

INTRODUCTION

“Traumatic dental injuries (TDIs) occur frequently in children and young adults, comprising 5% of all injuries. Twenty-five percent of all school children experience dental trauma and 33% of adults have experienced trauma to the permanent dentition, with the majority of the injuries occurring before age 19. Luxation injuries are the most common TDIs in the primary dentition, whereas crown fractures are more commonly reported for the permanent teeth. Proper diagnosis, treatment planning and follow-up are important to assure a favorable outcome” (1) This case study presents a treatment case of full avulsion of teeth #8 and #9 following the International Association of Dental Traumatology, Dental Trauma Guidelines.



Figure 1 - image of patient post splinting and gingival repair

TEETH AVUSION

Avulsion of dentition is when tooth is dislodged from the socket which is often caused by trauma. Avulsed teeth is an emergency and there is proper protocol and timeline that needs to be followed in such cases.

Avulsion of Permanent Teeth

“The prognosis for avulsed permanent teeth is very much dependent on the actions taken at the place of accident. Promotion of public awareness of first-aid treatment for the avulsed tooth is strongly encouraged. Treatment choices and prognosis for the avulsed tooth are largely dependent on the vitality of the periodontal ligament (PDL), and the maturity of the root.” (1)

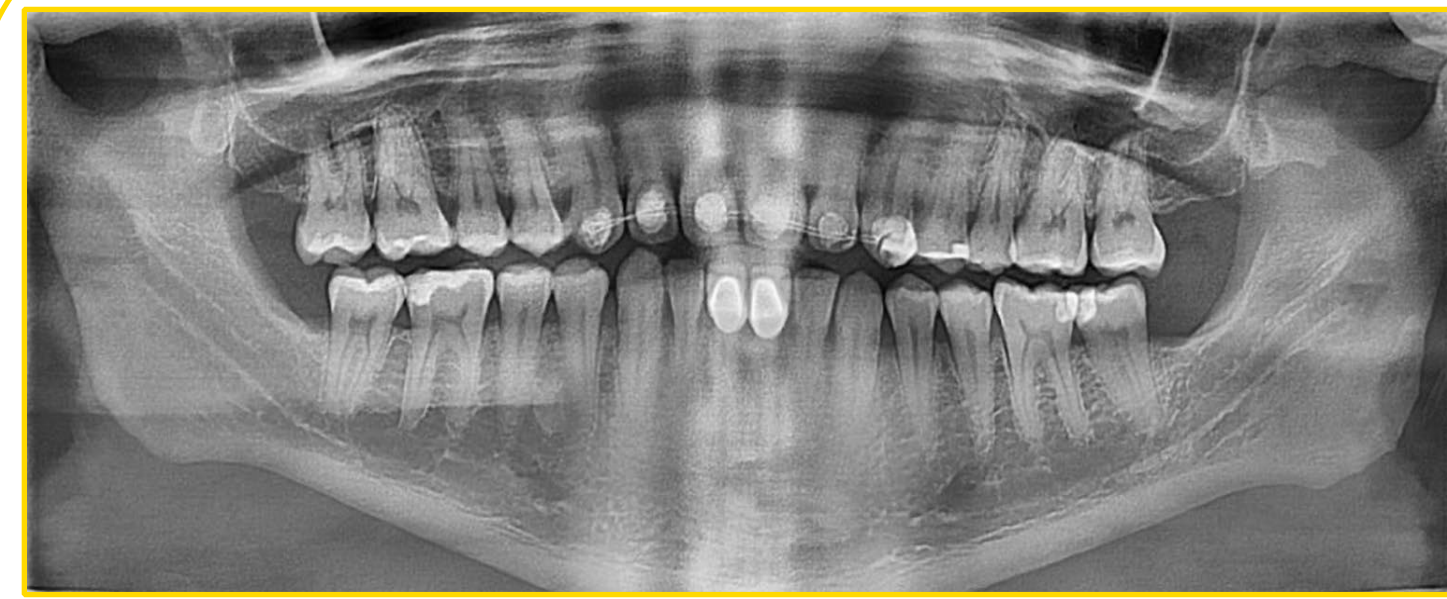


Figure 2: Panoramic radiograph taken on the time of tooth reimplantation

SUMMARY OF TREATMENT STEPS

“The tooth has been kept in a physiologic storage medium or osmolality balanced medium and/or stored dry, the extraoral dry time has been less than 60 minutes Physiologic storage media include e.g. tissue culture medium and cell transport media. Examples of osmolality balanced media are HBSS, saline and milk. Saliva can also be used.

- Clean the root surface and apical foramen with a stream of saline and soak the tooth in saline thereby removing contamination and dead cells from the root surface.
- Administer local anesthesia.
- Irrigate the socket with saline.
- Examine the alveolar socket. If there is a fracture of the socket wall, reposition it with a suitable instrument.

FOLLOW UP

One week follow up to assess healing and signs of acute infection, PA taken
Two weeks follow up to start pulpectomy while splint is still on as per guidelines
Completed RCT by fourth week
6 months follow up to assess RCT and take PA to screen for chronic infection

SUMMARY OF TREATMENT STEPS cont.

- Replant the tooth slowly with slight digital pressure. Do not use force.
- Suture gingival lacerations, if present.
- Verify normal position of the replanted tooth both clinically and radiographically.
- Apply a flexible splint for up to 2 weeks, keep away from the gingiva.
- Administer systemic antibiotics
- Check tetanus protection
- Give patient instructions (soft food diet, no biting etc)
- Initiate root canal treatment 7–10 days after replantation and before splint removal” (1)



Figure 3: two week follow up



Figure 4: pulpectomy initiated at 2nd week



Figure 5: RCT completed at one month

CASE REPORT

37 year old male presents to emergency department status post assault presenting with avulsed teeth #8 and 9, gingival laceration, multiple deep facial laceration and nondisplaced nasal bone fracture. Patient reports no loss of consciousness, and is in stable condition. Significant Medical History: Depression and Psychosis

The teeth were irrigated with saline immediately after pt entered the hospital, pt anesthetized with local infiltration, socket irrigated and teeth splinted back in place, systemic antibiotic prescribed, post-op radiograph taken to confirm seating of the teeth in the socket. Post-op instruction given to the patient.

CONCLUSION

Immediate reimplantation of avulsed teeth needs to be done with close attention to the guideline and protocols. RCT should be initiated in few weeks and follow ups must be done to rule out chronic infection. If the RCT fails, immediate implant placement can be indicated. In the presented case, pt reports no pain nor tenderness and the 6 months follow up radiograph to be taken in near future.

References:

- 1-Bourguignon C, Cohenca N, Lauridsen E, Flores MT, O'Connell AC, Day PF, Tsilingaridis G, Abbott PV, Fouad AF, Hicks L, Andreasen JO, Cehreli ZC, Harlamb S, Kahler B, Oginni A, Semper M, Levin L. International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 1. Fractures and luxations. Dent Traumatol. 2020 Aug;36(4):314-330. doi: 10.1111/edt.12578. Epub 2020 Jul 17. PMID: 32475015.
- 2- Andersson L, Andreasen JO, Day P, Heithersay G, Trope M, DiAngelis AJ, Kenny DJ, Sigurdsson A, Bourguignon C, Flores MT, Hicks ML, Lenzi AR, Malmgren B, Moule AJ, Tsukiboshi M. Guidelines for the Management of Traumatic Dental Injuries: 2. Avulsion of Permanent Teeth. Pediatr Dent. 2016 Oct;38(6):369-376. PMID: 27931479.