TUBERCULOUS DACTYLITIS (SPINA VENTOSA) IN A 10 YEAR OLD GIRL – A CASE REPORT

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INTRODUCTION
Tubercular dactylitis is a tuberculous infection of metatarsals, metacarpals and phalanges of hands and feet. This condition is uncommonly seen after the age of 5 years. The hand is involved more commonly than the foot. 1 This condition is also called as “Spina Ventosa”, a term which is derived from the radiological features of the disease, that is, cystic expansion of the short tubular bones (Spina = short bones; Ventosa =infected with air). 2

CASE REPORT

CLINICAL FEATURES
A 10 year old girl presented with swelling over the index finger of right hand since 2 months. The swelling was initially small and was gradually increasing in size. It was associated with dull aching pain. There was no history of any trauma, fever, weight loss, loss of appetite, cough, evening rise of temperature or exposure to pulmonary tuberculosis.

On examination, an oval-shaped swelling was noted over the proximal and middle phalanx of the index finger of the right hand. The skin over the swelling was normal. There was no local warmth, but tenderness was present over the proximal and middle phalanx of the index finger. Movements were painfully restricted at PIP joint of the index finger. The right axillary lymph node was palpable and was noted to be tender. Rest of the general and systemic examination was unremarkable.

LABORATORY INVESTIGATIONS
Hb was 12.6 gm%, TLC was 7860/mm³ with DLC of 51.1% Neutrophils, 39.5% Lymphocytes, 5.1% Monocytes, 4.1% Eosinophils, 0.2% Basophils and ESR of 15 mm/hr. The HIV, VDRL and blood culture tests were negative.

INTRA-OPERATIVE FINDINGS
Under regional anaesthesia, the entire length of the proximal phalanx was exposed by using the dorsal midline approach to the proximal phalanx. Intra-operatively, thickened periosteum was noted over the entire length of the phalanx. Congested, pale blue synovial hypertrophy of the PIP joint was seen. A lytic lesion was noted in the head of the proximal phalanx. Loose cartilage of the proximal phalanx was seen lying in PIP joint. Shiny white purulent material was noted within the medullary canal of the proximal phalanx and was also seen lying volarily, just posterior to the flexor tendon. This unhealthy material was sent for Tb PCR, Gram and ZN staining and histopathological examination.

TREATMENT
Once HPR established the diagnosis of tubercular dactylitis, her treatment was started with four drugs (Isoniazid, Rifampicin, Pyrazinamide and Ethambutol) for two months, followed by two drugs (Isoniazid and Rifampicin) for seven months. The patient responded well to the treatment. On follow-up, there was a substantial reduction in the size of the swelling and restoration of the finger movements within 3-4 months.

DISCUSSION
Skeletal TB spreads via the lympho-haematogenous route to the skeletal system. 85% of the children infected with tubercular dactylitis are younger than six years of age. Its incidence in children with tuberculosis has been reported to be 0.65%-6.9%. The proximal phalanx of the index and middle finger are the most common bones to be affected in hand by tuberculosis.

In children, the large nutrient artery of short tubular bones of hands and feet which enters the bone almost in the middle leads to first inoculation of infection being lodged in the centre of the marrow cavity and the interior of the short tubular bone is gradually converted into a tuberculosis granuloma. This results into a spindle shaped expansion of the bone with the nutrient artery of the involved bone getting occluded and the destruction of the internal lamellae. In the natural course, this disease heals with shortening of the involved bone and deformity of the neighbouring joint. 1

It is difficult to demonstrate or culture acid-fast mycobacteria from the lesions of tubercular dactylitis, as these are paucibacillary lesions. However, the gold standard for the diagnosis of skeletal tuberculosis is culture of Mycobacterium tuberculosis from the bone tissue. 2 Management is essentially done by anti-tubercular drugs, rest to the part in functional position and early mobilization of the involved parts or joints. 3 Current recommendations for the treatment of this condition include a 2 months initial phase of Isoniazid, Rifampicin, Ethambutol and Pyrazinamide followed by a 6-12 months regimen of Isoniazid and Rifampicin. 3 Surgery is limited in curtailing the bone cavities to promote early healing. 4 If a metacarpo-phalangeal, metatarsal-phalangeal or interphalangeal joint is ankylosed in awkward position, excision arthroplasty or corrective osteotomy is indicated. If a finger has ankylosed at more than one joint, or is grossly deformed, scarred and interfering with normal hand functioning, amputation of the finger or the corresponding ray may be advised. 1, 3

There is potential for preservation of good hand function when the diagnosis is made early. 2 Thus, one should be vigilant while dealing with the pathology of short tubular bones of feet and hands. 5

REFERENCES