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Case Report

Follicular Ameloblastoma : A Case Report

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Introduction:

The odontogenic tumors are heterogenous group of tumors that occur on gnathic bones. They arise mainly from remnants of teeth forming apparatus. The odontogenic tumors consist only 1.3 to 15 % of all jaw tumors. The ameloblastoma consists only 1% of all jaw tumors.^{1,2} It is prevalent in 3rd to 5th decade, mainly in males and commonly found in mandible. It can originate from the embryonic remains of odontogenic cysts, the dental sheet and the enamel organ or the stratified squamous epithelium of the oral cavity.³ It is a slow-growing, painless, swelling causing expansion and sometimes perforation of the lingual and/or buccal plates, and infiltration of soft tissue. There is often delay in the diagnosis because of its slow-growing nature.⁴ It has various clinical and histopathological types. The different types show difference in their prevalence, treatment needed and recurrence rate.

Case Report:

A 32 years old male patient reported to department of oral medicine and radiology with chief complaint of pain and swelling in lower front teeth region of jaw since last 6 months. On clinical examination a well defined solitary swelling seen extending from mesial aspect of 43 to distal aspect of 44 anteroposteriorly and from marginal gingiva to mandibular vestibule superoinferiorly. It is roughly round in shape and approximately 2 X 2 cm in size (figure 1). The swelling is slightly tender, hard, non-reducible and non-compressible on palpation. The associated teeth i.e. 31, 41, 42, 43 showed endodontic access opening. Hence, provisionally it was diagnosed as chronic periapical abscess.

On intraoral periapical radiograph a well defined, multilocular, mixed radiolucent radiopaque lesion seen extending from apex of 31 to posterior to the 44 (figure 2). Hence, OPG (figure 3) and CBCT was taken to rule out posterior extent. The lesion seen extending upto distal root of 46 (figure 4). The internal structure was multilocular having granular appearance with presence of curved and wispy septa (figure 5). The 43 was displaced mesially and 44 was displaced distally. Also the 42, 43, 45, 46 and 47 showed root resorption. The buccal cortical plate showed expansion and perforation in the 43 and 44 region (figure 4). The inferior alveolar nerve canal was in close approximation to the lesion with intact

corticated borders (figure 6). Hence, radiographically it was diagnosed as central giant cell granuloma of right side of mandible. The entities like aneurismal bone cyst, ameloblastoma, ameloblastic fibroma and odontogenic myxoma were considered as differential diagnosis.

After radiographic examination the surgical excision of the lesion was planned. Also the endodontic treatment was planned for 31, 41, 42 and 43.

The patient was briefed about the surgical procedure, its need and risks. Initially the endodontic treatment was carried out for 31, 41, 42, and 43. The informed consent was obtained from the patient. The splinting of endodontically treated teeth was done before starting the surgical procedure. The surgical procedure was performed under local anesthesia. The crevicular incision was given from 32 to 46 buccally and lingually from 41 to 44. A sharp dissection was done to raise a full thickness mucoperiosteal flap. The bony window was made buccally and lingually in 43 and 44 region. The surgical excision and complete curettage of the lesion was done, followed by lavage of surgical cavity with copious normal saline irrigation (figure 7). After the curratage, the apisectomy was done with 31, 41, 42 and 43 along with retrograde filling. Once the procedure was completed an IM injection of dexamethasone and diclofenac was given.

The excised tissue was immersed in 10% formaline solution and sent for histopathological examination.

The histopathological examination showed connective tissue stroma containing islands and follicles of odontogenic epithelium. The follicles were lined by tall columnar cells having palisaded arrangement. The nuclei were hyperchromatic and showed reversal of polarity. The infranuclear vacuoles were seen resembling ameloblast like cells. The follicles showed areas of cystic degeneration and acanthomatous changes. The interconnecting strands of ameloblastomatous epithelium were present at some places.

Regular follow ups were taken at 1 week, 2 weeks and 1 month which showed uneventful healing of the wound. (figure 8)



Figure 1: Intraoral swelling seen in 43, 44 region



Figure 2: IOPA

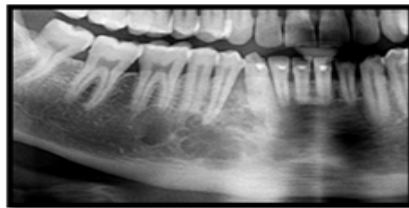


Figure 3: Cropped image of OPG

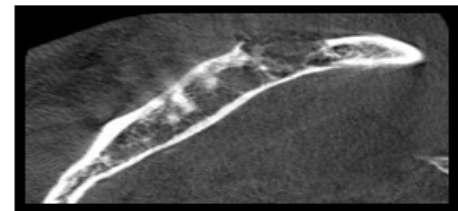


Figure 4: Axial section of CBCT showing exyension of lesion and perforation of buccal cortical plate

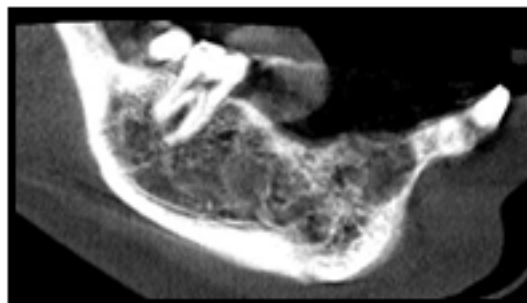


Figure 5: Sagittal section of CBCT showing multilocular, granular appearance with curved wispy septa and resorption of roots of 46

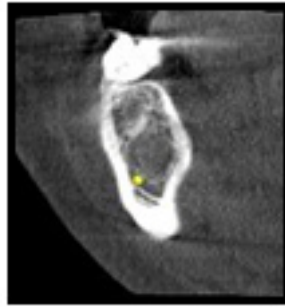


Figure 6: close approximation of inferior alveolar nerve to the lesion

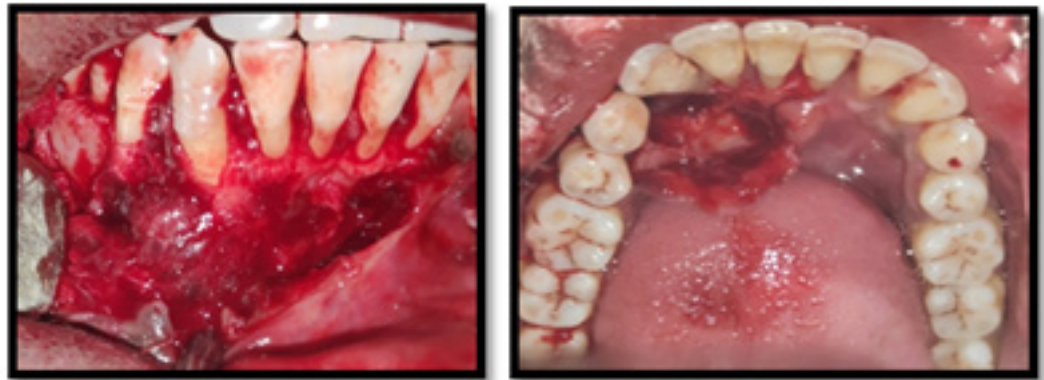


Figure 7: Intra-operative pictures

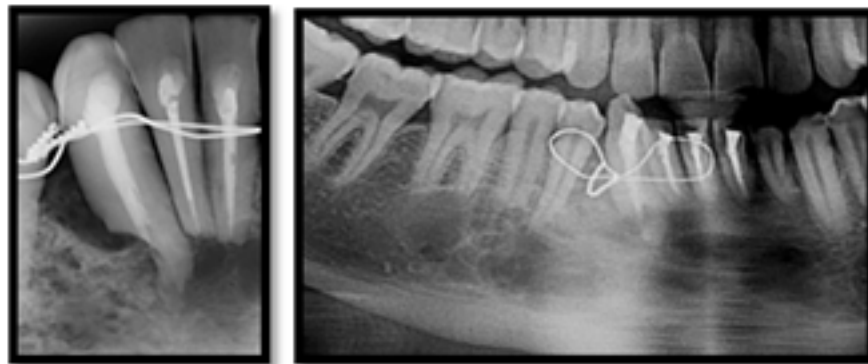


Figure 8: Radiographs at the time of recall after 1 month

Discussion:

Odontogenic tumors is a disorders of self limited growth, ranging from benign to malignant neoplasms, to malformations of dental tissues. They are mainly jaw lesions but some may present as localized gingival swellings, i.e. peripheral odontogenic tumors. Mostly all of the odontogenic tumors are benign however, ameloblastomas show locally infiltrative behavior.⁵ According to the classification given by Barnes for odontogenic tumors, the ameloblastoma is a tumor originating from odontogenic epithelium.⁶

The term ameloblastoma was coined by Churchill in 1934, formerly it was known as adamantinoma suggested by Malassez in 1885. But as there is no hard tissue formation seen, Churchill replaced the term. The ameloblastoma was first reported by Guzac in 1826 as tumor of jaw, after that in 1868 Broca reported tumor of this nature in scientific literature, though the first thorough description of ameloblastoma was given by Folkson in 1879.⁷

The ameloblastoma arises from remnants of tooth forming apparatus. The most common ways of pathogenesis are :

- 1) Cell rests of the enamel organ
- 2) Hertwig's sheath

- 3) Epithelium of odontogenic cysts
- 4) Disturbances of the developing enamel organ
- 5) Basal cells of the surface epithelium of the jaws
- 6) Heterotopic epithelium in other parts of the body, like the pituitary gland.

The Ameloblastoma is a most common tumor of odontogenic origin. It is a long standing, slow growing tumor which is mostly asymptomatic but leads to facial asymmetry. It generally shows equal prevalence in both genders but somewhat more in males, in 3rd to 5th decade of life. The 80% cases are found in the mandible, principally the molar and ramus area and only 20% cases in the maxilla. The tumor is locally aggressive but it does not have potential of malignant transformation.^{8,9}

In 2005 WHO classified ameloblastoma into 4 types¹⁰ :

- 1) Solid / multicystic ameloblastoma
- 2) Extra-osseous or peripheral ameloblastoma
- 3) Desmoplastic ameloblastoma
- 4) Unicystic ameloblastoma

In 2017 WHO modified this classification as follows¹¹ :

- 1) Conventional ameloblastoma
- 2) Unicystic ameloblastoma
- 3) Extraosseous / peripheral ameloblastoma
- 4) Metastasizing (malignant) ameloblastoma

The radiographically ameloblastomas show well defined and frequently corticated borders are seen. The internal structure varies from being completely radiolucent to mixed appearance. The coarse and curved septa give soap bubble or honeycomb appearance to the lesion. The dislocation and extensive root resorption of associated teeth is common. The cortical plates in the region show expansion and thinning leading to perforation.¹²

Histologically it has 6 various types ⁷:

- 1) Follicular
- 2) Acanthomatous
- 3) Basal cell
- 4) Granular cell
- 5) Plexiform
- 6) Desmoplastic

According to Reichart PA (1995) the follicular ameloblastoma is the most commonly encountered variant. It is composed of many small discrete islands of tumor having a peripheral layer of cuboidal or columnar cells whose nuclei are generally well polarized. These cells show characteristic features like ameloblasts or preameloblasts. The cells enclose a central mass of polyhedral, loosely arranged cells resembling the stellate reticulum. Clinically, some cases of follicular ameloblastoma shows tiny cysts that are evident when the lesion is excised and examined carefully. In these cases, the stellate reticulum like cells undergo complete breakdown or cystic degeneration, and then there is often flattening of the peripheral columnar cells so that they resemble low cuboidal or squamous cells. Cyst formation is relatively common in this follicular type of ameloblastoma.⁷

The surgery is a standard treatment for ameloblastomas. The ideal surgical option is resection as conservative enucleation have a high recurrence rate.¹³ The segmental resection with 1 to 2 cm bone margins and at least one adjacent uninvolved anatomic barrier for proper margins is preferable. The segmental resection results in a discontinuity of the defect.¹⁴

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