

Rare Case of Intraosseous Lipoma with Proximal Femoral Localization Causing Cortical Expansion

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Intraosseous lipoma has a 1% incidence among the primary tumors of the bone, and it frequently occurs in the calcaneus. As it is rare, it may be mistaken for nonossifying fibroma, aneurismal bone cyst, simple bone cyst, bone infarct and chondroid tumors.

Intraosseous lipomas are usually followed up conservatively due to their spontaneous involution. However, surgery is required in the presence of fracture risk, malignant transformation potential and/or extensive pain.

Herein we report a case with intraosseous lipoma involving the intertrochanteric femur and the collum femoris, causing cortical expansion. This presentation is extremely unusual for this type of tumor both in terms of localization and radiology. As the patient was symptomatic with extensive pain, we treated the patient by curettage and bone grafting.

Key words: intraosseous lipoma ■ proximal femur ■ cortical expansion

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INTRODUCTION

Intraosseous lipoma is a benign bone lesion, which is very rarely seen as an isolated primary tumor of bone. Although not clearly known, it has an incidence of approximately one in every 1,000 tumor cases.¹ It most frequently occurs in lower extremities with a rate of 71%, and the majority is seen in the calcaneus with a 32% occurrence rate.^{2,3} It has rarely been reported in the proximal femur—particularly in the head, neck and intertrochanteric regions.⁴

Radiographic diagnosis is not easy due to its rare occurrence, and it may readily be missed if it is in an atypical localization. It may be mistaken for nonossify-

ing fibroma, simple cyst, aneurismal bone cyst, fibrous dysplasia, giant-cell tumor, bone infarcts and chondroid tumor.^{2,5} Because of these reasons, the diagnosis should definitely be confirmed with histopathological examination besides radiological procedures.²

Herein we report a case of an intraosseous lipoma with a very rare intertrochanteric localization. We discuss the rationale for our preference of surgical intervention and the outcome.

CASE REPORT

A 32-year-old male patient presented to our clinic with pain in the left hip. He had this pain for the past year. His pain had intensified in the last six months, particularly during performance activities. He did not have a history of prior hip pain or any trauma.

He was walking with a limp, but he had a normal range of motion in the hip. The intertrochanteric region was sensitive to deep palpation. There were no additional physical examination findings. His whole blood count and routine blood tests, including the sedimentation and CRP, were normal. His two plane x-rays revealed a wide cystic cavity with a lytic appearance causing cortical expansion in the intertrochanteric region. There was occasional minimal calcification (Figure 1).

A hip MRI was obtained, which revealed an approximately 4x4-cm mass with intramedullary localization at the femur neck. The mass had expanded the cortex (Figure 2). The mass did not hold contrast and seemed hyperintense in the T1- and T2-A sequences and suppressed in the STIR-A sequence. Open biopsy was planned for differential diagnosis. A bone window was created at the base of the greater trochanter and, through it, the mass was curetted. The femoral neck was extremely weak with nearly no cancellous bone present. The curetted materials were sent to frozen section examination, which revealed benign fatty tissue. Then, the bone defect created during curettage was filled with allograft bone.

The definitive detailed histopathological examination of the extracted materials revealed lipogranuloma-

tous alterations and thin trabecular lamella, which were reported as mature adipose tissue-intraosseous lipoma scattered throughout the bone.

The patient's postoperative course was uneventful. He was given bed exercises and activity modification (to decrease the stress on the femoral neck) and was mobilized on the third day without bearing weight. He was followed up by x-rays, and full weight-bearing was allowed at the end of third month upon consolidation of the graft tissue.

DISCUSSION

The primary complaint in 70% of cases with intraosseous lipoma is pain.^{2,6} Other times, it is usually asymptomatic and occurs incidentally.⁵ For this reason, intraosseous lipoma is not as rare as the literature suggests but has rarely been diagnosed. The lesion generally undergoes spontaneous involution, so that surgical excision may not be necessary in some cases.^{1,2,5,6}

Microtrabecular fractures occurring subsequent to minor traumas in the weakened bone have been blamed for the pain. However, pathological fractures are extremely rare in these tumors.² The etiology of intraosseous lipoma is not clearly evident, yet it is considered a benign neoplasm.^{1,2,5} It is most frequently located in the lower extremities and the calcaneus.²

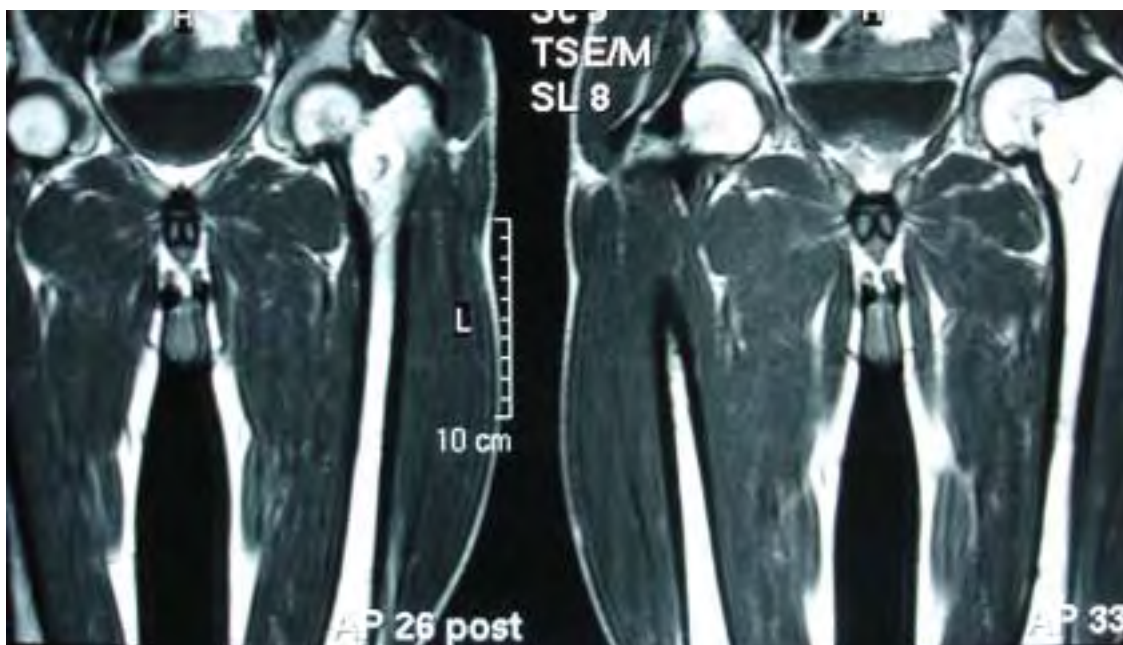
Intraosseous lipomas have been reported to occur in equal frequency in both genders, although women have a higher incidence of developing soft-tissue lipomas.^{6,7}

Although lipid density, cortical expansion, internal ossification-calcification, presence of pathological fractures, and presence or absence of sclerosis in the bone are valuable factors in differential diagnosis, definitive differ-

Figure 1. Wide cystic cavitory lesion with intertrochanteric localization in hip AP x-ray; occasional minimal calcifications are evident



Figure 2. Hip MRI sagittal sections showing cystic-cavitory lesion causing expansion and thinning in the cortex



ential diagnosis from nonossifying fibroma, simple cyst, aneurismal bone cyst, fibrous dysplasia, giant-cell tumor, bone infarcts and chondroid tumors is always made by histopathological examination. The majority of the patients can be diagnosed by conventional x-rays, computed tomography (CT) and MRI techniques.^{2,5}

Although cortical expansion is not typical for intraosseous lipomas in histopathological and radiographic examinations,^{2,5} it was clearly evident in the x-rays and MRI of our case. We also observed extensive thinning in the cortex. We think that the most significant finding in our case was the high risk of pathological fracture in the cortical bone due to the extensive thinning caused by the cortical expansion in the intraosseous lipoma.

Secondary malignancies are very rare in intraosseous lipomas. However, there are reported cases in the literature.⁵ It is not very clear what causes this transformation and how, yet the possibility of malignant transformation should be taken into consideration.

Although intraosseous lipomas are considered benign lesions and are treated conservatively due to their propensity for spontaneous involution, curettage and grafting has been suggested in cases with painful tumors, pathological fractures and/or malignant transformation.¹⁻⁵ We performed

curettage and grafting in our case without waiting for spontaneous involution because of the high risk of fracture and cortical expansion.

In conclusion, the orthopedic surgeon should consider intraosseous lipoma in the differential diagnosis of lytic lesions in the intertrochanteric region even in the presence of cortical expansion. In cases with a high risk of fracture, curettage and bone grafting is a good option for treatment with an excellent clinical and functional result.

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