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Ameloblastoma- A Review of 10 Cases.

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ABSTRACT

Ameloblastoma is a benign odontogenic tumor which is slow growing and have a locally agressive nature. The treatment of this tumor is a matter of concern as it has a high recurrence rate. 10 patients with ameloblastoma who reported to sree balaji dental college and hospital were treated surgically during the year 2011-2013. The treatment included non radical and radical surgeries. Non Radical surgery is conservative treatment done by enucleation and curettage. Radical surgeries done for larger invasive tumors which includes segmental resection and hemi mandibulectomy. There was no recurrence with the minimum follow up period of one year.

Keywords: Ameloblastoma, tumor, enucleation, resection

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INTRODUCTION

Ameloblastoma is one of the common tumors having epithelial origin and account to about 23% of odontogenic tumors [1]. In 1827, Cusack first described ameloblastomas [2]. Ameloblastoma is benign in nature having a aggressive behaviour. [3] 20% cases of tumors can be seen in the upper jaw mostly in the region of canine and molars. In the mandible, 70% are present in the ascending ramus or molar region, 20% are seen in the region of premolars and 10% in the anterior region.[4] Ameoloblastoma occurs equally in the both the sexes [5]. It can occur in any age group mostly between the third and fifth decades of life.[6] Ameloblastomas can be clinically classified into 4 groups: unicystic, muliticystic or solid, peripheral and malignant. Histologically, ameloblastomas are divided into follicular and plexiform, its subtypes, acanthomatous, grandular cell, spindle cell, desmoplastic and basal cell [7-10].

This tumor is mostly asymptomatic in the beginning stages., which implicates that they are diagnosed later on after attaining a larger size. The most common symptoms are pain, discomfort and swelling [2,11]. In the surgical management of the tumor, the challenges faced are to prevent recurrence by complete excision without leaving any reminisce and reconstruction of the bony defect to provide function and esthetics to the patient [12].

This article discusses and reports the clinical and radiographic characteristics and management of ameloblastoma in 10 patients.

MATERIALS AND METHODS

10 patients who reported to sree balaji dental college and hospital, chennai and diagnosed with ameoloblastoma were treated between the year 2011 to 2013 with 1 year of follow ups. Out of the 10 patients, 6 were males and 4 females. The age of the patients varied between 35 to 60 years. Among the 10 patients 5 were apparently healthy, 2 were diabetic and 3 were hypertensive. The patient's health condition did not alter the treatment plan of the patients.

Clinical information regarding age, sex, location and size of the tumour, its clinical manifestations were recorded and ortho pantamo gram radiographs was taken for all the patients for evaluating the radiological boundaries and to gather information regarding the size and the location of the tumor.

Final diagnosis was done after the histological examination of the specimen taken by biopsy. The surgical treatment was divided into radical and non radical. The radical surgery is the procedure in which the tumor is resected completely or partially leaving a minimum of 2 cm margin of normal bone, with or without the continous defect. The treatment in the non radical section includes enucleation and curettage of the lesion.

Post operatively, all the patients were given antibiotics (amoxicillin with clavulanic acid) and analgesics for a period of one week. Patients were called for follow ups every 3 months for a period of a year.

RESULTS

A total of 10 patients were treated for ameloblastoma between the year 2011 to 2013. The mean age of the patients was 47.5 (35-60 years). Out of the 10 patients, only one tumor was located in the maxilla (posterior region)(10%) while the other 9 tumors were located in the mandible (90%). Among the 9 tumors, 3 were in the body of the mandible, 4 present in the bony and angle and 2 located involving the body, angle and ramus of the mandible. The surgeries done were segmental resection, hemi mandibulectomy, enucleation and curettage.

There was no recurrence seen in the period of one year follow up. Only in 1 patient out of 10 patients pus discharge was noted during 6 months review. The infected region that is in the lower anterior mandible, under local anaesthesia curettage was done and 2 screws surrounded by granulation tissue were removed. After 1 year period, the infected region was apparently healthy with no disturbance to the stability of the reconstruction plate. (fig7)

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There was no other wound healing disturbances in the rest of the 9 patients.

Figure 1: Preoperative clinical picture

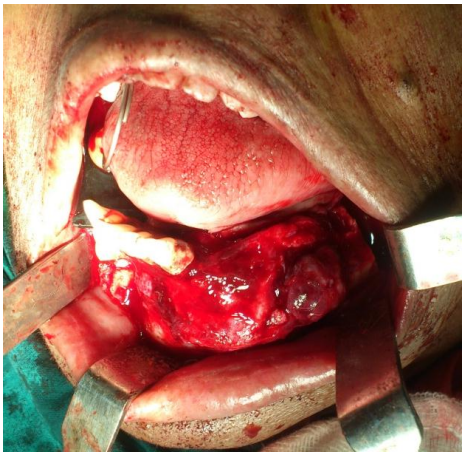

Figure 2: after exposure of the tumour during surgery

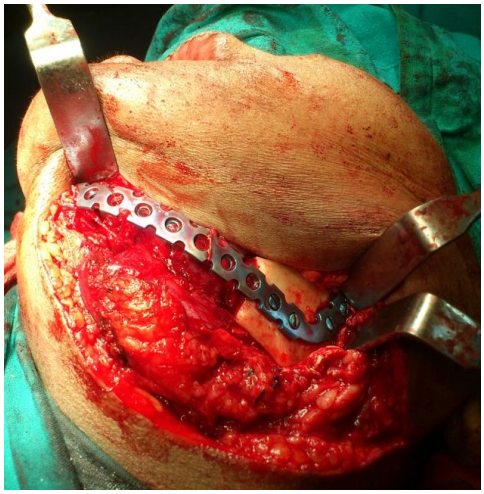

Figure 3: Reconstruction plate adapted and fixed.

Figure 4: Resected portion of the mandible

Figure 6: Post-operative OPG after 10 days of surgery

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Figure 7: Post-operative OPG after removal of 2 screws in the lower anterior infected region after 1 year of surgery.

DISCUSSION

Ameloblastoma constitute to about 15% of all oral neoplasms. There are two theories of management of ameloblastoma discussed in literature, non radical surgeries in which ennucleation and curettage is done mostly in cases of unicystic ameloblastomas. Whereas some authors state that high rate of recurrence is seen after conservative management, therefore suggest radical surgery [5]

Generally, ameloblastoma can occur at any stage of life mostly seen in third to fifth decades of life. Patient's mean age was 47.5 among in our 10 cases. In literature too, it is mentioned that this tumor occurs in adults predominantly during the forth and fifth decades of life.[2,13] 80% of the ameloblastoma tumors have found to be located in the mandible and 20% in the maxilla[2,13,14]. In our 10 cases, 9 tumors were located in the mandible and 1 in the maxilla, which is similar to the study done by Kim and Jang in which 71 cases that is 93.9% of the ameloblastomas occurred in the mandible [11].

Tumors that are more in volume may penetrate through the adjacent soft tissues which leads to erosion and resorption of the tooth roots[15]

Ameloblastomas represents as a slow growing, painless mass without much functional impairment during the beginning stages of the tumor development. Kahairi et al [16] stated that their patient was asymptomatic for 2 years, later developed malocclusion , chewing difficulty and facial asymmetry.

Radiographs can be used to predict the growth rate of the facio osseous lesions. Ueno et al [17] reported that biological nature of the tumour can be related to its radiographic appearance and ameloblastomas of multilocular type showed poor prognosis.

Radiographically, the boundaries of the tumor can also be useful in analysing its growth rate. Kramer[18] reported that in cancellous bone intertrabecular spaces can be invaded by ameloblastomas whereas in compact bone they do not, though they might erode it. Ameloblastomas having a well defined edge along with sclerosis are believed to grow slowly, and the normal bone has more tendency to form sclerotic edge which resists the invasiveness of the tumor, even in the cases of large tumors. Therefore the tumor is confined and has good prognosis. Contrarily, if the boundaries of the tumor are not sclerotized, the tumour is believed to be more aggressive and not so good prognosis. Therefore tumors with boundaries ill defined are thought that they are more aggressive and the treatment of this kind of tumors should be done by radical surgeries as they show high recurrence rate.

Histopathologically, ameloblastoma cann be divided into multicystic or solid, unicystic and peripeheral. 85% cases are of multicystic type, they are locally invasive and show high recurrence rate. The unicystic type account to 14% of cases, they are less invasive and show less rate of recurrence. The peripheral type account to 1% of cases, very rare and affects only the soft tissues surroundinf the teeth region[19]. Kahairi et al stated that unicystic type of ameloblastomas can be treated conservatively by enucleation and curettage while multicystic or solid type of ameloblastomas are treated by radical surgeries[16].

The treatment of this tumor is surgical, radical or non radical. Non radical management includes enucleation and curettage and is done in cases of unicystic type of tumor, having well defined edge radiographically. In our 10 cases, 2 patients were treated by enucleation and curettage as the tumor size was small, unicystic and well defined. Both the patients showed no recurrence in the follow up period of a year. The rest 8 patients were treated by radical surgeries such as segmental resection and hemi mandibulectomy.

Reconstruction and rehabilitation is utmost necessary after the treatment of ameloblatoma. Few authors have done primary reconstruction (immediate) while other have chosen secondary reconstruction (delayed). In 1982, Lawson et al showed 48% success rate with primary construction while 90% success rate was seen with secondary reconstruction[20]. Komisar also stated that secondary reconstruction showed a higher success rate [21].

In our centre, we opted for secondary reconstruction, primarily reconstruction was done using reconstruction plates. (fig 3)

Initial difficulties of swallowing and mastication was confronted by our patients post operatively which improved later.

During the immediate post operative period, drooling of saliva was seen in almost all the patients. They regained their control over salivary secretions within 10 to 15 days post operatively.

There was no recurrence seen during one of follow up. One patient after 6 months post operatively, developed swelling and pus discharge from the lower anterior region. Under local anaesthesia, curettage was done and the infected granulation content removed along with 2 screws alone of the reconstruction plate (fig 7). The histopathology report of the content removed showed no recurrence. After a year of follow the patient showed no recurrence of swelling or pus discharge and the stability of the reconstruction plate was unaltered.

CONCLUSION

Ameloblastoma though a benign tumor is highly aggressive and has a high rate of recurrence if not properly removed. For large invasive tumors, radical surgery is the treatment of choice. Reconstruction and rehabilitation are among the important aspects. Our 10 cases included a follow up period of a year with no recurrence. Though a follow up period upto 5 years may through more light about recurrence of the tumor.

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