Acute Management of an Avulsed Permanent Tooth with an Open Apex (Apex >1 mm)

Instructions to Individual at Site of Avulsion:
- Seek medical attention if loss of consciousness, signs of neurological impairment, or other major medical concerns.
- Rinse avulsed tooth gently in milk, saline, or saliva; care not to touch root with fingers.
- If possible, replant avulsed tooth.
- If unable to replant tooth, place in physiologic storage medium (milk, Hank's Balanced Salt Solution [HBSS], saliva, or saline).
- Seek immediate dental treatment.

Upon Arrival to Dental Facility:
- Perform general neurological assessment (See also Acute Traumatic Injuries: Assessment and Documentation1).
- If tooth was not previously replanted or stored in physiologic medium, rinse the root structure with gentle stream of saline until all visible contaminants are removed and store in physiologic medium.
- Review medical history (including tetanus immunization status) and details of injury.
- Complete clinical and radiographic evaluations.
- Consider taking photographs.
- Evaluate for abuse.

Tooth has been replanted before arrival to the dental facility.

Tooth has not been reimplanted prior to arrival. (Prognosis, but not treatment, will change based on placement in physiologic storage medium versus dry storage before arrival to dental facility,2)

Confirmation of Positioning:
- Verify the correct position of the tooth clinically and radiographically.
- Reposition if necessary.

Replantation:
- Replant tooth slowly and gently.

Postoperative Management: Prescriptions, Splint Removal, and Follow-Up
- Prescribe 7-day course of antibiotics (e.g., amoxicillin or penicillin; alternative for penicillin-allergic patients; doxycycline has demonstrated anti-resorptive, anti-osteoclastic, anti-inflammatory, and antibacterial effects but is not recommended for patients <12 years of age).
- Prescribe chlorhexidine mouth rinse 2 times/day for 2 weeks.2
- Refer to medical professional for tetanus booster as needed.
- At 2 weeks, remove splint (unless bony fracture occurred) and evaluate clinically and radiographically for pulpal revascularization, infection, pulpal necrosis, and root resorption.
- Initiate pulpal revascularization, apexification, or root canal treatment as soon as definitive clinical and/or radiographic pathology presents.2
- Frequent, regular follow-up evaluations (e.g., every 4 weeks) are indicated initially.


References
Acute Management of an Avulsed Permanent Tooth with an Closed Apex (Apex <1 mm)

**Instructions to Individual at Site of Avulsion:**
- Seek medical attention if loss of consciousness, signs of neurological impairment, or other major medical concerns.
- Rinse avulsed tooth gently in milk, saline, or saliva; care not to touch root with fingers.
- If possible, replant avulsed tooth.
- If unable to replant tooth, place in physiologic storage medium (milk, Hank's Balanced Salt Solution [HBSS], saliva, or saline).
- Seek immediate dental treatment.

**Upon Arrival to Dental Facility:**
- Perform general neurological assessment (See also Acute Traumatic Injuries: Assessment and Documentation¹).
- If tooth was not previously replanted or stored in physiologic medium, rinse the root structure with gentle stream of saline until all visible contaminants are removed and store in physiologic medium.
- Review medical history (including tetanus immunization status) and details of injury.
- Complete clinical and radiographic evaluations.
- Consider taking photographs.
- Evaluate for abuse.

**Tooth has been replanted before arrival to the dental facility.**

**Tooth has not been replanted prior to arrival.** (Prognosis, but not treatment, will change based on placement in physiologic storage medium versus dry storage before arrival to dental facility.²)

**Preparation for Replantation:**
- Anesthetize area, giving consideration to using block injection techniques and no vasoconstrictor.
- Irrigate socket with gentle stream of sterile saline, removing coagulum.

**Replantation:**
- Replant tooth slowly and gently.

**Confirmation of Positioning:**
- Verify the correct position of the tooth clinically and radiographically.
- Reposition if necessary.

**Stabilization:**
- Stabilize the tooth using a passive, flexible wire or nylon fishing line bonded with composite. Placement should allow area to be cleansable.
- **Exception:** Alveolar or jaw fracture requires a rigid splint.

**Postoperative Management: Prescriptions, Root Canal Treatment, Splint Removal, and Follow-Up**
- Prescribe 7-day course of antibiotics (e.g., amoxicillin or penicillin; alternative for penicillin-allergic patients; doxycycline has demonstrated anti-resorptive, anti-osteoclastic, anti-inflammatory, and antibacterial effects but is not recommended for patients <12 years of age).
- Prescribe chlorhexidine mouth rinse 2 times/day for 2 weeks.²
- Refer to medical professional for tetanus booster as needed.
- Initiate root canal treatment (e.g. calcium hydroxide) within 2 weeks of replantation.²
- Splint removal at 2 weeks; rigid splint placed for bony fracture should remain for 4 weeks.
- Follow-up evaluations: 1 month, 3 months, 6 months, 12 months, and annually for 5 years.


**References**