Granular cell ameloblastoma mimicking oncocytoma

Nirima Oza, Karoon Agrawal
Department of Oral Pathology, Mahatma Gandhi Post Graduate Institute of Dental Sciences, Pondicherry, Department of Plastic, Burns and Maxillofacial Surgery, Safdarjang Hospital, New Delhi, India

ABSTRACT
Granular cell ameloblastoma is a variant of ameloblastoma where cells located in the central portion of the follicles have granular eosinophilic cytoplasm and the peripheral cells resemble ameloblasts. A case of granular cell ameloblastoma of the mandible having very similar histopathological features of oncocytoma (oxyphilic adenoma) is reported where tumor cells were arranged in cords, sheets and follicles and their cytoplasm was full of eosinophilic granules.

Key words: Granular cell ameloblastoma, mandible, odontogenic tumor, oncocytoma

INTRODUCTION
Granular cell ameloblastoma is a variant of ameloblastoma. Histopathologically, it is characterised by having numerous large eosinophilic granular cells. These cells usually form the central mass of the epithelial tumor islands and cords. Sometimes even peripheral cells also exhibit similar features which are usually non granular cells.[1] But in rare cases of granular cell ameloblastoma, majority of the islands are composed of granular cells. Such granular cell rich ameloblastoma is histologically similar to oncocytoma (oxyphilic adenoma) as seen in salivary glands.[2] Here a case of granular cell ameloblastoma mimicking oncocytoma is presented.

CASE HISTORY
A fifty years old male reported to the department with a swelling of left side of the lower jaw. The swelling was of four years duration, slowly increasing in size and was painless but was causing definite discomfort. There was a history of spontaneous loss of teeth in the region of the swelling. Patient was diabetic and was not on regular medication.

On extra oral examination, the swelling was found extending from the angle of the mouth till the posterior border of the ramus [Figure 1]. Intra orally, there was a hard swelling extending from parasymphysis region of left side of the mandible till the condyle and the coronoid process. There was expansion of both the cortical plates of the mandible. All molars on affected side were missing. The mucosa over the swelling involving alveolar ridge was ulcerated because of trauma from the opposite teeth. The buccal and lingual vestibules were obliterated [Figure 2].

Radiographs revealed large, well defined, soap bubble type of radiolucency from distal to lower left canine involving the body of the mandible and ramus sparing the coronoid process and the condyle [Figures 3 and 4].

Fine needle aspiration smears showed polygonal cells with eosinophilic granular cytoplasm. Since the report was not conclusive, an incisional biopsy was taken. It showed polygonal cells arranged in cords, mostly in two rows having eosinophilic granular cytoplasm and eccentrically placed nuclei [Figure 5]. These features were in favor of an oncocytoma. As oncocytomas are not reported developing in the mandible, incisional biopsy was repeated twice which showed similar features. Hence, provisionally the lesion was diagnosed as oncocytoma. Considering massive destruction, hemimandibulectomy of the mandible was planned. With medications, blood sugar level was brought under control. Under general anaesthesia and antibiotic coverage, segmental resection of the mandible from left parasymphysis to ramus sparing coronoid process and condyle was done that included tumor mass with a margin of healthy appearing bone [Figure 6]. A clear demarcation between the tumor and the surrounding tissue was found at the time of surgery. A contoured Kirschner wire (K wire) was placed.

HISTOPATHOLOGIC FINDINGS
Cut section of the specimen revealed the jaw bone to be...
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Figure 1: Swelling extending from the angle of the mouth till posterior border of the ramus

Figure 2: Intraorally, buccal and lingual vestibules were obliterated, teeth in the site of the tumor were missing and there was ulceration because of trauma from the opposite teeth

Figure 3: PA view radiograph revealed soap bubble type of radiolucency extending from parasympysis region of the mandible extending in the ramus till coronoid process and condyle

Figure 4: Lateral oblique view radiograph revealed soap bubble type of radiolucency extending from parasympysis region of the mandible extending in the ramus till coronoid process and condyle

Figure 5: Photomicrograph of the incisional biopsy showing cells arranged in cords having eosinophilic granular cytoplasm. (hematoxylin and eosin, ×100)

Figure 6: Segmental resection of the mandible done from distal to lower left canine to the condyle including clinically normal appearing bony margins

replaced by a whitish yellow coloured tumor with large cystic areas [Figure 7]. Histopathologically the sections from multiple bits as well as deeper sections revealed the lesion to be composed entirely of polygonal large cells with
granular eosinophilic cytoplasm [Figure 8]. Nuclei were open, vesicular and were pushed to one corner [Figure 8]. Few cells had pyknotic nuclei. The cells were arranged in cords, nests, large follicles and sheets. Collagenous fibrous stroma was scanty and was present between the tumor cell nests. Blood vessels were seen in the stroma as well as within tumor islands. The histopathological features were similar to that of the incisional biopsy. Hence extensive sampling was done, that revealed nests of tumor cells resembling granular cell ameloblastoma [Figure 9].

DISCUSSION

Oncocytoma is characterised microscopically by large cells which have an eosinophilic cytoplasm and distinct cell membrane. They tend to be arranged in rows or cords and sometimes in sheets. The above mentioned case was similar to oncocytoma by having polygonal cells with eosinophilic granular cytoplasm arranged in cords, islands and sheets.

In the granular cell ameloblastoma, there is marked transformation of the cytoplasm of the stellate reticulum like cells, so that the cells take on a very coarse, granular, eosinophilic appearance. This often extends, to include the peripheral columnar or cuboidal cells as well. This case was different from the usual type of granular cell ameloblastoma by the following histopathological findings:
1. The tumor nests were composed of only polygonal granular cells [Figure 5].
2. Peripheral cells also had similar morphology with eosinophilic granular cytoplasm [Figures 5 and 6].
3. Cells were arranged in cords [Figure 5].

The histologic findings from the incisional biopsy suggested an oncocytoma. After extensive sampling of the tumor, some nests were found to resemble granular cell ameloblastoma [Figure 9]. Our case was therefore diagnosed as a variant of granular cell ameloblastoma where cytoplasm of majority of cells had granular changes.

Although oncocytomas are not reported occurring in the mandible, possibility can not ruled out as on rare occasions, salivary gland tumors arise centrally within the jaws. The most common and best recognized intrabony salivary tumor is the intraosseous mucopidermoid carcinoma. However other salivary tumors have been reported to develop within jaws, including adenocarcinoma, acinic cell carcinoma and monomorphic adenoma.

We believe this report underlines two important findings that the ameloblastomas may show marked cytomorphic heterogenicity and extensive sampling of the tumor may be necessary to come to a final diagnosis.

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