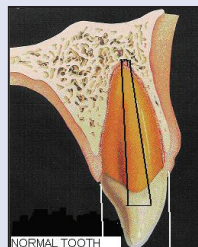


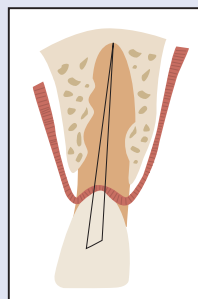
1.) Radiograph of a 16 year old boy, who had #8 avulsed 7 years ago at the age of 9. The tooth was out of the mouth for one hour and stored in milk, before being re-implanted. Since then, the patient had orthodontic treatment for 2 ½ years – (Ortho treatment was completed at age 14). 2.) The Root Canal treatment was completed a week later. 3.) 3 months post-op 4.) 6 Months post-op 5.) 11 Months Post op. 7.) Still tested vital and is being monitored every 6 months.

REPLACEMENT RESORPTION

Localized areas of the root surface are resorbed and replaced by bone. Clinically, this is manifested as ankylosis. Radiographically, this is characterized by disappearance of the normal PDL and replacement of the resorbed root structure by bone. If there is a viable periodontal ligament present at the time of replantation, there is a good chance that this replacement resorption will be transient.



However, if the PDL on the root surface loses its vitality, then progressive replacement resorption takes place until very little root is left.



In conclusion, the prognosis for the avulsed tooth depends on:

1. How long the tooth had been out of the mouth.
2. While out of the mouth → Storage medium.
3. Stage of root development.

10 Holden St., Ste. 5, Fl. 2
Malden, MA 02148



A Knock OUT!

A Clinical Update



10 Holden St., Ste. 5, Fl. 2 | Malden, MA 02148
P: 781-321-6006 | F: 781-324-1549
www.maldenendo.com

A Knock OUT: Management of the Avulsed Tooth

Today, every child participates in organized sports on a daily/weekly basis, either because the child genuinely loves the sport, the parent does, or just simply because of the common knowledge that exercise helps the brain function better. It is therefore understandable that sports injuries are more prevalent and the incidence of tooth trauma is higher among children. An avulsion (a knock out) is the most damaging of all traumatic tooth injuries.

When a tooth is avulsed, three groups of people play a role in making the difference between saving the natural dentition and losing the tooth prematurely.

The FIRST group alludes to the immediate actions taken by the patient, coaches, athletic trainers and parents after a tooth is avulsed. The **general dentist** is often the SECOND group to be called upon in this emergency. And finally, **the endodontist** is the THIRD group to manage the case as the tooth's blood supply will be severed thus resulting in the need for endodontic therapy.

As Endodontists, we treat this emergency situation with the prompt attention that it deserves. The American Association of Endodontists has laid down several guidelines for the management of the avulsed tooth which, when adhered to, will result in successfully saving the tooth. At Endodontics of Malden, we are proud of the cases that we have handled successfully, and would like to share our knowledge with you.

If a permanent tooth is avulsed, how should it be handled?

- Place the tooth in Hank's Balanced Salt Solution (HBSS), milk or saline. HBSS is the best option, however if that is not available milk is the next best solution to use. It maintains the vitality of periodontal ligament cells for three hours.

- Handle the tooth by the **crown** only. Do **not** touch the root as this may result in periodontal ligament damage, which will result in an advanced rate of external root resorption (aka Replacement Resorption) and thus earlier tooth loss. If the root is contaminated, use a stream of saline to rinse it.
- Do **not** place an avulsed tooth in water. This leads to rapid cell lysis, which will prevent periodontal ligament attachment and thus make replantation very difficult.
- Place a flexible splint after the tooth is replanted.
- Print and follow the *Recommended Guidelines for the Treatment of Traumatic Dental Injuries* for an easy guide to determine the AAE's recommendations regarding antibiotic regimen, follow-up, and varying treatment for primary teeth, extraoral times >60min, and luxation injuries. (www.aae.org)

Can the patient reimplant the tooth?

Yes, depending on the severity of the injury. If possible, the patient should replace the avulsed tooth in its socket immediately and seek dental care to stabilize it. The quicker Endodontic care is sought, the greater the chance to save the tooth.

If an avulsed tooth is reimplanted, will it remain healthy?

Although external root resorption is expected over time due to the periodontal ligamental damage, management of the avulsed tooth according to the American Association of Endodontist's guidelines will save the tooth for years to come. The goal is to maintain the natural dentition as long as possible to allow for the child's maxilla and mandible to

fully develop. Therefore, when possible, replantation of the knocked-out tooth is recommended.

Get Involved

- Educate parents, school administrators, coaches and athletic trainers on
 - 1) How to handle the tooth at the site of trauma.
 - 2) The importance of MANDATORY sports mouthguards.
 - 3) The availability of HBSS for purchase:
www.save-a-tooth.com
- Provide copies of the AAE's patient education brochures on *Your Guide to Traumatic Dental Injuries*. **Coaches may be given copies of AAE's Avulsed Tooth Poster, and Tooth Trauma Chart.**
- Organize a community event to give a PowerPoint presentation on the **prevention and emergency management** of the avulsed tooth. Your target audience would be
 - 1) Parents and school officials
 - 2) Students at school assemblies
- Please call us at "Endodontics of Malden" for assistance in providing the above necessary materials, including some case histories.

When In Doubt, Refer Out

At Endodontics of Malden, we aim to be your partner to "SAVE-A-TOOTH"

References:

- 1) AAE brochure, "Recommended Guidelines for the Treatment of Traumatic Dental Injuries"
- 2) *Textbook and Color Atlas of Traumatic Injuries to the Teeth, Third edition* by Andreason J. O and Andreasen F M, 1994. Pages 315 to 425.