**CASE REPORT**

**COCKADE SIGN OF INTRAOSSEOUS LIPOMA OF CALCANEUS ON TRIPHASIC BONE SCAN**

Nosheen Fatima,1 Maseeh uz Zaman,2 Asad Bilal,1 Hira Bibi,1 Sehrish Zehra1

1 Department of Nuclear Medicine, Dr. Ziauddin Hospital, Karachi, Pakistan.
2 Department of Radiology, The Aga Khan University Hospital, Karachi, Pakistan.

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**ABSTRACT**

Intraosseous lipoma is rare benign tumor of bone most commonly involving the calcaneus and derived from mature lipocytes. It has classical appearance of Cockade on plain X-ray (Cockade sign). We are presenting a case of calcaneal intraosseous lipoma with findings on a three phase bone scan. To the best of our search this is the first report depicting the findings of this rare tumor on a dynamic bone scan.

Key Words: Cockade sign; intraosseous lipoma; bone scan

**Case Report**

We present a case of 40 years old lady with 05 months history of pain of moderate severity over left calcaneal region. She denied any history of trauma or associated fever. She was a known hypertensive and has had treatment for Hepatitis-B about 03 years ago. On local examination, her left calcaneal region was normal looking with no sign of acute inflammation but she had mild tenderness. There was no movement restriction. Her primary physician referred her for a bone scan to rule out any possibility of infection.

A dynamic triphasic bone scan was performed with 20 mCi of Technetium-99m Methylene Diphosphonate (Tc-99m MDP) using a Ecam, Siemens gamma camera. Her dynamic images revealed asymmetrical flow over left calcaneal region and a well defined area of enhanced activity over mid of left calcaneus on blood pool images. Delayed images show a curvilinear area of increased tracer uptake over proximal part of inferior border of left calcaneus and a small photon lucency just above it is also seen. Abnormal uptake over tarsal joints were also noted (Fig. 1a-c).

This was followed by an X-ray of left calcaneus which revealed a large lytic area over left calcaneus with a well defined radio-opaque area in the centre and significant sclerosis over the inferior surface. The findings were classical for Cockade sign of intraosseous lipoma with a central calcification (Fig. 2).

**Correspondence:** Dr. Nosheen Fatima
Department of Nuclear Medicine,
Dr. Ziauddin Hospital,
Karachi, Pakistan
Email: dr.nosheen_fatima@yahoo.com
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Discussion

Intraosseous lipoma of calcaneus is a benign and rare bone tumor. The reported incidence is about 0.1-2.5% of all bone tumors. It usually presents at extreme of ages (5-85 years) with a peak age at the time of diagnosis between 40-50 years with a male preponderance. It is derived from mature lipocytes without admixed hematopoietic tissue or bony trabeculae. It can be found essentially anywhere within the skeleton, the lower limb accounts for the majority of cases. Calcaneus is the commonest site of involvement and its appearance on radiological examination gives its name of Cockade sign. Pain is the commonest presentation and in about 1/3rd cases it is detected incidentally. On CT and MRI, the fatty component of intraosseous lipoma may display varying degrees of involution and necrosis. However, to the best of our search, no report has been published regarding findings of Cockade sign on triphasic bone scan. In our case, the enhanced flow over the site was concomitant with sclerotic inferior border due to enhanced bone remodeling with a central area of lucency representing area of calcification associated with involution and necrosis. Although these findings are non-specific, but would help the nuclear physicians to be aware of intraosseous lipoma (Cockade Sign) while reporting bone scan in patients with painful heel. A symptomatic lesions with no evidence of bone instability are treated conservatively but symptomatic lesions with impending fractures are treated surgically with curettage and bone grafting.

References

