

A Case Report

Intentional Replantation: A Method of Last Resort

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Abstract

Introduction: intentional replantation following endodontics may be an option when surgical access is very limited or presents unacceptable risks. It has been proposed as an alternative to retrograde endodontic procedure. The purpose of replantation is to prevent permanent loss of the tooth and to replace the landscape of the mouth. Any tooth that can be a traumatically removed can be a potential candidate for intentional replantation.

Case Report: A 14-year-old girl reported to our department with pain in lower right back tooth region with a history of failed endodontic procedure. Intraoral IOPA was taken, fractured instrument was seen at apical third of the canal. Tooth was intentionally removed a traumatically and treated endodontically, splinting was done.

Uniqueness of the Case: intentional replantation is considered as a last resort for preserving the tooth. It is a predictable method when tooth removed a traumatically.

Introduction

Replantation is not a new procedure. It has been performed for more than ten centuries. At the eleventh century AD, Abulcasis described the first replantation technique using ligatures to splint the replanted tooth¹. Over the years the procedure of intentional replantation has been progressively modified and refined.

Intentional replantation is a one-stage treatment that would maintain the natural tooth aesthetics if Successful². Due to the lack of long-term evidence, it is often considered as a procedure of last resort. Grossman³ defined it as a purposeful removal of a tooth and reinsertion of the tooth into the socket almost immediately after sealing the apical foramina and he also stated that it is the act of deliberately removing a tooth after having proper examination, diagnosis, endodontic manipulation, and repair—returning the tooth to its original socket to correct an apparent clinical or radiographic

endodontic failure⁴. It may have some advantages over surgery, including easier procedure, less time-consuming, and less invasive. It involves the atraumatic extraction of the offending tooth, root-end resection and reinsertion of the extracted tooth. Messkoub⁵ reported success rate in retaining replanted teeth varies between 52- 95%. There are many reasons for the failure of replanted teeth but the main reason for failure in replanted teeth is root resorption, specifically ankylosis or replacement resorption. This is directly related to the amount of time the tooth is out of the mouth during the procedure⁶. MTA has been used successfully in several clinical applications such as pulp capping, pulpotomy, perforation repair treatment of traumatized teeth with immature apices and for treatment of root resorptions⁷.

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The present article describes the case of mandibular right first molar with fractured instrument at apical third of a canal.

Case Report

A 14 years old girl reported to our department of paediatric and preventive dentistry at PDM dental college and research institute with chief complain of pain in lower right back tooth region since one week. She had a history of endodontic treatment earlier. clinically tooth presents spontaneous, continual and intense pain. On radiographic examination we found a fractured instrument at apical third of the canal (figure.1,2). Different treatment modalities were explained to the patient but her parents totally disagreed to the long term procedure so we took this case for intentional replantation.



(Figure1-Preoperative photograph)



(Figure2-Preoperative iopa)

The tooth was extracted a traumatically as possible (figure.3) and the tooth was kept in homogenous pasteurized milk. PDL and extraction socket was left untouched. Then root end resection was carried out by holding the tooth from coronal portion (figure.4),

fractured instrument was removed and retrograde filling was done and apical end was sealed using MTA (figure.5) and then alveolus was irrigated with saline at very low pressure and then tooth was replanted and splinted with adjacent tooth. Splinting was done with orthodontic wire and composite (figure.6). The occlusion was adjected in order to ensure that tooth is free of any interface.



(Figure 3- Tooth after etraction)



(Figure 4- Root end resection)



(Figure 5-Mta placement)



(Figure 6-Tooth after splinting)

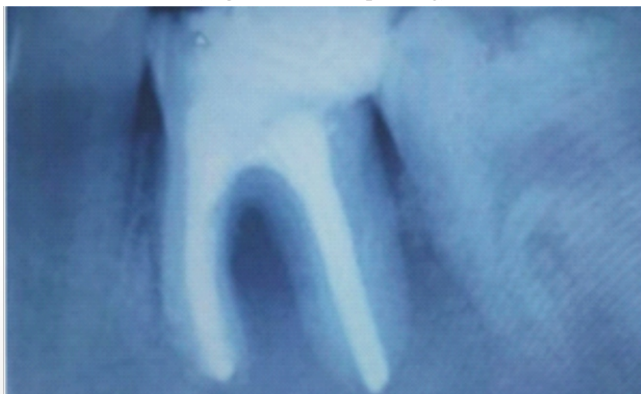


(Figure 9- One year follow up)

An IOPA was taken that revealed proper repositioning of tooth and proper root end filling (figure 7). After 6 weeks follow up splinting was removed (figure 8) and finally crown was placed. After crown placement, postoperatively radiograph was taken, in this case we can very well appreciate the successful endodontic treatment. then on further follow up of one year we can see the radiographic success of this case by remodeling of alveolar bone along with reduction in furcation involvement and healing of periapical region (figure 9).



(Figure 7- After splinting)



(Figure 8- 2 Month follow up)

Discussion

In the present case report, the teeth were outside the mouth approximately less than 15 minutes, manipulation was kept minimal, and the periodontal ligament was not removed as recommended by most authors. The potential for resorption in replanted teeth increases if they remain outside the mouth for more than 30 minutes^{8,9}. The tooth was stabilized by splinting for 6 weeks. The tooth was followed up to a period of 1 year, the tooth was asymptomatic, furcation area was healed and there is complete healing of periapical region. Patient compliance and lack of periodontal disease in this area were important factors in the decision to perform the procedure. The risk of intentional replantation were considered and acknowledged and conveyed to the patients. Difficulty of tooth extraction, the possibility of fracture during extraction and risk of external resorption are some limitations of this treatment. The most common causes of failure in intentionally replanted teeth is replacement resorption and sometimes ankylosis caused by periodontal ligament^{10,11}. Their desire to save the tooth was made with all these issues in mind, fortunately to date; this procedure resulted in the continued retention of teeth in this case.

Conclusion

A recent case report has demonstrated that with good case selection, intentional replantation can be a reliable and predictable procedure. Intentional replantation can have a high success rate with different bio-regenerative materials and it is also less expensive than other treatments. This alternative treatment may be suggested for certain cases when routine treatment cannot be undertaken or has failed.

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