RESECTION OF MANDIBULAR AMELOBLASTOMA INVOLVING CONDYLE WITH IMMEDIATE TITANIUM RECONSTRUCTION – A CASE REPORT

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ABSTRACT

Ameloblastoma is a benign aggressive but slowly progressing odontogenic tumour accounting for 1% of all jaw tumors. In this article we present a case of mandibular ameloblastoma treated with surgical resection and an immediate reconstruction with Titanium plate. The 3 dimensional titanium reconstruction plate is a stable material for immediate reconstruction of mandible after resection of ameloblastomas.

Key words : Ameloblastoma, Titanium reconstruction, benign jaw tumor.

INTRODUCTION

Ameloblastoma is a benign aggressive slowly progressing odontogenic tumour accounting for 1% of all jaw tumors, which has a tendency to recur1. Ameloblastoma occurs most commonly in the mandible , in the angle and ramus region more oftenly. Common age of occurrence is 30- 60 years and there is no gender preference.2 Though most of the ameloblastomas are asymptomatic and diagnosed incidentally by orthopantomography, some of them cause swelling of the face, malocclusion, pain, mobility of teeth, loss of tooth. The golden standard for diagnosis is histopathological examination, but OPG helps us in a great extent to diagnose the condition.They show unicystic or multicystic radiolucent lesions with root resorption. Computed tomography (CT) is used to assess the anteroposterior and superoinferior extent of the tumor, as well as its proximity to the alveolar nerve, erosion of teeth, and soft tissue involvement.

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There are four different growth variants of ameloblastoma are recognized by 2005 WHO classification for head and neck tumors: peripheral, unicystic, solid/multicystic, and desmoplastic.3

Treatment of ameloblastomas have been a great controversy since ages: enucleation/curettage against the resection with wide margins. There is a high recurrence rate of 60-90% of solid ameloblastomas only with enucleation alone. A meta-analysis discovered that recurrence rate was 3.15 times greater with enculeation alone when compared to surgical resection.4 A segmental resection of mandible/maxilla with a 1 to 2 cm margin has been proved to be a better option for solid or multicystic-type ameloblastoma.5,6

CASE REPORT

A 53 year old male patient presented to our JKK Nattraja Dental College and Hospital ,Kumarapalayam with a swelling in the left lower jaw since 1 year. He is a know diabetic under medication. Clinically there was a huge swelling of size 8 X5cms extraorally extending from the left angle region of the mandible to the midline(figure 1).Orthopantamogram revealed a multilocular radiolucency extending from left ramus to right mental foramen region(figure 2). Computed Tomography revealed multilocular radiolucencies with bony expansion and erosion of bone both buccally and lingually. The lesion was provisionally diagnosed to be ameloblastoma.

Histopathological examination confirmed the provisional diagnosis of Ameloblastoma.The treatment done was resection and reconstruction with titanium plate under General Anesthesia.(figures 3 and 4) One week postoperative followup showed good symmetry of the face and acceptable occlusion.(figure 5)

DISCUSSION

Treatment of tumors like ameloblastomas must be tailored to both macroscopic and histolopathologic characteristics of that particular tumor and patient .7 Recurrence of ameloblastoma mostly depends upon the surgical treatment that is done to the patient . The chances of tumor recurring again with enucleation alone is about 60% to 90%. Surgical resection with 1 to 2 cm margin could result in reduced recurrence rates but the patient might have greater morbidity, poor esthetic and functional outcomes.

• Reconstructing the mandibular defects after trauma or tumor surgery is one of the most challenging problems faced even by experienced reconstructive surgeons. The mandible plays a huge role in protecting the airway and support the tongue, articulation, deglutition, respiration and mastication. If the mandibular continuity is

disrupted, it produces both a functional and cosmetic deformity. Loss of mandibular continuity results in deviation of the mandible toward the resected side due to the unopposed pull of the remaining muscles of mastication and soft tissue contracture and scar formation.

The functions like mastication, deglutition, speech articulation and oral competence should be addressed as well. If we have to make the patient to their original state of function, the reconstructive surgeon should try to restore facial contour and bony continuity , maintain tongue movements and try to regain sensation to the denervated areas. Post-operatively, oral rehabilitation is imminent to improve upon the patient's ability masticate the food, swallow and speak.

CONCLUSION

Ameloblastoma is a benign odontogenic tumor which has a great propensity for local and regional spread and a high rate of recurrence. Recent studies indicate that the primary surgical treatment methods and histopathologic growth patterns are the most crucial prognostic determinants in ameloblastomas.

The 3-dimensional titanium plate is a sturdy material for immediately reconstructing the manidible after segmental resection of ameloblastomas.

Mandibular reconstruction is a complex surgical procedure with variable options. The remaining soft tissue should provide adequate tongue mobility and sufficient bulk. In addition, the reconstruction should provide sufficient strength and durability for the patient to carry on daily activities such as talking and eating.

A water-tight closure should be attained to elude problems like fistula formation or infection. The level of expertise training and availability of the reconstructive team must be considered, as well as the duration needed for reconstructive surgery ,the type of defect and the patients long-term prognosis,. Most importantly, the overall health status and the desires of the patient must be taken into consideration. Thus it is crucial for the surgeon to be well known with a variety of reconstructive alternatives so patient and the surgeon together could choose the best suited procedure for that particular patient.

Figure 1 – PREOPERATIVE VIEW

Figure 2 - ORTHOPANTAMOGRAM

Figure 3 – RESECTED SPECIMEN

Figure 4 – TITANIUM RECONSTRUCTION PLATE

Figure 5 – ONE WEEK POSTOPERATIVE VIEW

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