

Research Article

MANAGEMENT OF PLEXIFORM AMELOBLASTOMA OF POSTERIOR MANDIBLE WITH RESECTION AND ARCH BAR FIXATION: A CASE REPORT

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ABSTRACT

Ameloblastomas are benign but ‘locally malignant’ odontogenic tumors of epithelial origin, being able to reach large sizes. The conventional type consists of six histological forms: plexiform, follicular, acanthomatous, desmoplastic, granular, and basal cell type. The unicystic type is subdivided into mural, luminal, and intraluminal forms. This case report presents a clinical, radiographic, and histopathological evaluation of a patient diagnosed with plexiform ameloblastoma of the right mandible. Our case report outlines the diagnostic evaluation, treatment approach, and clinical outcome using only wide local excision of tumour, primary closure and arch bar fixation.

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INTRODUCTION

The word ameloblastoma was coined by Churchill in 1930. It was first described by Cusack in the year 1827¹. Ameloblastoma is a frequently encountered tumour arising from odontogenic epithelium, and is characterized by a benign but locally malignant behaviour with high rates of recurrence². It is described by Robinson (1937)¹ as a benign tumor that is usually unicentric, nonfunctional, intermittent in growth, anatomically benign and clinically persistent³. Common age group of ameloblastoma is 30-60 years age group with more male predilection, while mandible being more commonly affected than maxilla²⁴. Management involved wide local excision of the tumour with adequate resection margins as it can spread microscopically beyond the normal clinical margins³.

CASE REPORT

A 66 year-old male presented to Department of Oral and Maxillofacial Surgery, King Georges Medical University with complaints of swelling and discomfort in the right mandible for the past 7 days. The patient reported no significant medical history or previous dental procedures. Clinical examination revealed a firm, painless, extra-oral swelling on the right side of the mandible, extending from the body to ramus region with size approximately 3cmx3cm. There were no signs of ulceration or paraesthesia and the swelling was diffuse. The swelling was tender on palpation. Intraorally there was no significant swelling or growth seen (refer to Figure 1a,b,c)



Figure 1a,b Pre-operative clinical photographs



Figure 1c Pre-operative clinical intraoral photograph
Radiographic examination with CBCT (refer to Figure 2) scan revealed a well-defined, multilocular radiolucent lesion

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involving the right mandibular body, ramus, and coronoid process with displacement of adjacent teeth. The lesion showed characteristic "soap bubble" appearance on OPG (refer to Figure 3).

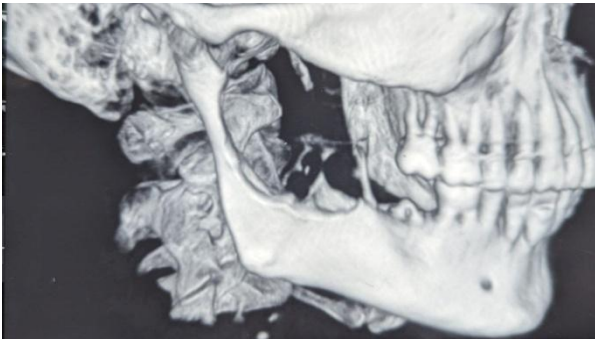


Figure 2 CBCT of the lesion showing multilocular lesion



Figure 3 OPG showing characteristic soap bubble appearance of lesion

Histopathological examination of an incisional biopsy specimen confirmed the diagnosis of plexiform ameloblastoma. Microscopic evaluation revealed interlacing strands of odontogenic epithelial cells surrounding the myxoid cystic areas. Peripheral palisading was appreciated focally with lack of stellate reticulum. Islands of basaloid cells with hyperchromatic cells and squamous metaplasia was also seen, consistent with histological features of plexiform ameloblastoma.

Treatment

Given the size and extent of the lesion, a multidisciplinary approach was adopted. The patient underwent a hemimandibulectomy with disarticulation along with importance to adequate margins. The incision chosen was Robson's modification of standard lip-split incision (refer to Figure 4). This was followed by primary closure and intraoperative intermaxillary fixation of the remaining teeth to establish the occlusion. The patient had been kept on long term follow up. There was eventful healing without any derangement of occlusion or asymmetry of face (refer to Figure 5). The resected sample was sent for sampling and confirmatory diagnosis of Plexiform Ameloblastoma was established. The margins were confirmed via the biopsy report to be free from the tumour invasion.

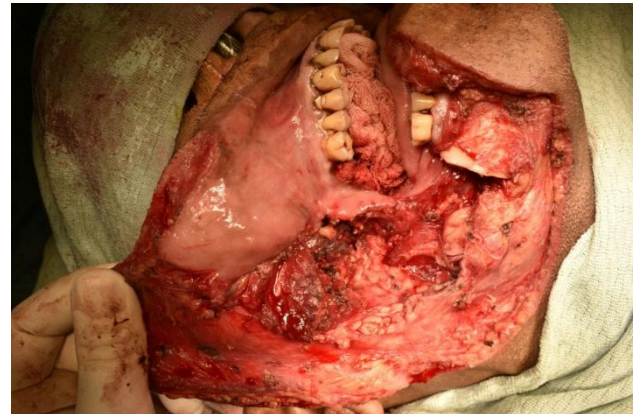


Figure 4 Intraoperative photograph of lesion



Figure 5 Post Operative Clinical Photograph

DISCUSSION

The term plexiform refers to the appearance of interlacing strands of odontogenic epithelium in contrast to the follicular type which presents with islands of odontogenic epithelium⁴. Initially, it was not considered as an ameloblastoma, rather hyperplastic proliferation as it failed to meet criteria given by Vicker and Gorlin⁵. Later Gardener et al led to the conclusion that this type should be included as a type of ameloblastoma⁶. Ameloblastoma appears with equal frequency between sexes, but slightly more in males^{7,7}. Age group which was already mentioned to be in range of 30 to 60 years and site is body-ramus region of mandible. In our report the patient was male and coming under the age group in which ameloblastoma is highly prevalent. Also the common site of ameloblastoma is observed in our study. Since the lesion was multicystic and solid type a resection margin of 1.5cm to 2cm was taken in our case. Since the posterior mandible was involved it was easy to re-establish the occlusion after hemimandibulectomy with only arch bar fixation and intermaxillary fixation with the remaining teeth. Thus there was also no need for reconstruction plate. Since the patient was from older age

group reconstructive option of free fibula was omitted as well and thus primary closure was performed. This is greatly benefit the patient was there will be no opportunity for hardware failure (e.g - plate infections, plate exposure, plate fractures sinus tracts and fistulas) that is commonly seen with reconstruction plates. Donor site morbidity is also a concern for free fibula patients which was prevented from happening in our case.

CONCLUSION

This case report aims to highlight the clinical outcome of management of unicystic plexiform ameloblastoma with mandibular resection and arch bar fixation. The recurrence potential of ameloblastoma justifies radical treatment of the lesion, hemi-mandibulectomy in this case. Thanks to the selection of hemimandibulectomy, at follow-up no recurrence is seen. Avoiding complex reconstructive procedures following resection prevents related complications and multiple major surgeries.

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