

Mickey mouse sign – a rare and specific finding of Paget’s disease of bone

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An 82-year-old female patient with multifocal osteoarthritis presented at a Rheumatology consultation with persistent pain in the left tibia, with one-year evolution. Blood studies showed an isolated raised serum alkaline phosphatase (sAP), with normal blood counts, serum protein electrophoresis and calcemia. No bone lesion was found in the lower left limb by conventional radiography. Considering the findings, a bone scintigraphy (BSc) was performed, revealing an isolated tracer uptake at the second lumbar vertebrae, from the body to the posterior aspects (Figure 1), also known as "Mickey Mouse Sign", typical of Paget’s Disease of Bone (PDB). Lumbar spine computed tomography showed no suspicious lesion. To exclude a potential neoplastic cause, considering age and sex, the patient underwent screening with mammography, colonoscopy, upper digestive endoscopy, cervical-vaginal cytology and abdominal/gynecologic ultrasound, all negative. A single dose of intravenous zoledronate was administered (5 milligrams as single intravenous dose), with posterior sAP normalization. Lower limb pain resolved spontaneously short after treatment and sAP levels have remained within normal range for the last 3 years.

PDB is a disorder of bone remodeling, leading to changes in the architecture and appearance of the bone¹. It commonly involves the spine/pelvis (30-75%), sacrum (30-60%), skull (25-65%) and femur (25-35%) and is often an incidental finding on radiological examination^{1,2}. In imaging, PDB originates a great variety of typical signs such as saber shin, picture frame vertebrae or clover/heart sign^{2,3}. An appearance of mouse head at the spine on bone scintigraphy – "Mickey Mouse sign" – is rarely observed in clinical practice and was first described by Van Heerden⁴ in 1989. Kim et al later reported this to be a rather spe-

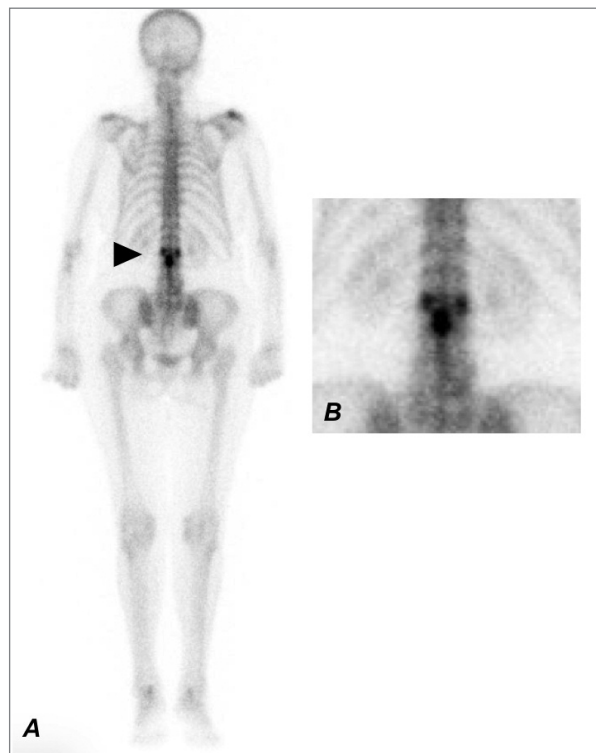


FIGURE 1. Bone scintigraphy with "Mickey Mouse" sign at L2 (arrowhead, panel A) (magnified, panel B).

cific finding of PDB⁵. In the case presented, this image allowed an early diagnosis and treatment in an asymptomatic critical location, avoiding possible complications such as fractures, bone deformity or compressive neurological impairment.

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REFERENCES

1. Winn N, Lalam R, Cassar-Pullicino V. Imaging of Paget's disease of bone. *Wien Med Wochenschr* 2017; 167: 9–17.

1. Serviço de Reumatologia, Centro Hospitalar Vila Nova de Gaia/Espinho, Vila Nova de Gaia, Portugal

2. Cortis K, Micallef K, Mizzi A. Imaging Paget's disease of bone - from head to toe. *Clin Radiol* 2011; 66: 662-672.
3. Rotes-Sala D, Monfort J, Solano A, Miralles E, Vila J, Carbonell J. The clover and heart signs in vertebral scintigraphic images are highly specific of Paget's disease of bone. *Bone* 2004; 34: 605-608.
4. van Heerden BB, Prins MJ. The value of pinhole collimator imaging in the scintigraphic analysis of vertebral diseases. *S Afr Med J* 1989; 75: 280-283.
5. Kim CK, Estrada WN, Lorberboym M, Pandit N, Religioso DG, Alavi A. The 'mouse face' appearance of the vertebrae in Paget's disease. *Clin Nucl Med* 1997; 22:104-108.