INTENTIONAL REPLANTATION- A CASE REPORT

ABSTRACT

For many years, intentional reimplantation has been a treatment option for teeth that would be difficult, if not impossible, to treat using traditional root canal therapy. It is a viable alternative in the case of unsuccessful endodontic procedures; however it must be accomplished as quickly as possible. The preservation of cell vitality in the periodontal ligament, the removal of all tissue debris and irritating substances from the root surface, achievement of a good apical seal and reinforcement of the crown structure are critical in ensuring normal function of the reimplanted tooth. In this article, we report on an intentional reimplantation of a mandibular molar to relieve continuing symptoms.

KEYWORDS | Intentional Replantation, Retrofilling, MTA Splint, Molar, Iatrogenesis

INTRODUCTION

Intentional reimplantation is an accepted procedure in which a tooth is extracted and treated outside the oral cavity, then reinserted into its socket to correct an obvious radiographic or clinical endodontic failure. Although traditional root canal therapy (RCT) is preferred and has always been a mainstay of endodontic therapy, intentional reimplantation has been used for many years to treat pulpless teeth and is considered to be an effective strategy when traditional RCT would be difficult; if not impossible. Intentional reimplantation has undergone a sort of revival in recent years. In the field of endodontics, serious questions are being raised as to whether it should be considered a treatment of “last resort,” when intracanal or surgical endodontic treatments are not recommended, or as a conventional treatment procedure. The critical event in any reimplantation following avulsion or extraction of a tooth is the preservation of cellular vitality in the periodontal ligament under aseptic conditions. The removal of all tissue debris and irritating substances from the root surface, achievement of a good apical seal and reinforcement of the crown structure are mandatory for normal function.

This paper discusses a case report where reimplantation procedure in a previously treated mandibular molar was performed.

CASE REPORT

A 31-year-old female patient who had previously undergone endodontic treatment in her second right mandibular molar (47) reported to OPD with spontaneous and intense pain in the same tooth. Detailed clinical examination revealed fractured instrument in the mesial root of incompletely treated second right mandibular molar (47) (Fig 1). Replantation was planned as a treatment option as retrieval of instrument was not possible by conventional methods. It was also indicated due to anatomic difficulties of this tooth for an apicoectomy (root apex near the inferior alveolar nerve).

The patient was informed of the risks and the benefits of this treatment. The patient was put on antibiotic and anti-inflammatory medication and was instructed to return 72 hours later for the procedure. The patient reported with decreased symptomatology and replantation procedure was planned. Core build up using posterior composite was done in 47 (Fig 2). After giving anesthesia, careful extraction was performed without damaging the tooth (Fig 3,4). Root canal treatment was initiated extraorally (Fig 5,6). Separated instrument that was extruded periapically was removed from the apical region (Fig 7). The extracted tooth was stored in saline. The alveolus was curetted, irrigated with saline and closed by gauze embedded in this solution.

The roots were retrofilled using MTA (Fig 8,9). Subsequently the tooth was replanted in socket and immobilized by a wire splint for 2 weeks (Fig 10,11).

Address Of Correspondence:
Dr. Chandrawati Guha
Reader,
Dept of Conservative Dentistry & Endodontics,
Institute Of Dental Sciences, Bareilly(U.P)
E-mail : mahak2312@gmail.com
DISCUSSION

Intentional replantation is an accepted endodontic procedure in cases in which intracanal and surgical endodontic treatments are not recommended. Although not frequently used, intentional replantation is a treatment option that dentists should consider under these conditions. If the standard protocols during intentional replantation are not followed, root resorption and ankylosis may be observed within 1 month and 1–2 months, respectively. Most resorptive processes are diagnosed within the first 2–3 years. As various investigators report varying success rates, it is difficult to predict the outcome for intentional replantation. Bender and Rossman evaluated 31 cases with an overall success rate of 80.6% (6 recorded failures). Replanted teeth survived from 1 day to 22 years. A second mandibular molar that failed after 3 weeks was replanted successfully a second time with no signs of failure after 46 months of follow-up.

Aqrabawi evaluated 2 cases of intentional replantation and retrograde filling of mandibular second molars. At the 5-year recall visit, radiographs showed no evidence of pathologic changes. Araujo et al demonstrated that processes — including root resorption, ankylosis and new attachment formation — characterized healing of a re-implanted root that had been extracted and deprived of vital cementoblasts. Nuzzolese et al state that the success rate of intentional replantation at 5 years reported in the literature ranges from 70% to 91%.

Benenati reported a case of nonsurgical endodontic treatment and intentional replantation of a mandibular second molar to relieve continuing symptoms. A 15.5-year follow-up clinical examination found the patient to be asymptomatic, the tooth to be still functional, and a
recall film showed no evidence of root resorption. Peer reviewed 9 cases of intentional replantation that illustrated the feasibility of the procedure for a variety of indications. Only 1 case of replantation showed evidence of pathosis, reflected by root resorption or ankylosis. His report suggests that intentional replantation is a reliable and predictable procedure and should be considered more often as a treatment method to maintain the natural dentition.

Majorana et al. followed 45 cases of dental trauma for 5 years, recording complications and responses to treatment. Root resorption was observed in 45 cases (17.24%); of these, 9 were associated with luxation injury (20%) and 36 (80%) with avulsion. The authors identified 30 cases of inflammatory root resorption (18 transient and 12 progressive) and 15 cases of ankylosis and osseous replacement.

Andreasen stated that retrograde obturation with amalgam is responsible for more resorption than gutta-percha. That was the reason MTA was used in the case report. Use of MTA as a retrograde material was due to its excellent biocompatibility namely, minimal toxicity and pulpal irritation, mild periapical inflammation, nonmutagenicity, cell adherence and growth, increased levels of alkaline phosphatase and osteocalcin, interleukin production (IL-6, IL-8), periodontal ligament attachment, cementum growth and dentinal bridge formation.

**CONCLUSION**

Although intentional replantation is considered by many as an audacious procedure, it can be indicated correctly as an alternative treatment for cases in which conventional endodontic therapy or surgical technique cannot be performed.

**BIBLIOGRAPHY**