

MULTILOCULAR AMELOBLASTOMA OF MANDIBLE-A CASE REPORT

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ABSTRACT

Ameloblastoma is a true neoplasm of odontogenic epithelial origin. It is the second most common odontogenic neoplasm, and only odontoma outnumbers it in reported frequency of occurrence. Its incidence, approximately 1% of all oral tumours and 18% of all odontogenic tumours, combined with its clinical behaviour, make ameloblastoma the most significant odontogenic neoplasm. The ameloblastoma occurs in three variants, each with specific implications for treatment and a unique prognosis: solid or multicystic, unicystic, and peripheral. A painless expansion of the jaws is the most common clinical presentation; neurosensory changes are uncommon, even with large tumours. Slow growth is the rule, with untreated tumours leading to tremendous facial disfigurement especially for solid ameloblastoma. It is characterised by high recurrence rate (up to 70% depending on treatment modality) and potential to undergo malignant transformation and to metastasize (in up to 2% cases) .we report a case of multicystic ameloblastoma in a 56 year old male.

KEY WORDS:

Ameloblastoma, Multilocular,

INTRODUCTION

According to WHO 1992 definition Ameloblastoma is defined usually as :- unicentric, nonfunctional, intermittent in growth anatomically benign, locally invasive polymorphic neoplasm consisting of proliferating odontogenic epithelium, which usually has a follicular or plexiform pattern, lying in a fibrous stroma¹. It accounts for 5-15% of all intraosseous ameloblastoma². Ameloblastomas originate from the epithelium involved with the formation of teeth: enamel organ, odontogenic rests of Malassez, reduced enamel epithelium and odontogenic cyst lining. Ameloblastoma has been categorized broadly into three biological variants: cystic (unicystic), solid, and peripheral³. The multicystic or solid ameloblastoma, a variant of ameloblastoma, first described by Robinson and Martinez in 1977, is reported to have a more aggressive biological behaviour with devastating morbidity and higher recurrence rate than the classic unicystic ameloblastoma. The tumour is known for its propensity for local recurrence, especially if soft tissue invasion or cortical bone perforation has occurred.

CASE REPORT

A 56 year old male patient reported with the complaint of a progressively enlarging hard mass over the left lower jaw for the past 10 years (fig-1). The swelling started as a painless swelling which grew slowly to attain the present size. There was no history of similar swelling in the body. On extraoral examination, a single ovoid swelling about 12-15 cm in size was seen in the left body and angle of mandible. The skin over the swelling was normal, without visible pulsation or secondary changes. On palpation the swelling was found to be non-tender, non-compressible, non-reducible and firm in consistency. Intraorally, there was buccal and lingual expansion extending from 45 to sigmoid notch with obliteration of the alveolobuccal and alveololingual sulcus. A provisional diagnosis of ameloblastoma was made. No cervical lymphadenopathy is present and neurosensory testing reveals normal mandibular nerve function and no other focal neurological deficit (sensory changes are particularly common in malignancies and are not usually seen in benign lesions such as ameloblastoma). In general examination the patient is well developed and well nourished and appears distressed about his possible diagnosis.

IMAGING

In this patient, the panoramic radiograph demonstrates a 12-15 cm multilocular, cystic-appearing lesion extending from right first premolar to the sigmoid notch of left side, also there is loss of continuity at the inferior border (FIG.2). The CT scan shows an expansile lesion of the left region mandible with cortical perforation seen on axial and coronal sections at the body and ramus. There is no evidence of lymphadenopathy and no areas of abnormal enhancement (contrast-enhanced imaging provides improved delineation of soft tissue and can aid in determining any associated vascular malformation).

The differential diagnosis of a multilocular radiolucent lesion of the body and ramus is best categorized as lesions of cystic, neoplastic, or vascular origin, with the latter being less common. Although the above presentation is classic for an ameloblastoma (bony expansion of the body and ramus mandible with a multilocular or soap bubble appearance), the lesion cannot be distinguished on clinical and radiographic parameters.

HISTOPATHOLOGICAL ASPECT:-BIOPSY

For diagnosis of this multilocular and expansile lesion, aspiration followed by an incisional biopsy was performed with local anaesthesia. Needle aspiration negative for blood or any clear fluids and therefore suggestive of a mass lesion. A typical buccal mucoperiosteal third molar incision was reflected (it is important to make the incision where the definitive surgical incision would ultimately be made in order to minimize dehiscence). A large sample of the cystic lining was taken from two different locations. The wound was closed with 3-0 chromic interrupted sutures, and a specimen was sent for histopathological examination.

Microscopic evaluation reveals islands of epithelium that resemble enamel organ in a fibrous connective tissue stroma attached to the basement membrane surrounding the islands are tall columnar cells exhibiting reversed polarity. This is consistent with the diagnosis of a multicystic, follicular ameloblastoma.

TREATMENT

Successful treatment is the treatment that renders an acceptable prognosis, causes minimal disfigurement and is based on the behaviour and potential of growth, the growth patterns of the various physical forms, duration, the anatomic site of occurrence, clinical extent and the size of the tumour and histological assessment. The treatment modality is also determined considering the age and general health of the patient. Curettage should never be considered as the treatment modality, since intraosseous multicystic lesions recurrence rate is 55 to 100% after curettage, and for intraosseous unicystic lesions 18 -25%.

In general, treatment must focus on the ability of the tumour to invade surrounding bone tissue. The average extension into surrounding bone beyond the normal tumour margin is 4.5mm with a range of 2 to 8 mm. With this in mind, resection must be at least 10mm beyond the bony (and radiographic) margin of the tumour for large, multicystic-type ameloblastoma. For this patient, given the size and extensive, aggressive nature of the lesion a resection was undertaken via extra oral approach. Tumour en bloc resection with continuity defect was elected in this case due to close anatomic proximity of the tumour margin at the inferior border, as well as cortical perforation and involvement of mucoperiosteal (FIG 3, 4, 5&6). Special attention was paid to the site of perforation, in which a suprapariosteal resection was performed, and the overlying mucosa and periosteum was resected with the specimen. The condyle was retained and the ramus and angle was reconstructed using a standard reconstruction plate. The mandibular defect for this patient was subsequently reconstructed using an iliac crest cancellous bone graft, performed at 4 months (to allow time for soft tissue healing), via an extra oral approach. A segmental resection with an osteotomized vascularised fibula free flap and reconstruction plate is a good alternative, especially with recurrences or large, aggressive tumour.⁴

DISCUSSION

Ameloblastoma often persists as a slow growing, painless swelling, causing expansion of the cortical bones, perforation of the lingual and/or buccal plates and infiltration of soft tissues, occurring more frequently in the posterior mandible⁵. The lesions are often asymptomatic. In many patients, the lesion typically appears as a circumscribed radiolucency that surrounds the crown of an unerupted mandibular third molar, radiographically resembling a dentigerous cyst. There are seven histological types of ameloblastoma: follicular, plexiform, acanthomatous, granular cell, desmoplastic, basal cell, and unicystic variant, with the first two being the most common. Ameloblastoma can be either solid or multicystic, but they frequently demonstrate both characteristics. Although the majority of the tumours originate from within the maxilla or mandible, they can also be peripheral. The different histological variants don't significantly alter treatment considerations except for the unicystic and the peripheral types, which can typically be treated with enucleation and curettage⁶. The multicystic ameloblastoma has a recurrence up to 50% during the first 5 years postoperatively so long term follow up is must. The literature indicates the cystic variant is biologically less aggressive and has a better response to enucleation or curettage than the solid ameloblastoma^{7,8}.

CONCLUSION

Ameloblastoma is an aggressive tumour of odontogenic origin. There is some difference of opinion about preferable method of treatment, and the only unanimity centres around the fact that complete removal of neoplasm, regardless of how it is accomplished, will result in a cure of the patient. Treatment decisions for ameloblastoma are based on the individual patient situation and the best judgement of the surgeon^{9, 10}. Recurrence is the most worrisome long-term complications. Recurrence can be due to persistence of the original tumour that was not resected or actual recurrence of new neoplastic cells¹¹. Aggressive surgical therapy does not necessarily eliminate the chance of tumour recurrence. All patients require long term follow up and imaging studies as needed.

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FIG. 1 PRE-OPERATIVE PHOTO OF PATIENT



FIG. 2 – O.P.G OF JAW



FIG 3. PRE-OPERATIVE INCISION

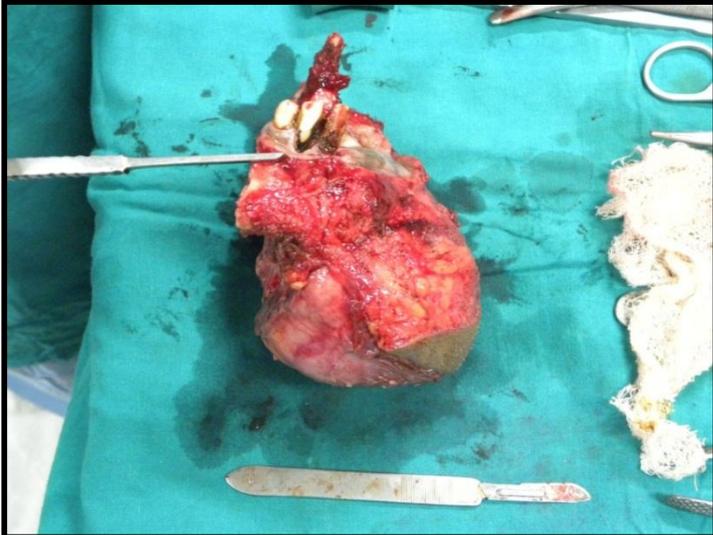


FIG 4 – RESECTED MANDIBLE



FIG 5 CUT SPECIMEN OF RESECTED MANDIBLE



FIG 6 – 5TH DAY OF POST OPERATIVELY