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Case Report

Rare case of tuberculous dactylitis of proximal interphalangeal joint in 27-year-old-male: a case report

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Abstract:

Tubercular infection of Metacarpals, Metatarsal and Phalanges of hand and feet is known as tuberculous dactylitis. The disease is predominant in children and uncommon in those above 5 years of age [1]. Hand is more commonly involved than foot in most cases. This condition is also called Spina-Ventosa a term which is derived on radiological feature of this condition that is, cystic expansion of the short tubular bone in a spindle shaped pattern.

Keywords: interphalangeal joint, tuberculous dactylitis

Introduction

Tubercular infection of Metacarpals, Metatarsal and Phalanges of hand and feet is known as tuberculous dactylitis. The disease is predominant in children and uncommon in those above 5 years of age [1]. Hand is more commonly involved than foot in most cases. This condition is also called Spina-Ventosa a term which is derived on radiological feature of this condition that is, cystic expansion of the short tubular bone in a spindle shaped pattern.

Pathogenesis

Normally during childhood, the blood supply of short tubular bone that is nutrient artery, enters almost in the middle of the bone is good, so the first inoculum of infection is lodged in the centre of the marrow cavity and this slowly converts the internal structure of the short tubular bone into tuberculous granuloma. This leads to spindle shaped expansion of the bone (Spina Ventosa) [2,3]. With increased destruction of the internal structure there is formation of sequestrum and subperiosteal bone formation of the involved bone. This leads to thickening of the bone. In the natural course, the disease heals with shortening of the involved bone and deformity of the neighbouring joint.

Case report

1 History

A 22year old male resident of Shahjahanpur, came to our outpatient department at Varun Arjun medical college, with the complains of pain and swelling over the left index finger for 1 month, which was initially small and gradually increasing in size, localised to left index finger. It was associated with pain over the left index finger, which was moderate in intensity for the past 1 month non radiating intermittent, aggravated on movement, trying to grasp object and while writing, it was relived on rest to the finger. It was associated with fever which was non-documented, more in the evening, weight loss and decrease appetite along with occasional night cries are also noted .it was also associated with cough with increased frequency at night which associated with sputum which was copious, white in colour and was relieved by medication from local doctor. The patient also

complained of clothes becoming loose since few months. There was no history of tuberculosis, hypertension and diabetes no significant family history was noted.

2 Examination

On examination patient was conscious well oriented to time place and person and cooperative. The other systems were normal.

On local examination an oval, circumferential swelling over the proximal and middle phalanx of the left index finger was noted, no scar mark or sinus were present over the finger, attitude of the limb was Extension at arm, Semi-pronated at forearm with hand in neutral position with Proximal interphalangeal joint (PIP) and Distal interphalangeal joint (DIP) in Extension. Range of motion was painful and restricted at PIP and DIP of Left index finger. Local tenderness and local rise of temperature was present over the proximal and middle phalanx of the Left index finger. The swelling was hard in consistency and fixed to the underlying bone. The left axillary lymph-node were palpable and tender.

Laboratory Investigation

Hb- 15.5gm %,

TLC -15,940,

DLC (N/L/E/M)-55/38/3/4,

CRP-0.98

ESR-40mm

MANTOUX -17mm induration seen

SERUM BILLIRUBIN-2.0

SGOT/SGPT- 41/54,

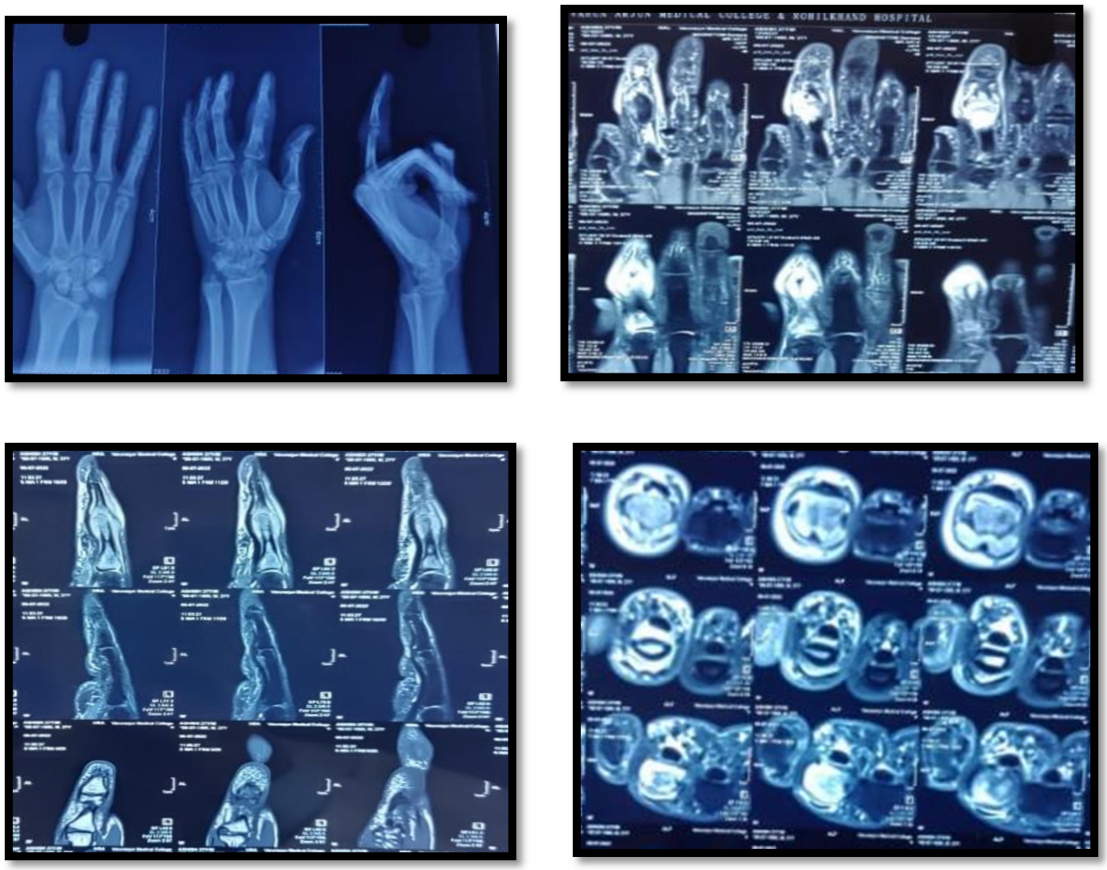
SERUM PROTEIN/ALBUMIN-4.5/2.1,

SERUM ALKALINE PHOSPHATE-107.4

Radiological investigation

XRAY of L HAND – Show index finger is swollen with lytic lesion in the middle and subperiosteal new bone formation along the affected bone.

MRI of L HAND – Shows tubercular arthritis of 2nd proximal Interphalangeal Joint with associated bone marrow changes and gross soft tissue swelling.



Treatment

Once the diagnosis of SPINA VENTOSA was established the patient was started on ANTI-TUBERCULAR DRUGS Isoniazid, Rifampicin, Pyrazinamide, Ethambutol for 2 months since 9/7/2022 followed by two drugs (Isoniazid and Rifampicin) for 6 months will be given. Good response to treatment is noted and on follow-up, there was substantial reduction in size of the swelling and restoration of finger movements within 1 month. [4,5,6,8]

The patient is on regular follow up for further progress of disease.

Discussion

Tuberculous dactylitis typically shows as a long-lasting, painful, and gradually progressive swelling of the fingers or toes, affecting most commonly the proximal phalanx and metacarpals of the hand in children. Multifocal involvement, sequestration, discharging sinus, and mutilation of the fingers occur more often in children and patients who are suffering from immunodeficiency. Abscess and sinus formation are common and lead to secondary bacterial infection in most cases [7,9,10,13].

Good clinical-radiological response is seen irrespective of the stage of the disease in which it is started. Ankylosis of the joint is one of the dreaded complications of the disease; however, in most cases; complete remission is seen following the completion of anti-tubercular chemotherapy.

Differential diagnosis such as Chronic Pyogenic Osteomyelitis, Syphilitic dactylitis, Fungal dactylitis, and conditions with lytic lesions (Enchondroma or fibrous defect). Other conditions include Sarcoidosis,

Brucellosis, Psoriasis, Hyperparathyroidism, and Leukaemia should be kept in mind when we deal with swelling of fingers of hand. Pyogenic osteomyelitis of the fingers should be considered when there is presence of local rise of temperature, severe tenderness over the affected finger, high-grade fever, and loss of finger movements with elevated total leukocyte counts. Tuberculous dactylitis usually progresses through an slow-moving course, rarely manifesting systemic symptoms. The lack of sequestration and the presence of diffuse osteopenia distinguish Tuberculous infection from Pyogenic infection [11,12,14].

Conclusion

Tuberculous dactylitis usually affects children of less than 5 years of age; it needs to be considered as a differential diagnosis in adults and children with unusual soft-tissue or skeletal swelling even in the absence of usual risk factors such as tubercular contagion, immunodeficiencies, and primary foci of TB elsewhere in the body (7). A high degree of suspicion accompanied by proper clinical examination and radiology helps in diagnosing this rare entity. Once the diagnosis is confirmed by clinico-radiological examination, Anti-tubercular chemotherapy is seen as the treatment of choice [17,15,16].

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