Dental Emergencies

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Dental Emergencies

- Pain
- Trauma
- Infection
- Pathology
Dental Pain

Trigeminal Nerve
Aδ (small myelinated)
C (unmyelinated)
Transmits only Pain
Dental Pain

Analgesics – NSAID, Tylenol/Narcotic
Antibiotic – Penicillen, Clindamycin
Dental Care – Filling, Root Canal etc.

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**Mucosal Pain**

- Ulceration
- Differential: Neoplasm, Immune, Infection, Trauma
- Biopsy Directed Treatment

**Aphthous Ulcer /“canker sore”**

- Etiology: Immune Mediated
- Incidence: 40% Population
- Minor: Small (3-10mm)
  - Superficial
  - Short Duration (7-14d)
- Major: Larger (greater than 10mm)
  - Deep (submucosal and muscle)
  - Longer Lasting
Mucosal Pain

Aphthous Ulcer / Stages
- Pro-dromal – tingling, burning
- Pre Ulcer – red papules
- Ulcer – superficial, white base
- Healing – granulation, no scar

Mucosal Pain

Aphthous Ulcer / Treatment
- No Treatment
- Topical Anesthetics
- Topical Antibiotics – Tetracycline
- Corticosteroids – topical, intra-lesional, systemic
Dental Trauma

- Concussion
- Subluxation
- Intrusion
- Dental Evaluation
- Good Prognosis
- Root Canal
- Analgesics/Antibiotics

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Dental Trauma

- Concussion
- Subluxation
- Intrusion
- Extrusion
- Lateral Luxation
- Avulsion
Dental Trauma

Concussion
Subluxation
Intrusion
Extrusion
Lateral Luxation
Avulsion

Time Limitations – 1h

Storage Medium
- tissue culture
- socket
- saliva
- milk
- saline
Dental Trauma

**Avulsion**
Time Limitations – 1h

**Storage Medium**
tissue culture, socket, saliva, milk, saline

**Health of the Tooth**

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**Dental Trauma**

**Avulsion/Replantation**
1. Irrigate Tooth
2. Local Anesthetic
3. Irrigate Socket
4. Replant Tooth
5. Splint
6. X-Ray

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**Dental Trauma**
Dental Trauma

Crown Fracture
Root Fractures
Dental Alveolar
Dental Trauma

Crown Fracture
- Ellis Classification
  - Class I – Enamel Only
  - Class II – Enamel and Dentin
  - Class III – Enamel, Dentin and Pulp
  - Class IV – Root Fractures

Treatment
- Dental Referral
- Filling, Root Canal/Crown
- Analgesics
Dental Trauma

Crown Fracture

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Class I – Enamel Only
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Treatment
Dental Referral
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Treatment
Dental Referral
Root Canal/Crown
Possible Extraction
Analgesics
Antibiotics – Penicillin, Clindamycin

Dental Trauma

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Dental Referral
Extraction
Analgesics
Antibiotics – Penicillin, Clindamycin

Oral Infections

Periodontal Disease and Tooth Decay
are the most common infectious
diseases in the United states.
Over 95% of the Population.
Oral Infections

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Odontogenic Infections
Most common cause of an abscess in the deep spaces of the Head and Neck

Spread of Infection depends on:
- Thickness of bone adjacent to tooth
- Position of muscle attachment in relation to root apex
- Host Defense
- Virulence of bacteria
Oral Infections

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Primary Spaces

- Palate
- Sublingual
- Submandibular
- Vestibular
- Buccal
- Canine
- Submental
Oral Infections

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Secondary Spaces
- Pterygomandibular: spread from submandibular
- Masseteric
- Temporal
- All above + Masticator space
- Sign: Trismus
- Orbital
- Infratemporal
- Lateral Pharyngeal
- Retropharyngeal
- Prevertebral
Oral Infections

Secondary Spaces
Orbital
Peri-Orbital

Orbit: CT with contrast

Treatment
Drainage, Antibiotics

Secondary Spaces
Orbital
Peri-Orbital

Ophtho
Acuity, eom, pupils
CT with contrast

Treatment
Drainage, Antibiotics
Most odontogenic infections are caused by multiple bacterial species.

**Primarily**
- Aerobic gram (+) cocci
- Anaerobic gram (+) cocci
- Anaerobic gram (-) rods

**Aerobic / Anaerobic characteristics**

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Infection</td>
<td>5-7%</td>
</tr>
<tr>
<td>Anaerobic Infection</td>
<td>30%</td>
</tr>
<tr>
<td>Combination Infection</td>
<td>70%</td>
</tr>
</tbody>
</table>

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**Aerobic Species**
- Gram + rods
  - Corynebacterium, Diptheroids
- Gram – rods
  - E. corrodens
  - Haemophilus
  - Enterobacteriaceae
- Gram + cocci (strep, staph)
- Gram – cocci (Neisseria)
- Spirochetes
- Fungi

**Anaerobic Species**
- Gram + rods
  - Actinomyces, Lactobacillus, Propionibacterium acnes, Clostridia
- Gram – rods
  - Bacteroides, Fusobacterium, Wollinella
- Gram + cocci
  - Streptococcus, Peptostreptococcus
- Gram – cocci
  - Veillonella

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**Trends Microbiology of Maxillofacial Infections**

Increase in Beta-Lactamase, E. Corrodens, S. Aureus, questionable decrease in Bacteroides

*Shreeve et al; The changing face of odontogenic infection, JOMS, 2001: 59, 739-48

Unlikely shift in the types of bacteria seen in odontogenic infections in the last decade

Oral Infections

Management of Odontogenic Infections
- Determine severity
- History and Physical
- Imaging Studies
  - Panorex
  - CT with contrast:

Determine severity

History and Physical

Imaging Studies
- Panorex
- CT with contrast:

Identifying drainable fluid collection in face and neck regions

- Clinical exam: sensitivity 55%, specificity 73%
- CT: sensitivity 95%, specificity 53%
- CT and Clinical exam: sensitivity 95%, specificity 80%


Hospital Admission
- Airway
- Trismus, Floor of Mouth
- Lateral Pharynx
- Fever
- WBC
- Immunocompromised
- DM, HIV, EtOH
Orral Infections

Hospital Admission
Airway
Trismus, Floor of Mouth
Lateral Pharynx
Fever
WBC
Immunocomp
DM, HIV, EtOH

Treatment
Airway
Drainage
Extraction
Antibiotics

Oral Infections

<table>
<thead>
<tr>
<th>Oral</th>
<th>24h</th>
<th>1wk</th>
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<tbody>
<tr>
<td>Penicillin V</td>
<td>$0.56</td>
<td>$9.99</td>
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<tr>
<td>Amoxicillin</td>
<td>$0.93</td>
<td>$13.89</td>
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<tr>
<td>Augmentin</td>
<td>$10.95</td>
<td>$104.99</td>
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<tr>
<td>Cephalexin</td>
<td>$4.28</td>
<td>$24.99</td>
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<tr>
<td>Clindamycin</td>
<td>$3.92</td>
<td>$51.29</td>
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<tr>
<td>$16.88</td>
<td>$108.27</td>
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</tr>
<tr>
<td>Metronidazole</td>
<td>$2.88</td>
<td>$10.02</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>$8.30</td>
<td>$80.59</td>
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</tbody>
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Oral Infections

<table>
<thead>
<tr>
<th>Intravenous</th>
<th>24h</th>
<th>1wk</th>
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<tbody>
<tr>
<td>Penicillin G</td>
<td>$21.28</td>
<td>$148.96</td>
</tr>
<tr>
<td>Ampicillin</td>
<td>$21.24</td>
<td>$148.68</td>
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<tr>
<td>Unasyn</td>
<td>$75.80</td>
<td>$516.60</td>
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<tr>
<td>Cefazolin</td>
<td>$17.70</td>
<td>$123.90</td>
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<tr>
<td>Clindamycin</td>
<td>$53.64</td>
<td>$375.68</td>
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<tr>
<td>Metronidazole</td>
<td>$77.36</td>
<td>$541.52</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>$168.00</td>
<td>$476.00</td>
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Oral Infections

Pericoronitis
Bacterial infection and inflammation of the soft tissue around a partially erupted third molar.

Pain, Trismus, Fever
FOM Soft

Treatment
Extraction
Antibiotics – PCN, Clindamycin
Chlorhexidine(.12%)/H2O2
Oral Infections

Acute Necrotizing Ulcerative Gingivitis
Fusiform and Spirochete Bacterial infection of the gingiva.

Signs and Symptoms
Pain, bleeding, gingival necrosis, fever, Foul oral odor.

Treatment
Antibiotic – PCN, Clindamycin
Chlorhexidine/H2O2
Dental Cleaning

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Oral Pathology

Bone Pathology
Cysts
Tumors

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Soft Tissue Pathology

Mucocele
- Mucus Extravasation
- Mucus Retention

Painless, recurrent swelling with periods of drainage

Treatment: excision of gland.
Oral Pathology

Soft Tissue Pathology
Carcinoma
90% SCCa

Painful, nonhealing ulcer
White – leukoplakia
Red – erythroplakia

Adenopathy

Risk Factors:
Tobacco, Etoh
No Risk Factors
**Oral Pathology**

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