

ACTINOMYCOSIS MASQUERADING AS SOFT TISSUE TUMOR OF THE THIGH: A RARE CASE REPORT

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Abstract

Actinomycosis is a chronic, suppurative, and granulomatous process caused by actinomycetes, saprophytic bacteria normally residing in the oral cavity. There are a few cases of primary actinomycosis described in the literature where it can involve any organ. We present a rare case of an actinomycosis in a 69 year old man, with swelling over posterior compartment of thigh for 6 months, mimicking clinically a soft tissue sarcoma of right thigh. MRI suggested a sarcomatous lesion. The patient underwent wide local excision and the histological examination of the specimen revealed actinomycosis.

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1. INTRODUCTION

Actinomycosis is a chronic suppurative granulomatous inflammation caused by the *Actinomyces* species, a microaerophilic, and anaerobic Gram-positive rod [1]. The disease process includes an autologous infection mainly induced by immunosuppression or surgery. Preoperative diagnosis is usually difficult with the majority of cases being diagnosed after the histological and bacteriological examination of the resected specimen [2-5]. We herein report on a case which was treated with a combination of antibiotics and surgical intervention.

2. CASE REPORT

A 69 year old male, non smoker, affected by diabetes mellitus and ischemic heart disease, presented with complaints of swelling over the posterior aspect of the right thigh for 6 months. He did not complain of trauma, fever or radiation treatment. Past medical history was unremarkable, except for a lesion which was small in size at the right gluteal region and gradually progressed, which was operated and diagnosed as dermoid cyst. On examination, a swelling of 10*18 cm was present over the posterior aspect of the thigh, with intramuscular involvement, and on examination could move along the muscular plane, not fixed to the underlying bone, and no lymph nodes

palpable. MRI Scan of the right thigh with contrast revealed (multiplanar and multisequential with and without contrast) a well defined mass predominantly within the biceps femoris measuring 55*90mm, 160mm in length, infiltrating into the gluteus maximus, intramuscular septae and subcutaneous tissue, likely sarcomatous radiologically (Figures 1 & 2). Diagnostic suggestion appeared to be mild anemia (Haemoglobin 9.8 mg/dL), and an elevated white cell count of 19.6 $\times 10^9/L$ (reference range 4.0–11.0 $\times 10^9/L$) with neutrophilia and band forms, C-reactive protein (CRP) was positive by qualitative analysis. It was clinically diagnosed as soft tissue tumor and patient underwent wide local excision of the soft tissue mass and the excised specimen was sent for histopathological study. Histopathological examination revealed features of actinomycosis. Histologically a necrotizing granulomatous reaction with central aggregates of neutrophils, forming micro abscesses, was observed. Some bacterial colonies were situated inside the neutrophilic collections and they formed characteristic structures as “sulfur granules” (Figure 3). After diagnosis of actinomycosis, amoxicillin antibiotic therapy was administered and was planned to continue for 3months. MRI after 1 month revealed a

reduction of the lesion and showed no evidence of disease.

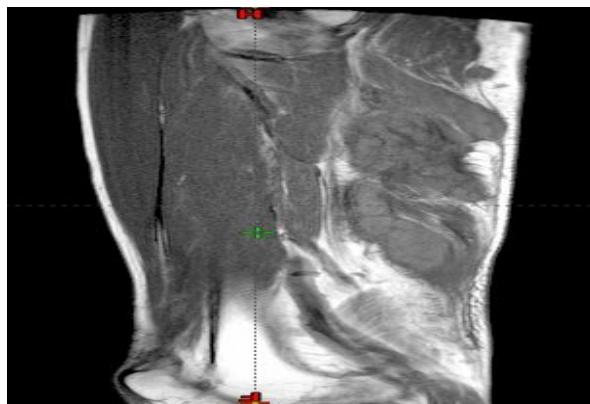


Figure 1: A predominant mass mimics a malignant tumor extends from biceps femoris infiltrating into the gluteus maximus, intramuscular septae and subcutaneous tissue on MRI

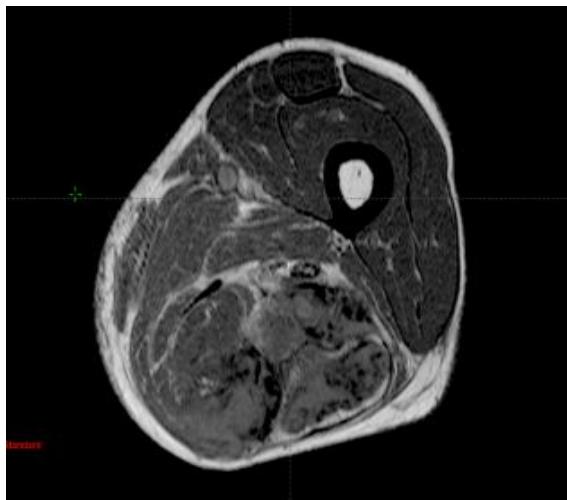


Figure 2: MR image shows an irregular area of tissue thickening with moderate contrast enhancement on the right biceps femoris extending till the underlying muscles.

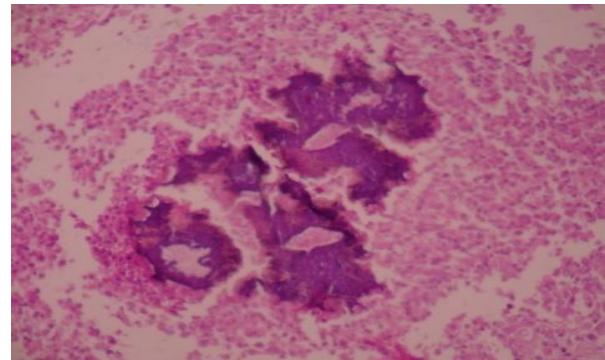


Figure 3: Actinomycotic colony with surrounding chronic inflammation

3. DISCUSSION

This case describes an uncommon presentation of actinomycosis, which can be initially mistaken for a malignancy. Actinomycosis is an infection that affects all age groups, and is characterized by subacute or chronic abscess formation with nonspecific systemic symptoms and is sometimes known as the "most misdiagnosed disease," as it is frequently confused with neoplasms^[6]. The causative organisms are anaerobic (or microaerophilic), Gram-positive, non-spore-forming, non-acid fast, filamentous, branching rods that are from normal flora of the oral cavity, gastrointestinal tract and the female genital tract^[7]. The precise source in this case, however, was unclear.

In 1938 Cope first classified actinomycosis into 3 different forms: cervicofacial, pulmonothoracic, and abdominopelvic, occurring in 50%, 30%, and

20% of cases respectively [8]. The predisposing factors are represented by debilitating conditions such as malignancy, diabetes, and immunosuppression such as leukemia, lymphoma, renal insufficiency, and renal transplant [9]. Cervicofacial actinomycosis is also more frequent in people with poor oral hygiene and oral mucosal trauma. The fifth decade of life is the most affected, and there is a slight male prevalence. Actinomycosis located at the cervicofacial region classically presents as a slowly growing, firm, painless, and possibly suppurating submandibular region mass, but it can also present as a rapidly progressive, painful, and fluctuant infection anywhere in the neck or face associated with fever and leukocytosis. Racial predisposition or geographic factors are unknown. Actinomycosis is an insidious disease, and its propensity to mimic different pathologies, such as tuberculosis or carcinoma, is well known. CT and MRI are nonspecific for diagnosis, but they can help in defining the localization and the extension of the lesion [10]. The final diagnosis is based on cytology (FNAC) or pathology [11].

There have been a few unusual presentations of actinomycosis reported, like Vocal cord actinomycosis mimicking a Laryngeal tumor [12], tubo-ovarian

actinomycosis mimicking ovarian cyst [13], primary actinomycosis of the breast as breast malignancy [14], actinomycosis mimicking a sigmoid colon [15] and ulcerative malignancy [16]. An instance where Actinomycosis - Left Posterior Chest Wall which was provisionally diagnosed as malignancy with secondary infection, showed an FNAC with features suggestive of dysplasia but histopathology confirmed the diagnosis as actinomycosis [17]. Actinomycosis needs to be considered when the patient has chronic progression of the disease across tissue planes, mass-like at times, which may heal and recur, after a typical course of antibiotics. The main therapeutic treatment is administration of antibiotics, and penicillin is the drug of choice. Erythromycin, amoxicillin and tetracycline can be used in patients allergic to penicillin [18]. The antibiotic therapy must be administered in high dosage over a prolonged period because of the tendency of the disease to recur, as well as a surgical intervention if the disease is extensive.

CONCLUSION

In conclusion, we report a unique case of actinomycosis resembling a soft tissue tumor in its clinical features and MRI findings. Because of its rarity, the documentation of more cases is required to define the pathogenesis in much detail.

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