Differential diagnosis of Orofacial Pain

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Orofacial Pain & Headache
Yair Sharav & Rafael Benoliel
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Special features of orofacial pain

The density of anatomical structures

Mechanisms of referred pain

Important psychological meaning of face and oral cavity
## Acute & chronic pain

### Acute versus Chronic Pain

<table>
<thead>
<tr>
<th></th>
<th>Acute</th>
<th>Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time course</strong></td>
<td>Short (Hours to days)</td>
<td>Long (months to years)</td>
</tr>
<tr>
<td><strong>Etiology</strong></td>
<td>Peripheral inflammatory</td>
<td>Central neuropathic</td>
</tr>
<tr>
<td><strong>Response to:</strong></td>
<td><strong>Analgesics</strong> Good</td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td><strong>Psychotropics</strong> Poor</td>
<td>Moderate - Good</td>
</tr>
<tr>
<td></td>
<td><strong>Behavioral</strong> Anxiety</td>
<td>Depression</td>
</tr>
</tbody>
</table>

“guarding” “illness behavior”
Acute Orofacial Pain

Intraoral pain
- Dental
- Periodontal
- Mucosal

Related structures
- Maxillary sinus
- Salivary glands

Mostly inflammatory in origin,
Due to: infection, trauma, malignancy
Dental Pain

Dentinal Pain

Pulpal Pain

Evoked (cold, sweet)
Short, mild

Spontaneous, or evoked (cold)
Paroxysmal
Severe

Not affected by antibiotics
Periapical Pain

- Spontaneous, long lasting
- Strong
- Evoked by chewing
- No cold sensitivity

Lateral periodontal Pain

- Spontaneous, long lasting
- Mild to strong
- Evoked by chewing

Affected by antibiotics
Chronic Orofacial Pain

Musculoskeletal
- Masticatory muscles
- Tension-type headache
- TMJ disorders

Neurovascular
- Migraine
- Cluster headache
- Paroxysmal hemicrania
- Neurovascular orofacial pain (VOP)

Neuropathic
- Paroxysmal
- Neuralgias
- Continuous
- Deafferentation
Musculoskeletal

Masticatory muscles
Tension-type headache
TMJ disorders
Temporo mandibular pain & dysfunction (TMD)

- Pain is chronic, daily, does not wake
- Unilateral: angle of mandible & front of ear
- Pain on chewing & yawning
- Limited mouth opening (less than 45 mm)
- Masticatory muscles tender to palpation (mostly unilateral)
Fibromyalgia: Age & gender distribution

TMD (n=3,428), Age and Gender Distribution

(Adapted from Howard JA 1991)

Wolfe et al 1995
Conservative management of TMDs

• Medication
  - Amitriptyline (10 – 20 mg)
    – NSAIDs
    – Analgesics
• Physical Therapy
• Soft Diet
• Occlusal splint
• CBT
Neurovascular Pain

Migraines

TACs:

• Cluster Headache
• Paroxysmal Hemicrania
• SUNCT

Neurovascular Orofacial Pain (NVOP)
Common Features of Neurovascular Pain

Pain is:
- Periodic
- Severe
- Unilateral
- Pulsatile
- Wakes from sleep

Accompanied by:

a. Local autonomic signs
   - Ocular: tearing, redness, ptosis, miosis
   - Nasal: rhinorrhea, congestion
   - Local swelling or redness

b. Systemic signs
   - Nausea, vomiting
   - Photo/phonophobia
The TACs

Trigeminal Autonomic Cephalgias

- Cluster Headache
- Paroxysmal Hemicrania
- SUNCT
# TACs Pain Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Duration (mins.)</th>
<th>Episodes /24h</th>
<th>Wakes</th>
<th>Trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>45-90</td>
<td>1</td>
<td>++</td>
<td>Alcohol</td>
</tr>
<tr>
<td>PH</td>
<td>13-29</td>
<td>8</td>
<td>+</td>
<td>Mechano</td>
</tr>
<tr>
<td>SUNCT</td>
<td>0.2-2</td>
<td>28</td>
<td>+-</td>
<td>Mechano</td>
</tr>
</tbody>
</table>
Cluster Headache

Very severe pain around the orbit
Short duration (15 - 120 mins)
Active (cluster) and non-active periods
Once a day (50% wakes)

Autonomic signs:
Tearing, redness of eye
myosis, Ptosis,
rhinorrhea
Cluster Headache

Pain characteristics
  Unilateral
  Severe
  Paroxysmal

Active periods:
  For 4-12 weeks
  Every 6-18 months

Epidemiology
  Male/female (!)  5:1
  Onset  30-40 years
  Prevalence  0.24%
  (Migraine 10 – 15%)
# Abortive treatment of CH

<table>
<thead>
<tr>
<th>Agent</th>
<th>Dose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen</td>
<td>8 liters/min</td>
<td>First line, but cumbersome</td>
</tr>
<tr>
<td>Sumatriptan</td>
<td>6-12mg SC 20mg IN</td>
<td>Effective, fast</td>
</tr>
<tr>
<td>Dihydroergotamine</td>
<td>0.5-1mg IN</td>
<td>Reduces pain severity</td>
</tr>
</tbody>
</table>
### Prophylactic treatment of episodic cluster headache

<table>
<thead>
<tr>
<th>Agent</th>
<th>Dose mg/d</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verapamil</td>
<td>160-480</td>
<td>First line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Baseline ECG</td>
</tr>
<tr>
<td>Prednisone</td>
<td>50-80</td>
<td>Initial therapy until, e.g. verapamil takes effect.</td>
</tr>
<tr>
<td>Valproic Acid</td>
<td>600-2000</td>
<td>For patients with migraine</td>
</tr>
<tr>
<td>Topiramate</td>
<td>25-200</td>
<td>Increase by 25mg/d every 5 days</td>
</tr>
</tbody>
</table>
paroxysmal hemicrania

- Unilateral, around orbit and temple
- Frequent (up to 30 per day), wakes from sleep

Associated signs (ipsilateral):
- Short attacks (15 - 30 min) of sharp, excruciating pain
- Conjunctival injection
- Tearing with nasal congestion and rhinorrhea
**Paroxysmal hemicrania treatment**

Absolute response to *Indomethacine* 25 - 150 mg / d

(Abortive and Prophylactic)

To avoid GI side effects:

Omeprazole (Losec), 20-40 mg/day
Neurovascular Orofacial pain (NVOP)

• Episodic
• Chronic
Neuropathic Orofacial Pain (NOP) : Common entities

- Trigeminal Neuralgia
- Post Herpetic Neuralgia
- Ramsay Hunt Syndrome
- Deafferentation Pain
- Neuritis
Trigeminal Neuralgia

Pain is:

- Paroxysmal
- Short (seconds)
- Provokable (triggered)
- Unilateral
- Confined to Vth nerve

No sensory deficit

Tic
Drugs used in Trigeminal neuralgia

<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial dose</th>
<th>Target dose (titerated)</th>
<th>Dose increase</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbamazepine-CR</td>
<td>100-200</td>
<td>1200</td>
<td>100-200mg/2d</td>
<td>A</td>
</tr>
<tr>
<td>Oxcarbamazepine</td>
<td>300</td>
<td>1200-2400</td>
<td>300-600mg/w</td>
<td>B</td>
</tr>
<tr>
<td>Baclofen</td>
<td>5-15</td>
<td>30-60</td>
<td>5mg/3d</td>
<td>A</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>300</td>
<td>900-2400</td>
<td>300mg/3d</td>
<td>B</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>150</td>
<td>300-600</td>
<td>50mg/2-3d</td>
<td>C</td>
</tr>
</tbody>
</table>
Pretrigeminal Neuralgia

PTN has been reported in 18% of Trigeminal Neuralgia patients.

Characterized by **dull continues pain** for months to yrs becoming more typical of TN as the process continues.

PTN is highly responsive to Carbamazepine.
Herpetic Pain

Acute herpetic

• Post herpetic

• Ramsay Hunt
Acute herpes zoster

- Affects the trigeminal nerve in 10-15% of cases
- Ophthalmic branch affected in 50-80% of cases
- Begins as localized pain followed by typical vesicular eruption within 7 days
## Acute herpes zoster Treatment

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Times (Days)</th>
<th>Duration (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acyclovir (Zovirax)</td>
<td>800</td>
<td>5</td>
<td>7-10</td>
</tr>
<tr>
<td>Valaciclovir (Valtrex)</td>
<td>1000</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Famcyclovir (500 U.S.)</td>
<td>250</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

Initiate drug treatment early, especially in patients >50-y-o to avoid rash duration, pain severity and PHN.
Post Herpetic Neuralgia

- Pain that develops in acute HZ but persists for > 6 months
- Pain is burning with superimposed stabbing pain
- Accompanied by allodynia and hyperalgesia
- Typical skin changes
- Affects elderly > young, 60% of patients >60y will develop PHN
### Post Herpetic Neuralgia

#### Treatment

<table>
<thead>
<tr>
<th>Drug</th>
<th>NNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptyline</td>
<td>2.6 - 3.2</td>
</tr>
<tr>
<td>Opioids (oxycontin)</td>
<td>2.5 - 3</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>3.9 – 4.39</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>3.3 – 4.93</td>
</tr>
<tr>
<td>Tramadol</td>
<td>4.7</td>
</tr>
</tbody>
</table>