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CASE REPORT

Accidental Extraction and Reimplantation of a Premolar - A Case Report

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Abstract

The most serious but rare iatrogenic outcome of exodontia is the extraction of the wrong tooth. The extracted/avulsed tooth can be reimplanted back into the socket. The human body can repair and regenerate tissue, leading to the healing of the tooth and the periodontium. The following is a case report on the accidental extraction of the premolar and its immediate reimplantation, followed up for 6 months both clinically and radiographically.

Keywords: Accidental extraction, Permanent teeth, Reimplantation, Clinical, Radiography

Introduction

The extraction of a primary tooth is a very common procedure practiced in paediatric patients.[1] It is a well-established fact that premolars are preceded by primary molars. The most common and the most serious complication of extraction of a primary tooth is the accidental extraction of the permanent tooth. But on the brighter side, the extracted permanent tooth can be reimplanted. There are only a handful of case reports that have been published till date about the accidental extraction of premolars while extracting a primary molar.

Kemp (1977) reported a case of accidental extraction of a premolar while extracting a primary second molar in a 9-year-old child. The extracted tooth was immediately placed back in the alveolar socket.[2] This immediate act leads to the proper healing of the socket. The reimplantation of the tooth and its healing involves several factors like the tooth factors and the patient factors.[3] In the case reports published regarding accidental extraction of the permanent tooth, all the cases had successful outcomes following immediate reimplantation of the tooth.

This is a case report of an immediate reimplantation of the first premolar following the accidental extraction while extracting the second primary molar.

Case Presentation

A 13-year-old boy reported to the department with a complaint of retained primary teeth. On examination, the upper left primary second molar was indicated for extraction and the first permanent premolar was grossly decayed with coronal changes and the same was indicated for root canal treatment. The undergraduate trainee during the extraction, accidentally extracted the first premolar in the place of the second primary molar.

The patient as well as parents were informed about the incident. The extracted permanent tooth was immediately placed back in the socket without any delay to preserve the periodontal ligament fibres, Sling shot sutures were placed. Wire-composite splinting was done extending from the central incisors to the first permanent molar on the left side to hold the tooth in position. Bite risers were applied with Glass ionomer cement on the lower first permanent molars. As this tooth was indicated for root canal treatment, access opening was done on the same day and root canal treatment was started. Following this, a radiographic evaluation of the tooth was done. The patient was prescribed antibiotics and analgesics and was recalled the next day for review.

On the second day, the patient did not complain of pain or any discomfort. The root canal treatment was continued and biomechanical preparation using hand k files was done till file no 25 and a close dressing was given. The splinting was removed on the 10th day after clinical and radiographic evaluation. The radiograph (IOPAR) still showed PDL space obliteration. An intracanal medicament of the triple antibiotic paste was given for 14 days. After 2 weeks, the tooth was completely firm. Following the clinical and radiographic evaluation, apexification was done using mineral trioxide aggregate (MTA), and obturation with Gutta-percha cones was completed. Access filling was given with composite resin restoration and a porcelain fused metal crown was given to the tooth.

Follow-up was done at 1, 2 and 6 months intervals. In all the follow-up visits, the patient was asymptomatic, and the tooth was completely functional. Radiographic evaluation during the follow-up visits of 6 months showed no signs of external or internal resorption or obliteration of the periodontal ligament spaces.

Discussion

It is believed that a specific set of events led to the unfortunate, unintentional extraction of the permanent tooth. Wrong tooth extraction is a common but preventable complication among dentists.[4] This mishap can be prevented by proper identification of the tooth to be extracted.[5] The commonly extracted tooth in error is the upper permanent canine instead of the upper first premolar. In the lower arch, it is the lower premolar instead of a deciduous molar, followed by the upper second molar in place of the upper third molar in the permanent dentition.[5]

It has been noted that there is a failure in the regrowth of the connective tissue in an accidentally lost tooth in areas that were deprived of periodontal ligament tissue.[6] The best healing potential is seen in an avulsed tooth that is reimplanted immediately after the trauma as the avulsion of the tooth causes damage to the periodontium.[7] Healing of the tooth along with its supporting periodontium depends on a number of factors, like the duration of time the tooth was exposed to the outer environment, the stage of the development of the tooth, and trauma to the surrounding structures.[8] In the present case, the tooth was reimplanted immediately without any treatment to the root surface to preserve and maintain the vitality of periodontal ligament cells.

It is necessary to splint the avulsed tooth to the adjacent teeth using a flexible splint for 7-10 days and perform root canal treatment within two weeks in case of a tooth with a closed apex tooth to prevent inflammatory resorption.[9,10] In the present case, splinting was done for 10 days, additionally, 4 slingshot sutures were also placed to aid soft tissue healing immediately after reimplantation. The patient was asked to avoid biting on the splinted teeth till the splinting was removed. The sutures were removed after 7 days. Root canal treatment was carried out after the immediate reimplantation intraorally so that there is no wastage of time and so that the integrity of the periodontal ligament is adequately preserved.

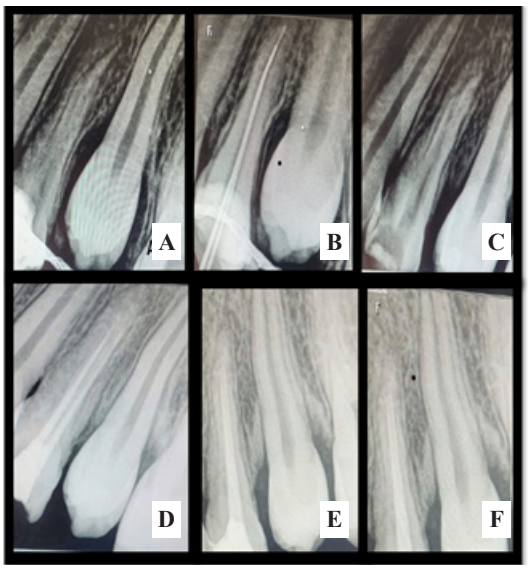

Figure 1: A-Immediately after reimplantation and splinting; B- Working length determination during the 14th day follow up; C- 21 days Follow up; D- Post Operative after MTA Apexification and Obturation; E- 3 months follow up; F- 6 months follow up

The outcome of reimplantation is classified by Pohl *et al.,* as Functional healing, infection-related resorption and replacement resorption.[11] According to the radiographic evaluation and clinical evaluation, the tooth was asymptomatic, normal percussion tone was noted, no mobility of the tooth was seen, no signs of inflammatory resorption and intact lamina dura were noted at 6 months follow-up visits, indicating that the tooth had undergone a response of functional healing in the clinical practice (Figure 1).

The extraction of the wrong tooth is a rare and preventable iatrogenic complication of exodontia. The outcome of reimplantation depends on the duration of extra-oral time, the surface treatment, patient cooperation and the host response. In the present case, immediate reimplantation and uneventful healing of the tooth and the periodontium suggest a very favourable outcome which can be implemented.

Conflicts of Interest

Nil

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