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# Giant Ameloblastoma of Mandible - A Case Report

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## Abstract

Ameloblastoma is an uncommon benign, locally aggressive odontogenic neoplasm that usually occurs in the vicinity of the mandibular molars or ramus. Although surgery is the mainstay of treatment, the extent of resection is controversial. Radical resections, including marginal and segmental mandibulectomy, result in local control rates exceeding 90%. About 80% of ameloblastomas occur in the mandible mainly the third molar region and the remaining 20% in the upper jaw. The relatively high recurrence rate of ameloblastoma is influenced by the type of molecular etiological factors, the management approach, and how early the patient presents for treatment.

**Keywords:** Ameloblastoma, Chemotherapy, Carboplatin Oral Tumours

## Introduction

As stated by Robinson, ameloblastoma is usually unicentric, nonfunctional, intermittent in growth, anatomically benign and clinically persistant.

The tumour is relatively uncommon and accounts for about 1 % of all oral tumours, 9-11% of odontogenic tumours.

The peak incidence is in 3rd to 4th decades of life and male: female ratio is 1:1.Ameloblastoma accounted for 60.3% of all odontogenic tumours in Indian population with mean age of presentation of 30.2 years 80% in mandible and 20% in maxilla.

Most common tumour of odontogenic origin is ameloblastoma which develops from epithelial cellular elements and dental tissues in their various phases of development.

It is a slow growing persistent and locally aggressive neoplasm of epithelial origin.

Clinically ameloblastomas may be relatively asymptomatic and can be detected incidentally on radiological imaging.

Patient often complaints of a slow growing painless swelling.

Facial deformity if present may range from very mild to severe in delayed presentations. They may also be associated with presence of unerupted teeth in particular the mandibular third molar.

Numerous operative procedures including enucleation, curettage, marsupalization and radical resection have been described in the management of ameloblastoma.

**Case Report**

A 54-year male patient reported our department of oral and maxillofacial surgery, Sri Hasanamba Dental College and Hospital with the chief complaint of swelling and pain in his left side lower one third of face since 1 month.

Patient gave history of mild pain in his left side parasymphysis region since 1 month then patient visited a private dental clinic where pus drained and extraction of 45 tooth done under local anaesthesia then patient referred to our unit for further management.

Patient gave history of smoking beedi 3 to 4 times a day since 10 years and consumes alcohol occasionally.

He was a moderately built, moderately nourished patient and well oriented with time, place and person. His vitals were in normal limits.

On further examination extraorally, we noted a mild swelling in the left side parasymphysis region of mandible, skin over the swelling appears normal with mild tender on palpation and no localized rise in temperature.

Intraorally vestibular obliteration noted in the 33, 34, 35, 36, 37 and 38 regions with severe tenderness on palpation on the same region the site was soft in consistency.

Prominent Buccal cortical plate expansion noted in the same region.

34, 36, 37 and 38 teeth were grade 1 mobile.

Based on our clinical examination we came to a provisional diagnosis of Ameloblastoma or odontogenic keratocyst of the mandible.

Routine blood investigations and orthopantomograph done.

Opg revealed well defined radiolucent lesion noted at the left side body and ramus of the mandible approximately of size 4 *4 cm size. (figure 7).

In view of the imaging and clinical findings, the presumptive diagnosis of ameloblastoma or odontogenic keratocyst of mandible was considered. An incisional biopsy of the lesion was done under local anesthesia, which reported the tumor to be an Ameloblastoma of the mandible.

After obtaining prior consent, complete examination of systemic conditions was done and in absence of any systemic conditions, the surgical procedure was done. The patient was intubated under general anesthesia and after achieving adequate vasoconstriction using 2% lidocaine with 1:80,000 adrenaline,

Vestibular incision placed from the anterior border of the ramus of mandible extending both buccally and lingually till the vestibule of 44 tooth. Full thickness mucoperiosteal flap reflected and the lesion was exposed, erosion of the buccal and lingual cortical plate was noted. Extraction of 31 tooth done and osteotomy cut carried out through the extraction socket .The reconstruction plate was adapted from the left side ramus till the right parasymphysis region till 44 tooth region. Posterior osteotomy cut made distal to 38 tooth .Segmental resection of the mandible containing the lesion carried

out (figure 2) smoothening of the margins carried out and chemical cauterization of the excised lesion site done with modified Carnoy's solution for 5 minutes .(figure 3)

Reconstruction plate fixation done connecting right parasymphysis and left ramus region using 2.7 *10mm screws (4 no.s) in the parasymphysis region and 2.7 *8 mm screws at the left side ramus region (3 no.s ).(figure 4)

Genioglossus muscle sutured to the reconstruction plate with 1-0 mersilk.(figure 4 )

Minivac drains placed at the left angle region.

Closure achieved using 2 layers using 3-0 vicryl (round body).

The excised specimen (figure 5) was sent for histopathological examination.

Histopathological evaluation of excised specimen revealed fragments of tissue lined by mucosa and respiratory epithelium with surface ulceration and subepithelial fibrocollagenous stroma with inactive odontogenic epithelium in cords and nests. Fibrocollagenous stroma showed edema with chronic inflammatory cell infiltrates with occasional lymphoid follicles.(figure 6)

Patient was discharged after 3 days post-operatively and prescribed with oral antibiotic and analgesic course. Suture removal was done after 14 days. Patient was educated about post-operative care and told to come for regular follow-up. No post-operative complications was recorded. An orthopantamograph was taken 6 months postoperatively (figure 8).

To prevent the mandibular deviation , after 6 months a palatal based guide flange prosthesis (figure 9 ,10) was given to the patient and he was satisfied with the prosthesis.

**Discussion**

Both primary and recurrent ameloblastomas are treated by either surgical or non-surgical approach. The surgical approach could be conservative (type I) or radical (type II) surgery.

Management of ameloblastoma has been controversial because of the unique biological behavior of this disease as a slow-growing, locally invasive tumor with a high rate of recurrence. Recurrence rates of ameloblastoma are reportedly as high as 15-25% after radical treatment and 75-90% after conservative treatment.

Two therapy strategies are mentioned in literature: a conservative way of treatment and radical procedures.

Non-radical surgical procedures like enucleation and curettage, combined with liquid nitrogen spray cryosurgery, or just drilling of the perilesional bone are mentioned to be useful in unicystic ameloblastomas, especially in children and young patients. Other authors show high rates of reccurence of ameloblastoma after conservative treatment protocols and therefore recommend radical surgical treatment

Gardner and Pecakl defined enucleation as the "removal of a lesion by shelling it out intact." The improbability of shelling out an intrabony lesion without violating its integrity makes this term confusing and inaccurate. Reported recurrence rates of solid ameloblastomas treated by curettage range from 55% to 90%.

The radical approach includes Resection, the excision of a lesion that includes a measurable perimeter of investing bone. In the mandible this could be done with (segmental) or without (marginal) continuity defect or extend into a disarticulation if the temporomandibular joint is involved.

The efficacy of chemotherapy in the management of primary and recurrent ameloblastomas is still being explored as chemotherapy can improve clinical outcomes

in non-surgical patients. Several drug regimens may be used in combination with surgical resection and/or or radiotherapy. These include the combinations of vinblastine + cisplatin + bleomycin; adriamycin + cisplatin +cyclophosphamide; doxorubicin + cisplatin; and gemcitabine + carboplatin (Van Dam et al, 2010; Amzerinet al, 2011). However, there is still a need for more multicenter randomized controlled clinical studies to validate the use of radiation and chemotherapy as treatment options for ameloblastoma.

Curettage is removal of a lesion from bone with preservation of bone continuity by scraping due to absence of an intact encapsulation.

Segmental mandibulectomy with resection of 1–2 cm of uninvolved bone and immediate reconstruction is currently the treatment of choice in multicystic mandibular ameloblastoma.

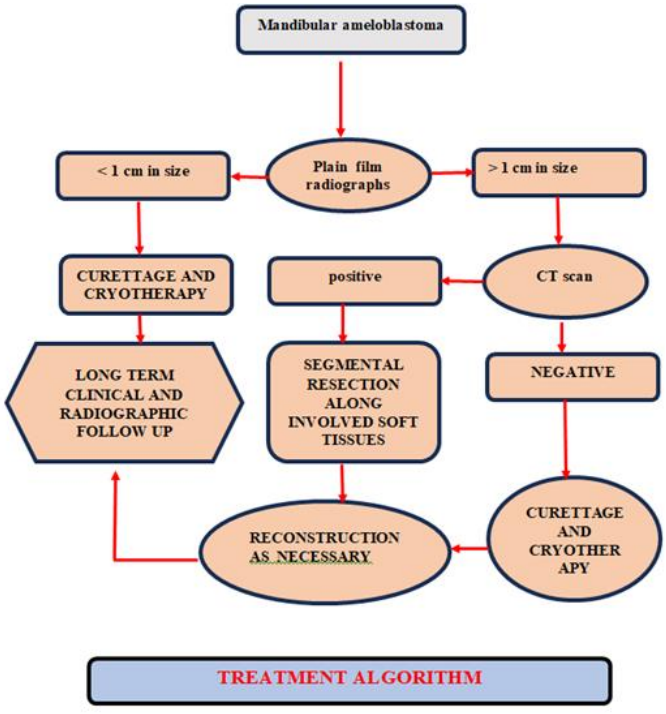


Figure 1:

Figure 2:

Figure 3:

Figure 4:

Figure 5:

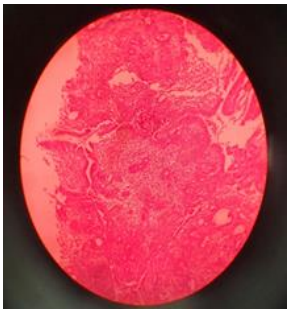

Figure 6:

Figure 7:

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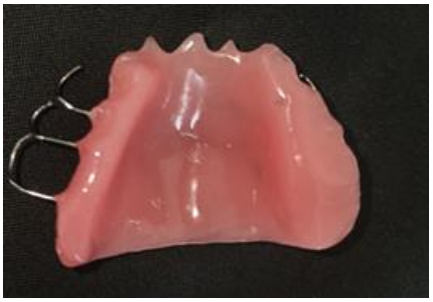

Figure 9:

Figure 10:

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