Coexistent Actinomycosis and Eumycetoma in an Immunocompetent Patient

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Sir,

Actinomycosis is a chronic bacterial infection, which rarely involves skin as primary infection. Eumycetoma is a chronic subcutaneous infection of fungal origin. We came across a young immunocompetent male, with concurrent Actinomycosis and Eumycetoma.

A 34-year-old healthy male, resident of Western Rajasthan presented with a swelling over his left knee of 18 months duration. He sustained a blunt injury over left knee following a fall 18 months back. One month later, he developed a peanut sized solitary asymptomatic swelling over left knee, which gradually progressed to attain the present size. It was not associated with any constitutional symptoms or discharge of granules. On examination, he had a solitary firm to partially fluctuant non tender skin colored swelling with variegated surface measuring 4 cm × 4 cm over left knee [Figure 1]. Examination of his left foot also revealed multiple discrete asymptomatic subcutaneous nodules measuring 0.5-1.0 cm diameter over instep [Figure 2], which were historically present for past 8 years. Patient did not give history of discharge of granules from either site. There was no history of obvious trauma over his left sole. He had not taken any treatment for the foot lesions.

Biopsy from left knee showed nodular collections of numerous neutrophils, lymphocytes and plasma cells forming microabscesses in the dermis, some of these...
surrounding filamentous colonies (sulfur granules). These colonies were Periodic Acid Schiff (PAS), Gram stain, and Grocotts positive [Figure 1]. Biopsy from left foot nodule showed fungal colonies composed of broad branching septate hyphae in an amorphous background with surrounding inflammatory cell reaction composed of neutrophils and lymphocytes. Few foci showed Splendore Hoeplli reaction with deposition of eosinophilic material surrounding these colonies. PAS, Grocotts stains were positive for fungal profile [Figure 2]. Patient’s other laboratory investigations including Hemogram, Biochemistry, Enzyme-linked immunosorbent assay (ELISA) for Human immunodeficiency virus (HIV), X-ray (local and chest) were normal.

Patient was managed with Injection sodium Penicillin and oral Voriconazole for a period of 4 weeks followed by daily oral Rifampicin, Trimethoprim-Sulfamethoxazole (He was intolerant to ampicillin and doxycycline) and Voriconazole. Both his lesions subsided over eight weeks of therapy.

Actinomycosis is a chronic suppurative granulomatous disease produced by endogenous, anaerobic or microaerophilic, gram positive non spore forming bacteria belonging to families of Actinomycetaceae and Propiononibacteriacae. Actinomyces were earlier classified under fungi because of their tendency to produce branching filaments. Pathogenic anaerobic actinomycetes are normal inhabitants of human oral cavity, respiratory, intestinal, and genitourinary flora, hence, usually actinomycosis is acquired endogenously and primary cutaneous actinomycosis is rare and has a variable presentation. The five main clinical types depending on the site of the primary infection are cervicofacial, thoracic, abdominal, pelvic, and rarely primary cutaneous. Few cases of hematogenous spread have also been mentioned in literature.

Eumycetoma are deep fungal infections. Foot is the most common site of infection. The disease is initially limited to the skin and subcutaneous tissue but may eventually spread through the fascial planes to contiguous structures such as muscle, bone, blood and lymphatic vessels, and nerves. It is endemic in India, parts of Africa, Pakistan, Yemen, Mexico, Central America, and South America. Predisposing factors include local trauma, walking barefoot, agricultural work, poor personal hygiene, poor nutrition, pre-existing wounds or multiple infections. Identification of the etiologic agent of eumycetoma is based on direct microscopic examination of the granules, culture isolation of the agent, colonial features, and fungal microscopic morphology.

Management of actinomycosis includes injectable penicillin for 2-4 weeks followed by amoxicillin or doxycycline for 6-12 months. Our patient was intolerant to amoxicillin and doxycycline and was hence placed on Penicillin G 6 million units daily for 6 weeks followed by Rifampicin 600 mg daily along with Co-trimoxazole twice a day for 6 months. For his eumycetoma lesions, he was placed on Voriconazole 200 mg twice for a day to which he responded well. It was, thereafter, continued for another 6 months. Subsidence of the lesions was observed and he has remained symptom free for the past 4 months. He has been placed on follow up with advice for a monthly review.

Co-existence of primary cutaneous actinomycosis with eumycetoma in a single patient has not been reported in literature. The case is interesting for its rarity and the therapeutic challenge it posed.

References