DENTAL TRAUMATIC INJURIES

Nitrous Oxide Not Contraindicated

Predisposing Factors

◆> 90% of All Injuries
   • Protrusion of Anterior Teeth
   • Poor Lip Coverage
Mouthguards

◆ Girls as Well as Boys
◆ Off-the-Shelf Vs. Individualized
◆ Colors
◆ Neurological Protection
Legal Considerations

- Detailed Records
- Standardized Forms
- Consistant Information
- Professional Responsibility
Medical Issues
◆ Never Treat a Stranger
◆ Neurological Assessment
◆ Above All Else, Do No Harm

Inappropriate Treatments
◆ Endo in Hand
◆ Snip Root Tip
◆ Scrub Root Surface
◆ Soak in Fluoride
Head Injury

◆ Medical Emergency
◆ Priorities
  • Patient before dental!

Neurological Assessment

◆ Aware X 3 ?
◆ Loss of Consciousness?
◆ Nausea or Vomiting?
◆ P E R R L A ?
◆ Drowsy ?
◆ Blurred Vision?
◆ Highway Patrol...
Other Medical Issues

◆ Current Meds?
◆ Other Pathology?
◆ Tetanus Status (DPT)
  • 10 years...
**Antibiotic Necessity**
- Bacterial Endocarditis Prophylaxis
- Soft Tissue “Through and Through”
- Avulsion: Prevent Root Resorption
- Dentoalveolar Infections Later

**Trauma Treatment Priorities**
- No Further Damage...
- Save the Tooth
- Save the Vitality
- Compromised PDL - Crush Sequellae

**Types of Injuries**
- Concussion
- Fracture
- Luxation
- Intrusion
- Extrusion
- Avulsion
- Root Fracture
Fracture Classifications

◆ A Picture is Worth A Thousand Words
◆ Class I, II, and III
Locate Fragment

◆ ANYONE SEE IT?
◆ IN THE LACERATION?
◆ RADIOGRAPHIC LOCATION
◆ AVOID PROBING IF POSSIBLE
Endodontic Considerations

- **Direct Pulp Cap**
  - 1 of 2 reasonable applications
  - Mechanical/surgical exposure
- **Larger Exposure - Pulpotomy**
  - Primary - Formocresol
  - Permanent - Calcium Hydroxide
  - Partial Pulpotomy?
- **Necrosis**
  - Complete pulpectomy
  - Obturation
    - Interim
    - Permanent
- **Apexitification**
  - Permanent Root Canal
    - Gutta Percha
    - Cavit
    - GP Final
Radiographic Needs

- **Periapical Views**
  - Two Required
- **Lateral Radiograph**
  - Primary Anterior Intrusions
- **Panorex**
  - Suspect Major Bony Fractures
    - Subcondylar
    - Mandibular
    - LaFort Types
Concussive Sequellae

◆ Fracture dissipates energy
  • Diminished pulpal shock

◆ Adjacent teeth
  • Future prognosis

◆ Warning to patient / parents
Luxation Injuries

- Reposition
  - Crossbite
- Potential for Root Resorption
- Stabilization
Adequate Isolation

◆ Rubber Dam
  • no clamp
  • premaxilla
  • contiguous holes
◆ Cotton Rolls and Saliva Ejector
◆ Dri-Angles
Splints: Appropriate Use

- Easy to Apply
- Hygienic
  - Patient can maintain
- Adequate Stabilization
- Ease of Removal
  - for doctor
  - for patient

Splinting Times

- Luxations    7-10 Days
- Avulsions    7-10 Days
- Root Fractures 3 months
- All Are Estimates;
  Frequent Revision
  - Andreasen & J of Trauma
Intrusive Injuries
◆ Status of Periodontal Ligament
◆ Status of Alveolar Bone
◆ Status of Pulp
◆ Reposition???
◆ Orthodontic Repositioning

Reposition STAT

Root Resorption

Orthodontic Repositioning
Primary Versus Permanent

◆ Different Pulpal Prognosis
◆ Recovery Likelihood
◆ Dangers of Sequellae

Primary Anterior Intrusion

◆ Into Follicle?
◆ Apex Through Cortical Plate?
◆ Reasonable Expectation of Re-eruption?
Apical Penetration of Cortical Plate

◆ Reposition?
◆ Extract?
◆ Pulpectomy...
Primary Anterior Intrusions

◆ Re-eruption Probability
  • 6-12 months = 50%?
  • Ankylosis...Extract Stat!
◆ Pulpectomy Necessary?
Replantation Protocol

- On Site
- 15 Minute Window ... MAX!
- Clean Gross Debris
- Hold in Position
- Seek Dental Care
- If MUST Transport > Milk

Contraindicated

- Endodontics in Hand
- Scrape/Scrub Root Surface
- Soak in 10% SnF
  - Unless exarticulated > 1 Hour
- Snip Root Tip

Primum Non Nocere
- Galen

Milk Still A Far Second Choice
**Dental Replantation Protocol**

- Check for Full Replantation
- Occlusion
- Stabilize
- Follow-up
  - Short-term
  - Long-term
Root Resorption

- Replacement
  - Ankylosis
- Inflammatory
  - Disappearance of root
- Calcium Hydroxide Temporary Obturation
Apexogenesis and Resorption Prevention

- Calcium Hydroxide Obturation
  - 3-10 Day window
- Instrumentation and Complete Cleansing
  - Critical
- Replace at 3 and 6 months
- If No Contradicting Signs/Symptoms - Final Fill
- Long Term Observation
Replantation Research

- Doxycycline soak
- Hank’s Balanced Salt Solution
- Shortened or No Splint Times
Root Fracture

- Prognosis Location Dependent
  - The More Apical the Better
- Long Bone Model of Repair
  - Longer Splint Time
- Endodontics?
  - Complete?
  - Partial Coronal Fragment
- Long Term Observation
Sequellae to Trauma

- To the Involved Teeth
  - External Resorption
  - Internal Resorption
  - Ankylosis
  - Loss of Vitality
    - Root Dilaceration, Canal Dystrophic Calcification

- To Succedaneous Teeth
  - Damage to Follicle
    - Timing Critical
    - Hypoplasias, Demineralization, etc.
  - Root Dilaceration
  - Loss of Teeth
Replacement Options

◆ Short Term:
  - Removable: “Kiddie” Partial
  - Fixed: Orthodontic Band Retained

◆ Long Term
  - Etch Retained Bridge
  - FPD

◆ Eventual: Implant or FPD
It's Over...
Thank You!