Case Report

University J Dent Scie 2022; Vol. 8, Issue 3

Management of Retained Primary Teeth in Adult Patient: Case Report

Abstract:
An 18 year old patient reported with the chief complaint of pain in the lower left back region since 2 months. On intraoral examination, retained primary left mandibular second molar was open and tender on percussion. Radiographic examination revealed absence of its successor. A diagnosis of apical periodontitis was made based on the clinical and radiographic examination. Pulpectomy was performed and the tooth was obturated with guttapercha. The cavity was restored with glass ionomer cement and later on restored with zirconia crown.

Key-words: primary molar, pulpectomy, guttapercha, zirconia.

Introduction:

Maintaining primary teeth for a required period of time isnecessary for a child's overall oral and general development as they are necessary for mastication, phonetics, esthetics and at the same time, they also act as space maintainers for eruption of permanent teeth. When three-fourths of the root length of the replacing permanent tooth, is formed the deciduous molar teeth spontaneously shed. When a deciduous molar persists or remains in its place beyond this point, it is considered as an over-retained tooth. Primary teeth may be retained for a variety of reasons, the most common being developmental absence of the permanent successor. While agenesis of primary teeth is rare (0.1-0.9%), absence of permanent teeth is encountered relatively frequently with a prevalence of 2.5-6.9%[1]. Following third molars (22%), second primary molars (5%) are the most frequent congenitally missing permanent teeth (Biggerstaff, 1992; Thompson et al., 1974). In many populations, apart from the third molars, the most common missing teeth is the mandibular second molars (Ravn and Nielson, 1973; Thilander and Myrberg, 1973; Bergstrom; 1977; Locht; 1980). In a meta-analysis done by Polder BJ et al, the most frequently missing permanent teeth are the mandibular second premolars (2.4-4.3%), maxillary second premolars (1.4-1.6%), maxillary lateral incisor in the second rank (1.6-1.8%), and the mandibular incisors (0.2- 0.4%)[2]. In deciduous dentition, the retention of primary molars may lead to infraocclusion of the tooth or resorption of the root can take place due to trauma. If there is substantial infraocclusion, root resorption or caries that cannot be restored, or in cases where crowding is seen and more space is required to correct the malocclusion then it may be necessary to extract the primary teeth. Nevertheless, in non-crowded cases, where the primary molars are in good condition, or can be restored then it should be preserved[3].

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Received : 26 April, 2022, **Published :** 30 Sep., 2022

How to cite this article: Ullah, R. I. (2022). Management of Retained Primary Teeth in Adult Patient: Case Report UNIVERSITY JOURNAL OF DENTAL SCIENCES, 8(3). 48-51

Access this article online

Website: www.ujds.in

DOI: https://doi.org/10.21276//ujds.2022.8.3.11

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However, preserving the retained primary teeth with absence of its successors can be challenging to a dentist. If the tooth becomes pulpally involved with absence of signs of mobility, sinus, pulpectomy should be performed in order to preserve the tooth. The tooth should be obturated using non resorbable root canal filling material such as guttapercha, MTA, Biodentine etc. After obturation, an appropriate final restoration should be done to maintain the occlusal function and arch integrity.

The following case report presents a case where a retained primary molar with absence of its successor is being obturated with guttapercha, which is biocompatible and non resorbable and finally a zirconia crown is placed to preserve it for a longer duration. The informed consent was taken from the patient.

Case Report:

An 18 year old female patient reported to the department of paediatric and preventive dentistry with the chief complaint of pain in the lower left back region since 2 months. She gave the history of getting treated for the same 3 months back but did not complete the entire treatment. On intraoral examination, mandibular left primary second molar was open. Primary second molars were present in upper left and right region of the jaw as well (figure 1a & b). An orthopantomagram confirmed the congenital absence of second premolar in the upper right and left side as well as on the lower left side (figure 2). Mandibular left primary molar was tender on percussion. An intraoral periapical radiograph was taken(figure 3)

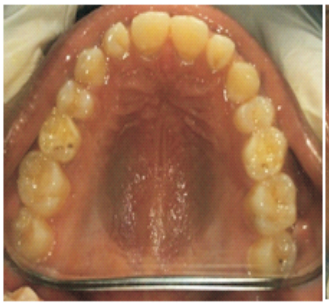

Figure 1a

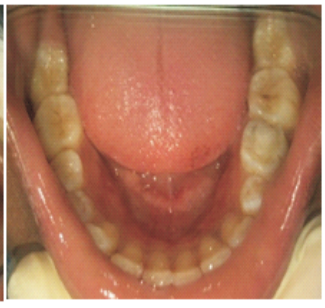

Figure 1b

Figure 2

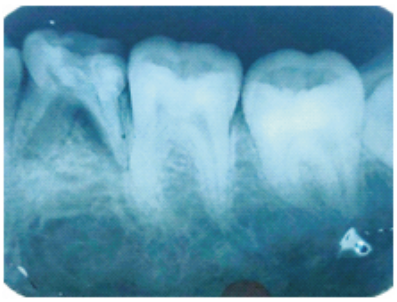

Figure 3

Based on clinical and radiographic examination, apical periodontitis in the mandibular left primary molar was diagnosed. Pulpectomy was performed in subsequent three visits. Inferior alveolar nerve block was administered, and four canal orifices were located and working length was determined (figure 4).

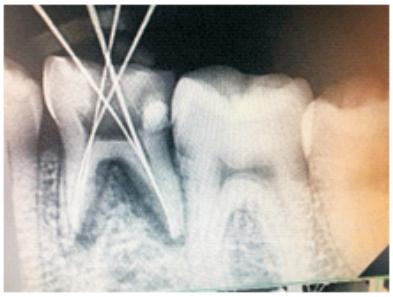

Figure 4

The canals were prepared along with copious irrigation with saline. A cotton pellet was placed in the tooth along with temporary restoration. In the third visit, obturation was done with gutta percha (figure 5). In subsequent visit, the tooth was restored with glass ionomer cement (figure 6). In the fifth visit the tooth was prepared to receive the zirconia crown. Occlusally, the tooth was reduced by 2 mm by pear shaped bur. 1.5 mm was cut proximally by the tapered fissure bur. All the line angles and point angles were rounded and zirconia

crown was placed (figure 7a - d). 4 month follow up of the pateint was done and case remained uneventful

Figure 5

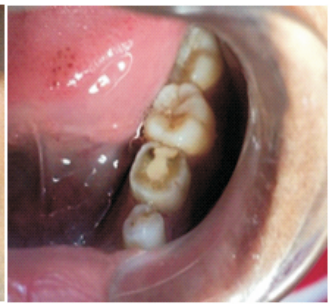

Figure 6

Figure 7a

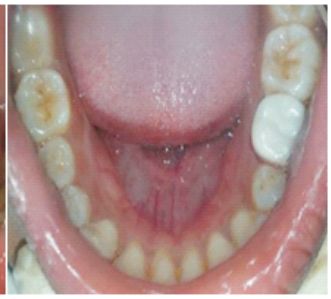

Figure 7b

Figure 7c

Figure 7d

Discussion:

Retained primary molars where there is absence of its permanent successor should be preserved so as to maintain the arch integrity without any prosthetic or orthodontic intervention. It is suggested to use zinc oxide eugenol, metapex, calcium hydroxide, endoflas etc. as obturating materials in primary teeth so to give the chance of absorption of the material by the patient's defense mechanism following physiologic root resorption. However, in this case where the tooth is to be maintained it should be obturated with a biocompatible and non resorbable material. Literature suggests that the use of biodentine, MTA and guttapercha should be used for obturation. Jeevanandan G et al reported the use of biodentine for obturating retained maxillary second molar[4]. O' Sulliavan SM et al., reported a case of 20-year old male with retained primary mandibular second molar obturated with MTA[5]. Bolla N et al., reported a case of 26-year-old female with retained primary mandibular second molar, obturated with gutta-percha[6]. Ansari G also used guttapercha for obturating primary mandibular second molars on both sides[7]. Bezgin T compared the clinical and radiographical success of mineral trioxide aggregate (MTA) and gutta-percha/AH-Plus used as a root canal filling material in primary second molars without successors and concluded that MTA can be recommended for use in root canal treatment of primary molars without successors based on better radiographic success[8].

After the pulpal treatment of primary teeth, placement of stainless steel crowns is recommended. However, in this case, zirconia crown has been placed owing to the patient's concern for esthetics. Zirconia crowns are biocompatible, metal free with high durability and highly esthetic. The main disadvantages of using zirconia crowns are that they are not cost effective and require excessive cutting of tooth.

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