Case Report ISSN (O):2395-2822; ISSN (P):2395-2814

Non-Ossifying Fibroma of Calcaneum.

Sanjay Kumar[1], Kritesh Mishra[2]

[1]Associate Professor Department Of Orthopaedics, G.S.V.M. Medical College & LLR Hospital, Kanpur.
[2]Junior Resident, Department Of Orthopaedics, G.S.V.M. Medical College & LLR Hospital, Kanpur.

Received: April 2017
Accepted: May 2017

ABSTRACT

A rare case of non-ossifying Fibroma arising in the left calcaneum presented with swelling over lateral aspect of left ankle region. X ray showed a well-defined radiolucent lesion in the anterolateral portion of the left calcaneum with minimal peripheral sclerotic margins. CT scan showed an osteolytic lesion in the calcaneum comprising of regular cortical thinning with slightly increased attenuating central core.The patient was managed operatively by curettage of the bone cyst followed by autologous bone grafting. Histopathological examination of the tissue showed ghost appearance suggestive of benign spindle cell lesion probably, non-ossifying fibroma.

Keywords: Osteo ; ytic lesion Calcaneum,Non Ossifying Fibroma, Curattage & bone grafting.

INTRODUCTION

A rare case of non-ossifying Fibroma arising in the left calcaneum presented with swelling over lateral aspect of left ankle region.

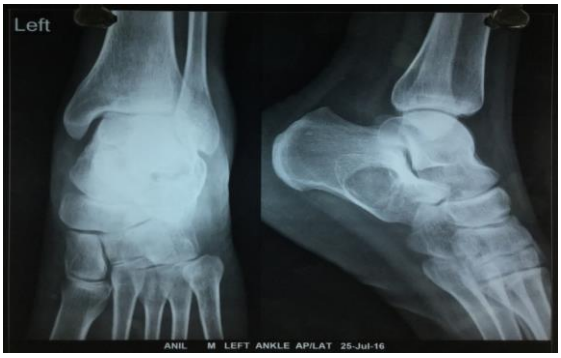
Name & Address of Corresponding Author
Dr. Sanjay Kumar
Associate Professor
Department Of Orthopaedics,
G.S.V.M. Medical College & LLR Hospital,
Kanpur.

CASE REPORT

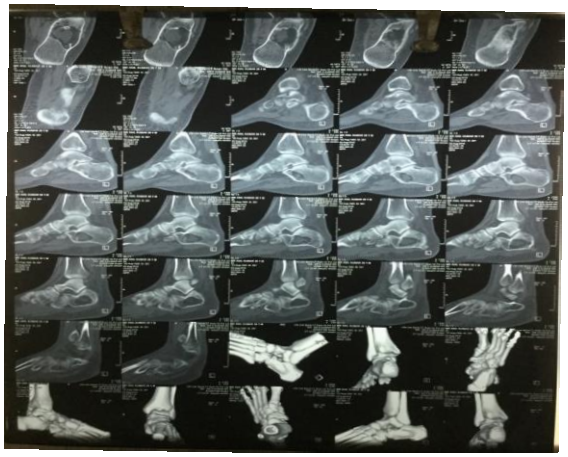
A 36 year old man presented to the OPD with the complaint of swelling over lateral aspect of left ankle region. The swelling developed spontaneously one month back and gradually increased in size. There was no associated history of pain.

On physical examination, a 4×3 cm ovoid swelling is seen over lateral aspect of left heel with indistinct edges. The overlying skin was freely mobile & normal in colour with no pigmentation. There was no venous prominence or visible pulsation. On palpation, the local temperature was not raised but there was slight tenderness on deep palpation. The swelling had smooth surface with indistinct margins and was firm to hard in consistency. The movement of ankle joint was neither painful nor restricted.

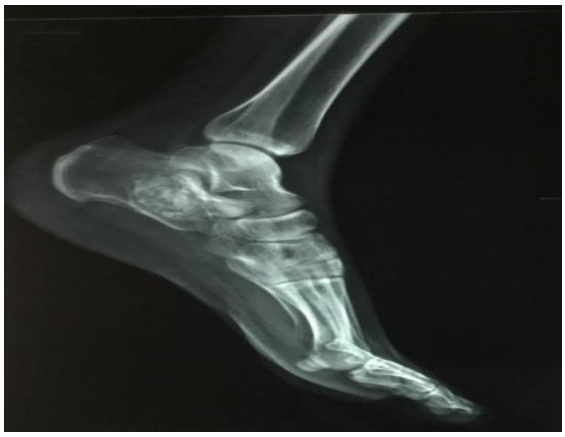
X ray shows a well-defined radiolucent lesion in the antero lateral portion of the left calcaneum with minimal peripheral sclerotic margins.

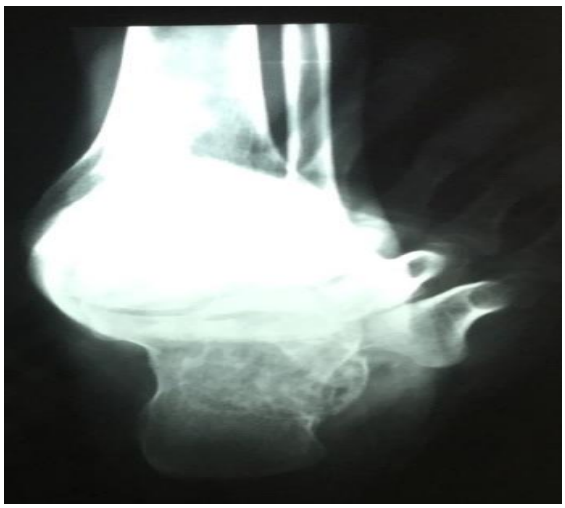


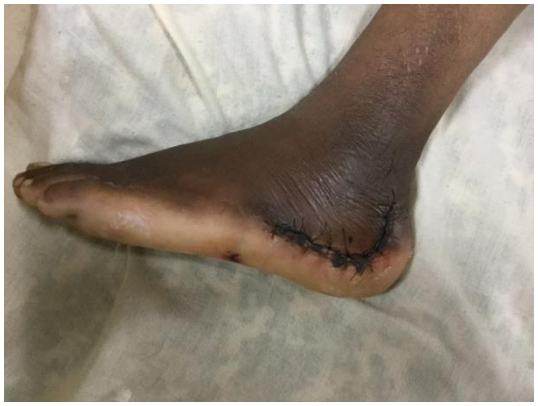
CT scan shows an osteolytic lesion in the calcaneus measuring 33×25×23 mm in dimensions. The lesion comprises of regular cortical thinning with slightly increased attenuating central core. Margins are not sclerotic. The clinical impression being a bone cyst.



The patient was managed operatively by curettage of the bone cyst followed by autologous bone grafting.







The tissue was sent for histopathological examination which was reported as follows-

Gross:

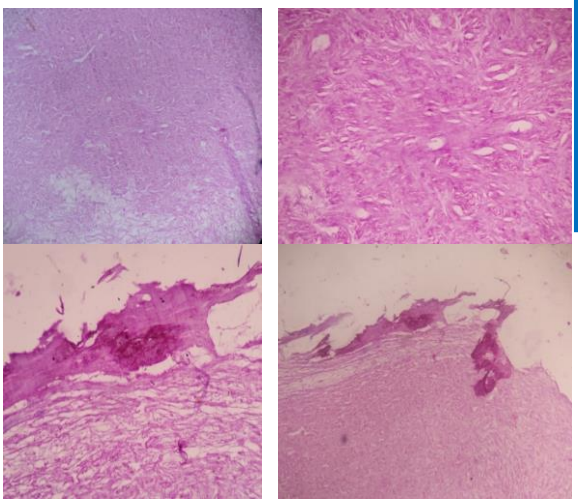
Single greyish white soft tissue piece measures 2.0×2.0 cm.

Microscopic description:

Section shows autolytic changes. There is ghost appearance of fibro-collagenous tissue, focal areas at the periphery of tissue are showing degenerated bony trabeculae.

Impression:

One the basis of ghost appearance, findings are suggestive of benign spindle cell lesion of bone probably, non ossifying fibroma.



DISCUSSION

Non- ossifying fibroma, metaphyseal fibrous defect, and fibrous cortical defect all refer to the same histopathological process in the bone. The spontaneous resolution of most metaphyseal fibrous defects and their relationship to the growing portions of bones support the concept that they represent faulty ossification rather than true neoplasm. They are commonly discovered incidentally on plain radiographs. There is slight male predominance. It is exclusively a disease of childhood and adolescence. They rarely appear in children younger than 2 years of age or in adults over 20 years of age. They develop in the metaphysis and, as the bone grows, they gradually seem to move toward the diaphysis. Radiographic evidence of small cortical defects may be found in approximately one-third of growing children, most commonly in the distal femur. Other common sites are distal tibia and proximal tibia. When patients near skeletal maturity, the lesions ossify or completely disappear.Few of these lesions pose a significant diagnostic problem or produce enough symptoms to require surgery. A few fibroblastic masses may continue to grow and produce pathologic fracture of even a major tubular bone. Patients may have multiple fibrous defects in one or more extremities.

When there are several metaphyseal fibrous defects, the patient may have other problems like café au lait spots, intellectual disability, kyphoscoliosis, hypogonadism, ocular & cardiovascular malformations, and may have Jaffe-Campanacci syndrome, as described by Mirra and colleagues.

The main differentials for these lesions are- Simple bone cyst, Aneurysmal bone cyst, Giant cell

tumour, Bone infarct, Chondroid tumour, Intraosseous Lipoma or Fungal infections.

Radiographic features:
Most metaphyseal fibrous defects have a characteristic radiographic appearance that is virtually diagnostic. When a large tubular bone is affected, the lesion is practically always located eccentrically and often produces some bulging of the cortical outline, which is usually thin over the defect. The lucency begins in the metaphysis, near or at the epiphyseal line, and appears to migrate toward the centre of the bone as the epiphyseal region grows away from it.
The inner boundary of the lesion is demarcated by thin or prominent scalloped line of sclerosis. Trabeculae frequently appear to traverse a defect and give it a multilocular appearance; however, these trabeculae are nearly always incomplete and the appearance is actually produced by the shadows of corrugations on the inner surface of the cavity that houses the defect. Occasionally, the entire width of the bone may be affected.

Gross Pathological features:
It is unusual to see intact specimens of metaphyseal fibrous defect. Curetted fragments show a granular lesion that is predominantly brown but has foci of yellow discoloration. If the gross specimen is intact, it will have the characteristic lobulated appearance expected from the radiographic features. The lesion attenuates the cortex but does not breach it.

Histopathological features:
Metaphyseal fibrous defects characteristically show a spindle cell proliferation, with a loose storiform arrangement of the cells. The cells are plump but show no hyperchromasia of the nuclei. Mitotic figures may be found. Very characteristically, a yellow to brown pigment, which special stains show to be iron, is present within the spindle cells. Benign giant cells are always found. These are usually in clusters but focally may be very prominent and, out of context, may suggest the diagnosis of a giant cell tumor. Foam cells containing lipid are almost always found in metaphyseal fibrous defect and produce the yellow appearance grossly.
Typically metaphyseal fibrous defects do not contain bone. However, small foci of reactive new bone formation may be seen, especially in association with a pathologic fracture.
Because of the presence of giant cells, the lesion may be mistaken for a giant cell tumor. However, the giant cells usually are arranged in clusters, unlike that seen in a true giant cell tumor. The occurrence in the second decade of life and the characteristic location in the metaphysis practically rule out the diagnosis of giant cell tumor. The presence of foam cells, giant cells, and spindle cells in a storiform arrangement may suggest a diagnosis of fibrohistiocytic neoplasm. Indeed at least some of the so-called fibrous histiocytomas of bone reported in the literature probably represent metaphyseal fibrous defects in unusual locations.

REFERENCES

1. 1942 Jaffe, H. L. and Lichtenstein, L.: Non-Osteogenic Fibroma of Bone. Am J Pathol, 18:205–221.
2. 1945 Hatcher, C. H.: The Pathogenesis of Localized Fibrous Lesions in the Metaphyses of Long Bones. Ann Surg, 122:1016–1030.
3. 1956 Cunningham, J. B. and Ackerman, L. V.: Metaphyseal Fibrous Defects. J Bone Joint Surg, 38A:797–808.
4. 1964 Gordon, I. R. S.: Fibrous Lesions of Bone in Childhood. BrJRadiol, 37:253–259.
5. 1974 Drennan, D. B., Maylahn, D. J., and Fahey, J. J.: Fractures Through Large Non-Ossifying Fibromas. ClinOrthop, 103:82–88.
6. 1974 Steiner, G. C.: Fibrous Cortical Defect and Nonossifying Fibroma of Bone: A Study of the Ultrastructure. Arch Pathol, 97:205–210.
7. 1982 Mirra, J. M., Gold, R. H., and Rand, F.: Disseminated Nonossifying Fibromas in Association With Café-au-Lait Spots (Jaffe-Campanacci Syndrome).ClinOrthop, 168:192–205.
8. 1983 Campanacci, M., Laus, M., and Boriani, S.: Multiple Non-Ossifying FibromataWithExtraskeletal Anomalies: A New Syndrome? J Bone Joint Surg, 65B:627–632.
9. 1988 Blau, R. A., Zwick, D. L., and Westphal, R. A.: Multiple Non-Ossifying Fibromas: A Case Report. J Bone Joint Surg, 70A:299–304.

How to cite this article: Kumar S, Mishra K. Non-Ossifying Fibroma of Calcaneum. Ann. Int. Med. Den. Res. 2017; 3(4):OR06-OR08.

Source of Support: Nil, **Conflict of Interest:** None declared