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Ameloblastoma of the Mandible – A Rare Case Report

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Case Report

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Abstract: Ameloblastoma is a benign tumour arising from the jaw. It is a locally invasive tumour of epithelial odontogenic origin. It is common in the third and fourth decade. Multicystic type of ameloblastoma is a locally aggressive lesion. Ameloblastoma is a locally aggressive benign tumour of the mandible, which is painless and slow growing. It constitutes 1% of cysts and tumours of the jaw. It has equal gender predilection. Commonly ameloblastomas are found in molar ramus region. When the maxilla is involved, it has the potential to spread insidiously to involve the infra temporal fossa, orbit and skull base; thus a thorough assessment is essential. Ameloblastoma either presents as unilocular or multilocular lesion in radiograph. It has a honey comb appearance. In extensive lesions involving mandible and maxilla we require CT and MRI to establish the diagnosis. Ameloblastoma needs a complete excision and reconstruction. It is also treated by enucleation, curettage and surgical excision. Recurrence rate is approximately 18 to 20 %.
Keywords: Ameloblastoma, Magnetic resonance imaging.

INTRODUCTION

Ameloblastomas are locally aggressive benign tumours that arise from the mandible [1], or less commonly from the maxilla. Usually presented slowly but continuously growing hard painless lesion near the angle of the mandible in the 3rd to 5th decades of life which can be severely disfiguring if left untreated.

MATERIALS AND METHODS

A 50 year old man reported with a swelling in the lower jaw for the past one year. He also complained of pain while chewing food for the past 6 months. There was no history of trauma.

Investigations

An MRI neck was done at the Department of Radiodiagnosis, Sree Balaji Medical College, and Chennai. Magnetic Resonance Imaging was done in axial, coronal and sagittal sections with T1, T2 and STIR sequences. It revealed T2 / STIR hyperintense lesion measuring ~ 5.8 x 8.4 x 5.6 cm was noted in the region of the mandible with extensive destruction of the both hemi mandibular bodies and involvement of alveolar facets (Left > Right). Few cystic areas were noted within. Associated enlarged lymph nodes were seen in bilateral submandibular and submental region. Peri apical cyst was noted along the root of right maxillary 1st and 2nd molar teeth. Left mandibular molars and 2nd premolar were not seen. Above findings hereby infer that this is a case of ameloblastoma of mandible.

DISCUSSION

Ameloblastoma accounts for 11% of odontogenic tumours [2]. Ameloblastoma is a benign epithelial tumour. It is an aggressive tumour which can destroy the surrounding bone and invade adjacent structures. Ameloblastoma of the lower jaw can progress to different sizes ranging from 1-15 cm. The complications are facial asymmetry, displacement of teeth, malocclusion of teeth and pathological fractures. In our case the patient presented with a swelling in the lower jaw which was hard on palpation. The lesion involved molar region of the mandible with expansion of the buccal and lingual cortical plate.

Etiology

Ameloblastoma arises from epithelial cells and dental tissues.

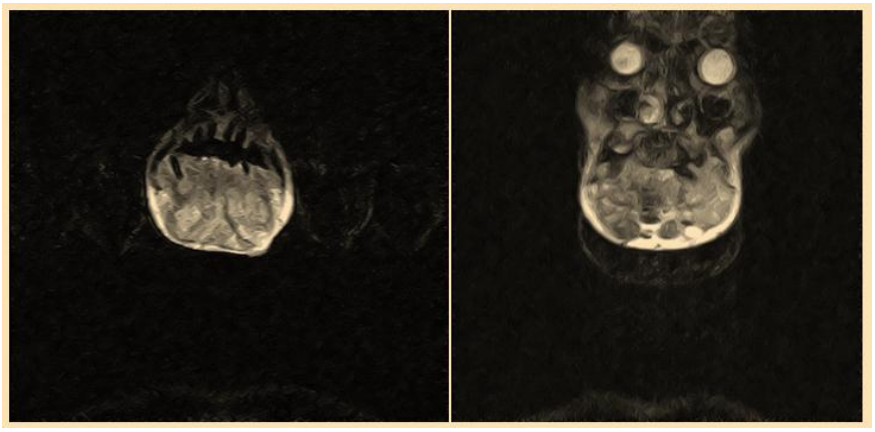

Fig-1, 2: T2 weighted MRI coronal section of mandible shows hyperintense signal in mandibular region

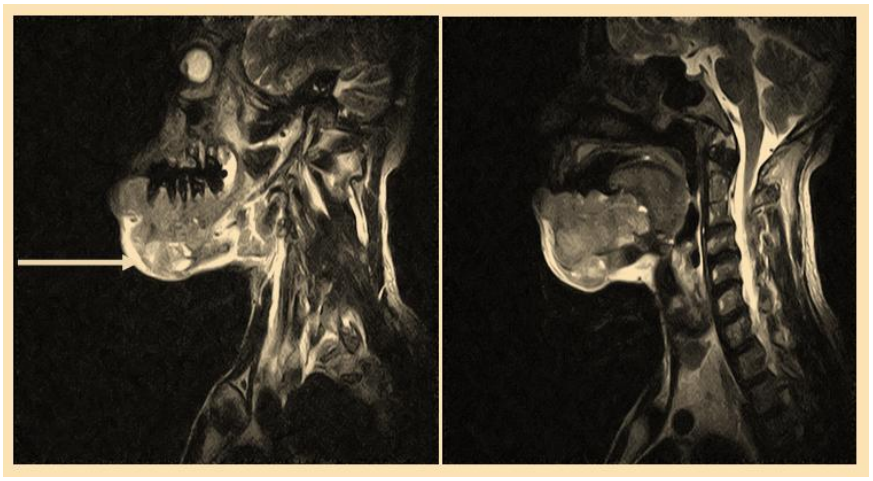

Fig-3, 4: T2 weighted MRI sagittal section of mandible shows hyperintense signal in mandibular region with extensive destruction of right hemimandible

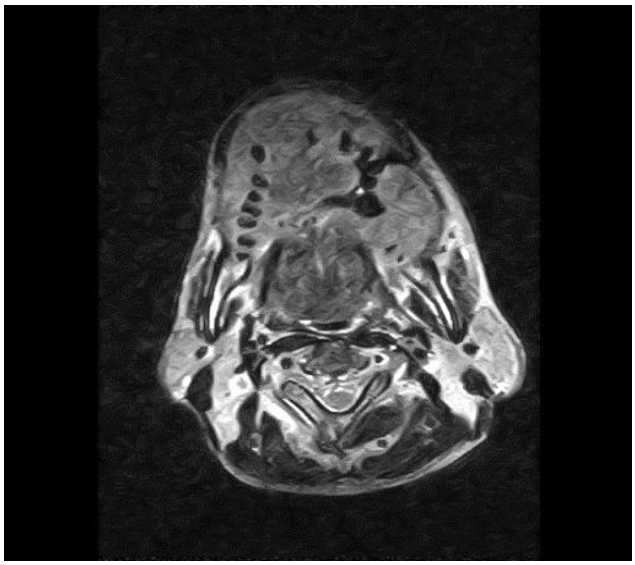

Fig-5: T1 weighted MRI axial section of mandible shows lesion in the region of the mandible with extensive destruction of the both hemi mandibular bodies and involvement of alveolar facets

Epidemiology and Prevalence:

Ameloblastomas are slow growing and tend to present in the 3rd to 5th decade of life. They have equal gender predilection [3]. More than 70 % of ameloblastomas are located in the molar ramus. Less than 20 % are associated with unerupted tooth.

Classification

Ameloblastomas may be extraosseous or intraosseus. They may be sessile or pedunculated and desmoplastic, mixed cystic and solid types [4]. More aggressive forms include mixed cystic and solid forms. Follicular, plexiform types, acanthomatous and granular cell types comes under histopathological variants. Desmoplastic, basal cell, clear cell ameloblastoma, keratameloblastoma and papiliferous ameloblastomas are very rare. Very less aggressive variant is plexiform pattern.

Clinical Presentation

In our case the patient presented with slow growing hard mass which was painless. This lesion may present with pain or anaesthesia of the affected area. More than 30 % of the patients presented with swelling, 13 % of the patients presented with paraesthesia of the innervated region of the mandibular nerve, 10 % of cases had altered occlusion of the teeth. 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 mandible [5].

Radiographic features

Amelobastoma has a unilocular or multilocular radiolucency. It contains septa or locules of variable size to produce a soap bubble appearance. It has a well defined corticated margin. It may produce jaw expansion with perforation of the bony cortex.

Panoramic radiograph and CT

Multicystic ameloblastomas account for 80-90% of cases which are classically expansile "soap-bubble" lesions, with well-demarcated borders and no matrix calcification. Occasionally erosion of the adjacent tooth roots can be seen. When larger it may also erode through cortex into adjacent soft tissues.

MRI

In general, ameloblastomas demonstrate a mixed solid and cystic pattern, with a thick irregular wall, often with solid papillary structures projecting into the lesion. These components tend to enhance vividly which is very helpful to distinguish them from other lucent lesions of the mandible. A moderate to high signal with good conspicuity of the tumour margin appears in T 1 weighted images with gadolinium enhancement and T 2 weighted images.

The literature indicates the cystic variant is biologically less aggressive and has a better response to enucleation or curettage than the solid ameloblastoma [6, 7].

CONCLUSION

Ameloblastoma is the commonest of all mandibular swellings. For small lesions conventional radiographs is sufficient. But for large lesions we require CT and MRI. All patients require long term follow up and imaging studies as needed. MRI helps in deciding the mode of treatment and further management.

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