Evaluation of Facial Pain

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Objectives

- Discuss common causes of facial pain
- Recognize imaging findings in various conditions that produce facial pain
- Review trigeminal nerve anatomy and trigeminal neuralgia (TN)
- Emphasize that all facial pain is not necessarily TN

Facial pain classification

- Depends on many factors:
  - Clinical presentation
  - Location of pain
  - Provider
    - Dentist/maxillofacial surgeon
    - Primary care MD
    - Specialist MD (ENT, neurologist, neurosurgeon)

Facial pain classification:

“Simple”

Table 1 Classification of orofacial pain

1. Musculoligamentous/soft tissue (TMJ & myofascial disorders, salivary gland dz, burning mouth, cancer, sinuses)
2. Dental (caries, periodontal, pulpal, cracked tooth syndrome)
3. Neurological/vascular (trigeminal neuralgia, nerve compression, cluster H/A, post-herpetic neuralgia, dissections)

Classical TN

- Most common facial neuralgia & one of most painful conditions known ("suicide disease")
- Paroxysmal facial pain in TN distribution
- Prevalence 3-6/100,000; 70% >60yrs at onset
- Often precipitated by light mechanical contact with trigger point (shaving, washing, brushing teeth)
- Etiology unknown, may be related to compression of CNS REZ by vascular loop → demyelination
- Variety of treatment options (medical, microvascular decompression, stereotactic radiosurgery, percutaneous rhizotomy)

“Symptomatic” or Secondary TN

- TN cause found in up to 15% of cases (most commonly PF tumors, MS)
- DDx: depends on which CN 5 segment is involved (BS, cisternal, cavernous sinus, skull base foramina, PPF)
  - Multiple sclerosis
  - Tumors and cysts
  - PNTS
  - Vascular lesion (AVM, aneurysm, infarction)
**CN 5**

- Largest cranial nerve; nerve of the 1st branchial arch
- **Sensory**
  - Face, teeth, mouth, nasal cavity
    - Ophthalmic (V1)
    - Maxillary (V2)
    - Mandibular (V3) — sensory and motor
- **Motor**
  - Muscles of mastication, ABD, MH
  - Tensors (palate, tympani)
- **Sympathetic and PS functions as well**

**Symptomatic CN 5 lesion: DDx (Location! Location! Location!)**

- **PPF**
- Site of emergence from skull base
  - Foramen ovale (V3)
  - For rotundum (V2)
  - Superior orbital fissure (V1)
- **Cavernous sinus**
- **Meckel's cave**
- **Cisternal segment**
- **Brainstem**

**Conclusions**

- Wide spectrum of conditions can produce facial pain
- Imaging (or not) depends on the clinical scenario
- Remember the anatomy of CN 5
- Always be suspicious of PNTS in pts with H/N Ca (especially cheek/forehead skin Ca)
- Don’t forget about referred pain in H/N Ca