

# Unusual Unilateral Polyostotic Fibrous Dysplasia

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## Abstract

Differential diagnoses of patients with multiple bony lesions that are confined to one side of the body should include polyostotic fibrous dysplasia with and without McCune-Albright Syndrome, particularly if there is no history of malignancy. Lesion biopsy ultimately provides the definitive diagnosis.

## Key Clinical Message:

Differential diagnoses of patients with multiple bony lesions that are confined to one side of the body should include polyostotic fibrous dysplasia with and without McCune-Albright Syndrome, particularly if there is no history of malignancy.

## Manuscript:

Fibrous dysplasia (FD) is a benign congenital bone disorder characterized by replacement of normal bone with a large fibrous stroma and islands of immature woven bone. FD is often incidentally found and is usually painless. About 80% of cases are monostotic; 20% are polyostotic typically affecting the femur, tibia and pelvis.<sup>1</sup> Malignant transformation is rare, occurring in [?] 2.5% of cases. We report here a 30-year old male with interval progression of a left-sided chest mass who underwent FDG-PET/CT to rule out malignancy. Increased uptake was noted in the left 8<sup>th</sup> rib, acetabulum and proximal femur (Figure 1). Figure 2 shows that the increased FDG uptake in the left 8<sup>th</sup> rib corresponds to an expansile lytic lesion on CT (arrows). <sup>99m</sup>Tc-MDP bone scan showed increased uptake in the left 8<sup>th</sup> rib, acetabulum and femur, similar to FDG-PET/CT. In addition, increased uptake was seen in the left tibia and foot bones, which were not in the field of view of FDG-PET/CT (Figure 3). Because of the enlarging rib lesion and imaging finding of multiple lesions the patient underwent biopsy of his left rib lesion, which showed FD with no evidence of malignancy. Polyostotic FD confined to one side of the body (in this case the left side) is rare and is typically seen in patients with McCune-Albright syndrome.<sup>2</sup> Our patient did not show the usual dermatological (e.g., café-au-lait skin pigmentation) and/or endocrinological (e.g., thyroid, pituitary or adrenal dysfunction) manifestations of McCune-Albright syndrome. This is the first reported case of unilateral polyostotic FD without evidence of McCune-Albright syndrome.

**Compliance with Ethical Standards** : No patient identifying information or images are contained in this report, hence an informed consent was not required by our Ethics Committee.

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**Conflict of Interest** : All authors (Malik E. Juweid, MD, Abeer Bani Hani, MD, Salem AlYasjeen, MD and Qabas Al-Ruwaishedi, MD, Hussam Al-Issa MD, Sara Jwaied MD) declare that they have no conflict of interest.

**Ethical approval** : All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed consent** : No patient identifying information or images are contained in this report, hence an informed consent was not required by our Ethics Committee.

**Contributions:**

**MEJ:** Interpreted the images and wrote the initial version of manuscript.

**ABH:** Collected clinical date on the patient.

**SA:** Co-interpreted the images and helped write the manuscript.

**QA:** Collected clinical data on the patient.

**HA:** Collected clinical data on the patient.

**SJ:** Researched references on the subject.

**References:**

1. Fitzpatrick K, et al. Imaging findings of fibrous dysplasia with histopathologic and intraoperative correlation. *Am J Roentgenology* . 2004;182 (6): 1389-98.
2. Leet A, et al. Current approach to fibrous dysplasia of bone and McCune–Albright syndrome. *J Child Orthop* . 2007;1:3–17.

**Figure Ligands:**

**Figure 1** : MIB FDG-PET image from earlobes to mid thighs shows increased uptake in the left 8th rib, acetabulum and proximal femur (**arrows** ).

**Figure 2** : Axial FDG-PET (**a** ), axial CT (**b** ) and axial fused FDG-PET and CT (**c** ) images at the level of the left 8th rib lesion show that the increased FDG uptake corresponds to an expansile lytic rib lesion on CT (**arrows** ). Biopsy of this lesion revealed FD with no evidence of malignancy.

**Figure 3** : Anterior and posterior spot bone images show increased uptake in the left 8th rib, acetabulum and femur, similar to the FDG-PET findings. In addition, increased uptake is seen in the left tibia and foot bones, which were not in the field of view of the FDG-PET.









