

Case Report

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Complete Healing of Radicular Cysts only by Marsupialization Cagri Delilbasi^{1*}, Emir Yuzbasioglu² and Kader AydiN³

¹İstanbul Medipol University School of Dentistry, Department of Oral and Maxillofacial Surgery, Turkey ²İstanbul Medipol University School of Dentistry, Department of Prosthodontics, Turkey ³İstanbul Medipol University School of Dentistry, Department of Oral and Maxillofacial Radiology, Turkey

Abstract

Marsupialization is defined as opening a window in the cyst wall which enables integration of the cyst lining with oral mucosa. This helps shrinkage of the cyst and provides more conservative surgical procedure fortotal removal of the lesion. Marsupialization is usually performed prior to enucleation and curettage. However, complete healing of the relatively large cysts in adults only by marsupialization is rare. Here we reported two cases of large radicular cysts of the jaws those treated only by marsupialization.

Keywords: Marsupialization; Jaw cyst; Odontogenic cyst

Introduction

Surgical treatment of jaw cysts includes enucleation, marsupialization, curettage or combination of these techniques. Enucleation is defined as a complete removal of the cystic lining with healing by primary closure, while marsupialization is conversion of cyst into a porch [1]. Marsupialization needs considerable patient care and patient cooperation for keeping the surgical site clean.While it resolves and heals by relieving the internal pressure; it is indicated when the cyst is in close proximity to vital structures and where there is significant risk of injury with enucleation [2,3]. Marsupialization is usually preferred for large radicular cysts and dentigerous cysts, particularly in children [4]. Although small cystic lesions can be successfully managed by endodontic treatment, large lesions need advanced surgical intervention. Untreated cysts may expand causing tissue destruction and deformities [1]. Here we reported two cases with large odontogenic cysts in adults those were only managed with marsupialization.

Case Reports

Case 1

A forty-five-year-old-male patient admitted to our clinic with a swelling of lower left jaw. Intraoral examination revealed a rudimentary mandibular left first premolar and swelling associated with bluish color change in the gingiva. The patient mentioned about gingiva and lip numbness in the region. There was no pain or other complaint reported. Panoramic radiograph and CT revealed a well demarcated radiolucent (RL) oval lesion between the apices of canine and second premolar (Figure 1A-1C).Vitality test for lateral incisor, canine and second premolar teeth were negative.Endodontic treatment was performed for nonvital teeth. Firstly, aspiration biopsy was performed and processed for microscopic examination. The specimen was consistent with 'odontogenic cyst'. Under local anesthesia root remnant of first premolar was extracted and mucoperiosteal flap was raised. A window was created on the cyst lining through extraction socket and sutured to surrounding gingiva. The cavity was rinsed with sterile saline and povidone iodine combination. Theimpression of th ecavity was made with a polyvinylsiloxane impression material. A claspretained acrylicre movable partial denture served as an obturatorwith a sleeve which extended to the defect cavity according to traditional prosthetic techniques. The patient was recalled for weekly control for the first month and twice monthly for the rest of the treatment period. The obturators were removed and the cavities were rinsed with antibacterial rinse. The extension of the obturators through the cavities weregrinded in the recalls to allowshrinkage of the lesion. The treatment lasted for 8 months and postoperative period was uneventful.Numbness in the lip and gingiva resolved gradually. Volumetric CT and panoramic radiographsat postoperative 2.5 years revealed complete healing the cystic lesion (Figure 2).

Case 2

A 20-year-old-male patient admitted to our hospital complaining about swelling of the right cheek and numbness of the lip. Intraoral examination revealed rudimentary mandibular first molar root and firm expansion of the buccal alveolar bone. Panoramic radiograph



Figure 1: Panoramic (fig 1A) and CT (fig 1B) appearance of the well-defined RL oval lesion in the left mandibular premolar region. Note the root divergence in the premolar teeth. (fig 1C) Axial CT appearance of the cyst.

*Corresponding author: Cagri Delilbasi, Professor, İstanbul Medipol University School of Dentistry, Department of Oral and Maxillofacial Surgery, Atatürk Bulvarı No:27, 34083 Unkapani-Istanbul, Turkey, Tel: +90 212 453 49 50; Fax: +90 212 531 75 55; E-mail: cdelilbasi@yahoo.com

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and volumetric CT revealed a large radiolucent lesion from second premolar to second molar extending down to border of the mandible (Figure 3A,3B). Vitality test was negative for the second premolar and second molar. Endodontic treatment was performed for nonvital teeth. Aspiration biopsy was performed and processed for microscopic examination. The specimen was consistent with 'odontogenic cyst'. Under local anesthesia first molar root was extracted and a window was created from the extraction socket following mucopriosteal flap elevation. Cyst lining was sutured to alveolar mucosa and the cavity was rinsed with sterile saline and povidone iodine combination. The impression of the cavity was made with a polyvinylsiloxane impression material. A metal supported acrylic fixed partia ldenture served as an obturator with a sleeve which extended to the defect cavity according to traditional prosthetic techniques. The extension of the acrylic fixed partial denture through the cavities was grindedin the recalls to allow shrinkage of the lesion. The treatment lasted for 10 months and postoperative course was uneventful. Numbness in the lip resolved gradually. Complete healing could be observed with panoramic radiograph and volumetric CT 1.5 years postoperatively (Figure 4A,4B).

Conclusion

The treatment of choice for jaw cysts depend on the size and location of the lesion as well as bone integrity of the cyst wall and its neighboring to vital structures. Enucleation is generally preferred if the cyst lining can easily be separated from its bone attachment and the cavity be filled with blood clot. As an alternative, large cysts can be marsupialized to relieve inside pressure. Marsupialization consists of deroofing the outer wall of a cyst by suturing the remaining cystic wall to the mucosal surface followed by an obturator application.



Figure 2: Bone deposit in the cystic cavity at 2.5 year postoperatively.



Figure 3: A) Large cystic lesion extending to border of the mandible causing lingua perforation (arrow). B) Axial 3DCT appearance. Arrow: lingual perforation.



Figure 4: A) Complete bone deposit in the cystic cavity at 1.5 year postoperatively. **B)** Axial ^DCT appearance. Of the complete bone healing.note the lingual defect repairmen (arrow).

The evidence for results of different treatment options is not certain. Marsupialization is preferred thanks to its low morbidity and providing bony growth as the lesion shrinks. The disadvantages may be the long treatment period, and patient's responsibility for careful post-operative care. Marsupialization is performed prior to enucleation for more aggressive odontogeniccycts like odontogenickeratocysts. Zhao et al. [2] reported that bone regeneration can occur more rapidly in odontogenickeratocysts after marsupialization. However; there is no evidence for preference of marsupialization as only treatment modality in aggressive cysts. In our patients cytic lesions healed with only marsupialization, but the long treatment duration necessitates strict patient cooperation. We believe that it is a reliable treatment choice for the large cystic lesions particularly for those with close proximity to anatomical structures.

References

- Riachi F, Tabarabi C (2010) Effective management of large Radicular cysts using surgical enucleation vs. marsupialization. IAJD 1: 44-51.
- Zhao Y, Liu B, Han QB, Wang SP, Wang YN (2011) Changes in Bone Density and Cyst Volume After Marsupialization of Mandibular Odontogenic Keratocysts (Keratocystic Odontogenic Tumors). J Oral Maxillofac Surg 69:1361-1366.
- 3. Karamanis S, Kitharas T, Tsoukalas D, Parissis N (2006) Implant placement after marsupialization of a dentigerous cyst. J Oral Implantol 32:313-316.
- Bozdogan E, Cankaya B, Gencay K, Aktoren O (2011) Conservative management of a large dentigerous cyst in a 6-year-old girl: a case report. J Dent Child 78:163-167.