



CASE REPORT: “SPINA VENTOSA” TUBERCULOUS DACTYLITIS IN A 7 YEAR OLD BOY- A RARE CASE

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Abstract

Spina ventosa (Latin-spina: “a thorn”, ventosa: “full of wind, distended”) is a rare condition. Tuberculous infection of metacarpals, metatarsals and phalanges of hands and feet is known as tuberculous dactylitis. In children, the lesions involve the peripheral skeleton, while in adults the involvement is mainly axial. TB dactylitis and spina ventosa are the common variants of TB osteomyelitis seen in children below five years. In our case, 7 year old boy was admitted with fever and respiratory complains along with flexion deformity of left hand ring finger. Detailed history and investigation revealed pulmonary tuberculosis along with spina ventosa of left hand middle finger. The patient responded well to anti-tubercular therapy and is now free of tubercular infection. A high index of clinical suspicion, timely and judicious use of invasive diagnostic methods and confirmation of the diagnosis, early institution of DOTS and close clinical monitoring for adverse drug reactions, are the key to the successful management of this case.

Key Words: Tuberculous Dactylitis, Tuberculous Granuloma, Spina Ventosa, Spindle Shaped Expansion.

INTRODUCTION

Spina ventosa (Latin-spina: “a thorn”, ventosa: “full of wind, distended”) is a rare condition. Tuberculous infection of metacarpals, metatarsals and phalanges of hands and feet is known as tuberculous dactylitis [1]. The hand is most frequently involved than the foot. Tuberculosis of the metacarpals, metatarsals and phalanges is uncommon after the age of 5 years. It is more common in younger population with 85% cases seen in children younger than 6 years and accounts for 0.65% to 6.9% of all forms of tuberculosis cases in children [2]. There are not many case reports devoted to tuberculous dactylitis.

Case Report

We report a case of a 7 year old male patient admitted in pediatric ward with on and off fever of 9 days duration, difficulty in breathing and pain over right side of chest for 4 days. The child also complained of pain and swelling over ring finger of left hand since the onset of fever. Detailed history and investigation revealed pulmonary tuberculosis along with secondary involvement of the proximal phalanx of left hand ring finger. There was no history of any contact in the family or history of trauma to the finger.

The patient was average built, with pallor and no significant peripheral lymphadenopathy. On systemic

examination, there was reduced air entry over right side of chest and examination of other systems was unremarkable. Locally there was a fusiform swelling of bony consistency involving the proximal half of the left middle finger with mild increase in local temperature and tenderness on deep palpation. Movements of the finger were restricted.

Investigations revealed Hemoglobin 9.2 gm/dl, ESR 110 mm/hour, white blood cell count was normal with and an increased percentage of neutrophils and monocytes and sterile blood culture. HIV negative and Mantoux test was positive, with 12mm of induration. Chest radiograph revealed encysted pneumothorax with partial lung collapse over right side, however pus culture from ICD drain was sterile. Also, plain radiograph of left hand revealed spina ventosa over proximal phalanx of ring finger raising a possibility of tubercular infection.

Diagnosis of pulmonary tuberculosis with tuberculous dactylitis (TD) was made on the basis of respiratory symptoms, raised ESR, positive mantoux test and radiological picture of spina ventosa. ATT under category 1 was started for 8 months 2(HRZE) + 6 (HR). After completion of the ATT course he was relieved of the symptoms of pulmonary tuberculosis and is under follow up for regular strapping of the left hand ring finger to prevent contractures.



Figure 1 showing encysted pneumothorax with partial lung collapse over right side.



Figure 2 x-ray showing spina ventosa of proximal phalanx of left middle finger



Figure 3 showing fixed flexion deformity of the metacarpophalangeal joint of left hand middle finger.

DISCUSSION

Tuberculosis is still a major cause of significant morbidity and mortality despite universal availability of effective chemotherapy. Bone and joint tuberculosis occur in 1-5% children who have untreated initial pulmonary tuberculosis and spread to the skeletal system during the initial infection via the lymphohaematogenous route [3]. The skeletal

infection becomes symptomatic within 1-3 years after the initial infection. 85% of children with tuberculous dactylitis are younger than 6 years of age and its incidence among children with tuberculosis was reported to be 0.65%-6.9% (4). The bones of hands are more frequently affected than the bones of feet with the proximal phalanx of index and middle finger more frequently affected. The condition usually presents as a painless swelling of a digit of a few months duration. The radiographic feature of cystic expansion of short tubular bones has led to the name of SPINA VENTOSA being given to tuberculosis dactylitis of the short bones of the hand [4, 5]. Periosteal reaction and sequestra are not common but may occur. Sclerosis may be seen in long standing cases. During childhood, these short tubular bones have a lavish blood supply through a large nutrient artery entering almost in the middle of the bone. The first inoculum of infection is lodged in the centre of the marrow cavity and the interior of the short tubular bone is converted gradually into a tuberculosis granuloma. This leads to a spindle shaped expansion of the bone (SPINA VENTOSA) with the occlusion of the nutrient artery of the involved bone and the destruction of internal lamellae (or formation of sequestra). In natural course, the disease heals with shortening of the involved bone and deformity of the neighbouring joint.

Musculoskeletal tuberculosis was previously considered rare extra-pulmonary form of tuberculosis accounting for 10 – 18% of extra-pulmonary cases, but recent studies show it represents 27 – 35% cases and hence the most common site of EPTB [6]. Statistical data is not available in literature pertaining to any rise in the incidence of TD in the recent era. Prognosis is good as response to antituberculous therapy is dramatic and only 15 % cases require surgery. Significant radiological improvement is seen as early as 6 weeks [7,8].

CONCLUSION

Diagnosis of TD should always be kept in mind while dealing with pathology of short tubular bones of hand and feet as it is often missed because of usual absence of stigmata of tuberculosis in other parts of the body especially lungs, absence of constitutional symptoms and clinico- radiological mimicking with other infections, tumors, endocrinopathies, metabolic disease, hemoglobinopathies and chronic granulomatous disease. Any delay in diagnosis and treatment of TD will likely decrease the chances of good functional outcome. A high index of clinical suspicion, timely and judicious use of invasive diagnostic methods and confirmation of the diagnosis, early institution of DOTS and close clinical monitoring

for adverse drug reactions, are the key to the successful management of EPTB.

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