

SURGICAL MANAGEMENT OF PLEXIFORM AMELOBLASTOMA: A CASE REPORT

ABSTRACT

Ameloblastoma is a benign but locally invasive neoplasm of odontogenic epithelium. Patients usually present late after the tumor achieves considerable size to cause facial disfigurement. Diagnosis made mainly from tissue biopsy. The challenges in the management of this tumor are to provide complete excision as recurrence rate is high. Reconstruct the bony defect in order to give reasonable cosmetic and functional outcome to the patient.

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KEYWORDS

Ameloblastoma. Reconstruction. Surgical management.

INTRODUCTION

The ameloblastoma is a slow growing, benign tumor of epithelial origin. It may arise from the enamel organ, the dental follicle, the periodontal ligaments and the lining of odontogenic cysts¹. Ameloblastomas are the most common odontogenic tumors. About 80% of the tumors occur in the mandibular molar and the ascending ramus area². A typical intraosseous ameloblastoma is locally invasive with islands of tumor infiltrating cancellous marrow spaces without causing bone resorption. As a consequence simple curettage is not sufficient and recurrence rates of 55–90% have been reported with enucleation³. The recommended treatment is radical resection of the affected part of the jaw.

Various methods of reconstruction of mandible have been described. Replacement with cancellous bone and a tray, fibula graft, rib graft, spine of scapula, and iliac crest graft are few of them³⁻⁵.

CASE REPORT

A 24-year-old female patient reported to our dental unit with complaint of swelling on right side of face since last 11 months. A history of progressive increase in size not associated with pain.

On extra-oral examination there was a uniform ovoid swelling of approximately 3 x 4 cm over lower jaw, extending from

the corner of mouth to the angle of mandible antero-posteriorly. It was non-tender, bony hard in consistency, non-pulsatile and neither compressible. There was no sensory or motor deficit on right side of face. There was no cervical lymphadenopathy.

Routine biochemical and hematological investigations were within normal limits.

The panoramic view of the jaw revealed multi-cystic lesion in the right mandible. Inferior alveolar canal displaced caudally. Biopsy of the mass suggested the diagnosis of benign odontogenic tumor with ameloblastic differentiation.

Under general anesthesia and nasoendotracheal intubation and all aseptic precautions, tumor mass was exposed buccally and lingually via extended submandibular incision (Figure 1). Osteotomy cut was placed and completed buccally and lingually. Whole of right hemimandible exposed till condyle and coronoid process above. Right temporomandibular joint preserved. The expansile swelling was removed and sent for histopathology (Figure 2).

Defect was reconstructed by using AO titanium reconstruction plate (Figure 3). Drain was secured and closure was done in layers (Figure 4). Antibiotics, analgesics and anti-inflammatory drugs were given postoperatively. Extraoral sutures were

removed on 7th postoperative day. Patient has been kept under periodic follow up since then. Postoperative patient had no complaints in chewing, swallowing or speech articulation. Mouth opening was in normal limit and with no recurrence in two year follow up (Figure 5).

Figure1. Intra operative view.

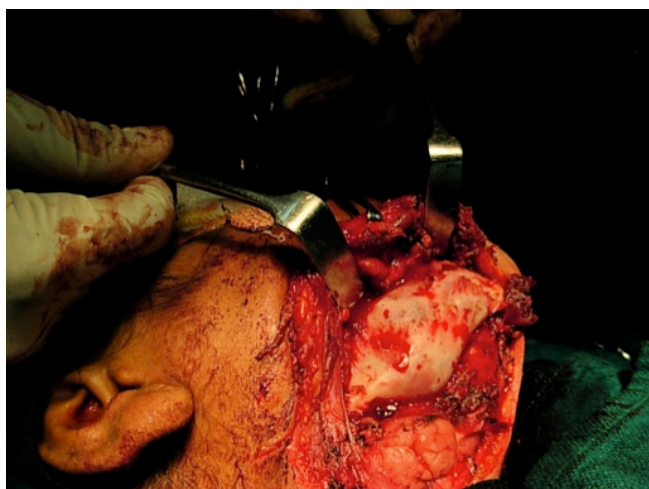


Figure 2. Tumor mass.



Post operative histopathological examination revealed plexiform ameloblastoma.

Figure 3. AO titanium reconstruction plate.



Figure 4. Drain was secured and closure was done in layers.



DISCUSSION

Ameloblastoma is a benign odontogenic neoplasm but is often aggressive and destructive, with the capacity to attain great

size, erode bone and invade adjacent structures⁶. It is the most common odontogenic tumor although it represents only about 1% of tumors and cysts of the jaws⁷.

Figure 5. Postoperative view of the patient after two year.



In the mandible (80% of ameloblastomas), 70% are located in the area of the molars or the ascending ramus, 20% in the premolar region, and 10% in the anterior region⁸. About 10-15% of ameloblastomas are associated with a non-erupted tooth. In the present case, a large plexiform ameloblastoma was found in the mandible.

Ameloblastoma appears equal frequency between sexes, although a higher frequency in females than in males has been

described⁶. In our case, the patient was female.

Clinically, it frequently manifests as a painless swelling, which can be associated with facial deformity, ulceration and periodontal diseases. In our case, clinical examination revealed a large, expansive mass in the ascending ramus and molar region of the mandible. The swelling was hard, painless to palpation and covered by normal mucosa.

Histologically, ameloblastoma is characterized by the proliferation of epithelial cells arranged in a collagenous fibrous connective tissue stroma of conjunctive vascular tissue in locally invading structures that resemble the enamel organ at different stages of differentiation⁶. The tumor found in our patient was an ameloblastoma of the plexiform type. The term "plexiform" refers to the appearance of anastomosing islands of odontogenic epithelium in contrast to a follicular pattern.

When the results of treatment of ameloblastomas are assessed, several factors are important. First, long term follow up is essential because this neoplasm has the capacity for continued growth. Successful treatment in this context may be defined as treatment that renders an acceptable prognosis, causes minimal disfigurement, and is appropriate on the age and general

health of the patient and on the size, location and duration of the tumor.

In our case surgical resection of large sized ameloblastoma was done to prevent recurrence and mandible stabilized and reconstructed with AO titanium reconstruction plate.

CONCLUSION

In conclusion, en-bloc tumor resection reduces the chance of tumor recurrence but resulted in large mutilating bony and soft tissue defects as indicated by our experience and also in many other series. The challenge in the management of large ameloblastoma of the mandible is not only to excise the tumor completely in order to prevent recurrence but also to provide the best reconstruction method.

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