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Intraosseous lipoma of the mandible: A case report

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ABSTRACT

The lipoma is 5% of benign tumors and 25 to 50% of soft tissue tumors. It most occurs in the upper trunk area, neck and the extremities. But it is rare in the oral and maxillofacial area. It is a benign lesion composed of fat mature adipose tissue that Separated with fibrous septa and surrounded with a thin fibrous capsule. Jaw Intraosseous lipoma is very rare, and its prevalence has been mentioned in articles 1.0%. The case of this manuscript was a 33-year-old woman who referred to an orthodontic specialist with a complaint about the tooth crowding and requesting orthodontic treatment. Based on clinical, radiography and histopathology finding, a diagnosis of intraosseous lipoma of the mandible was made.

Keywords: Benign tumor; Lipoma; Intraosseous.

Introduction

The lipoma is a benign lesion composed of fat mature adipose tissue that Separated with fibrous septa and surrounded with a thin fibrous capsule. It is commonly found in subcutaneous, intramuscular, retroperitoneal regions [1]. It is 5% of benign tumors and 25 to 50% of soft tissue tumors. It most occurs in the upper trunk area, neck and the extremities. But it is rare in the oral and maxillofacial area [2-3]. The presence of this lesion is more common in the spongy bones of the lower extremities than in the facial bones [4]. Based on its association with the bones, they are divided into intra-bone (inter-medullary, intra-cortical) or bone-attached (parenteral, sub-periosteal) types. Most of these lesions are asymptomatic, and they are randomly seen in the radiography [1]. Jaw Intraosseous lipoma is very rare, and its prevalence has been mentioned in articles 1.0%. Lipoma also is classified according to the amount of tissue in this lesion, in addition to fat. Histopathologically, the most common of which is fibroplipoma, which involves an increase in the amount of fibrosis in the adipose tissue. Others include angiolipoma with more capillaries, Myxolipoma, with a wide range of myxoma changes. The most rare types of lipomas are oste-

olipoma, ossifying lipoma and Lipoma with bone metastases is associated with bone and cartilage changes [5,6]. In this case-report the authors present a new case of intraosseous mandibular lipoma without expansion and pain.

Case Report

A case of this manuscript is a 33-year-old woman who referred to an orthodontic specialist with a complaint about the abnormal teeth and requesting orthodontic treatment. After viewing the lesion in the anterior mandible patient's panoramic radiography by orthodontist, for further investigation, was referred to oral and maxillofacial surgeon. The patient did not have pain and swelling. X-ray CT scan was requested by the surgeon for the patient.

Radiographic Evaluation

Reformatted CBCT study of mandible shows the psudopanoramic and alveolar cross-sectional reconstructed images. The panoramic like image illustrated a solitary unilacular radiolucent lesion with well-defined sclerotic border which has extended between canine teeth and is approximately 17.44 millimete×15.77 millimeter in diameter (Figure 1). Cross-sectional view revealed a regular bordered lesion without any expansion in buccal and lingual plates. Root displacement can be seen in adjacent teeth but root resorption cannot be detected. According to radiographic appearances the best differential diagnosis are simple bone cyst, keratocystic odontogenic tumor and odontogenic myxoma.

Surgery:

An excisional biopsy of the lesion under bilateral mental block anesthesia was undertaken for precise diagnosis. The mucoperiosteal flap was raised in full thickness and the bone was removed by a Bur surgery. After the area was washed, the flap was sutured with vicryl 3-0 and the specimen was kept in formalin10%, then was sent to the pathology department (Figure 2).

Histopathologic evaluation:

The specimen received in formalin 10% consist of multiple pieces of yellow-gray to brown color soft tissue totally measuring 1×0.5×0.5 centimeter. The histopathology feature of lesion under Olympus optical microscope (Tokyo, Japon) showed variable size mature adipocyte with area of hemorrhage. There is no evidence of epithelial lining indicates cyst presence .The fat cells was without cellular atypia or mitotic figure. There was no evidence of recurrence of the lesion after one year. Based on clinical, radiography and histopathology finding, a diagnosis of intraosseous lipoma of the mandible was made (Figure 3).

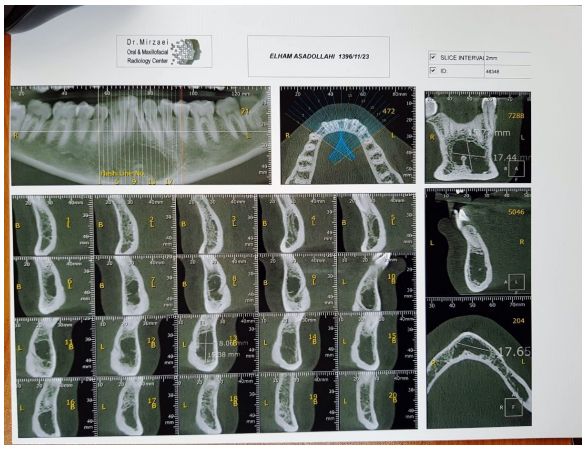
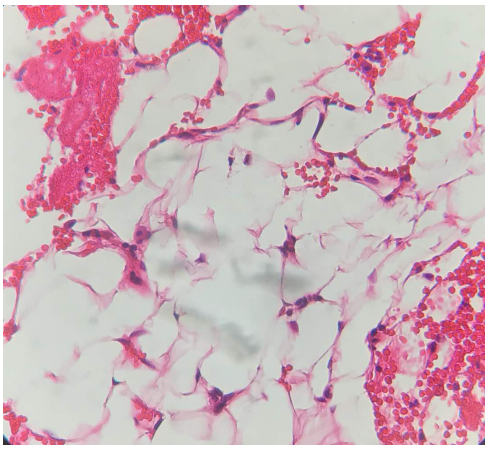


Figure 1. A solitary unilacular radiolucent lesion with well-defined sclerotic border which has extended between canine teeth and is approximately 17.44 millimeter×15.77 millimeter in diameter.



Figure 2. Surgery field in anterior region of mandible.



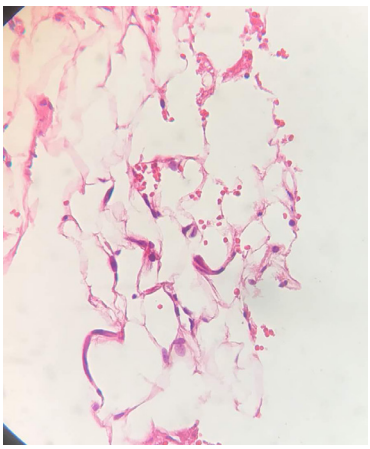


Figure 3. Variable size mature adipocyte without cellular atypia or mitotic figure with area of hemorrhage.

Discussion

Lipoma is the most common mesenchymal tumor and is microscopically divided into different types depending on the type and amount of non-fatty tissues. The most common of which is fibroplipoma, that includes large amounts of connective tissue fibrosis between fat cells. Other types of lipoma are angiolipoma with more capillaries, Myxolipoma, with a wide range of myxoma changes and myolipoma with smooth muscle. The formation of cartilage and bone occurs in some soft tissue tumors, rarely it occurs in the lipoma [5,6]. So osteolipoma is a rare type of lipoma. In 2003, Jones and colleagues evaluated 10 cases of intraoral mesenchymal tumors, of which only one had bone with adipose tissue [7]. According to Fojimura and Enomoto, the use of the mesenchymoma for ostelipoma, which dominantly has fat, is incorrect [3].

There are two theories regarding the pathogenesis of osteolipoma. Most researchers believe that Fatty cells, chondroblasts, and osteoblasts originate from undifferentiated mesenchymal cells. It is assumed that neoplastic changes occur in several undifferentiated cells and then turns to cells that produce fatty cells, cartilage, bone and fibroblast. According to this hypothesis, bone or cartilage in this lesion is due to neoplastic changes. Another hypothesis is that only fat cells are affected by neoplastic changes, and cartilage or bone formation occurs due to fibroblasts metaplasia [3]. The structure and action of some mesenchymal cells can be affected by regional factors such as trauma or systemic problems, such as prolonged ischemia leading to infarction, haemorrhage and calcification [8] Mild continuous trauma and reduced blood supply can cause intralesional metaplasia in lipoma [9]. Most osteolipomas develop within or near the bone [10]. They must be distinguished from parosteal lymphoma, which is located directly on the bone cortex and sub periosteal area and causes patologic changes in the adjacent bone [3,9]. Few of the osteolypomas also occur in soft tissue (Godby). The symptoms of the lipoma in the jaw depend on the position and size of the tumor. If the tumor grows up, it can cause root resorption and even symptoms such as paresthesia [11,2]. Malignant changes may occur in the intraosseous lipoma [12]. Although the origin of intraosseous lipoma is known from the bone marrow adipose tissue, the origin of it are still unknown [2,13,14]. Intraosseous lipoma often occurs in the 4th and 5th decades Buric et al in 2001, reported 13 cases with mandibular intraosseous lipoma [15]. Milgram made the largest case series and reported that men are more likely to have intraosseous lipoma than women with a ratio of 1.6 to 1 [16]. Hart et al Reported that the cause of intrabony lymphoma in the long bones could be due to infarction and nutritional problems [17]. It's hypothesized that in the mandible the obstruction of inferior alveolar artery branches may cause lipoma. In this area, fat cells of the bone marrow tissue may accumulate and develop a lipoma [18]. The present case may also be due to this cause. Another cause of this lesion is trauma [19,2]. But there is no history of trauma in this case. Most of the lipoma occurs in the posterior region of mandible [20,21] and only in three cases, anterior maxilla have been involved.

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