Unusual presentation of more common disease/injury

Unifocal tubercular osteomyelitis of distal ulna: a rare presentation

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Tuberculosis is a major health issue in developing countries. The authors present a case of a 28-year-old male doctor, working as resident in the department of radiodiagnosis who attended orthopaedics outdoor with complaint of wrist pain over ulnar aspect. Radiograph of left wrist showed an oval shaped osteolytic lesion. Fine needle aspiration cytology was performed which produced only haemorrhage. Therefore, open biopsy was planned; yellowish coloured material was obtained which was sent for histopathological examination. Finally, *Mycobacterium tuberculosis* was isolated and thus the patient was immediately started with antitubercular therapy. This brief report emphasises upon the rare sites of skeletal tuberculosis which should always be kept in mind while diagnosing such lesions.

BACKGROUND

Distributed throughout the world, tuberculosis is clearly one of the most important bacterial diseases of mankind. Tuberculosis is a major health issue in developing countries with over two billion people being infected with tuberculous bacilli world wide.¹ Musculoskeletal involvement occurs in 10% of patients with extrapulmonary tuberculosis.² However, isolated involvement of ulna is extremely rare.

CASE PRESENTATION

This 28-year-old male resident doctor, working in the department of radiodiagnosis, presented to the outpatient department of orthopaedics at our institution with pain localised to the left wrist for the past 1 month. Pain was insidious in onset, diffuse in character and mild in intensity. He had slight tenderness over the ulnar side of wrist. He gave history of frequent contact with the patients of tuberculosis and he also performed few interventional procedures on such patients like image guided abscess drainage, etc. There was no history of fever or recent trauma.

INVESTIGATIONS

Radiograph of the left wrist (figure 1a,b) showed oval shaped centric lytic lesion in the distal diaphysis of ulna with destruction of overlying cortex. Associated periosteal reaction was also noted. Fine needle aspiration produced only blood and the report showed only haemorrhage. Other diagnostic tools such as MRI scan were not done as the lesion was very much appreciable on the radiograph and gave adequate information. Surgical intervention had to be done anyways, so with consensus open biopsy with curettage was planned.

Therefore, the patient was admitted and blood investigations were done along with a chest radiograph. All blood investigations were within normal limits, except the erythrocyte sedimentation rate was slightly raised (15 mm/h). Open biopsy and curettage was performed, which revealed

yellowish coloured cheesy material which was sent for histopathological examination while thorough curettage and lavage of the irregular cavity was done. Microscopy of the material showed florid granulomatous inflammatory process with areas of fibrinoid necrosis with the presence of epithelioid cells, while the culture of the material isolated *M tuberculosis*.

DIFFERENTIAL DIAGNOSIS

Tubercular osteomyelitis, osteoclastoma, aneurysmal bone cyst.

TREATMENT

Antitubercular treatment was started (isoniazid 300 mg, rifampicin 600 mg, ethambutol 1200 mg and pyrazinamide 1500 mg daily, patient weighed 61 kgs) from the next day. The patient was applied a below elbow cast for a period of 3 weeks, and then wrist physiotherapy was started and light work was permitted after a duration of 6 weeks. At the end of 4 months, pyrazinamide and ethambutol were discontinued, whereas isoniazid and rifampicin were continued for the next 14 months as preferred by most doctors in India for skeletal tuberculosis.

OUTCOME AND FOLLOW-UP

At the end of 8 weeks, patient had no pain or tenderness and was able to do all his work without any significant difficulty. Repeat haematological investigations done at regular intervals were all within normal limits. A repeat radiograph (figure 2) was done after 12 months of surgery which showed healed lesion and patient was comfortably performing his daily activities.

DISCUSSION

Tuberculosis is one of the oldest diseases known to man. The typical features of spinal tuberculosis have been identified in Egyptian mummies dating back to almost 4000

Figure 1 (a) Radiograph of the left wrist AP view showing centric osteolytic lesion over distal ulna at distal diaphysis. (b) Lateral view shows that the lesion is more towards the dorsal aspect with evidence of periosteal reaction over both posterior and anterior surfaces of ulna.

BC.³ Extra-spinal tubercular osteomyelitis is rare and comprises about 2–3% of all cases of osteo-articular tuberculosis, with the hip and knee joints being the most common following spinal involvement.⁴ Isolated tubercular osteomyelitis of ulna is extremely rare.

Many examples of multifocal tuberculosis of ulna have been reported in the literature, however unifocal tubercular osteomyelitis of ulna remains a rare entity. Sciberras *et al* have reported a similar case of tubercular osteomyelitis of ulna confined to the styloid.⁴

Figure 2 Radiograph of the left wrist AP view showing new bone formation within the lesion.

Differential diagnosis in such a case can include osteoclastoma, aneurysmal bone cyst. Osteoclastoma although a common lesion of ulna is confined to epiphysis. Aneurysmal bone cyst more commonly involves metaphysis and can sometimes extend to epiphysis. It is also eccentric in location and is not commonly associated with periosteal reaction, whereas in our patient, as discussed earlier, the lesion was centric with irregular margins and was confined to diaphysis. Therefore, our differential diagnosis was limited to tubercular osteomyelitis which was further confirmed by histopathology.

As far as duration and combination of antitubercular drugs is considered, numerous regimes have been discussed. In India, most clinicians prefer giving therapy for a

duration of 18 months (4HRZE+14HR). Other recognised organisation such as British Medical Research Council suggests that skeletal tuberculosis should be treated with combination chemotherapy for 6–9 months. According to the most recent recommendations issued in 2003 by the US centers for disease control and prevention, the Infectious Diseases Society of America, and the American Thoracic Society, a 6–9 month regimen (2 months of isoniazid, rifampin, pyrazinamide and ethambutol, followed by 4–7 months of isoniazid and rifampin) is recommended as initial therapy for all forms of extrapulmonary tuberculosis unless the organisms are known or strongly suspected to be resistant to the first-line drugs.⁵

Learning points

- ▶ Tuberculosis should always be considered as a potential differential diagnosis, especially in cases from endemic areas.
- ▶ Tuberculosis sometimes presents at unusual sites where it often becomes difficult to reach a specific diagnosis.
- ▶ Doctors, especially residents who spend most of their time in the wards near the patients are most susceptible to infection and should take utmost care and precautions while performing their duties.

Competing interests None.

Patient consent Obtained.

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