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Curriculum Overview

ACGME formatted educational objectives
7 annotated 50 minute PowerPoint modules
1. The relationship of oral to systemic health
2. Child oral health
3. Adult oral health
4. Acute dental problems
5. Oral health in pregnancy
6. Fluoride varnish
7. The oral examination

Test questions

Resources for further learning
Acknowledgements

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Educational Objectives

• Diagnose, initially manage, and appropriately refer:
  – Pain of dental origin
  – Oral infections
  – Dental trauma to primary and permanent teeth

• Distinguish true dental emergencies

• Implement strategies aimed at the prevention of oral injuries
Oral Pain

Smiles for Life
Oral Pain

- 22% of adults have had oral pain in past 6 months
- Often poorly localized
- Children may not
  - Describe or localize pain
  - Identify affected tooth or region
Oral Pain Etiologies

• Dental source may present with sinus, jaw, ear pain
• Oral pain may have non-dental cause
  – Sinusitis
  – Otitis media / otitis externa
  – Oral ulcerations
  – Temperomandibular joint
Analgesia for Oral Pain

- Acetaminophen or NSAIDS can be effective alone or as adjuncts
- Often pain is severe and requires opioids
- Oil of Cloves has not been found to be effective
Oral Infections

Smiles for Life

Photo: ICOHP
Reversible Pulpitis

- Carious lesion encroaching on pulp
- Pain with hot, cold, sweet - resolves spontaneously
- Treatment: Filling

Photo: Joanna Douglass BDS DDS. Graphic: AAFP Home Study Program - with permission
Irreversible Pulpitis

- Severe pulpal inflammation
- Pain severe, spontaneous, persistent, poorly localized
- Treatment: Root canal or extraction
- Untreated can progress to apical periodontitis and abscess

Photo: Joanna Douglass, BDS DDS. Graphic: AAFP Home Study Program - with permission
Periapical Abscess

- A localized, purulent form of periapical periodontitis
- Can fistulize through gum or progress to cellulitis
Periapical Abscess

• If ‘pointing’ can perform an incision and drainage for temporary relief
• Antibiotics are indicated only if concurrent cellulitis is present
• Dental evaluation required for definitive care: root canal or extraction
Facial Cellulitis *Emergency*

- If localized - outpatient oral antibiotics and prompt dental evaluation
- Spread to deep fascial spaces can be life threatening with airway compromise or sepsis
  - Hospitalize with surgical and ID consultations
  - IV antibiotics, analgesics
  - CT imaging
- Root canal or extraction is necessary to prevent recurrence
Antibiotic Options

• Penicillin VK 25-50 mg/kg/day, divided 4 times daily
• Amoxicillin 35-50 mg/kg/day, divided 3 times daily
• For penicillin allergic patients: Clindamycin 10-25 mg/kg/day, divided 3 times daily
• For severe infections consider broad spectrum agents
Pericoronitis

- Patient complains of pain
- Gum flap traps food and plaque over partially erupted molar
- Secondary cellulitis possible
- Treatment: irrigation, antibiotics if cellulitis, removal of gum flap or tooth

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Dental Trauma
Epidemiology

• Dental injuries are common:
  – 30% of preschoolers
  – 25% of 12 y.o. have injured permanent teeth

• Common causes: bikes, falls, sports injuries, automobile accidents, violence

• Anterior maxillary incisors are most often injured
History

• Take history
  When? Where? How?

• Determine tetanus status
  Consider prophylaxis for intrusion, avulsion, deep laceration or contaminated wound if not updated in past 5 years

• Assess symptoms
  Pain, change in occlusion, difficulty opening mouth
Extra-Oral Exam

Triage

• Airway (ABC)
• Other life-threatening injuries
• Neurologic exam
• Assess the Cervical Spine
• Check for skull, orbit, or zygomatic fractures
• Primary vs. permanent teeth
• Availability of dental care

Photo: ICOHP
Extra-oral Exam

Examine mouth
- Irrigate to remove blood, clots, and debris
- Soft tissues
- Teeth: Primary or Permanent
- Bony structures

Assess:
- Tenderness and Swelling
- Lacerations
- Damaged or mobile teeth
- Occlusion
- Mobile jaw segments
- Pain or limitation on opening

Photo: © Eastman Dental Institute www.eastman.ucl.ac.uk
Alveolar Bone Fracture

- Often associated with gingival laceration
- Palpate alveolar ridge for step-offs
- Segmental alveolar fractures move when assessing tooth mobility
- Diagnose radiographically
- See oral surgeon emergently, ideally within one hour. Reduction is easier before swelling occurs

Photo: ICOHP
Chin Trauma

Suspect:
• Mandibular condyle fracture
• Tooth fracture

Physical evaluation
• Mouth opens normally?
• Normal bite?
• Chin deviation on opening?
• Palpable movement of condylar heads?
• Fractured teeth in the molar areas?

Photos: ICOHP
Missing Teeth

• Do not assume missing teeth were lost at scene
• Consider X-ray to determine if missing teeth are:
  – swallowed
  – aspirated
  – intruded into sinus or other structures
Trauma to Primary Teeth

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Trauma to Primary Teeth

- Permanent teeth develop close to primary teeth
- Alveolar bone more pliable in children—intrusion/subluxation of primary teeth more common
- Intrusion or subluxation may damage developing permanent dentition
Intrusion of Primary Tooth

- Tooth pushed into gum-deeper into socket
- Cannot accurately predict outcome of permanent dentition
- Do not attempt to remove intruded tooth
- Analgesics, warm saline rinses, consider antibiotics
- Dental evaluation in 1 day to 1 week based on symptoms
Avulsion of Primary Tooth

- Assess for other associated injuries
- DO NOT REPLACE
- Not necessary to save
- Refer to dentist within 24 hrs
- Underlying permanent tooth may be damaged
Trauma to Permanent Teeth

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Classification of Loosened (luxated) Permanent Teeth

- **Concussion**
  
  Tooth is tender but not displaced or mobile

- **Subluxation**
  
  Tooth is mobile, may have hemorrhage from the gingival crevice

- **Luxation**
  
  Tooth is loose, with no or some degree of displacement from socket

- **Intrusion**
  
  Tooth is pushed deeper into its socket

- **Extrusion**
  
  Tooth is partially displaced from its socket
Intrusion of **Permanent** Tooth

- See dentist immediately for repositioning and splint
- Do not attempt to remove intruded tooth
- Dental care may include:
  - splinting
  - soft diet
  - gentle tooth brushing with a soft brush
  - chlorhexidine mouthrinse
- High risk for complications
  - Tooth death, root resorption, infection
  - May require subsequent root canal therapy
Avulsion of **Permanent** Tooth

**Emergency**

- A true dental emergency!
- Preservation of periodontal ligament is critical for tooth survival
- Rinse off any debris gently with saline or milk
  - Hold tooth by crown only
  - DO NOT touch, rub, clean, or scrub the root

Photo: ICOHP
Avulsion of Permanent Tooth

Emergency

Re-implant immediately, ensuring correct orientation
- Best outcomes with 5 minutes
- Bite on gauze or hold tooth in place
- Antibiotic prophylaxis with penicillin or doxycycline for 7 days recommended
- See dentist immediately for radiograph, splinting

If can’t re-implant on scene, transport in saline, milk, or buccal sulcus

Photo: ICOHP
Tooth Fracture Classification

- **Root fracture**
- **Enamel, dentin and pulp**
- **Enamel and dentin**
- **Enamel only**

Smiles for Life
Tooth Fractures

Management depends upon severity and patient symptoms

- Routine referral if painless
- Urgent – 1 day – if pain or pulp exposed
Tooth Fractures

- Tooth may or may not be mobile depending on fracture location
- Radiograph mandatory for diagnosis
- See dentist same day
- Treatment is reduction and splinting or extraction
- Complications: root resorption, pulpal necrosis

Photos: ICOHP
Oral Piercing Complications

- Tooth fracture or injury
- Stud aspiration
- Allergic reaction
- Nerve damage
- Speech impediment
- Gingival recession
- Infection

Photos: ICOHP
Injury Prevention

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Photo: ICOHP
Mouth Guards Prevent Injuries

- Most trauma occurs in soccer, football, baseball and hockey
- Skateboarding, basketball, bicycling injuries are common
- A well-fitting mouth guard can decrease risk of injury
- By separating mandible from base of skull, mouth guards may also reduce cerebral and dental concussion
Mouth Guards Types

- Custom
- Stock
- Boil and bite

Photos: ICOHP
Injury Prevention

• Use a mouth guard – any is good, best are custom fitted
• A well fitting mouthguard is most likely to be used consistently
• Remove oral piercings for athletics
• Include review of mouth guards in adolescent well child checks or sports physicals
Take Home Messages

• Consider dental and non-dental sources of pain

• Two true dental emergencies:
  – Facial cellulitis needs immediate treatment and possible hospitalization
  – Re-implant avulsed permanent teeth immediately

• Accurately assess and describe dental trauma for optimal triage and referral

• Clinicians should promote the use of mouth guards and other protective equipment to prevent oral injuries
How would you manage these?