Conservative Management of Large Unicystic Ameloblastoma With Immediate Reconstruction using Bicortical Iliac Bone Graft

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Abstract

The standard management of Multicystic Amelobastoma is segmental resection of affected part of mandible. But less aggressive Unicystic Ameloblastoma (UA) can be successfully treated with parsch II (marsupilization followed by enucleation) with marginal resection and /or peripheral ostectomy. A young male patient with unicysticameloblastoma of right side mandible extending from canine to angle region was treated by parsch II with marginal resection and peripheral ostectomy of the lesion. Also the mandibular reconstruction was carried out in the same surgery with non-vascularized bicortical iliac bone graft which showed satisfactory healing and good facial aesthetics.

Keywords: Unicystic Ameloblastoma, Parsch II Procedure, Peripheral Ostectomy, Marginal Resection, Non-vascularized Iliac Bone Graft.

Introduction

Ameloblastoma is benign but locally aggressive lesion as it infiltrates the surrounding tissues.[1] More than eighty percent of cases of ameloblastoma occur in mandible. Amelablastoma has different variants both clinical and histological. Unicystic ameloblastoma is a clinical variant of ameloblastoma which has less aggressive behaviour compared to multicystic/ multilocular ameloblastoma.[2] Although various treatment modalities have been identified, the primary choice for multicystic ameloblastoma is segmental resection of mandible; while the unicystic variant can be successfully managed with parsch II (marsupilization followed by enucleation) alone or by marginal resection of mandible. We present a case of UA which was successfully treated by parsch II with marginal resection and peripheral ostectomy of the lesion. The reconstruction was carried out using non-vascularized bicortical iliac bone graft.

Case Report

A 18 year-old male patient was referred to the clinic with the chief complaint of a painless swelling in the right mandibular posterior region without any sign of sensory impairment (Fig.1). C.T scan with 3D reconstruction of the patient revealed a well defined radiolucent area extending from the

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right canine to the third molar tooth (Fig. 2, 3). Under local anesthesia, marsupilization was performed and the lesion was decompressed by extraction of two molar teeth. Also a tissue section was sent for Histopathological evaluation of the lesion which revealed UA. Regular dressing was carried out using BIPP pack at an interval of 15 days for 4 months (Fig.4). The diminished lesion was completely enucleated with marginal resection of mandible followed by peripheral ostectomy to ensure complete removal of the margins in the cystic cavity (Fig.5, 6). The reconstruction was performed using bicortical non vascularized iliac bone graft (Fig. 7, 8). There were no signs of recurrence at follow-up(Fig.9, 10).

Fig. 1 : Pre-op photograph

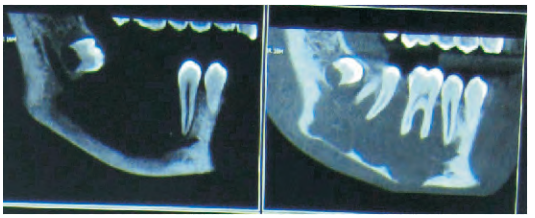

Fig. 2: C.T. image of the lesion

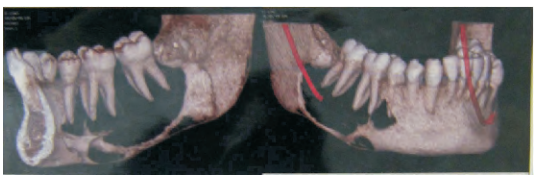

Fig. 3: 3D reconstruction of the lesion

Fig. 4: Marsupialized mandibular lesion

Fig. 5: Marginal mandibulectomy with enucleation

Fig. 6: Mandibular defect after Enucleation, Peripheral ostectomy and Marginal mandibulectomy

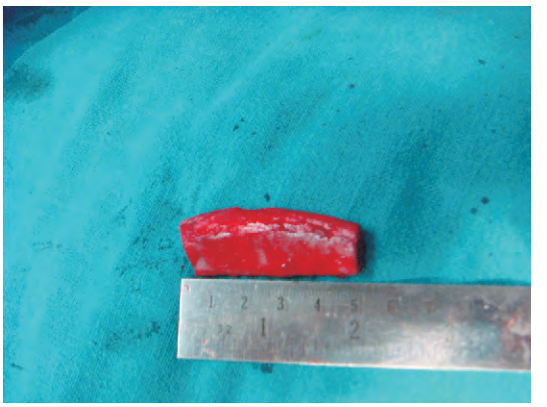

Fig. 7: Harvested iliac bone graft

Fig. 8: Post-op photograph

Fig. 9: Intraoral view after mandibular reconstruction

Discussion

The rationale for marsupialization is reducing the size of the lesion to ease total removal. Among different treatment modalities for UA, the highest recurrence rate (30.5%) was observed with single enucleation, while the lowest (3.6%) was observed with marginal resection.[2] The recurrence rate was reduced when marsupialization was performed prior to curettage. Smaller the lesion better is response to conservative management like enucleation and curettage.[1]The lesion in our report was first marsupialized and after regression in size, it was enucleated along with peripheral ostectomy and marginal resection. In general, unilocular lesions of the jaws are treated conservatively, by following enucleation and curettage procedures, regardless of the microscopic features. However, the histological characteristic of UA should be considered while making the treatment choice.[3]Lesions with subtype 1 and subtype 2 histological patterns give better response to conservative treatments like marsupialization and enucleation, while marginal resection could be considered for subtype 3 lesions for UA.[4]

Furuki[4] reported three cases of UA recurrence after marsupialization. According to Sampson and Pogrel, marsupialization is associated with a high tumour recurrence rate, since the tumor cells may be left within the adjacent cancellous bone.[1]So marginal resection /peripheral ostectomy should be performed to prevent recurrence rate.The outcome of marsupialization is affected by various factors, such as: age, technique of marsupialization, removal of solid growths during incisional biopsy, close radiographic follow-up and effectiveness of enucleation after marsupialization.

In the present report, our case was a good candidate for marsupialization because of the histological type of the lesion, younger age of the patient and thinned out lower border of mandible. It is always difficult to reconstruct mandible after segmental resection as the continuity is lost. So parsch II was considered with peripheral ostectomy. Marginal resection of mandible was carried out mesial and distal to lesion with extraction of involved teeth. Usually reconstruction is considered at later

stage after marginal resection. But in our case immediate reconstruction was carried out to maintain the jaw contour and prevent the second surgical procedure. Also immediate reconstruction prevent soft tissue shrinkage during healing which is difficult to reconstruct at later stage. Inability to augment the alveolar process later hinders the optimal prosthetic rehabilitation.

Conclusion

Unicystic variant of ameloblastoma can be successfully treated with marsupialization with subsequent enucleation alone but has more recurrence rate. However, shrinkage of the lesion by marsupilization is always beneficial to preserve the host bone and adjoining vital structures. Clinicians should also perform a close radiographic follow-up and consider radical treatment options in case of suspicious radiographic changes during the marsupialization follow-up period. Aggressive enucleation with peripheral ostectomy, with accurate management of teeth in the area of the lesion can help in improving the treatment outcome. Adding marginal resection to parsch II with peripheral ostectomy can improve the long term prognosis further. Immediate reconstruction maintains the jaw contour and helps in early rehabilitation of patient.

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