Cemento-ossifying Fibroma: A Case Report

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Cemento-ossifying fibroma is a benign rare tumor of mesenchymal origin seen in the third or fourth decade in females. It arises from the mesenchymal blast cells of the periodontal ligament and can mature into cementum, bone, or fibrous tissue or varying proportions of each. The lesion is most commonly seen in the jaw. It appears as a well-defined circumscribed unilocular radiolucent lesion. Radio-opacity of the lesion depends on the concentration of cement or bone or in the concentration of both. We present the imaging features of cemento-ossifying fibroma in a 73-year-old female patient, involving the left maxilla.

Keywords: Cemento-ossifying fibroma, Expansile lesion, Imaging, Mesenchymal

INTRODUCTION

Cemento-ossifying fibroma is a benign rare benign mesenchymal odontogenic mass seen in the third or fourth decade in females.1 It arises from the mesenchymal blast cells of the periodontal ligament and can mature into cementum, bone, or fibrous tissue or in varying proportions of each. The lesions are seen in head and neck most commonly in the jaw.2 They are benign tumors that grow slowly and are histopathologically similar to fibrous dysplasia, ossifying fibroma, and cement-ossifying dysplasia.3

CASE REPORT

A 73-year-old elderly lady presented to the Outpatient Department of Otorhinolaryngology at St. John’s Medical College and Hospital in February 2013 with a swelling over the left cheek of 1-year duration and a dull aching pain over the swelling for the past 3 months. On clinical examination asymmetry of the face with a diffuse swelling over the cheek was noted (Figure 1). The patient was edentulous. Examination of oral cavity revealed a bulge in the upper gingivo-buccal region (Figure 2). Examination of the nose was unremarkable. Contrast-enhanced computed tomography (CT) of the maxilla was done for further evaluation which showed a large expansile lytic lesion arising from the left maxillary sinus and bone, with gross expansion of both plates of the cortex and multiple areas of trabecular homogenous non-coalescing hyperdensity with areas of mineralized matrix. Multiple cortical breaches at varied sites due to gross expansion were noted (Figures 3 and 4). However, no periosteal reaction or soft tissue was noted. Right maxillary sinus was normal. Considering the age and sex of the patient along with the clinical presentation and imaging findings, the following differential diagnosis was considered: (1) Giant cell reparative granuloma, (2) chondrosarcoma, and (3) ossifying cementoma.

Endoscopic biopsy of the maxillary sinus lesion was planned under general anesthesia. Intraoperatively, a globular smooth mass was noted filling the maxillary sinus. Punch biopsy was taken and nasal cavity packed. Histopathology revealed a cemento-ossifying fibroma composed of benign fibrous stroma with entrapped trabecular woven bone along with smoothly contoured calcified round deposits of cementum.

Excision of the mass was done under general anesthesia via a combination of transnasal endoscopic route and a sublabial approach with complete hemostasis. Follow-up after 6 months revealed no lesion on clinical evaluation.

This report describes the case of the 73-year-old female patient in whom the diagnosis in question, i.e., cemento-ossifying fibroma was not the principal one. Findings namely an expansile enhancing radio-lucent lesion in the
left maxillary sinus causing cortical break were seen in the case described here, and hence, a diagnosis of cemento-ossifying fibroma was considered in the differential, though lower down in the list, before histopathological evaluation. The differential diagnosis included giant cell reparative granuloma and chondrosarcomas.

Giant cell reparative granuloma occurs almost exclusively in the mandible, in young women. Radiologically, it presents as a small lucent region that gradually enlarges into a multilocular appearance. The lesion may demonstrate expansion, root resorption, and erosion through or remodeling of the overlying cortex. Due to radiological similarity, this was considered as the primary diagnosis.

Chondrosarcomas are aggressive malignant cartilaginous tumors which on imaging show a lytic pattern, cortical erosion, and soft tissue extension. The central chondroid matrix shows ring-and-arc pattern of mineralization. Chondrosarcoma was considered as differential as there was evidence of cortical breaks in the maxillary bone. Ultimately,
a histopathological diagnosis proved unequivocally the true identity of the lesion and the patient underwent a total excision. She was found to be disease free on follow-up at a later date (Figures 5 and 6).

**DISCUSSION**

Cemento-ossifying fibroma is a benign rare tumor of mesenchymal origin seen in the third or fourth decade in females. It arises from the mesenchymal blast cells of the periodontal ligament and can mature into cementum, bone, or fibrous tissue or varying proportions of each. The lesion is most commonly seen in the facial bones most commonly jaw followed by maxilla. Occasionally, seen in children, where it is more aggressive variant and is known as juvenile aggressive cemento-ossifying fibromas.

On histopathology, these tumors are composed of fibrous tissue, calcified tissue resembling bone and/or cementum. It is further divided into divided into cementifying fibroma and ossifying fibroma depending on the tumor’s content.

These are usually well-circumscribed masses which expand the underlying bone. They are usually slow growing small benign tumors but can become large, particularly when they arise from the maxilla or paranasal sinuses as there is more room to expand. They are initially lucent on X-ray with soft tissue attenuation on CT. As they mature, they gradually develop increasing amounts of calcification/ossification. They usually expand the bone without cortical breach; the soft tissue component is seen to enhance following contrast administration.

Surgical excision is the treatment of choice, and we usually require bone grafting or reconstructive surgery. Recurrence following complete excision is rare. However, it has been reported to be as high as 28%.

**CONCLUSION**

Cemento-ossifying fibroma a rare benign fibro-osseous lesion though known to occur in female patients in the third to the fourth decade was found to present itself in the above-mentioned case belonging to the seventh decade. Therefore, in an expansile lesion in the jaws with varying amounts of radiopacity and minimal bony erosion, a differential diagnosis of the cement-ossifying tumor should be kept in mind.

**REFERENCES**