Teaching Endodontic Emergencies to Predoctoral Dental Students

AAE Predoctoral Directors Educator Workshop

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Outline

- Didactic training on endodontic emergencies in UW predoc endo curriculum
- Material covered in predoc endo curricula
- Dental emergencies literature
- How endodontic emergencies are handled in dental schools

UW Didactic Training in Endodontic Emergencies

- 2 hours of lecture devoted specifically to “Endodontic Emergencies” in 2nd and 3rd years
- Material on endodontic emergencies included in other lectures throughout the curriculum

UW Didactic Training in Endodontic Emergencies

- Spring Quarter Second Year
  Introduction to Clinical Endodontics (Preclinical Lab Course)
  - Endodontic Diagnosis (1 hour)
  - Endodontic Emergencies (1 hour)
- Summer Quarter Third Year
  Comprehensive Treatment Planning in Restorative Dentistry
  - Longitudinal Fractures + Review Dx Procedures (1 hour)
- Fall Quarter Third Year
  Endodontic Treatment Procedures
  - Endodontic Emergencies (1 hour)
  - Local Anesthetics (1 hour)
  - Endodontic Pharmacology (1 hour)
- Winter Quarter Third Year
  Advanced Endodontic Diagnosis and Treatment Issues
  - Trauma (2 hours)
Content: Endodontic Emergencies

• Pretreatment Emergencies
  – Irreversible pulpitis
  • With symptomatic apical periodontitis
  • Without symptomatic apical periodontitis
  – Pulp necrosis with apical pathosis
    • Without swelling
    • With localized swelling
    • With diffuse swelling
• Interappointment emergencies
• Postobturation emergencies


Content: Endodontic Diagnosis

• Diagnostic procedures
  – History, chief complaint, extraoral exam, intraoral exam, diagnostic tests, radiographic exam
• Diagnostic classification

Content: Longitudinal Fractures

• Detecting cracks and fractures
• Symptoms, diagnosis, treatment of:
  – Craze lines
  – Fractured cusp
  – Cracked tooth
  – Split tooth
  – Vertical root fracture

Content: Local Anesthetics

• Testing for anesthesia
• Factors affecting anesthesia
• Conventional anesthesia techniques and agents: onset, duration, success rate
• Supplemental anesthesia techniques: intraosseous, PDL, intrapulpal
• Hypotheses why local anesthetic “fails”
Content: Endodontic Pharmacology

- Local anesthetics  
  — already covered
- Irrigants and intracanal medicaments  
  — covered next quarter in ENDO 535
- Antibiotics
- Analgesics

Content: Trauma

Dental Trauma

Traumatic injuries to teeth and supporting tissues
- Epidemiology, classification, and diagnosis.
- Injuries to hard dental tissue and pulp
  - Enamel fracture
  - Uncomplicated Crown Fracture
  - Complicated Crown Fracture
  - Crown & Root fracture
  - Root fracture
- Injuries to periodontium

Survey of Diplomates of the ABE

- Follow-up on previous surveys in 1977 and 1990
- 232 respondents
Current Trends in Endodontic Practice: Emergency Treatments and Technological Armamentarium
Lee et al, J Endod, 2009

### Table 1

<table>
<thead>
<tr>
<th>Procedure</th>
<th>% of Patients</th>
<th>% of Endodontists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulpal extirpation</td>
<td>23.2%</td>
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<tr>
<td>Acute pulpitis + periapical periodontitis</td>
<td>52.3%</td>
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</tbody>
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Dental Emergencies Literature

- Little current literature available on teaching dental emergencies or how emergencies are handled in dental schools
- Literature exists that provides rationale for endodontist involvement in handling emergency patients in dental schools

An Analysis of the Out-of-Hours Demand and Treatment Provided by a General Dental Practice Rota Over a Five-Year Period. Portman-Lewis, Primary Dental Care, 2007.

- Experience of a cooperative of 12 dentists providing out-of-hours care over a 5 yr period
- Kept a log of calls since started the on-call rotation
- 1070 usable results
Dental Emergencies in a University Pediatric Dentistry Clinic: a Retrospective Study

- Data from 253 emergency pedo visits in 2010
- University-based clinic
- Mean age of 7.8 years

Dental Emergency Rates at Two Expeditionary Medical Support Facilities Supporting Operations Enduring and Iraqi Freedom
Dunn et al, Mil Med, 2004

153 and 145 dental emergencies per 1000 soldiers per year

How are endodonic emergencies handled at your dental school?

137 dental emergencies per 1000 soldiers per year
Urgent Care in the Dental School Setting: Analysis of Current Environment and Future Challenges in Emergency Dental Education
Tiwana et al, J Dent Educ, 2007

• Survey of urgent care directors at all US dental schools
• 49 schools responded

Urgent Care in the Dental School Setting: Analysis of Current Environment and Future Challenges in Emergency Dental Education
Tiwana et al, J Dent Educ, 2007

• In terms of supervising dentist(s), what facets of dentistry are represented on the clinic floor in the urgent care clinic?
  – General dentistry 89.8%
  – Endodontics 49%
  – OMS 36.7%
  – Radiology 30.6%
  – Pathology 24.5%
  – Oral Medicine 16.7%
  – Orthodontics 8.2%
  – Dental public health 0%
  – Periodontics 7.7%
  – Pediatric Dentistry 10.2%
  – Prosthodontics 30.6%
  – Average of 3.49 types of representing depts

Urgent Care in the Dental School Setting: Analysis of Current Environment and Future Challenges in Emergency Dental Education
Tiwana et al, J Dent Educ, 2007

• How are active student patient emergencies handled?
  – By assigned DDS student 29%
  – In urgent care clinic by student on rotation 28.6%
  – Both 38.8%
  – Other 10.2%

After-Hours Emergency Policies at US Dental Schools
Bauman et al, J Dent Educ, 1998

• Survey of clinical deans/directors at US dental schools
• 52 schools responded
• All schools had some after-hours emergency care available
• 33% provided care at the dental school
• 75% of schools had >1 group of provider treat pts after hours
After-Hours Emergency Policies at US Dental Schools
Bauman et al, J Dent Educ, 1998

Hope to see you in Seattle....

• AAE Annual Session, May 6-9, 2015