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Multidisciplinary approach to diagnostic imaging in melorheostosis

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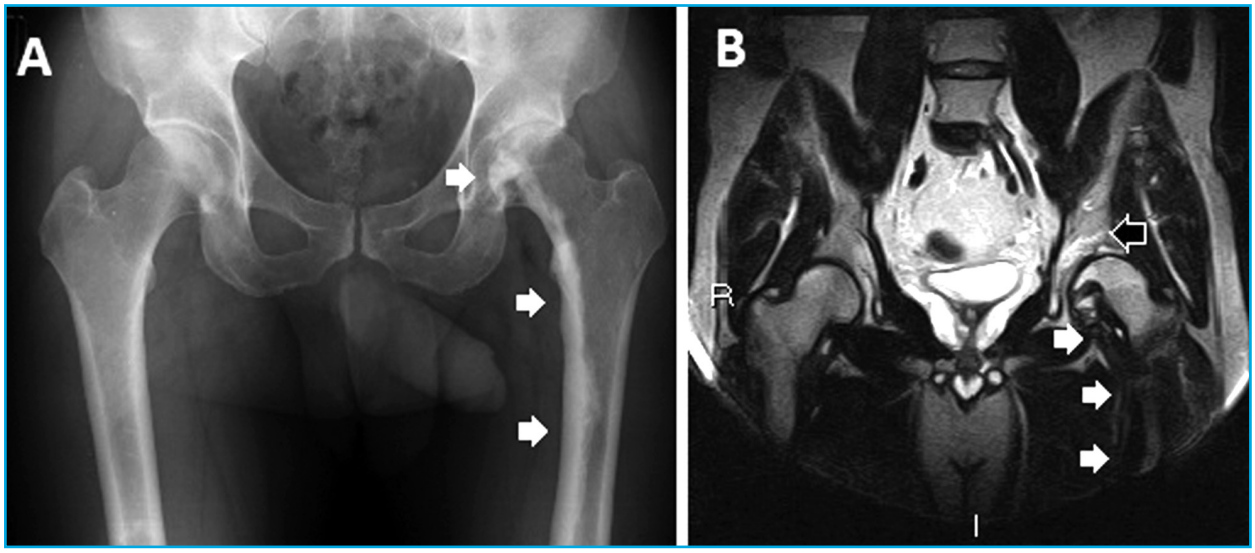
We present a 44-year-old man with a history of multiple trauma in childhood and trauma to the left hip eight months before the consultation, who consulted for pain of short duration (5 days) in the left hip, presenting limited range of movement on physical examination in the extreme degrees of the left hip, without signs of local infection or laboratory abnormalities. The x-ray of the hips (Figure 1A) showed periosteal hyperostosis along the inner cortex of the left femur (white arrows), giving rise to a characteristic image of "molten wax dripping down the side of a candle". (Figure 1B) Cortical thickening appeared as hypointense in all image sequences (white arrows), in addition to showing bone edema of the femoral head related to degenerative joint disease (black arrow). A bone gamma scan study was requested.

The early phases of the bone gamma scan study with 28 mCi (1036 MBq) of Tc99m-MDP (Figure 2) showed increased vascularity in the left hip (black arrows). The late full-body image highlighted the focal uptake of the radiotracer in the upper region of the femoroacetabular joint (black arrow), corresponding in the SPECT/CT fusion images with an area of sclerosis and degenerative joint disease. In addition, another deposit of less intensity was identified in the left femoral shaft (white arrows), in relation to the radiological thickening of the inner edge of the cortex seen in the fused images.

Melorrheostosis is a benign bone dysplasia that predominantly affects the appendicular skeleton and adjacent soft tissues[1]. The bone distribution is usually asymmetric[2] and can be monostotic or polyostotic. It is

Figure 1. Simple AP radiography of the hips (A) and T2 STIR sequence coronal plane MRI (B)



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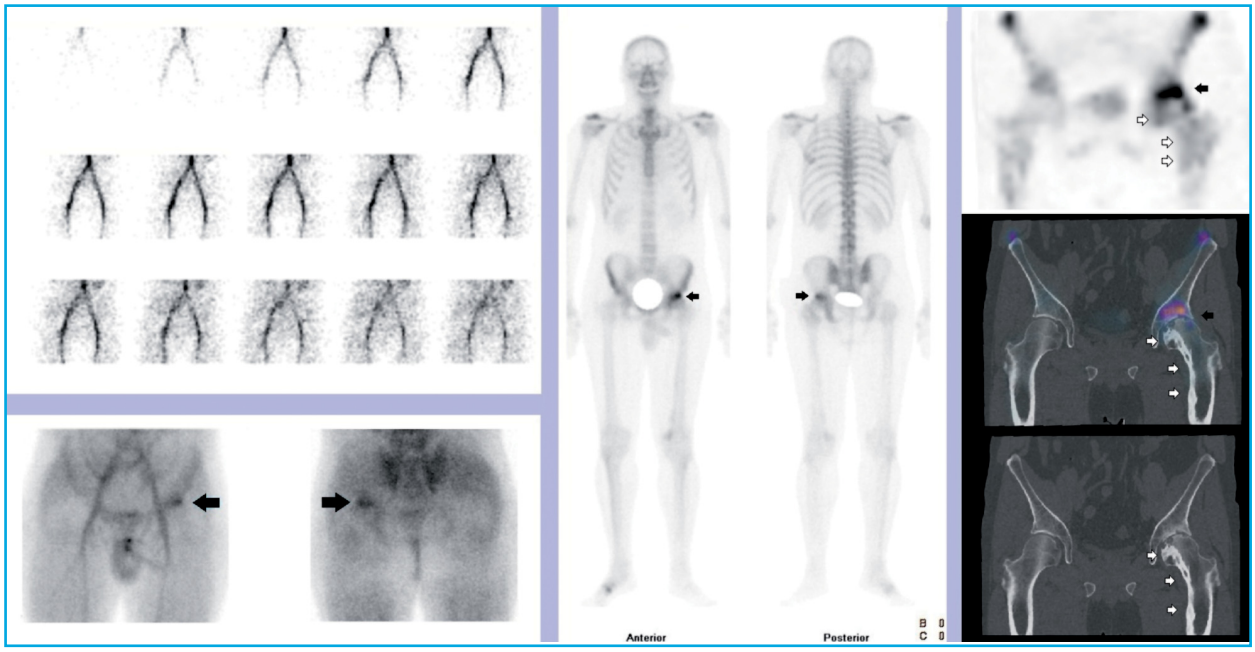
caused by an abnormality of embryonic development with a sclerotome distribution[3]. There is no standard treatment, so it must be planned individually. The efficacy of bisphosphonates on pain has been described[4,5], but in some cases corrective surgery for bone deformities and osteodegenerative sequelae may be necessary.

Diagnosis is often made by conventional radiography, by identifying cortical hyperostosis with a "candle wax" image[6,7]. Since laboratory tests are normal, the bone scan pattern is crucial for the differential diagnosis of other infiltrative diseases and other osteodysplastic syndromes[8,9].

Figure 2. 3-phase 99mTc-MDP bone scan of the hips, full-body scan, and SPECT/CT of the hips



Conflict of interests: The authors declare no conflict of interest.

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