Lucent Lesions: Tuberculosis in Tumour Disguise

Aw, NSJ; Mohamed-Haflah NH
Department of Orthopaedics and Traumatology, Universiti Kebangsaan Malaysia Medical Centre, Cheras, Malaysia

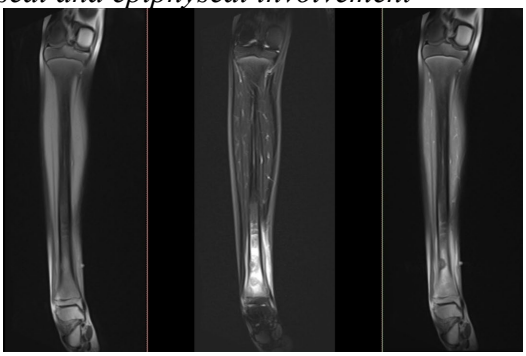
INTRODUCTION

Tuberculosis (TB) imitates many diseases in symptoms and signs. Consequently, TB is hailed the 'Great Mimicker'[1] or 'Great Imitator'[2]. TB rarely imitates long bone tumours, while tuberculous osteomyelitis itself is uncommon. A diagnostic dilemma arises as tumours and TB share many clinical and imaging similarities.

REPORT

A healthy 14-year-old girl, presented when a previously painless four-month diffuse hard swelling of her right gaiter area became painful. She denied cough, shortness of breath, and red flag symptoms. Family history was negative for tuberculosis exposure and cancer. Examination elicited a healthy child with a tender, diffuse, smooth, non-pulsatile, hard swelling in continuity with the medial right tibia, measuring 10x8cm. Lack of skin changes, sinuses, warmth, erythema, and palpable proximal lymph nodes were not suggestive of infection. Distal neurovascular function was preserved, with normal gait, and painless single-limb weight-bearing. Lung auscultation proved unremarkable. BCG vaccination scar was present. Erythrocyte sedimentation rate was elevated, while other blood investigations remained normal. Mantoux test was negative. Radiographs revealed a distal right tibia radiolucent lytic lesion, with cortical erosion and adjacent posteromedial lamellar periosteal reaction showing a narrow transitional zone, suggestive of an aggressive bone tumour (*figure 1*). Chest radiography to exclude lung metastases uncovered a left mid-zone opacity. Subsequent systemic staging of the potential tumour by contrast-enhanced CT disclosed multiple enhancing ipsilateral inguinal lymph nodes, whilst lung findings displayed overlapping characteristics of metastases and infection. Right leg MRI for local staging showed an aggressive bone tumour resembling Ewing's sarcoma, substantiated by onion-skin periosteal reaction, associated soft tissue extension, and lack of plane with peroneal neurovasculature. However, unambiguous transphyseal extension favoured tuberculous osteomyelitis. A multidisciplinary meeting resolved any diagnostic doubts. Ensuing percutaneous biopsy clinched the diagnosis of tuberculosis. Uneventful follow-up consultations after a six-month course of anti-TB medications ascertained successful eradication.

Figure 1. Coronal MRI projections showing physeal and epiphyseal involvement



DISCUSSION

The literature is rife with reports of sarcoma imitating infection[3,4], lacking mention of the reverse[3]. History and examination are frequently unhelpful in differentiating tumours from tuberculosis. Therefore, knowledge of radiological findings is valuable. Bone tumours such as Ewing's sarcoma classically do not cross the physis, while TB does. Definitive diagnosis is undoubtedly made by biopsy.

CONCLUSION

Tuberculosis, in endemic regions, is a differential diagnosis to be considered in cases of tumour-like lytic bone lesions, even in the absence of TB symptoms or contact history.

REFERENCES

1. Prapruttam D, et al. Semin. Ultrasound CT MR 2014; 35(3): 195–214.
2. Sievers M. JAMA 1961; 176(9): 809.
3. Lex JR, et al. Ann R Coll Surg Engl. 2019 Jul; 101(6): 405–410.
4. Shalini B, et al. Malays J Med Sci. 2002; 9(1): 52–54.