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A rare presentation of an intraosseous lipoma in the proximal femur

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABCF 1 **Samar A. Rabbani**
FG 2 **Imran Ilyas**
E 3 **Husam Alrumaih**

1 King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia
2 Alfaisal University, College of Medicine, Orthopaedic Consultant King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia
3 National Guard Health Affairs, King Abdulaziz Medical City, King Abdullah International Medical Research Center, Riyadh, Saudi Arabia

Corresponding Author: Imran Ilyas, e-mail: imran_ilyas@hotmail.com

Patient: Female, 32
Final Diagnosis: Intraosseous lipoma
Symptoms: Swelling of the thigh
Medication: —
Clinical Procedure: Excision of the mass
Specialty: Surgery

Objective: Rare disease

Background: Intraosseous lipomas happen to be one of rarest benign soft tissue tumors with only a little known about its etiology and pathophysiology. A pubmed search using key word "Intraosseous lipoma". Came back with 165 results. All the sizes and presentations were reviewed and compared with the case we are presenting. We are reporting a 15×20 cm intraosseous lipoma

Case Report: 32-year-old lady with a large intraosseous lipoma in the proximal thigh. The largest reported in English literature

Conclusions: A intraosseous lesion with this size could still be benign even if its larger than 5 cm. Keeping in mind that with a lesion this size malignancy should always be ruled out.

Key words: intraosseous lipoma • bone tumor • benign

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Background

Intraosseous lipoma is a rare primary bone tumor first described in 1880 [1]. An incidence of less than 0.1% of bone tumors some have reported higher incidence [2] it is considered of the rarest of benign bone tumors [3]. Most of cases presented in the literature affect people around the age of 40 [4]. Majority of them are in them lower limbs (70%) and the os calcis being the most frequently involved (32%) [4]. Due to the rare incidence it is often mistaken for nonossifying fibroma, simple cyst, aneurismal bone cyst, fibrous dysplasia, giant cell tumor, bone infarcts and chondroid tumor [4–6]. Radiologic diagnosis is challenging and histopathology is the standard of diagnosis [4,5]. We are reporting a case of a massive Intraosseous lipoma with a size of 20×15 cm. As far as we know no similar size of an Intraosseous lipoma has been reported in the English literature.

Case Report

We present a case report of a 32-year-old woman who presented to our institute with a history of a huge swelling in the thigh

Figure 1. An anterior–posterior X-ray view of the left femur showing the bony lesion.

Figure 2. Computerized tomography showing the Intraosseous lesion.

progressively increased in size over a period of five years. She had a biopsy at the local hospital about four years ago, which showed a benign lesion. Since then it continued to increase in size though slow and finally she was referred to our institute. She had some pain and feeling of heaviness in the left lower limb. On examination, there was a huge lump mainly over the antero-medial aspect of left upper thigh. The size was 15×18 cm and it was firm, fixed and immobile. There was mild tenderness on firm palpation and there was no fluctuation. The skin was normal in texture and mobile over the mass. The range of motion of the hip was limited in flexion due to the lump as it was hitting the lower abdomen during full flexion.

She had plane X-ray (Figure 1) and CT scan (Figure 2) which showed a well-circumscribed mass with sclerotic margins full of soft tissue and fat with specks of calcifications suggestive of Intraosseous Lipoma. She underwent excision of the tumor (Figure 3A, 3B) where (A) is intra-op and (B) is after excision. Histopathology typically showed a mass of mature adipose tissue surrounded by thin shell of bone with bony spicules and trabeculae admixed with hemorrhagic friable adipose tissue.

In reviewing the literature all the reported Intraosseous Lipomas were of small size as evident by X-rays and CT scans. We report this huge 15×20 cm size tumor acquiring this size over a period of five years, which was never reported in the literature.

Discussion

We conducted a pubmed search using the key words: Intraosseous and Lipoma. 165 results came back and were reviewed. The biggest case series was reported by Milgram

Figure 3. (A) Intra-operative image of the lesion from the left femur. (B) Intra-operative image of the lesion after marginal excision.

[6] He reported 61 cases and focused on the histologic and radiological features and was able to stage them accordingly.

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Stage 1, tumors of viable fat cells, stage 2, a mixture of partly viable fat cells, fat necrosis and calcifications and stage 3, necrotic fat, variable degree of cyst formation and reactive woven bone formation. The nature of pathology has been widely questioned some authors suggested that it is a benign tumor of the medullary adipose tissue [2,7,8]. Others suggested that they are a reactive changes secondary to infarcts, infections, or even a result of healed bony infarcts secondary to trauma [9]. In terms of size Campbell et al. reviewed the literature and reported 35 new cases. In his review of 206 cases of lipoma the largest was 120mm in size [4]. Palczewski et al. reported 6 cases of Intraosseous lipomas with no mention of the exact size, however, with the images he provided, they seemed relatively small to average in size [10]. Unlike the case we are presenting most of intraosseous lipomas are asymptomatic being incidental findings during radiologic evaluation for other complains [11]. Because of the variable appearance of intraosseous lipomas in different stages of involution, the radiographic findings can vary from a lucent lesion with a thin sclerotic margin to a radiodense lesion with a thick sclerotic margin [12] making the radiological diagnosis challenging.

Studies showed that only 5% of benign soft -tissue tumors exceed 5 cm [13–16]. Datir et al. studied the relationship between the size, depth and the diagnosis of soft-tissue masses, and found that the most predictive factor for potential malignancy is the age of the patient and size of the mass more or equal to 5 cm [17]. It recommended to biopsy every soft tissue lesion that is more than 5cm in size as it less likely to benign.

Conclusions

Intraosseous lipoma sizes were always thought to be relatively small and a large lesion is an indication of malignancy The case we presented is a rare presentation of a large size benign lesion. A massive intraosseous lipoma with a size that has not been previously reported in the English literature.

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