Pyomyositis With Uveitis With Secondary Osteomyelitis: An Atypical Presentation Of Tuberculosis

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Citation

V Chewoolkar, L Bichile. *Pyomyositis With Uveitis With Secondary Osteomyelitis: An Atypical Presentation Of Tuberculosis*. The Internet Journal of Rheumatology. 2007 Volume 5 Number 1.

Abstract

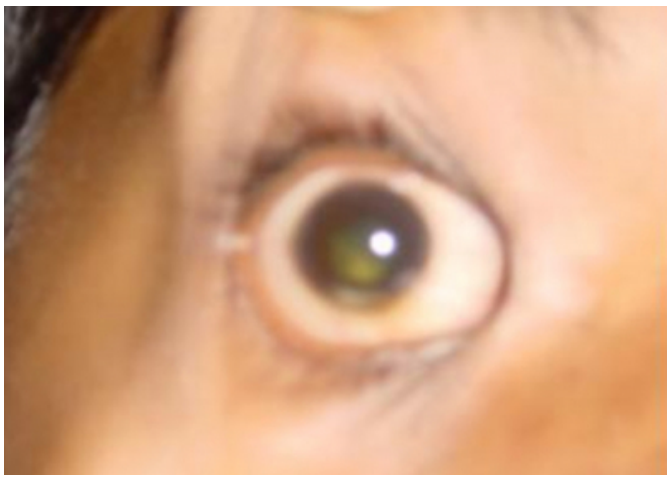
Pyomyositis is an acute bacterial infection occurring in skeletal muscle with no obvious local or adjacent source of infection. Tuberculosis involving the soft tissue from adjacent bone or joint is well recognized. However, primary tuberculous pyomyositis is rare. Initial symptoms include localized muscle pain, swelling, and tenderness. The diagnosis is often delayed because other primary diagnoses are first considered. This article discusses a case of tuberculous pyomyositis with uveitis in a 14-year-old boy. A review of the medical literature is also presented.

CASE PRESENTATION

A 14-year-old boy presented to the emergency department with a 4 days history of left shoulder pain with swelling. He denied history of trauma or local intramuscular injection. On second day of illness, he had also developed blurring of vision in the right eye associated with mild fever. On admission, the patient was afebrile, pulse rate 78/min and blood pressure 120/78 mm Hg. Physical examination revealed diffuse left shoulder tenderness with local warmth. Vision in the right eye was reduced to perception of hand movements at two feet with hypopyon (Figure 1) and keratic precipitates.

Figure 1

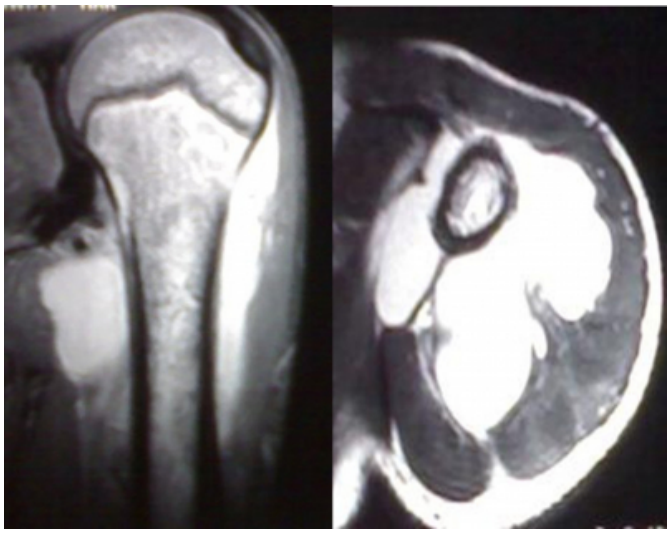
Figure 1: Right eye hypopyon uveitis.



The leukocyte count was 10,900/cumm with 75% polymorphs and 25 % lymphocytes. The erythrocyte sedimentation rate (Westergren method) was 86 mm/hr (normal- 0 to 20 mm/hr).Bleeding time, clotting time and prothrombin time were normal. Results of urine analysis and culture were negative. Chest and left shoulder radiography was normal. Two sets of blood cultures obtained on admission revealed no organisms.HLA-B27 was negative.An MRI of the left shoulder showed multiple abscesses in the left deltoid with septae within and in the intermuscular planes (Figure 2).Abscesses had no communication with the joint space. The humerus was normal with no osteolytic lesions.

Figure 2

Figure 2: MRI of the left shoulder showing multiple abscesses in the left deltoid with septae.



An aspirate from the abscess cavity showed plenty of pus cells with no organisms on Gram stain and acid fast smear and on culture. The patient was treated with intravenous Amoxycillin plus clavulanate (1.2 gm/6 hr) and Amikacin (0.5 gm/day). Piperacillin plus Tazobactum (4.5gm/8hr) was added in the second week. Despite therapy, no clinical improvement was evident. During the second week of therapy, patient developed a sinus at the site of aspiration with seropurulent discharge. The patient's leukocyte count was 10,700/mm3 and erythrocyte sedimentation rate 66 mm/hr. All repeated blood and pus cultures were negative. Patient was given Inj.Methylprednisolone 1gm/day for three days followed by oral prednisolone 1mg/kg/day with topical betamethasone and atropine. A Mantoux test done was positive. Pus for TB-DNA-PCR turned out to be positive. After 3 weeks of unsuccessful antibiotic therapy, the patient was started on 4-drug ATT (HREZ) as per weight .A repeat MRI of the left shoulder showed ill defined lucencies in the proximal humeral shaft with cortical thickening, sclerosis and abnormal marrow signal intensity in the proximal humeral shaft suggestive of osteomyelitis of the proximal humeral shaft. Shoulder and elbow joints were normal. Repeat ophthalmological assessment revealed inflammatory membrane on the lens with streak hypopyon. A final diagnosis of tuberculous pyomyositis with uveitis with secondary osteomyelitis was made. Shoulder pain and swelling gradually subsided and the sinus gradually stopped discharging with complete healing after 8 weeks. However, unfortunately, patient developed scarring of the cornea with loss of vision.

DISCUSSION

Tuberculosis (TB) is a communicable disease caused by Mycobacterium tuberculosis or related members of the TB complex.Tuberculous infection of skeletal muscles is usually secondary to direct extension from a bone, synovial lining of a joint, infected tendon sheath, direct inoculation, or lymphohematogenous dissemination. The infection is manifested as tuberculous pyomyositis. However, the selective involvement of a skeletal muscle by tuberculosis without existing active skeletal or extraskeletal tuberculosis is rare. Skeletal muscles are the least frequent location of primary extra spinal musculoskeletal tuberculosis [1, 2, 3]. M.tuberculosis may be a cause of pyomyositis in endemic areas. With intact adjacent bones and joints, the mechanism of the transmission of infection to the muscles is not known.

Ocular TB is an infection by M. tuberculosis in the eye, around the eye, or on its surface. Ocular TB can be primary or secondary. Primary disease includes conjunctival, corneal, and scleral disease, while tuberculous uveitis is a manifestation of secondary disease. Anterior tuberculous uveitis is typically granulomatous and an accompanying vitritis is not uncommon. The absence of clinically evident pulmonary TB does not rule out the possibility of ocular TB, as approximately 60% of patients with extra pulmonary TB have no evidence of pulmonary TB[4]. Ocular manifestations may result from a delayed hypersensitivity reaction in the absence of any infectious agent .Negative chest X-ray and sputum testing have limited exclusion value.

Recently, polymerase chain reaction has been used for detecting tubercular DNA in fluid samples[5] .Molecular techniques have good specificity, but sensitivity is only around 77%[6]. Thus, the widely accepted approach to the diagnosis of TB is based on clinical findings consistent with TB, positive tuberculin skin testing and sterile pus with repeatedly negative cultures. Newer tests are being developed based on gamma interferon production by T cells sensitized to specific antigens, which are specific to M. tuberculosis and therefore not influenced by BCG or most nontuberculous bacteria. These tests, including Quantiferon TB Gold[7] and enzyme-linked immunospot (ELISPOT) test[8], may prove useful in the future.

It might be questioned whether the clinical response observed was due to ATT, or simply a response to steroids. However, only after commencement of ATT, was there a sustained clinical response.

In summary, TB has a wide spectrum of presentations and a high index of suspicion is needed for timely diagnosis and treatment. Empirical ATT is sometimes justified to prevent irreversible organ damage.

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