

Intraosseous Lipoma: A Rare Benign Bone Tumor

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Received: November 19, 2023; **Published:** December 20, 2023

Abstract

Intraosseous lipoma is a rare benign lesion, accounting for approximately 0.1 - 2.5% of all bone tumors. It is typically asymptomatic and is frequently discovered incidentally during imaging studies conducted for unrelated reasons. We report the case of a 52-year-old female patient who is followed-up for a controlled ovarian adenocarcinoma. A routine follow-up a chest-abdomen-pelvis computed tomography scan revealed a well-defined expansive lytic lesion in the right humeral head, characterized by a fatty density measuring -55 Hounsfield units, suggesting an intraosseous lipoma.

Keywords: *Intraosseous Lipoma; Bone Tumor; Computed Tomography*

A 52-year-old female patient with a history of treated adenocarcinoma of the ovary underwent a chest-abdomen-pelvis computed tomography scan, revealing a well-defined lytic lesion in the right humeral head, measuring approximately 4 cm in diameter, and exhibiting a fatty mean density measured at -55HU (Figure 1), suggesting an intraosseous lipoma. Differential diagnoses including bone infarct, simple bone cyst, or osteochondroma could not be ruled out. Subsequently, a biopsy was performed confirming the diagnosis of an intraosseous lipoma.



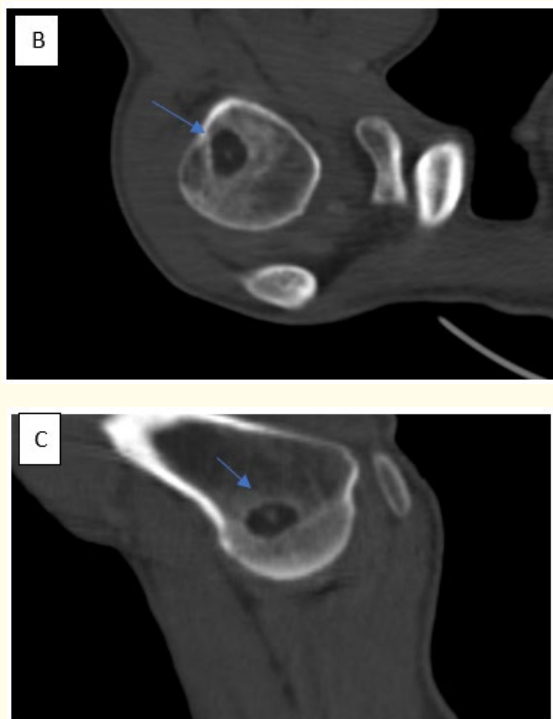


Figure 1: Coronal (A), axial (B) and sagittal (C) CT images in the bone window, showing in the right humeral head a well-defined lytic lesion with a fatty density measuring -55 HU.

Intraosseous lipoma is an infrequent benign bone tumor, often discovered incidentally during imaging studies. It affects a broad age range (5 - 85 years) and exhibits a peak incidence in the 4th to 5th decades of life with a slight male predilection. The cause of intraosseous lipoma remains unknown, although embryonic fat cell remnants or bone marrow metaplasia are thought to contribute [1,2].

Intraosseous lipomas describe three stages:

- A homogeneous content with well-defined margins.
- Mostly fat content with some necrosis, calcification, and bone degeneration.
- And a heterogeneous lesion with a large central necrotic area and a sclerotic wall accompanied by extensive calcifications or bone degeneration [7].

The differential diagnoses of intraosseous lytic lesions featuring a fatty density encompass:

- Bone infarct: Characterized by disrupted bone blood supply, leading to tissue necrosis. It can resemble intraosseous lipoma, however, bone infarcts are typically symptomatic causing pain.
- Simple bone cyst: A benign fluid-containing bone lesion, which is commonly found in the metaphysis of long bones.
- Osteochondroma: Benign tumors that present as bony projections with cartilage caps. They can sometimes present a fatty appearance on imaging due to bone marrow.

- Myeloma: A malignant bone tumor causing osteolysis and bone marrow fat infiltration. It may resemble an intraosseous lipoma, but the lesions are commonly multiple, and associated with anemia, hypercalcemia, and renal failure [3-5].

Intraosseous lipomas can generally be managed conservatively. However, symptomatic cases or those with recent fractures may require bone grafting and curettage. Surgical excision is a great treatment tool with absence of recurrence. Nonetheless, sporadic cases of malignant transformation have been reported [6].

Conflict of Interest Statement

No conflicts of interest to be declared.

Funding Support

None.

Ethical Approval

No ethical approval is required for de-identified single case reports based on our institutional policies.

Consent

Written informed consent was obtained from the patient's legally authorized representatives.

Guarantor

Dr. Majda Ankri is the guarantor for this publication.

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Volume 15 Issue 1 January 2024

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