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Isolated Tuberculosis of the wrist; elusive but destructive

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Abstract:

Background: Tuberculous arthritis is rare, but can lead to severe complications and disability if untreated. We present a case of tuberculous arthritis of the left wrist, in whom diagnosis was delayed leading to significant joint destruction.

Methods: A 36 year old right handed housewife presented with a 6 month history of left wrist pain following minor trauma. There was no history of systemic symptoms, no relevant past medical or family history and no known tuberculosis (TB) contacts. She was originally from Pakistan but had been in the UK, living in South London for 15 years. Clinical examination revealed a swollen tender left wrist with limited movement (Figure 1). Systemic examination was unremarkable.

Results: She was initially seen in the private sector where routine blood tests, auto immune screen and blood borne virus screen were negative. Bone and synovial biopsy histology showed “granulomatous inflammation” but was not sent for culture. Initial X-ray wrist was normal and initial MRI showed oedema of the triquetrum. Based on this, a diagnosis of osteonecrosis with complex regional pain syndrome was made. She was then referred to NHS services. Repeat radiographs over 4 months showed progressive destruction of the carpal bones and MRI revealed severe extensive synovial thickening with secondary diffuse bony oedema (Figure 2 and 3).

Given the extent of joint destruction a second biopsy was performed. Histology showed non-specific inflammatory changes. Acid fast bacilli microscopy was positive after 9 days of culture. The isolate was identified as Mycobacterium tuberculosis and was sensitive to first line anti tuberculous drugs. CXR revealed clear lung fields and normal hilar (Figure 4).

She was started on TB treatment with Isoniazid, Rifampicin, Ethambutol and Pyrazinamide. Although she showed significant clinical improvement following 2 months of antibiotic therapy, she had ongoing pain and subsequent disability.

Conclusion: TB of the wrist is rare. Nevertheless, our case highlights that TB should always be considered as a cause of mono-arthritis of the wrist. Many of the typical features of tuberculosis infection such as systemic symptoms, raised inflammatory markers, CXR findings and TB on microscopy may be absent. In our case, the initial biopsy in the private sector was not sent for TB culture and a diagnosis of osteonecrosis had been made so the emphasis of treatment was not focused on infection. In order to aid earlier diagnosis we suggest a low threshold for looking for TB exposure through TB QuantiFERON or skin testing, although a definitive diagnosis can only be obtained by sending tissue samples for TB culture and PCR.

Unlike bacterial septic arthritis, TB arthritis resolves with anti-tuberculous therapy alone. As such, surgery is usually reserved for correction of severe deformity by arthrodesis or arthroplasty once medical treatment is completed.

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