Multiple Myeloma: Lytic Bone Lesions of the Skull

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A 77-year-old woman with a 1 years history of Multiple Myeloma (MM) presented with headache, fatigue, and bone pain. She underwent whole body multi-detector computed tomographic (MD-CT) to evaluate possible lytic bone lesions. MD-CT showed small, multiple osteolytic lesions, particularly at the skull level (Figure 1, 2).

MM is a plasma cell disorder. It is characterized by the monoclonal proliferation of malignant plasma cells. These cells, among their various characteristics, determine an infiltrate haemopoietic locations. Pathogenesis of MM related bone disease is the uncoupling of the bone remodelling process. There is an increased activity of osteoclastogenesis with the suppressed osteoblastic one, resulting in bone loss. This process creates lytic lesions without reactive bone formation. Bone disease could be from single lytic lesion to multiple lytic lesions affecting any part of skeleton, preferably skull, spine and long bones. MD-CT, with dedicated low-dose protocols, is able to provide whole body skeletal volume information with a greater sensitivity than conventional X-ray studies in MM patients. Whole body CT with low-dose protocols can detect lesions with less than 5% trabecular bone destruction, and it is the first-line diagnostic imaging procedure for the diagnosis of lytic bone disease in patients affected by MM.

When skull is involved, its most common MD-CT presentation is by numerous, well-circumscribed and punched-out lytic bone lesions, without reactive bone formation and diffuse osteopenia, as in the case presented.

REFERENCES


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