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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/20252
DOI URL: http://dx.doi.org/10.21474/IJAR01/20252

RESEARCH ARTICLE

ISOLATED TUBERCULOSIS OF THE WRIST: A CASE REPORT

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Manuscript Info

Manuscript History
Received: 14 November 2024
Final Accepted: 16 December 2024
Published: January 2025

Key words:-
Wrist, Tuberculosis, Carpal Bones

Abstract

Osteoarticular tuberculosis accounts for 2-5% of all tuberculosis cases, with vertebral tuberculosis being the most frequent localization (50%). Peripheral joint involvement comes second, mainly affecting weight-bearing joints (hip and knee); wrist involvement is rare (< 1%).We report a case of a 42-year-old female with a history of pulmonary tuberculosis treated 10 years ago, presented with an isolated right hand swelling for a 4-month duration.Hisinitial imaging and CT scan showed multiple destructive lesions in the carpal bones associated with multiple ffluid collections, His histology and microbiological studies were positive for TB with no otherconcurrent evidence of TB elsewhere.

Introduction:-

Osteoarticular tuberculosis (OAT) accounts for 2-5% of all tuberculosis cases, and 11-15% of extra-pulmonary cases (1). The main site is vertebral tuberculosis, which accounts for at least 50% of cases. Peripheral articular tuberculosis comes second, mainly affecting weight-bearing joints (hip and knee); osteoarthritis of the wrist is rarer.

Case Report :

A 42-year-old female with a background history ofdiabetes and hypertension for 14 years presented with right side (non dominant) isolated hand swelling for a 7-month. Its progressive enlargement was associated withpain and restriction of movements. There were no othersmall or large joint symptoms. she did not have episodes offever, and he maintained good physical well-being in termsof appetite and weight. She has past history of pulmonary tuberculosis 10 years ago. The physical examination founded a swelling right wrist with a obvious deformity ,associated with multiple sub cutaneous collections with inflammatory sign (Figure 1) Flexion extension and circumduction movements were reduced.

Initialdigital X-ray (Figure 2) of the hand showed destructive type lytic lesionsinvolving mainly the carpal bones , a CT scan of the wrist (figure 3) was performed showed a total destruction of carpal bone and volar dislocation of the wrist associated with multiple collection in the volar aspect of the wrist with intra-articular extension.

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Figure 1:- Clinical image showing swelling wrist associated with inflammatory signs.

Figure 2:- x rays showing total destruction of carpal bones.

Figure 3:- Sagittal Ct scan of the wrist showing multiple collection.

The patient was admitted to operation room and Under general anesthesia and using a Henry approch debridement and curettage of the right wrist were performed.The purulent discharge was connected to the the subcutaneous layer at the ulnar border and involved the carpal tunnel. Carpal tunnel release was also performed for the eradication of necrotic tissue in view of the extension of the infection. The carpal bones were eroded and fragmented. The wrist was immobilized using a thermoplastic splint postoperatively.

Upon follow-up at six weeks, the wound was completely healed (figure 4) and the patient refused further surgical interventions.

Figure 4:- Wound healed.

Discussion:-

Osteoarticular tuberculosis is classically divided into four main types: spinal involvement (the typical form of which is pott's sore), peripheral arthritis and tuberculous osteoarthritis, osteomyelitis, and tenosynovitis and bursitis (2).

The spine is the most commonly affected site in 50 to 60% of cases, with arthritis and osteoarthritis coming second and predominating in the lower limbs, which are affected in 60 to 80% of cases. In the upper limbs, the shoulder (4-11%) and the elbow (5-15%) may be affected (1). Localization of tuberculosis to the hand is a rare entity (3), occurring in only 2% to 4% of osteoarticulartuberculosis cases(4), wrist involvement is much rarer <1% (5, 6). Tuberculosis of the wrist is often associated with another site. It is a chronic condition with a slow, insidious course, often leading to delayed diagnosis (6).

Plain radiography of the wrist and chestisneeded to establish the diagnosis appropriately. Typically, plain radiography shows sclerosis and osteolytic lesions in the bones involved. This is nonspecific and can be present in conditions such as pyogenic osteomyelitis, inflammatory arthritis, and malignancy (7). Sometimes, this condition can be misleading as patients also have bone destruction similar to that which can be found in that particular disease, whereas chronic bone infection should have sequestrum, involucrum, and cloaca in the radiograph six weeks or more following acute osteomyelitis (8) . CT and MRI scans are also nonspecific. However, they are useful in determining the extent of the swelling. In this case, we used ultrasound to evaluate the extent of the swelling since the consistency was fluctuant and there was purulent discharge on wrist movement.

The diagnosis can be confirmed by recognition of Mycobacterium tuberculosis in cultures and a histological pattern that is typical for tuberculosis. This is usually described as necrotizing granulomatous inflammation composed of epithelioid histiocytes surrounding a central necrotic zone with multinucleated giant cells and lymphocytes (9)

Treatment of tuberculosis is generally non-operative and involves a combination of anti-tuberculous medications that consist of a two-month-long intensive phase using a combination of rifampicin, isoniazid, ethambutol, and pyrazinamide followed by a continuation phase of rifampicin and isoniazid for another four months, as suggested by the World Health Organization in 2017 (10)

Surgical treatment is mainly reserved for abscesses, nerve compressions, and reconstructive options in wrist andhand involvement by tuberculosis

Conclusion:-

Tuberculosis is still a major healthcare burden that needs medical professionals' attention.The knowledge on tuberculosis and its different presentations is important to arrive at a diagnosis especially with itsextrapulmonary involvement. Tuberculosis is a rare causeof chronic inflammatory swelling of the hand, but it shouldbe considered in African countries where the disease prevalence is high

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