

# Differential diagnosis

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Mycetoma should be distinguished from Kaposi's sarcoma, malignant melanoma, fibroma and foreign body (thorn) granuloma. A radiograph that demonstrates the presence of bone destruction in the absence of sinuses is suggestive of tuberculosis. The radiological features of advanced mycetoma are similar to those of primary osteogenic sarcoma. Primary osseous mycetoma is to be differentiated from chronic osteomyelitis, osteoclastoma, bone cysts and syphilitic osteitis. In endemic areas the dictum should be 'any subcutaneous swelling must be considered a mycetoma until proven otherwise'. Moritz Kaposi, 1837–1902, Hungarian-born Professor of Dermatology viral cause was discovered in 1994. Ernest Codman, 1869–1940, American surgeon. Codman's triangle can be seen in osteosarcoma, Ewing's sarcoma, subperiosteal abscess and haematoma. Several imaging techniques are available to confirm the diagnosis: plain radiography, ultrasonography, CT and magnetic resonance imaging (MRI). Plain radiograph In the early stages, soft-tissue shadows (often multiple) with calcification and obliteration of the fascial planes may be seen. As the disease progresses, the cortex may be compressed from the outside by the granuloma, leading to bone scalloping. Periosteal reaction with new bone spicules may create a sun-ray appearance and Codman's triangle, not unlike an osteogenic sarcoma (Figure 6.28). Late in the disease, there may be multiple punched-out cavities throughout the bone. Ultrasonography This can differentiate between eumycetoma and actinomycetoma as well as between mycetoma and other conditions. In eumycetoma, the grains produce numerous sharp bright hyper-reflective echoes. There are multiple thick-walled cavities with absent acoustic enhancement. In actinomycetoma, the findings are similar but the grains are less distinct. The size and extent of the lesion can be accurately determined ultrasonically, a finding useful in planning surgical treatment. - - - - , University of Vienna, Austria, described pigmented sarcoma of the skin in 1872. The

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## Figure 6.28 Plain radiograph of the knee showing multiple large cavities

involving the lower femur, upper tibia and fibula, with well-defined margins and periosteal reaction typical of eumycetoma.

(b) Magnetic resonance imaging This helps to assess bone destruction, periosteal reaction and particularly soft-tissue involvement (Figure 6.29). MRI usually shows multiple 2- to 5-mm lesions of high signal intensity, which indicates the granuloma, interspersed within a low-intensity matrix denoting the fibrous tissue. The 'dot-in-circle' sign, which indicates the presence of grains, is highly

characteristic. Computed tomography CT findings in mycetoma are not specific but are helpful to detect early bone involvement.

Granuloma Dot-in-circle sign Figure 6.29 (a) Magnetic resonance imaging (MRI) of the foot showing multiple lesions of high signal intensity, which indicates granuloma, interspersed within a low-intensity matrix, which is the fibrous tissue and the 'dot-in-circle' sign, which indicates the presence of grains. (b) MRI showing massive upper thigh and lower abdominal actinomycetoma.

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