Non-Odontogenic Toothache
a Diagnostic Challenge

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Lecture Notes for the
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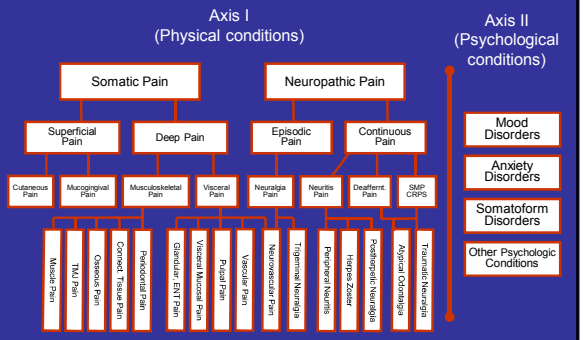
Why is toothache sometimes such a difficult pain problem to manage?

Think of all the possibilities.

Classification of Orofacial Pains

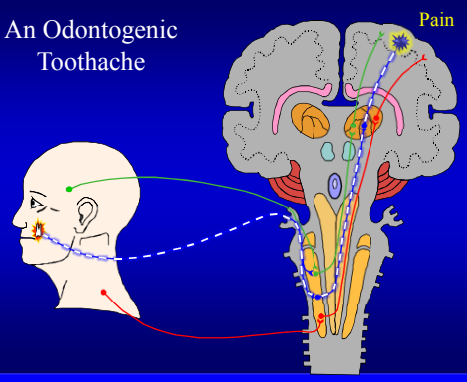


Okeson, 1995

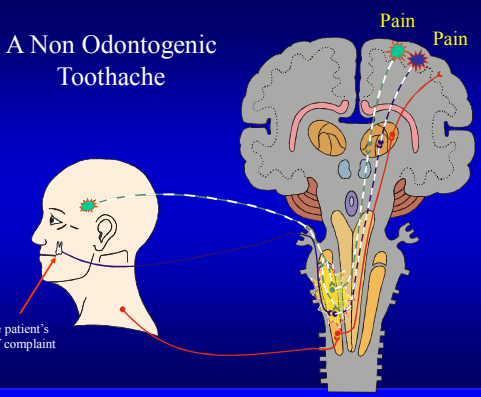
- an important concept -

Carefully listening to the patient's description of the pain allows the clinician to classify the pain disorder.

An Odontogenic Toothache



A Non Odontogenic Toothache



Diagnostic Rules for Identifying Referred Pain

1. Local provocation of the site of pain does not increase the pain.
2. Local provocation of the source of pain increases the pain not only at the source but also the site.
3. Local anesthesia at the site of pain does not decrease the pain.
4. Local anesthesia at the source of pain decreases the pain not only at the source but also at the site.

Toothache

- The 7th most common complaint of pain
- Responsible for 15 million days of lost work per year

- Taylor, 1985

Characteristics of Pulpal Pain

1. The quality of the pain is dull, aching, throbbing and occasionally sharp (depends on the condition of the pulp).
2. There is an identifiable pain source (i.e. caries, fracture).
3. The response to noxious stimulation is proportionate and predictable.
4. Pulpal pain tends to get better or worse (it rarely remains the same over time).
5. Local anesthesia of the tooth eliminates the pain.

Characteristics of Periodontal Pain

1. The pain is dull, aching, occasionally throbbing.
2. There is an identifiable pain source (the periodontal condition).
3. The amount of pain is proportional to the degree of local provocation.
4. The tooth pain increases with loading.
5. Local anesthesia reduces the pain.

The management of odontogenic toothache is very predictable. If treatment fails, consider other possible sources.

Do not continue providing more dental therapies.

Toothache maybe a heterotopic symptom of another disorder!

Characteristics of Myofascial Toothache

1. The pain is relatively constant, dull, and aching.
2. The toothache is not provocated by local stimulation.
3. The toothache is increased with muscle function.
4. Other heterotopic pains are often reported (i.e "tension-type" headache).
5. The presence of localized firm, hypersensitive bands within the muscle tissues (trigger points).
6. Increased provocation of the trigger points increases the toothache (heterotopic pain).

Treatment Considerations for Myofascial Toothache

Myofascial therapy to the responsible muscles.

(spray and stretch, deep massage, relaxation techniques, injections, etc.)

Characteristics of Sinus/Nasal Mucosal Toothache

1. Pressure felt below the eye(s).
2. The pain is increased by applying pressure over the involved sinus.
3. The tooth is sensitive to percussion.
4. The toothache is increased by lowering the head.
5. The toothache is increased by stepping hard on the heel.
6. Local anesthesia of the tooth does not eliminate the pain.
7. The diagnosis is confirmed by appropriate imaging.

Treatment Considerations for Sinus/Nasal Mucosal Toothache

Antihistamines
Antibiotics

Characteristics of Neurovascular Toothache

1. An intense, often pulsating toothache.
2. The pain has a temporal, periodic behavior with complete remission between episodes.
3. Frequently felt in a maxillary premolar or canine.
4. The toothache may be immediately preceded by focal neurological symptoms (an aura).
5. The toothache is accompanied by photophobia, phonophobia, or osmophobia.
6. Provocation of the tooth does not increase the pain.
7. The effect of local anesthesia is unpredictable.
8. A history of other neurovascular disorders (migraine).
9. A trial of 50 mg tablet of sumatriptan (Imitrex) reduces the toothache.

Treatment Considerations for Neurovascular Toothache

Referral to Internist / Neurologist

tricyclic antidepressants
ergotamine tartrate
sumatriptan
beta-blockers
ca+ channel blockers, etc.

Characteristics of Neuralgic Toothache

1. The pain is a severe, unilateral, lancinating, shock-like (paroxysmal pain) felt in a tooth.
2. The pain episodes are brief, lasting only 5-10 seconds.
3. There is no pain reported between episodes.
4. The pain is provoked by relatively innocuous peripheral stimulation of a “trigger zone”. The trigger zone is commonly an extra-oral site such as the lip or chin but may be the tooth.
5. If the tooth is the trigger zone, repeated stimulation will not produce the paroxysmal pain (need time for quenching period).
6. Very localized anesthesia of the tooth (inter-ligamentous injection) will not reduce the pain unless it is also the trigger zone.
7. Local anesthetic at the trigger zone (or a nerve block) will eliminate the episodes of paroxysmal pain and toothache during the period of anesthesia.

Treatment Considerations for Neuralgic Toothache

Referral to Neurologist

(Tegretol, Trileptal, Neurontin, etc.)
(surgical considerations)

Characteristics of Neuritic Toothache

1. Persistent, nonpulsatile, often burning pain felt in a tooth.
2. The presence of other neurologic symptoms.
   (i.e. paresthesia, dysesthesia, anesthesia)
3. Other teeth may feel "dead" or "strange".
4. The associated gingival tissue may be affected.
5. The onset of the toothache followed an infection or trauma (i.e. sinusitis, surgery etc.).

Treatment Considerations for Neuritic Toothache

When inflammation is suspected, management should be directed to the inflammatory condition (antibiotics, steroids, etc.).

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When inflammation is suspected, management should be directed to the inflammatory condition (antibiotics, steroids, etc.).

When trauma is suspected, management is the same as with a continuous neuropathic pain disorder.

Characteristics of Deafferentation Toothache

1. A continuous toothache that may vary in intensity but is always present.
2. Most common in the maxillary molars and premolars.
3. The pain location may change over time but usually remains in the same nerve distribution.
4. Most common in middle aged females with a history of trauma to the painful region.
5. The pain is not changed by local provocation.
6. The effect of local anesthesia is unpredictable.
7. The toothache is non-responsive to dental therapies.

Characteristics of Atypical Odontalgia*

1. The pain is felt in a tooth or tooth site (the maxillary canine and premolar are most commonly involved).
2. The pain is continuous or almost continuous.
3. The pain persists for more than 4 months.
4. There is no sign of local cause or referred pain.
5. Local anesthetic blocking of the painful tooth provides equivocal results.

*Graff-Radford SB, Solberg WK, J Cranio Disord Facial Oral Pain 6:260-266, 1992.

Treatment Considerations for Continuous Neuropathic Toothache

-pharmacologic considerations-

Tricyclic Antidepressants
(desipramine, amitriptyline)
Neurontin (gabapentin)
Baclofen (lioresal)
Lyrica (pregabalin)

-topical medications-

Neurogel (5% lidocaine, 5% carbamazepine, 2% amitriptyline)

Topical capsaicin and benzocaine

Characteristics of Cardiac Toothache

1. A deep, diffuse toothache that may sometimes pulsate.
2. The toothache has a pressure, burning quality.
3. The toothache has a temporal behavior that increases with physical exertion or exercise.
4. The toothache is associated with chest pain, anterior neck pain and/or shoulder pain.
5. Local provocation of the tooth does not alter the pain.
6. The patient has a prior history of cardiovascular disease.
7. The pain is decreased with sublingual nitroglycerin (already prescribed by the physician).

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Sources of Non-Odontogenic Toothache

1. Toothache of Myofascial Origin
2. Toothache of Sinus/Nasal Mucosal Origin
3. Toothache of Neurovascular Origin
4. Toothache of Neuropathic Origin
   a. Episodic Neuropathic Toothache
   b. Continuous Neuropathic Toothache
5. Toothache of Cardiac Origin
6. Toothache of Psychogenic Origin

Characteristics of Somatoform Toothache

1. There is no identifiable source of pain.
2. There is a lack of response to reasonable dental treatment.
3. The pain is reported in many teeth and/or other sites.
4. The pain jumps from tooth to tooth or to other locations.
5. There is a general departure from normal or physiologic patterns of pain.
6. There is an unusual and unexpected response to therapy.
7. The toothache spontaneously changes in intensity and quality.
8. The patient presents with usual behavior or expectations.
9. The clinical characteristics do not fit any of the other pain condition.

Treatment Considerations for Psychogenic Toothache

Referral to a Psychologist or Psychiatrist

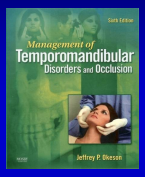
(Avoid any irreversible dental therapies)

General Characteristics of a Non-Odontogenic Toothache

- Summary -

1. A toothache without adequate local cause.
2. Local anesthetic blocking of the offending tooth does not eliminate the pain.
3. Spontaneous multiple toothaches.
4. Stimulating, burning, nonpulsatile toothaches.
5. Constant, unremitting, nonvariable toothaches.
6. Persistent, recurrent toothaches.
7. Failure of the toothache to respond to reasonable dental therapy.

Okeson Texts



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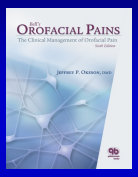

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