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Spina ventosa in a twelve year old boy: A case report

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Abstract

Spina Ventosa is a rare condition. The term “spina ventosa” has been used to describe tuberculous dactylitis because of its radiographic features of spindle shaped expansion of the short tubular bones due to tuberculous granuloma. Children less than 10 years of age are most frequently affected and the hand is the most commonly affected site in Tuberculous dactylitis. We report the case of a twelve-year-old adolescent boy who was diagnosed with tuberculous dactylitis, involving the proximal phalanx of middle finger of right hand. His diagnosis was delayed due to lack of suspicion of this rare entity.

Keywords: Spina ventosa, tuberculous dactylitis, tuberculosis

Introduction

The bones of the hands and feet constitute more than half of the bones in the human skeleton (106/206), but lesions occurring in them are infrequently reported [1-5]. Tuberculous dactylitis is an uncommon form of extra-pulmonary tuberculosis involving the small bones of the hand or the foot. It is mainly caused by hematogenous spread from the lungs. Tuberculous dactylitis is quite uncommon beyond 6 years of age after the formation of the epiphyseal centers. It often becomes symptomatic 1-3 years following the initial infection [6, 7]. The bones of the hands are more affected than the bones of the feet. The proximal phalanx of the index and middle fingers and the metacarpals of the middle and ring fingers are the commonest sites involved, manifesting by soft tissue swelling and periostitis. Children aged 6 years and below account for 85% of cases [6-8]. In this age group, the hematopoietic marrow of tubular bones is favorable for hematogenous spread of tuberculosis to the marrow. In children the disease may occur in more than one short tubular bone at a time. There are not many reports devoted to tuberculous dactylitis.

Case presentation

A twelve-year-old adolescent boy initially presented with a dull aching pain followed by a swelling over the dorsum of his right middle finger which gradually progressed over the last six months. Initially, he was taken to a general practitioner after a month of his presenting complaints, for which he was prescribed analgesics for pain and oral antibiotics (a combination of amoxicillin and clavulanic acid) for a period of 10 days suspecting a pyogenic infection, but to no avail. However, the swelling persisted only to increase in size, forming an abscess. The child consulted another doctor after 3 months, where both the abscesses were incised and drained leading to discharging sinuses.

The pain persisted despite the treatment causing restricted movements of the fingers. Finally, he was brought to our Outpatient Department, where we admitted him to our ward. On carefully probing into the history, the parents told us that the child's neighbor was diagnosed with pulmonary tuberculosis and was taking treatment for the same for 5 months. However, the child had no history of fever, cough, night sweats, loss of weight, or trauma.

Local examination revealed an oval shaped swelling of 4 cm * 2 cm over the proximal phalanx of right middle finger bone with a discharging sinus. Swelling was hard and fixed to the underlying bone (Fig.1). There was tenderness and local rise of temperature on palpation. Movements were restricted at the right proximal interphalangeal joint of the middle finger. There was no lymphadenopathy.



Fig 1: Systemic examination was unremarkable.

Complete laboratory investigations were done which revealed a haemoglobin of 10.2 g/dL, total leukocyte count of 11,800/mm³, and an ESR of 77mm/hr, and Mantoux test was strongly positive. Chest radiograph was normal.

Open biopsy specimen for histopathological examination taken from the proximal phalynx of right middle finger revealed a caseating granulomatous inflammation consistent with tuberculosis, but staining for mycobacterium was negative.

Radiograph of the right hand showed a diffuse thickening of proximal phalanx of right middle finger with subperiosteal new bone formation.

Based on all these features, a probable diagnosis of tuberculous dactylitis was established and antitubercular therapy was initiated, which consisted of a four-drug regimen (Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol) for a period of two months and two-drug regimen (Isoniazid and Rifampicin) for four months as per the guidelines of Revised National Tuberculosis Control Program in India (DOTS Category 1) under the supervision of T.B. and chest physician. The child responded well to the treatment within 8–10 weeks. On follow-up, there was a substantial reduction in the size of the swelling, restoration of the finger movements, and healing of the sinus within 4–5 months.

Discussion

Tuberculosis constitutes the major cause of osteomyelitis in India ^[9]. This explains the higher incidence of tuberculous osteomyelitis in the small bones of the hands or feet reported here compared to that in the West ^[1]. Diagnosis of specific infections like tuberculosis osteomyelitis is important for treatment because secondary infection in such affected bones leads to a confusing picture. Submission of curetted material for culture improves the diagnosis and helps guide the choice of appropriate drugs. Good prognosis in most of the cases has been noted worldwide if diagnosed and treated correctly.

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