

## OSSEOUS SARCOIDOSIS

Pires-Gonçalves L\*, Watt I\*\*

A 40-year-old female presented with intermittent worsening pain, swelling, redness, and stiffness of several fingers that had been on-going for the past 5 years. Swelling, warmth, redness, and slight limitation of motion of the fourth and fifth right fingers were observed on examination. The patient was known to have sarcoidosis with involvement of the respiratory tract and *lupus pernio*, confirmed by lung biopsy 3 years previously.

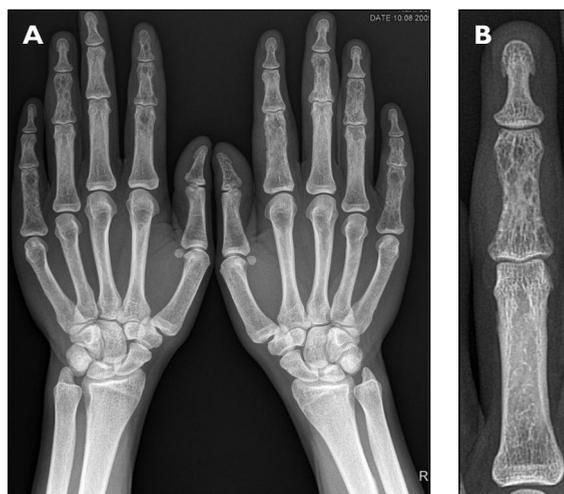
Radiographs of both hands and feet demonstrated a permeative pattern of osteolysis with expansion and “tunneling” of the shafts of several phalanges in both hands and feet associated with soft tissue swelling (Figures 1 and 2). The radiographic findings described in the setting of known sarcoidosis are virtually diagnostic of osseous involvement of sarcoidosis.

Osseous sarcoidosis is rare and usually occurs with synchronous cutaneous or pulmonary disease, present in up to 80-90% of the cases<sup>1,2</sup>. Although patients are often asymptomatic, tenderness, pain, stiffness, and swelling of digits are not rare and can precede the radiological findings<sup>2</sup>.

Any bone may be affected, the metacarpals and the phalanges of the hands and feet being the most commonly involved<sup>1</sup>. The nasal bones may also be affected particularly in the setting of *lupus pernio*<sup>1</sup>.

Osseous lesions can manifest as lytic, permeative, or destructive lesions, which can be complicated with pathological fractures<sup>1,2</sup>. The distribution typically is bilateral and asymmetrical. Subcutaneous soft-tissue masses or tenosynovitis may be present also<sup>2</sup>.

Musculoskeletal sarcoidosis can have a wide range of imaging manifestations<sup>2,3</sup>. Correlation with clinical and laboratorial data is essential to make the correct diagnosis. In the absence of typical ex-



**Figure 1.** **A.** A permeative pattern of osteolysis is seen with expansion and “tunneling” of the shaft with accompanying soft tissue swelling involving the shafts of the proximal phalanges of the second and fifth digits bilaterally, the middle phalanges of the right third and both fourth digits; and the distal phalanges of the second left digit and the right thumb. Joint space width is normal. **B.** Localized view of the third finger of the left hand better demonstrates the typical lacelike lytic pattern and the tubular shape of the phalangeal shafts.

traosseous features or in rare locations such as the long bones or the axial skeleton, bone biopsy may be necessary to confirm the diagnosis<sup>4</sup>.

The differential diagnosis includes other granulomatous diseases including tuberculosis, histoplasmosis, coccidioidomycosis, leprosy as well as brucellosis, syphilis, Wegener’s granulomatosis, hemangiomas, multiple myeloma, and metastasis<sup>1</sup>.

The detection of osseous sarcoidosis may change clinical assessment of the granulomatous load, the severity of the disease, and influences treatment.

The case presented demonstrates the radiographic findings diagnostic of osseous sarcoidosis. Recognition of the typical radiographic findings of osseous sarcoidosis avoids further work-up and al-

\*Department of Imagiology of Hospital de Braga, Braga/Portugal

\*\*Department of Radiology of Leiden University Center, Leiden/The Netherlands

Case observed at the Department of Radiology of Leiden University Center, Leiden/The Netherlands



**Figure 2.** The distal phalanges of the right third and left fourth toes present similar trabecular architecture and bony remodeling changes. On the distal phalanges of both halluces minute cortical defects are demonstrated. The joint space width is normal.

lows clarification of symptoms, accurate assessment of disease's severity, and appropriate patient management.

#### Correspondence to

Lígia Pires-Gonçalves, M.D.  
 Department of Imagiology, Hospital de Braga,  
 Largo Carlos Amarante - Apartado 2242  
 4701-965 Braga, Portugal  
 Phone: +351912608560  
 Fax: +351253613334  
 Email: l.f.p.goncalves@gmail.com

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