Case Reports in Odontology
ISSN:2410-0412
Journal homepage:
www.casereportsinodontology.org

Acrylic Plug Type Interim Obturator Prosthesis after Marsupialization of Dentigerous Cyst in the Maxilla – A Case Report

[PP: **06-10**]

Dr. Bandar Al-Makramani
Department of Prosthetic Dental Sciences, College of Dentistry, Jazan University
Jizan, **Kingdom of Saudi Arabia**

Dr. Syed Ali Peeran
Armed Forces Hospital
Kingdom of Saudi Arabia

Dr. Ghassan M. Al-Iryani
Head of Oral & Maxillofacial Surgery, Jazan University
Jazan, **Kingdom of Saudi Arabia**

Dr. Karthikeyan Ramalingam
Department of Oral & Maxillofacial Pathology
Surendera Dental College & Research Institute
Sriganganagar, Rajasthan, **India**

Abstract:

Dentigerous cyst is an odontogenic cyst associated with impacted tooth. We present a case of 13-year-old girl with a dentigerous cyst in association with impacted maxillary canine. It was treated with marsupialization and subsequently, an acrylic plug type interim obturator prosthesis was fitted. The lesion regressed under follow-up.

Keywords:	*Dentigerous Cyst, Maxilla, Acrylic Plug Type, Interim Obturator Prosthesis*
ARTICLE INFO	The paper received on: **20/06/2021** Accepted after review on: **27/07/2021** Published on: **01/08/2021**

Cite this article as:
Al-Makramani, B., Syed, A., Al-Iryani, G. & Ramalingam, K. (2021). Acrylic Plug Type Interim Obturator Prosthesis after Marsupialization of Dentigerous Cyst in the Maxilla – A Case Report. *Case Reports in Odontology. 8(2), 06-10.*

1. Introduction

Dentigerous cysts are odontogenic cysts in the jaws attached to necks of unerupted teeth and constituting around 24% of all epithelial-lined cysts. Enlargement of the cyst can lead to displacement of involved tooth. Mandibular third molars, maxillary canines and maxillary third molars are frequently involved. These cysts are common in 2nd to 3rd decade of life. Usually, they are asymptomatic unless secondarily infected. Occasionally, they can become large with cortical expansion and erosion, facial asymmetry, delayed eruption, resorption of adjacent teeth, displacement into maxillary sinus, paresthesia of inferior alveolar nerve and dysplasia.[1]

Conservative treatment is recommended for large cysts by marsupialization or with additional delayed cyst enucleation especially in dentigerous cysts of maxilla. This procedure decompresses the cyst by reducing the intracystic pressure, stimulates new bone formation and reduces the chance of pathological fracture or bony discontinuity.[2, 3, 4] Its disadvantages include prolonged

healing time, difficulty in maintaining oral hygiene at the marsupialization area and chances of pathologic remnants in situ.[5]

Maxillary defects of congenital, traumatic or oncologic origin are rehabilitated with a maxillary obturator prosthesis. It can restore anatomical continuity, occlude oro-antral and oro-nasal communication, prevent regurgitation, assist in deglutition and speech production. Long term success of the obturator prosthesis depends on the defect size, presence or absence of scar tissue and status of dentition. [6]

In this case report, we discuss a case of dentigerous cyst of maxilla treated with marsupialization and acrylic plug type maxillary obturator prosthesis.

2. Case Report:

A13 years old girl patient presented with a swelling on the upper left side of the mouth in the upper canine area.

On examination, the swelling extended buccally from the 22 to the 25 region. It was non-tender and bony in nature except in one area where it was depressible with some crepitation. The long axes of the 22 and 24 were diverged suggesting an apical space occupying lesion. The 23 was not seen in the oral cavity.

A panoramic radiograph was taken and a cystic lesion associated with impacted canine at the apical region of 22 was noted. The lesion had sclerotic border extending from midline to premolar area and pushing the roots of adjacent teeth. The clinical and radiographic presentations were suggestive of a dentigerous cyst.

A decision was made to marsupialise the lesion due to its large size. Under local anesthesia in an area between the 22 and 24, which had a soft wall, a large-bore needle was inserted to the lesion and clear straw color fluid was aspirated. At the same site, a bony window was made (Figure 1) and the excised tissue was sent for histopathology examination. Biopsy report confirmed that the lesion was a dentigerous cyst.

A pack was placed to maintain the patency of the window. One week later, an impression was made with rubber-based impression material (light body and putty) to record the surgical wound, tissue bearing areas and existing dentition (Figure 2). An acrylic plug type maxillary obturator prosthesis was made with heat cured acrylic resin (Figure 3). It was tried on the maxillary cast, finished and polished. (Figure 4)

It was inserted into the patient's mouth. (Figure 5) Instructions were given that the obturator prosthesis has to be removed daily by the patient, rinse the cystic cavity and cleaning of obturator has to be done.

The patient was under regular follow-up for radiological, surgical and prosthetic review. As the cavity reduced in size due to bone regeneration, the length of the obturator was reduced and the diameter of the opening was maintained. The decision to terminate the obturator usage was determined by radiographic assessment of the surgical site.

3. Discussion

Maxillary obturator prosthesis was used for rehabilitation by Ambroise Pare in the early 16th century for treatment of congenital defects. For acquired defects, the obturator prosthesis should be planned in three distinct phases: surgical, interim and definitive. The surgical prosthesis is inserted during the surgery and acts as a matrix to hold surgical packing. The interim prosthesis is usually placed one week following surgery, is removable and can be adjusted periodically during the healing phase post-operatively. A definitive

prosthesis is planned 3-4 months after surgery once the defect becomes dimensionally stable. [6]

Marsupialization is the conversion of a cyst into a pouch by suturing the cyst lining to the oral mucosa. This decompresses the cystic lesion and reduces the size of cystic cavity. It has lower morbidity compared to enucleation by preservation of important anatomical structures and vitality of adjacent teeth. Its disadvantage is that it is time consuming and patient compliance is critical. [7]

Marsupialization technique is used more often in the maxilla as it is easier to clean the cystic cavity on a daily basis and it also has drainage dependent on gravity. But in mandible, there is a risk of food impaction. The obturator should be designed such that it does not fall into the bony cavity or comes out loose. The design should be with a slim neck and wider top to prevent food impaction, to cover the surgical opening and to be stable during function. It should not damage the soft tissues or interfere with occlusion. [1]

The placement of obturator after marsupialization has the following advantages by reducing the patient visits to the clinic to replace the absorbent gauze placed into the cystic cavity, avoids entry of food into the surgical wound and facilitates better oral hygiene at the surgical site. This obturator is removed after lesion has healed completely. Clasp type obturator is used in the posterior or occlusal defects. Plug type obturator is used in the anterior or labial defects. [8]

In our case, dentigerous cyst involving the maxillary canine was marsupialized, a plug type acrylic interim obturator prosthesis was used to aid the healing of the surgical wound. The patient had limited post-operative morbidity and recovered without any other complications.

4. Conclusion:

In this report, we have discussed the marsupialization of dentigerous cyst and placement of interim obturator for function and to aid in healing. The obturator is a viable option due to its low cost, limited morbidity and ease of modification.

References:

1. Gendviliene I, Legrand P, Nicolielo L.F.P, Sinha D, Spaey Y, Politis C, Jacobs R. Conservative management of large mandibular dentigerous cysts with a novel approach for follow up: Two case reports. Stomatologija, Baltic Dental and Maxillofacial Journal, 2017; 19: 24-32.
2. Kirtaniya BC, Sachdev V, Singla A, Sharma AK. Marsupialization: a conservative approach for treating dentigerous cyst in children in the mixed dentition. J Indian Soc Pedod Prev Dent 2010; 28:203-8.
3. Bodner L, Manor E. Cystic lesions of the jaws - a review and analysis of 269 cases. Eur J Plast Surg 2010; 3:277-82.
4. Buyukkurt MC, Omezli MM, Miloglu O. Dentigerous cyst associated with an ectopic tooth in the maxillary sinus: a report of 3 cases and review of the literature. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2010; 109:67-71.
5. Hu YH, Chang YL, Tsai A. Conservative treatment of dentigerous cyst associated with primary teeth. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2011; 112:5-7.
6. Ahmed Z.U, Flynn J, Riedel E.R, Huryn J.M, Rosen E.B. Definitive maxillary obturator prosthesis: timelines for

fabrication and follow-up. Spec Care Dentist 2020; 1-5.
7. Sakkas N, Schulze D, Otten JE, Schmelzeisen R. Obturator after marsupialization of a recurrence of a radicular cyst of mandible. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2007; 103; e16-e18.
8. Murakami M, Nishi Y, Nishio M, Minemoto Y, Shimizu T, Nishimura M. A retrospective cohort study of cumulative survival rate of obturator prostheses for marsupialization. Journal of Prosthodontics 2017; 00: 1-6.

Figures with Legends:

Figure 1 is the Clinical picture showing the marsupialization window in the maxilla with the unerupted canine.

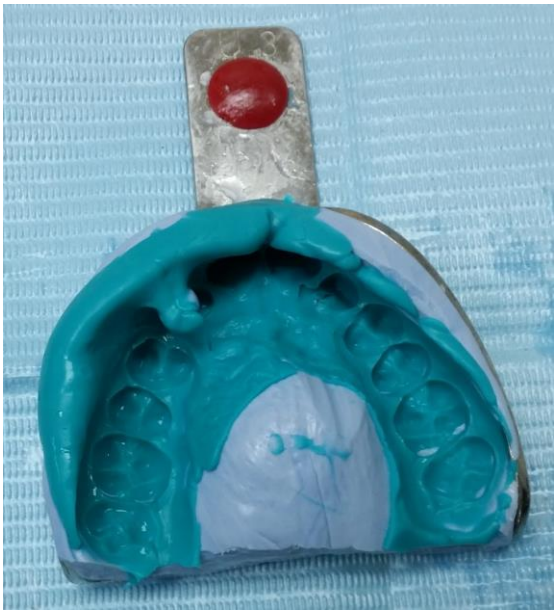

Figure 2 shows the maxillary impression of the teeth and marsupialization defect made with rubber-based impression material.

Figure 3 shows the fabricated acrylic plug type maxillary obturator prosthesis for the marsupialization defect

Figure 4 shows the try-in of the obturator prosthesis to the maxillary cast

Figure 5 is the clinical picture showing the obturator within the patient's mouth.