CASE REPORT

Intraosseous lipoma of mandible presenting as a swelling

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ABSTRACT

Lipomas are the most common form of benign mesenchymal tumors and are composed of mature adipocytes. They can occur anywhere in the body where fat is found and thus, called as the 'universal tumor' or the 'ubiquitous tumor'. Intraosseous lipomas (IOL) are among the rarest (0.1%) of primary bone tumors and are very rarely seen in head and neck bones. They have been subdivided based on the site of origin within bone, into intramedullary and intracortical. Of the two, few cases of intramedullary lipoma have been reported intraorally and none of the latter. Intraosseous lipomas are usually asymptomatic and are detected incidentally on radiographs taken for other complaints. Here, we report a case of intraosseous lipoma in the mandible presenting as a large swelling.

Key words: **Intracortical lipoma, intraosseous lipoma, mesenchymal tumors**

INTRODUCTION

Lipoma is the most common benign neoplasm of mesenchymal origin, and it is composed of mature adipose tissue without cellular atypia. Though predominantly located in subcutaneous sites, they are also found intramuscularly, retroperitoneally, and in intraosseous locations.[1]

Osseous lipomas are very rare despite the large amount of fatty marrow in the adult. They most commonly occur in the calcaneus and long bones of lower extremities.[2] Depending upon the location in relation to bone, they may be intraosseous (intramedullary and intracortical) or juxtacortical (parosteal and subperiosteal). These adipocyte tumors are usually asymptomatic and are found incidentally on radiographs. The occasional symptomatic case may be present with swelling and rarely with pain.[1]

In this article, we are reporting a case of intraosseous lipoma of the mandible, which to the best of our knowledge is the fifth only reported case in anterior mandible.[3] Also, significant is its presentation as a swelling, which is very rare for an intraosseous lipoma (IOL) in the jaw bones.

CASE REPORT

A 15-year-old boy reported to our institution with a complaint of swelling in the right lower jaw of 2 years duration, associated with increasing difficulty in speech. Anamnesis failed to reveal any trauma to the site. General and extraoral examinations were within normal limits. Intraoral examination revealed a smooth, non tender, and bony hard, ovoid swelling of about 4×2.5 cm size, located towards the lingual aspect of mandible extending from 41 to 47 [Figure 1].

A mandibular occlusal radiograph revealed cortical expansion with hazy radiopacity on the lingual surface of mandible [Figure 2]. The associated teeth were found to be within normal limits. Excision of the lesion under local anesthesia was planned. The growth was bony hard, and it was easily malleted out.

The specimen was decalcified overnight in 8% nitric acid and routinely processed to obtain paraffin-embedded, 10 μ thick hematoxylin and eosin (H and E) stained slides. Microscopically, the tissue was composed of areas of mature adipocytes interspersed with few trabeculae of mature lamellated bone and prominent thin-walled, large caliber vascular spaces. The fat cells were without cellular atypia or mitotic figures [Figure 3]. The major part of the lesion was surrounded by a continuous layer of cortical bone, which appeared to be thinned out [Figure 4]. There was no evidence of a fibrous capsule around the lesion. Serial sections failed to reveal normal hematopoietic tissue.

Based on these findings, a diagnosis of intraosseous lipoma was made. There was no evidence of recurrence at 1-year follow-up.

DISCUSSION

IOL is one of the rarest bone tumors accounting for approximately 0.1% of all benign primary bone tumors.[4]

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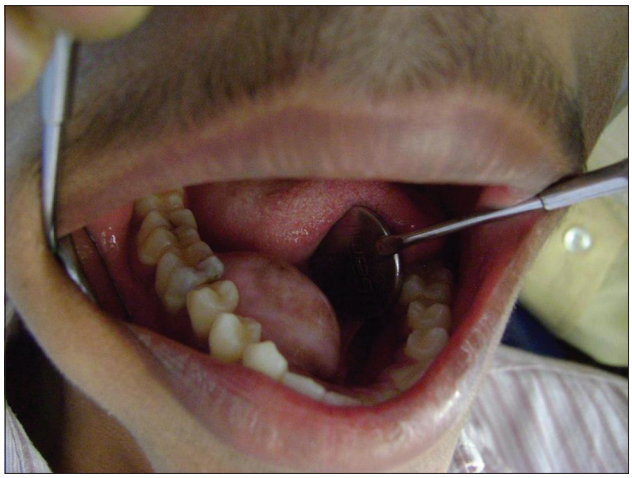

Figure 1: The pre-operative view shows a smooth, ovoid swelling on the lingual aspect of the mandible extending from mesial of 41 to 47

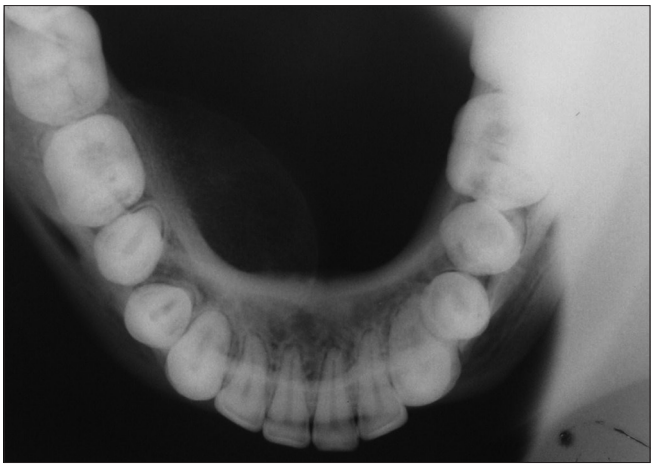

Figure 2: Cross-sectional mandibular occlusal radiograph shows cortical expansion with hazy radiopacity on the lingual surface of mandible extending from 41 to 47 region

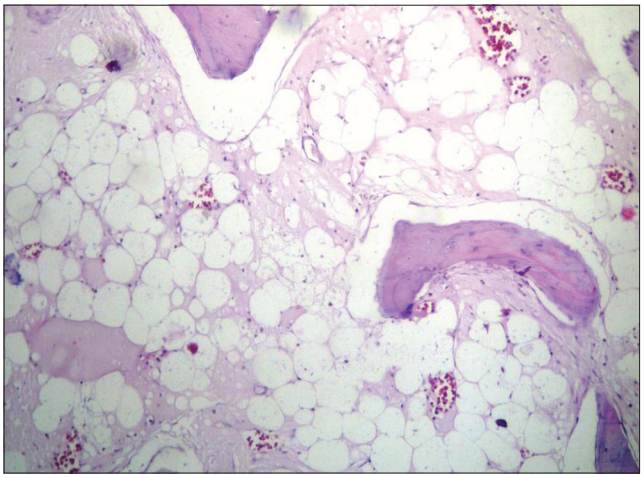

Figure 3: Photomicrograph. The tumor is composed of numerous mature adipocytes with entrapped mature lamellated bone. No necrotic areas or dystrophic calcification are noted within the lesion. (H and E, stain; ×100 original magnification)

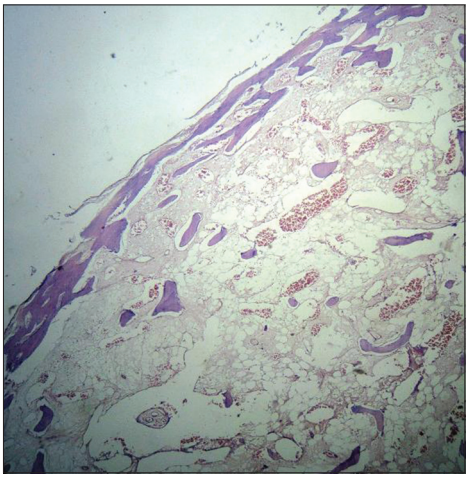

Figure 4: Photomicrograph showing thinned out cortical bone present at the periphery of the lesion (H and E, ×100 original magnification)

The first case of IOL was described in 1880 by Cornil and Ranvier in the femur.[5] Nearly every bone can be affected by this tumor, although favored sites are the calcaneus and the metaphysis of long bones.

These adipocyte tumors occur most commonly in the fourth decade with a slight male predilection.[6] Most of the IOLs are incidental findings on radiographs taken for other purposes. Symptoms, when present, are localized mild pain, swelling or rarely fracture of the affected bone.[7]

Based on their location, osseous lipomas can be intraosseous (intramedullary and intracortical) and juxtacortical (parosteal and subperiosteal).[2] Intramedullary lipomas appear as lytic lesions with sclerotic margins. The only two reported cases of intracortical lipoma were seen in the diaphysis of long bones, as well-demarcated radiolucent areas not communicating with the medullary cavity.[2] A total of 24 cases of intramedullary lipomas have been reported in the jaw bones till date. Of these, only four have occurred in the anterior mandible,[2,3] our case thus being the fifth.

Although clinical examination combined with computed tomography (CT) or magnetic resonance imaging (MRI) can point towards IOL, a definitive diagnosis requires microscopic examination.[8,9] Microscopically, sheets of mature adipocytes without atypia and absence of hematopoietic elements are the essential features.[10] The lesion may or may not be encapsulated.[5] Based on the level of involution, three stages of intraosseous lipomas have been described by Milgram: Stage 1, when there is no secondary necrosis; Stage 2, when there is partial necrosis; Stage 3, when there is complete secondary necrosis and dystrophic calcification.[11] Since we did not find areas of necrosis or dystrophic calcification in the present case, we considered it was in Stage 1 of Milgram's staging.

Microscopically, the lesion must be distinguished from a well-differentiated liposarcoma, normal fibro-fatty bone

marrow, and osteoporotic bone marrow defect.[12] Absence of lipoblasts with cellular atypia or giant cells ruled out liposarcoma. Diagnosis of normal fibro-fatty bone marrow was ruled out because of the lack of hematopoietic tissue and the expansile nature of the lesion. Furthermore, absence of any history of previous trauma to the site excluded the possibility of an osteoporotic bone marrow defect.

The precise nature of IOL is still controversial. Many authors regard these lesions as benign tumors of the medullary adipose tissue. Others have proposed that IOL are reactive changes secondary to infarcts, infections, or trauma.[12] Another hypothesis is that they are simple conglomerations of fatty marrow, formed as part of the normal ageing bone process. However, in the present case, the young age of the patient and the absence of any trauma to the region, all point towards a benign neoplastic nature of the lesion.

In symptomatic lesions and those prone to undergo pathologic fracture, curettage is the treatment of choice. Recurrence of the intraosseous lipoma is rare and it has been reported in only two cases.[13] Though intraosseous lipomas are considered benign, Milgram reported four cases of malignant transformation; however, no recurrence or malignant changes of mandibular intraosseous lipomas have been reported.[14]

Though, reported cases of osseous lipomas of the jaws are very few in number, this case highlights the importance of including it in the differential diagnosis of jaw lesions and properly documenting each new case.

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