# Bone Scan Appearance of Bilateral Femoral Head Osteonecrosis Secondary to Polyostotic Fibrous Dysplasia.

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**Citation**

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**Abstract**

We present the whole body bone scan images of a 44-year old male who complained of dizziness and vertigo. MRI showed a fibro-osseous lesion at the base of the skull involving the clivus and the greater wing of sphenoid, consistent with fibrous dysplasia. Whole body bone scan showed osteoblastic lesions involving base of the skull, right first rib, and bilateral humeri, suggestive of polyostotic fibrous dysplasia, and intense uptake in both hips. X-ray of the hips showed bilateral coxa magna with extensive hypertrophic changes. Patients with polyostotic fibrous dysplasia are prone to repeated femoral neck fractures which can cause femoral head osteonecrosis. This, we concluded, was the likely cause of intense MDP in both hips.

## CASE REPORT

We present the whole body bone scan images of a 44-year old male who complained of dizziness and vertigo. MRI showed a fibro-osseous lesion at the base of the skull involving the clivus and the greater wing of sphenoid, consistent with fibrous dysplasia. Whole body bone scan showed osteoblastic lesions involving base of the skull, right first rib, and bilateral humeri, suggestive of polyostotic fibrous dysplasia, and intense uptake in both hips. X-ray of the hips showed bilateral coxa magna with extensive hypertrophic changes.

FIGURE LEGENDS

Figure 1 Bone scan (A & B): Three hours after the intravenous administration of 20.8 mCi of Tc99m MDP, whole body bone planar images were acquired in anterior and posterior projections. The images show foci of increased MDP activity involving the base of the skull, right first rib, bilateral humeri, and bilateral hips, consistent with polyostotic fibrous dysplasia. Increased activity at the base of the skull correlates with fibro osseous lesion seen on the MRI. Fibrous dysplasia is a developmental dysplastic disorder of bone in which immature woven bone is formed directly from the abnormal fibrous connective tissue (1, 2). It occurs as a monostotic (about 8 times more common) and a polyostotic variant which may affect any bone in the body. Most often affected are proximal femur, skull and ribs (3).

Bone scintigraphy is a sensitive imaging modality for detecting early lesions and polyostotic involvement in fibrous dysplasia (4). Common findings include multiple areas of focal uptake that are often unilateral and typically involving the ribs, tibia, femur and craniofacial bones (5). In these patients there is a propensity for fracture of the femoral neck as a result of loss of mechanical integrity (6).Fracture at the neck of Femur compromises blood supply to femoral head causing avascular necrosis (7). We conclude that intense MDP activity seen in the hips, on bone scintigraphy, is from bilateral femoral head osteonecrosis, secondary to polyostotic fibrous dysplasia.

**Figure 1**

Fig 1: Bone scan

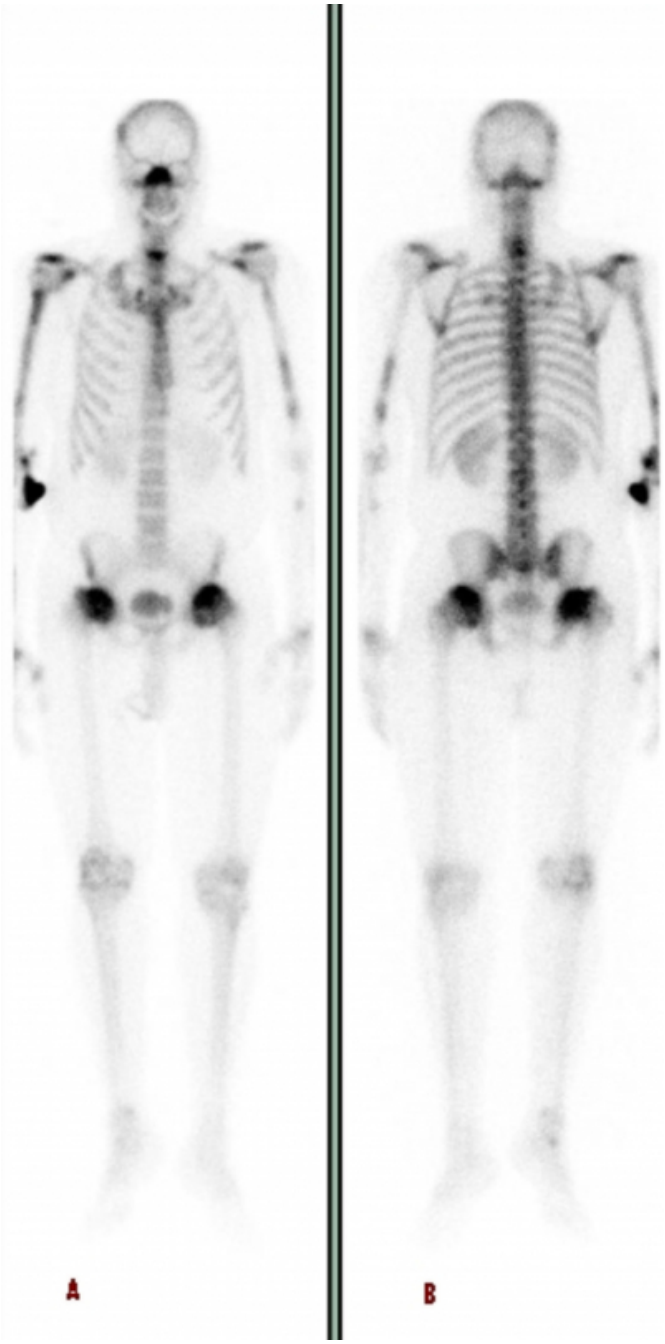



**Figure 2**

Fig 2: Right hip

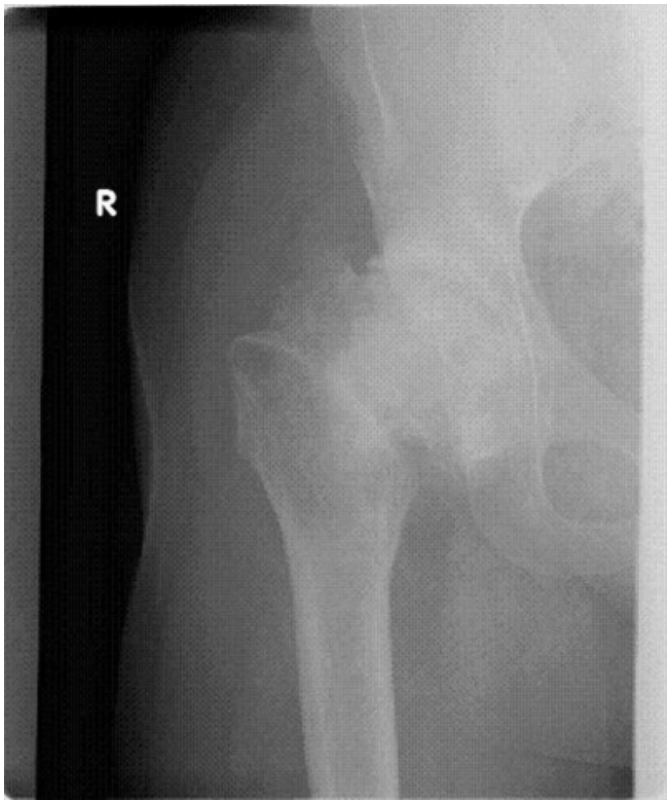
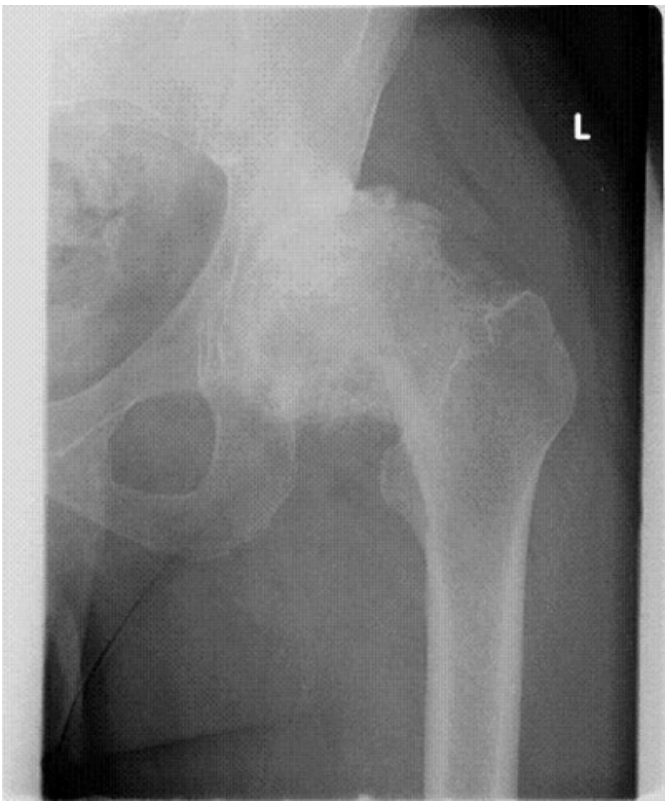



Figure 2 Xray (R & L) Hips: X-ray of the hips showing bilateral coxa magna with extensive hypertrophic changes which correspond to increased MDP activity on the bone scan. In patients with fibrous dysplasia, expansile, deforming, medullary lesions are seen with cortical thinning and overall ground glass density (8). The radiographic picture is significantly affected by the evolution of the lesion over time and by the appearance of superimposed changes (4).

**Figure 3**

Fig 3: Left hip

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