyticus is confirmed, requiring surgical drainage and antibiotic treatment.

Discussion: Pyomyositis is an acute muscle bacterial infection, rarely primary, more common in diabetics. The patient presents a typical clinical course, with risk of systemic complications. Pyomyositis primarily affects large muscles, such as the gluteus, and is mostly caused by *S. aureus*, but dual infection with *coagulase-negative S.* may occur.

Keywords: absesum, muscle, soft tissue infection, staphylococcus aureus.

Introduction

Skin infections may affect any layer of the skin and can even extend to the muscular fascia, thereby being classified as deep infections.

Among these deep infections, two major subtypes are recognized: necrotizing fasciitis and pyomyositis. Accurate clinical and diagnostic differentiation between these entities is essential for optimal patient management.

Necrotizing fasciitis refers to an infection of the deep layers of the skin and subcutaneous tissues, with extension to muscle and fascial planes. Pyomyositis is characterized by a single or multiple abscesses located within skeletal muscle.[1]

Pyomyositis (PM) may be classified as primary or secondary. Primary PM arises from transient hematogenous dissemination of an infection from an unidentified primary focus, while secondary PM results from contiguous spread from skin, bone, or soft tissue infections.[2]

The global prevalence and incidence span all age groups, with higher rates in tropical regions, particularly among pediatric populations. Males are more frequently affected than females.[3,4]

Microbiologically, the most common causative agent is *Staphylococcus aureus,* responsible for approximately 95% of cases. Less frequently, *Streptococcus pyogenes* (Group A streptococcus) is implicated in 1–5% of cases, while other streptococcal groups (B, C, G), *Streptococcus pneumoniae, Enterococcus faecalis, and Streptococcus anginosus* are rarely reported.[5,6]

Coagulase-negative staphylococci (CoNS) are rarely pathogenic in immunocompetent patients without risk factors. This underpins the clinical relevance of reporting this case.

Case Presentation

We present the case of a 61-year-old female from the Caribbean tropical region of Colombia, with a history of poorly controlled type 2 diabetes mellitus. She was admitted with a one-week history of progressive symptoms including erythema, warmth, induration, restricted mobility, and purulent discharge in the right gluteal region, accompanied by chills and unquantified fever. On history, the patient reported a prior soft tissue infection resembling an ulcerated abscess on a toe, which was treated with inadequate local wound care and manipulation without proper aseptic technique. She denied receiving any antibiotic therapy during that infectious episode.

Given the clinical picture, she was initially diagnosed with necrotizing soft tissue infection of the right gluteal area, with high risk due to underlying diabetes mellitus. Physical examination revealed signs of deep tissue involvement (Figure 1), supported by laboratory findings including moderate leukocytosis, neutrophilia, and elevated acute-phase reactants.

Due to the aggressive clinical course and extensive anatomical involvement, empirical intravenous antibiotic therapy with linezolid 600 mg every 12 hours was initiated. Blood cultures and imaging studies were ordered to evaluate lesion extent and tissue involvement (Figure 2). The general surgery team was consulted for source control, and surgical debridement was performed. Intraoperatively, an abscess in the right thigh containing approximately 5 mL of fibrinopurulent material was drained successfully. The patient showed significant clinical improvement after the first surgery, and subsequent surgical washouts were performed until complete source control was achieved (Figure 3).

Antibiotic duration was determined based on negative follow-up blood cultures, clinical response, and effective source control. The patient was transitioned to vancomycin 1 g IV every 12 hours for 14 days.

Discussion

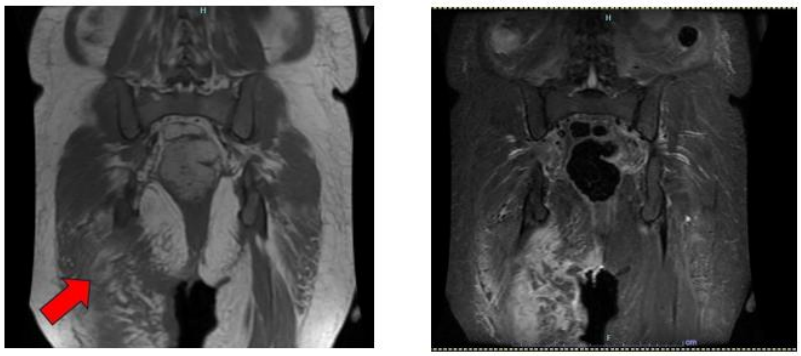
As noted, pyomyositis is an acute bacterial infection affecting skeletal muscle fascia.

Bacterial muscle infections typically result from hematogenous spread or direct inoculation through penetrating trauma, representing secondary pyomyositis. Primary pyomyositis, however, is uncommon and requires high clinical suspicion.

Skeletal muscle infections are often associated with predisposing conditions such as diabetes mellitus, malignancies, HIV infection, and hematologic or rheumatologic disorders.[5]

In this case, the patient's history of type 2 diabetes mellitus likely contributed to vascular endothelial dysfunction, compromising the physiological function of the vascular bed and increasing susceptibility to infection.

Figure 1. Right gluteal lesion on hospital admission.



A **B**

Figure 2. A) T1-weighted coronal MRI showing signs of myositis.
B) T2-weighted coronal MRI showing signs of myositis.

A

B

Figure 3. A) Right gluteal lesion after the first surgical debridement.
B) Right gluteal lesion after the second surgical debridement.

Additionally, the patient had a poorly managed ulcer on the hallux of the same limb, which may have served as the initial source of transient asymptomatic bacteremia. Such pathophysiological conditions are often difficult to detect retrospectively.

Pyomyositis typically progresses through three stages: initially, an invasive phase marked by muscle swelling with or without erythema, sometimes accompanied by fever and pain. This is followed by a suppurative phase occurring one to two weeks later, associated with fever, pain, and reduced mobility. If left untreated, systemic dissemination may result, potentially leading to sepsis, septic shock, and death.[6]

Despite these risks, the overall mortality of tropical pyomyositis remains below 1%.

Pyomyositis usually affects a single muscle group, commonly involving large muscle groups in the lower limbs or trunk[7]—as seen in this case with involvement of the gluteal group. Less commonly, it affects pericervical muscles such as the sternocleidomastoid or extraocular muscles.

While *Staphylococcus aureus* remains the predominant pathogen in tropical pyomyositis (95% of cases), co-infection with coagulase-negative staphylococci has also been documented.

In previous decades, *coagulase-negative Staphylococcus* (CoNS) isolates were often dismissed as contaminants. However, accumulating evidence now recognizes CoNS as significant causative agents in bloodstream infections.

Ethical Standards

This case report was conducted in accordance with the principles of the Declaration of Helsinki, the International Conference on Harmonization Good Clinical Practice (ICH-GCP) guidelines, and was approved by the affiliated institutional ethics committee. Written informed consent was obtained from the patient prior to accessing clinical data and medical history.

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None.

Conflicts of Interest

The authors declare no conflicts of interest.

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