EMERGENCY MANAGEMENT OF AVULSED TEETH

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SCENARIO:
A parent or patient calls the office to inform you that a tooth has been avulsed.

What advice do you need to give parents/caregivers or patients to assess & manage this situation?
**ADVICE:**

- Reimplant tooth ASAP & present to office
- If not possible to reimplant (unconscious or uncooperative patient)
  → immerse tooth in storage media

**STORAGE MEDIA:**

- Ideal – Hanks Balanced Salt Solution (HBSS) or Eagle’s medium
- Next best – milk
- Short timeframe – saliva (potential microbial contamination)
- AVOID tap water (can lead to rapid cellular lysis of PDL)
IN-OFFICE EXAMINATION:
• Assess for neurological damage
• Check responsiveness and vitals
• Soft & hard tissue exam (look for alveolar fractures)

Case 1 – Tooth reimplanted
• Verify correct position
• Splint tooth with flexible ortho wire

Case 2 – Tooth in storage media
• Prepare alveolar socket gently
• Reimplant tooth & verify position
  • If extra-alveolar time > 1 hour, endo treatment before reimplanting
• Splint tooth with flexible ortho wire
ANTIBIOTIC ADMINISTRATION:

• >12yrs – Tetracycline 1\textsuperscript{st} week after reimplantation

• <12yrs – Pen V or Amoxicillin

• Need to assess and advise parents/caregiver/patients re: risk of discoloration of permanent teeth with tetracycline usage
SUGGESTED ANTIBIOTIC DOSAGES:

**Penicillin:**
- **<12yrs**
  - 25-50 mg/kg/day in divided doses q 6-8h
  (Maximum dose – 3 g/day)
- **>12yrs incl. adults**
  - 250-500 mg q 6-8h
  (Available as 300 mg tablet)

**Amoxicillin:**
- **<3mths up to 40kg**
  - 20-40 mg/kg/day in divided doses q 8h
- **>40kg incl. adults**
  - 250-500 mg q 8h

**Tetracycline:**
- **>8yrs**
  - 25-50 mg/kg/day in divided doses q 6h

**References:**


KEY SUCCESS FACTORS FOR FAVOURABLE PROGNOSIS:

1. Extra-alveolar time
   • Longer time = less favourable prognosis
   • Leads to death of PDL cells → “replacement root resorption”

2. Storage medium
   • Keeps PDL cells alive and nourished

3. Age of patient
   • Open vs. closed apices = better prognosis of revascularization
EMERGENCY TX: Open vs. Closed Apices

- Emergency treatment is similar, overall
- Differences
  - Application of topical antibiotics to teeth with open apices before reimplantation
  - Enhances chances of pulp revascularization
ENDODONTIC TREATMENT:

- After avulsion, PDL takes ~7-10 days to start healing
- Ideally, wait for 10 days before endo treatment
FOLLOW-UP: IADT GUIDELINES

- Clinical & radiographic monitoring at:
  - 4 weeks, 3 months, 6 months and 1 year and then yearly thereafter.

- Watch for signs of root resorption (CBCT is a useful tool)

- Open apex (>1mm foramen)
  - Excellent prognosis if extra-alveolar time <10-15 minutes
  - Conduct cold/heat & EPT tests
  - For immature teeth, root canal treatment should be avoided unless there is clinical or radiographic evidence of pulp necrosis.
TREATMENT OF AVULSED PRIMARY TEETH:

• Do NOT reimplant!!

• Reimplantation can lead to:
  • Ankylosis
  • Affect permanent tooth’s eruption
  • Damage to crown of permanent tooth
REFERENCES:


http://www.dentaltraumaguide.org/