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Case Report

Ameloblastoma – An asymptomatic odontogenic tumor

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Abstract:

A 20-year-old male presented with a small swelling in the vestibular area of the right lower second mandibular molar region. Clinically, the area was slightly tender and the tooth had grade two mobility. There was no nerve deficit or adenopathy in the head and neck. Vitality testing of the tooth revealed the tooth to be vital. Radiographically, the tooth had a relatively-defined radiolucent lesion in the periapex with resorption of the mesial and distal root apices. We have discussed the probable treatment plan with the patient and going for extraction of involving tooth and excision of whole lesion with complete margin which is suspected as ameloblastoma.

Key words: *Ameloblastoma; odontogenous cyst*

Introduction:

Benign mandibular swellings can be due to a wide variety of lesions and can be divided into odontogenic and nonodontogenic origin. Among these are ameloblastoma, radicular cyst, dentigerous cyst, keratocystic odontogenic tumour, central giant cell granuloma, fibroosseous lesions and osteomas. Ameloblastoma is the commonest benign tumour of odontogenic origin which developed from epithelial cellular elements and dental tissues in their various phases of development, arising from dental embryonic remnants possibly from the epithelial lining of an odontogenic cyst; dental lamina or enamel organ; stratified squamous epithelium of the oral cavity; or displaced epithelial remnants[1].

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The most common types of ameloblastoma are the follicular and plexiform varieties, followed by the acanthomatous and granular cell types. Uncommon variants include desmoplastic, basal cell, clear cell, keratoameloblastoma, and papilliferous keratoameloblastoma. When the desmoplastic type coexists with other types, it is called a 'hybrid' ameloblastoma.

While these tumors are rarely malignant or metastatic (that is, they rarely spread to other parts of the body), and progress slowly, the resulting lesions can cause severe abnormalities of the face and jaw. Additionally, because abnormal cell growth easily infiltrates and destroys surrounding bony tissues, wide surgical excision is required to treat this disorder[2].

Case report:

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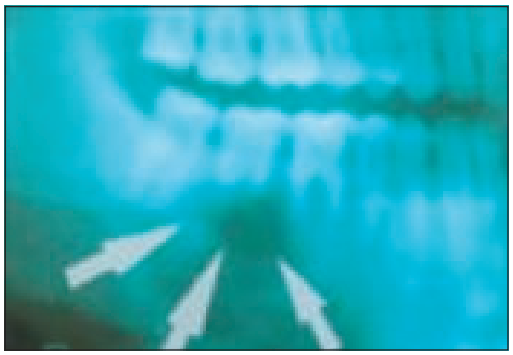

Figure 1: *OPG showing lesion*

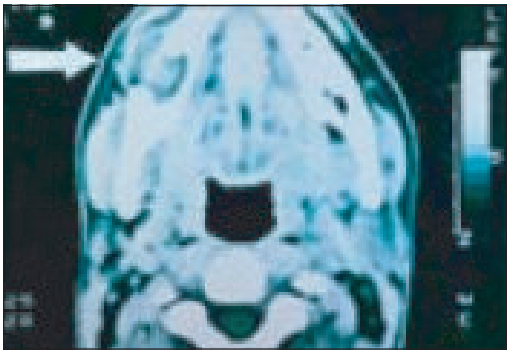

Figure 2: *CT scan showing lesion*

the area was slightly tender and the tooth had grade two mobility. There was no nerve deficit or adenopathy in the head and neck. Vitality testing of the tooth revealed the tooth to be vital. Radiographically, the tooth had a relatively-defined radiolucent lesion in the periapex with resorption of the mesial and distal root apices.We attempt extraction of involved tooth and complete surgical exicision of lesion with whole margin.

A frontal radiograph of the mandible revealed a diffuse, ill-defined, predominantly radio-opaque lesion interspersed with fine radiolucent areas, producing a honeycomb appearance; this arose under right lower 2nd molar. Panoramic X-ray and CT scan revealed a cystic lesion located in the right side of mandible under lower 2nd molar region.

The tooth was extracted by his dentist and the lesion was removed and submitted for pathologic examination. Several millimetres of the bony socket was also ground away using a round bur before wound closure perhaps because a fibro-osseous lesion or a keratocyst was suspected. The pathology report however, diagnosed a plexiform ameloblastoma.

Discussion:

The ameloblastoma is a benign but aggressive neoplasm of odontogenic origin. However, no enamel or hard tissue is formed by the tumour cells. It comprises 1% of all radiolucent jaw lesions. Ameloblastomas arise from either neoplastic transformation of odontogenic cyst epithelium or from residual epithelial rests left over from the formation of teeth, such as remnants of the enamel organ (reduced enamel epithelium) found over the crown of an unerupted tooth, remnants of Hertwig's epithelial root sheath (rests of Malassez) in the periodontal ligament, or remnants of the dental lamina (rests of Serres). Ameloblastomas may be confused clinically with other jaw lesions, and occasionally with infiltrating neoplasms of the maxillary sinus, particularly those of salivary gland origin[3].

Ameloblastomas typically occur around the age of 30-40 years; children are rarely affected. Odontogenic tumours that are more likely to appear in children are adenomatoid odontogenic tumour and ameloblastic fibroma. Ameloblastoma may appear anywhere in the jaws, although the molar-ramus area of the mandible is the favored location. Affected patients are asymptomatic, and lesions are usually discovered during routine radiographic examination or because of jaw swelling. Ameloblastoma in the mandible can progress to great size and cause facial asymmetry, displacement of teeth, loose teeth, malocclusion, and

pathologic fractures. Tumor size may ranges from 1 to 16 cm at presentation which result from expansion of bone and invasion into soft tissue. Typically ameloblastoma present as painless slow growing mass and in this case it took about two years before the patient developed symptoms such as significant facial asymmetry, malocclusion and difficulty in chewing. This patient also had parasthesia over the left cheek particularly over the distribution of mandibular division of trigeminal nerve[4].

Radiographically, ameloblastomas usually appear as unilocular or multilocular pericoronal radiolucencies often associated with impacted teeth. These characteristically exhibit slow but unrelenting and destructive growth. Periapical presentation of an ameloblastoma is very rare. Thus, it is usually not suspected when it occurs in this location. Teeth presenting with periapical ameloblastomas are often vital, however, there may be associated pulpal pathosis in which case diagnosis may be more difficult. Ameloblastoma is seen either as an ill-defined mass containing osteolytic and sclerotic areas or as multifocal radiodense flecks within a radiolucent background, resembling a honeycomb. This is because of the infiltration of the tumor cells into the adjacent marrow spaces, with simultaneous vigorous osteoblastic activity[5].

Treatment of ameloblastomas is primarily surgical. There has been some debate regarding the most appropriate method for surgical removal of ameloblastomas. These range from conservative to radical modes of treatment. The conservative modalities include curettage, enucleation and cryosurgery; while the radical modalities are marginal, segmental and composite resections[6].

There is a lack of consensus over the most appropriate treatment modality. Proponents of conservative approach believe that ameloblastoma though, locally invasive, are essentially benign in nature, therefore, they should be treated as such. Of the 15 cases, 7 (46.7%) recurred after the first operation, all but one of which was within 5 years of surgery. The peak period of recurrence was 3 years. Of the 7 cases that recurred, 6 of them were solid multicystic type. Despite the obvious high recurrence rate in their study, the authors recommended that large ameloblastoma with no cortical perforation be treated by curettage with 0.5–1 cm of clinically uninvolved surround bone. For solid-multicystic ameloblastoma of the mandible, a resection of the jaw should be approximately 1.5–2 cm beyond the radiological limit, in order to ensure that all the 'microcysts' and 'daughter cysts' are removed[7, 8].

Conclusion:

It is reasonable to assume that this case illustrates the malignant portion in the spectrum of ameloblastomas. It is possible that ameloblastoma shows a variety of histologic and biologic behaviours ranging from benignity to frank malignancy. Cases of ameloblastoma should thus be studied carefully, correlating their histologic pattern with biologic behaviour to detect subtle changes in histology that may predict aggressive behaviour. When the diagnosis of an ameloblastic carcinoma is made, an assessment of nodal metastasis and evidence of distant metastasis is required. A staged work-up consisting of a neck examination, a CT scan of the area and a chest radiograph becomes necessary. Surgical treatment usually requires jaw resection with 2 to 3 cm bony margins and consideration of contiguous neck dissection, both prophylactic and therapeutic. Meticulous follow-up is essential because of recurrence.

References:

1. Marx RE, Smith BH, Smith BR. Swelling of the retromolar region and cheek associated with limited mouth opening. J Oral Maxillofac Surg 1993; 51: 304.
2. Assael L. Surgical management of odontogenic cysts and tumors. *In* Peterson LJ et al.: Principles of Oral and Maxillofacial Surgery. Volume 3, Lippincott 1992; 694–697.
3. Williams TP. Aggressive odontogenic cysts and tumors. Oral Maxillofac Surg Clin N Am 1997; 55: 332–335.
4. Motamedi MHK, Khodayari A. Cystic ameloblastomas of the mandible. Med J Islamic Rep Iran 1992; 6: 75–79.
5. Wood NK, Goaz PW, Jaocobs MC. Periapical Radiolucencies. In Wood NK, Goaz P W. Differential Diagnosis of Oral and Maxillofacial Lesions 1997; Philadelphia: CV Mosby 252–277.
6. Macintosh RB. Aggressive surgical management of ameloblastoma. Clin Oral Maxillofac Surg 1991; 3: 73.
7. Hollows P, Fasanmode A, Hayter JP. Ameloblastoma: A diagnostic problem. Br Dent J 2000; 188: 243–244.
8. Regezi JA, Sciubba JJ, Pogrel MA. Atlas of Oral Pathology. WB. Saunders: Phila 2000; 98–99.