Scholars Journal of Medical Case Reports **ISSN 2347-6559 (Online)**
Sch J MedCase Rep 2014; 2(11):702-704 **ISSN 2347-9507(Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjmcr.2014.v02i11.001

A Unique and Newer Approach for Managing Early Loss of Permanent First Molar: A Case Report

Tej Yadav[1*], Bhriti Shah[2], Bhavna Dave[3]
[1,2]Post Graduate student, K.M.Shah Dental College, Sumandeep Vidhyapeth, Vadodara, Gujarat, India
[3]Professor & HOD, Department of Pedodontics & Preventive Dentistry, K.M.Shah Dental College, Sumandeep Vidhyapeth, Vadodara, Gujarat, India

***Corresponding Author:**
Name: Dr. Tej Yadav
Email: tej_yadav2000@yahoo.com

Abstract: First permanent molar is the important key factor for developing occlusion and for mastication. In adolescent patients loss of permanent teeth leads to change in arch integrity. During the mixed-dentition stage of dental development, dentists may encounter patients with first permanent molars considered to have a poor long-term prognosis. In this situation, extraction of the tooth and space closure or use of the extraction space for future orthodontic treatment should be considered. The loss of a permanent molar in young adolescent patient creates a need for early space maintenance and restoration of function. To establish function and esthetics short term treatments include interim restorative approaches.
Keywords: Fixed prosthesis, Conservative, Functional, Space maintenance, Interim restorations.

INTRODUCTION

First permanent molar is the important key factor for developing occlusion and for mastication. In adolescent patients loss of permanent teeth leads changes in arch integrity. Loss of permanent teeth leads to shift the adjacent tooth and also supra eruption of occluding permanent tooth. Different treatment modalities are available for the replacement of permanent tooth which is removable prosthesis, fixed prosthesis, implantation etc. [1]. Newer technique for the replacement of first permanent molar has been described in this article.

CASE REPORT

A twelve year old male patient had been reported to the department with the chief complaint of missing tooth in lower right back region of the jaw. History reveled that it was extracted by general dentist [2] weeks ago since it was grossly carious (Fig. 1a, 1b). Fixed appliance was fabricated since patient was not willing to wear removable prosthesis. Fixed prosthesis is an economical and esthetic interim restoration.The follow up of 11 months reveled satisfactory results both for patient and the operator. This prosthesis will remain in patient's mouth till patient's occlusion is enough to receive a permanent prosthetic replacement or an implant.

Technique

Band adaptation was done for the mesial and distal abutment teeth i.e., second premolar and permanent second molar. Alginate impressions of both the arches were made, the mandibular alginate impression was poured in stone with the bands in place thus providing a working model.

Wire mesh was constructed by bending 26-G stainless steel orthodontic wires. The width of mesh was 4-mm less than the bucco-lingual width of the crowns.The length and contour of mesh corresponded to the edentulous space. The mesh was soldered to the bands contoured for the abutment teeth (Fig. 2). The mesh served to hold the three units of bridge together, the gingival extension of the wire mesh was placed 1 mm above the ridge to allow adequate cleansing while not allowing food entrapment or gingival irritation, the occlusal rest is prepared on second molars to hold the appliance in place and the solder joints were finished and polished (Fig. 3). A mandibular first molar resin tooth was selected as pontic. The pontic was attached to the finished wire framework using auto polymer rising acrylic resin, matching the shade of the pontic. The acrylic attachment was finished and polished.

The bridge was ready for a try in, in the patient's mouth for final adjustments. The bridge was assessed for the gingival extension and soft tissue blanching. The occlusal and eccentric movements were adjusted. The bridge was cemented with Fuji I

Glassionomer luting cement (Fig. 4a). In a follow-up of 11 months, the bridge exhibited excellent soft tissue acceptance and has restored the masticatory function as well (Fig. 4b).

Fig. 1a: Pre-procedural radiograph

Fig. 1b: Pretreatment photograph

Fig. 2: Mesh work prepared on working model

Fig. 3: Occlusal rest preparation

Fig. 4a: Cemented prosthesis

Fig. 4b: Occlusal view of prosthesis

DISCUSSION

Development of occlusion takes place by transition of primary dentition to permanent dentition. These result in functional, esthetic, and stable occlusion. Disturbance in the sequence of developing occlusal affects the state of permanent dentition. To prevent the disruptions in developing occlusion and to maintain normal function of it, definite corrective measures are needed. Passive space maintainers, active tooth guidance, or a combination of both is needed to prevent the disturbance in function and development of occlusion.

The space can be maintained, this may be accomplished in one of the several ways [1].

- Cast overlay band and loop.
- Band and loop maintainer with occlusal bar and rest.
- Conventional fixed bridge work.
- Etched casting, resin-bonded posterior bridge.
- Single-unit implant prosthesis.
- Auto-transplantation of third molars into the first molar position.
- Stainless steel Crown Bridge [2].

In case of early loss of a permanent tooth at young adolescent age, additional treatment modality can be provided by the bridge. Bridge helps in sparing

the soft tissues when compared with the treatment partial denture.

Variation in success of bonded prosthesis depends on design, adequate structure of abutment teeth and availability of sound enamel [3].

As per the requirement of ideal space maintainer, the bridge maintains the functional integrity and mesio-distal dimension of the tooth, does not limit the normal growth and development, helps in prevention of supra eruption of opposite tooth [4].

The feasibility issues are minimal in such type of prosthesis because they are simple to construct, less fabrication time is needed and material is easily available. Thus, single appointment is sufficient for fabrication and delivery of the prosthesis.

The follow up of the patient has been shown to have superb patient compliance and trouble free to clean and maintain. It has also decreased the chances of food lodgment and break down of the appliance or being lost.

The most favorable advantage of the bridge is simple to remove and can be recemented after fluoride application.

REFERENCES

1. McDonald RE, Avery DR; Dentistry for the child and adolescent. Missouri Elsevier, 2004: 644-646.
2. Dimri M, Jain A; Stainlees steel crown bridge replacing permanent molar in the adolescent patient: A case report. J Indian Soc Pedo Prev Dent., 2001; 19(2?):74-76.
3. Berckally T, Smales R; A retrospective clinical evaluation of resin bonded bridges inserted at Adelaide Dental Hospital. Aust Dent J., 1993;38(2):85-96.
4. Graber TM; Orthodontics: Principles and Practice. W.B. Saunders and Co., Philadephia, 1992: 640-641.