REIMPLANTATION OF AVULSED AND INTRUDED MAXILLARY CENTRAL INCISORS

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INTRODUCTION:

Favorable healing after an avulsion injury requires quick emergency intervention followed by evaluation and possible treatment at decisive times during the healing phase. The urgency of the emergency visit and the multidisciplinary nature of follow-up evaluations require both the lay public and practitioners from different dental disciplines to possess a knowledge of the treatment strategies involved.

When a tooth is avulsed, attachment damage and pulp necrosis occurs. The tooth is 'separated' from the socket, mainly due to the tearing of the periodontal ligament which leaves viable periodontal ligament cells on most of the root surface. If the periodontal ligament left attached to the root surface does not dry out, the consequences of tooth avulsion are usually minimal. However, if excessive drying occurs before replantation, the damaged periodontal ligament cells will elicit a severe inflammatory response over a diffuse area on the root surface. But if the the area to be repaired on the root is large, The slower moving cementoblasts cannot cover the entire root surface in time and it is likely that, in certain areas, bone will attach itself directly onto the root surface. In time, through physiologic bone re-contouring, the entire root will be replaced by bone; a process which has been termed osseous replacement or replacement resorption {1,2}

One other consequence of avulsion is pulp necrosis which in turn results in bacterial infection If revascularization does not occur or effective endodontic therapy is not carried out, the pulp space will inevitably become infected. The combination of bacteria in the root canal and cemental damage on the external surface of the root results in an external inflammatory resorption that can be very serious and lead to the rapid loss of the tooth{3,4}

Treatment is directed at avoiding or minimizing the resultant inflammation which occurs as a direct result of the two main consequences of the avulsed tooth, name I.E.,attachment damage and pulpal infection.{5}

CASE REPORT :

A 28yr old male patient reported to our department of conservative dentistry and endodontics after meeting a road traffic accident with lip lacerations and an avulsed tooth.

HISTORY & EXAMINATION

The patient gave a history of trauma that occurred 20hrs back and the patient had already been seen by the medical staff who addressed the laceration injuries and confirmed that there were no bone and neural injuries. The patient stored the tooth in milk On intra oral examination, maxillary right central incisor avulsed and maxillary left central incisor intruded. The patient gave no history of loss of consciousness and vomiting without any systemic diseases.

TREATMENT PLAN

A treatment plan was made

1) To surgically reposition the intruded tooth
2) root surface management of avulsed tooth
3) Reimplantation and splinting of the teeth
4) pulp extirpation
5) repeated calcium hydroxide dressings
6) completion of endodontic therapy(obturation)
7) follow up

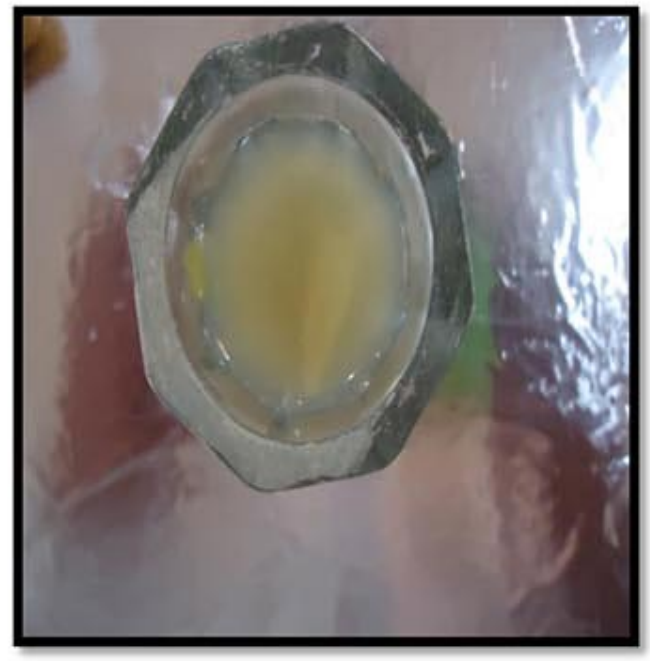
MANAGEMENT:

Primarily the avulsed tooth was transferred to a solution of doxycycline solution as the dry time of the tooth was more than 6omin .Then the intruded tooth was surgically repositioned with the help of extraction forceps and splinting with orthodontic wire was done. The socket was irrigated with saline following which local anesthesia is administered and the tooth is reimplanted with digital pressure gently. The normal position of the replanted tooth was confirmed both clinically and radiographically. The teeth(both avulsed and intruded) along with other two adjacent teeth were etched with phosphoric acid gel. Followed by priming and bonding of fibre reinforced composite (PERIOPOST) with flowable composite. The patient was put on antibiotic prophylaxis and recalled within 7days. On the recall visit , the teeth seemed stabilized and access opening was done followed by cleaning and shaping with manual K files in step back technique along with5.25% NaOCl and Glyde. calcium hydroxide dressing was given for about three times on the recall appointments. The use of calcium hydroxide is to eliminate any bacterial contamination before obturating the tooth. On the last recall appointment, the splint was removed and the teeth were obturated with 2% Gutta percha and zinc oxide eugenol sealer. The patient is beingf followed.On 6months follow up, there were no signs of periapical pathology and periodontally the tooth was healthy and stable.

PRE OPERATIVE PICTURE [LABIAL]

PRE OPERATIVE PICTURE [PALATAL]

PRE OP RADIOGRAPH



AVULSED TOOTH IN DOXYCYCLINE SOLUTION

SURGICAL REPOSITIONING OF INTRUDED TOOTH

POSITIONING OF AVULSED TOOTH IN THE SOCKET

ETCHING DONE

PRIMING DONE

SPLINTING WITH PERIO POST

POST SPLINTING RADIOGRAPH

WORKING LENGTH

MASTER CONER SELECTION

OBTURATION

FOLLOW UP AT 6 MONTHS

CONCLUSION

Though the extra oral time in the present case is more than 60min, the use of antibiotic as a part of root surface management, followed by pulp extirpation and repeated calcium hydroxide dressings could effectively eliminate the chances of resorption and tooth loss.

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