Part 3: Painful Cranial Neuropathies and Other Facial Pains

13.1 Trigeminal neuralgia
13.2 Glossopharyngeal neuralgia
13.3 Nervus intermedius (facial nerve) neuralgia
13.4 Occipital neuralgia
13.5 Optic neuritis
13.6 Headache attributed to ischaemic ocular motor nerve palsy
13.7 Tolosa-Hunt syndrome
13.8 Paratrigeminal oculosympathetic (Raeder’s) syndrome
13.9 Recurrent painful ophthalmoplegic neuropathy
13.10 Burning mouth syndrome (BMS)
13.11 Persistent idiopathic facial pain (PIFP)
13.12 Central neuropathic pain

13.10 Burning Mouth Syndrome

A. Oral pain fulfilling criteria B and C
B. Recurring daily for >2 h per day for >3 mo
C. Pain has both of the following characteristics:
   1. burning quality
   2. felt superficially in the oral mucosa
D. Oral mucosa is of normal appearance and clinical examination including sensory testing is normal
E. Not better accounted for by another ICHD-3 diagnosis
Burning Mouth Syndrome

- The American Academy of Orofacial Pain
  - a burning sensation in the oral mucosa despite the absence of clinical findings and abnormalities in laboratory testing or imaging
- The International Association for the Study of Pain
  - a burning pain in the tongue or other oral mucous membrane associated with normal signs and laboratory findings lasting at least four to six months

- Syndrome or Disorder
  - syndrome: (a disease unto itself) is a collection of several simultaneous signs and symptoms of varying intensity
    - normal appearing oral mucosa with a burning sensation
    - a feeling of oral dryness
    - taste disturbances
  - disorder: a condition manifesting symptoms of other diseases
    - complaint of dry mouth being the cause of the burning sensation

- Prevalence: from 0.7% up to 15% of the general population depending on:
  - methodology used
    - self report questionnaire
    - clinical examination
  - diagnostic criteria utilized
    - continuous or episodic burning pain
    - presence or not of clinical lesions, including candidiasis

Coculescu EC, et al. 2014
Kolkka-Palomaa M, et al. 2015
Grushka M, et al. 2002
Burning Mouth Syndrome

- Most commonly reported in females 3 years before to 12 years following menopause; rarely before the age of 30 (Grushka M 1987, Bergdahl M, Bergdahl J 1999, van der Waal I 1990)
- Prevalence appears to increase with age in both males and females (Forssell H, et al. 2015)

- Onset may be sudden or gradual
  - typically no identifiable precipitating factor
  - in some cases it can be traced to an event such as a dental procedure, trauma, introduction of a new medication, an illness or a stressful life event
- At presentation
  - patients will usually complain of chronic pain of 4–6 months duration
  - describe it as annoying, burning or scalding, tingling, itchy or numb

- Clinically: presentation will vary patient to patient
  - anterior two thirds of the tongue: mostly bilateral (may also include palate, lips, gingiva)
  - intensity: can be mild to severe
  - pain is usually constant but may remit on its own
  - tends to get worse as day progresses
  - topical anesthesia will typically increase pain
    - suggests CNS component
  - eating may temporarily relieve the pain
    - many will avoid oral intake of hot, spicy or acidic food/liquids or alcoholic beverages
  - for some, pain will increase or seem more noticeable when they feel more stressed or fatigued
Burning Mouth Syndrome

- Other body sites may be affected
  - other potential associated pains that have been noted to occur concomitantly
    - back pain
    - diffuse myalgia
    - temporomandibular joint pain
- Alteration of taste/phantom tastes and smells

Secondary causes
- oral candidiasis
- galvanism
- lichen planus
- xerostomia
- B12, folic acid, iron deficiency
- diabetes
- autoimmune disorders
- medications (ACE inhibitors)
- migratory glossitis
- thyroid dysfunction
- GER

Diagnosis of exclusion
Burning Mouth Syndrome

• Pathophysiology
  – salivary composition
  – disturbance between taste and sensory functions
  – estrogen decrease (neuroprotective)
  – large and small nerve fiber damage
  – steroid dysregulation
  – enhanced receptor activity (TRPV1)
  – CNS mechanisms
• Careful history is necessary

Burning Mouth Syndrome

• Most likely to be more than a singular disease process involving a multifactorial etiology with a number of potential pathophysiological processes

Investigations

• Physical examination
  – neurologic screening to include a cranial nerve examination
  – extra oral examination: inspection of the head, face, and neck for any evidence of trauma, tumors or previous radiation therapy
  – neck: goiter, lymphadenopathy or lymphadenitis
  – oral cavity: health of the mucosa, periodontium and dentition
  – any dental prosthetic device should be thoroughly evaluated
Investigations

• Laboratory
  – usually recommended
    • complete blood count (CBC) with differential
    • fasting blood glucose / hemoglobin A1c
    • thyroid function
    • serum iron, ferritin
    • total IgG
    • vitamin B6, B12, D
    • serum antinuclear antibodies (ANA)
    • antibodies to the ribonucloproteins 60 kD Ro and La (SSA/Ro, SSB/La)
    • erythrocyte sedimentation rate (ESR)
    • serum antibodies to H pylori, and oral candida swabs
    • hormonal studies

Adjunctive Testing

• To be considered
  – imaging: CT, MRI
  – allergy testing: esp in the presence of lichenoid like lesions
  – sialometry
  – biopsy of minor salivary glands
  – psychometric testing
  – assessment for GER

Management

• Evidence is lacking
• Determine if primary or secondary
• In primary BMS, since the etiology is unclear, management strategies are based on patients’ symptomatology
  – often yielding unsatisfactory results
Management

• Retrospective study of 53 BMS patients (duration of at least 18 month)
• Variety of treatment modalities
• Moderate improvement was reported in only 28.3%
• Spontaneous remission in 3.7%
• Remaining patients: no change or worsening symptoms after a mean of 5 years after having been diagnosed


Management

• Empathize and validate the patient’s complaint in addition to providing education and reassurance
  – patient needs to understand, based upon the best available scientific evidence:
    • the characteristics of the condition
    • appreciate the existing therapeutic difficulties associated with BMS

Management

• Patient needs to be aware that management may involve a multidisciplinary team approach
  – often requires multiple modifications of the management plan until an effective protocol is achieved
• These patients are often frustrated by a lack of understanding of this condition among health practitioners
Strategies

• Behavioral interventions
• Topical medications
• Systemic medications

Behavioral Interventions

• Self help measures
  – cessation of parafunctional habits (clenching, bruxism, tongue protrusion)
  – increase fluids
  – decrease or d/c caffeinated beverages, ETOH, spicy foods
  – modification of oral care product usage
    • alcohol-free mouthwashes
    • products without flavoring agents or irritating components (cinnamic aldehyde, sodium lauryl sulfate, tooth whitening agents, anti-calculus ingredients)
  – Other products to be considered for discontinuation: mints, gum or other breath aids

  Endo H, Rave TD. Med Oral Patol Oral Cir Bucal 2007

• Stress management approaches
  – moderate exercise
  – yoga
  – tai chi

Strategies

• Behavioral interventions
• Topical medications
• Systemic medications

Topicals

• Many topical approaches have been trialed with various rates of success
• Few well designed comparative studies
  – limits evidence based recommendations

Topical Medications

• Benzodiazepine: clonazepam (dissolve + expectorate or oral rinse)
• Anesthetic: lidocaine (viscous gel)
• Atypical analgesic: capsaicin (cream, rinse)
• Antidepressant: doxepin (cream)
• NSAID: benzydamine (oral rinse)
• Mucosal protectant: sucralfate (oral rinse), aloe vera
• Antifungals: nystatin
Clonazepam

- A recent meta-analysis concluded that clonazepam was effective in inducing symptom remission in patients with BMS
  - 3 RCTs and two case-control studies involving 195 BMS patients
  - Positive therapeutic effect was demonstrated for both short-term (<10 weeks) application and long-term (>10 weeks) application
  - Both topical and systemic administration were confirmed to be effective

Low Level Laser Therapy

- Recent study comparing the efficacy of LLLT to topical clonazepam
  - After a 12 week period, it was concluded that both approaches improved pain perception but that LLLT was superior to clonazepam

Strategies

- Behavioral interventions
- Topical medications
- Systemic medications
Systemic Medications

- Benzodiazepine: clonazepam, diazepam
- Anticonvulsants: gabapentin, pregabalin, topiramate
- TCA antidepressants: amitriptyline, imipramine, nortriptyline, desipramine, trazodone
- SSRIs: paroxetine, sertraline
- SNRI: duloxetine
- Antifungals: fluconazole
- Antivirals: valacyclovir

- Herbal supplement: hypericum perforatum (St. John’s wort)
- Salivary substitutes or sialogogues:
  - pilocarpine
  - cevimeline
- Vitamin supplement: vitamin B, C
- Antioxidant: alpha lipoic acid

Something New: Botulinum Toxin

- 4 patients (3 women and 1 man aged 67 to 76 years)
- BMS involving the anterior two thirds of the tongue and the lower lip for at least 6 months
- Total 16 units of incobotulinum toxin A (100 units diluted in 2 mL of saline)
  - 4 units into each side of the lower lip
  - 4 units into each anterolateral side of the tongue

- In all patients, pain disappeared within 48 hours (VAS 0)
- Effects lasted up to 16 weeks after injection in all but 1 patient (lasted up to 20 weeks)
- Injections were well-tolerated and caused no adverse effects
Botulinum Toxin

- To rule out a placebo effect
  - injected 2 additional women with saline at the same volume and injection sites
  - reported no pain improvement for 4 weeks
- Injected them with incobotulinum toxin A following the same protocol
  - pain disappeared within 48 hours
  - effect lasted up to 12 weeks

Conclusions

- BMS is an enigmatic condition that can create frustration for both the patient and practitioner
- Affects primarily peri menopausal females
- Evidence for therapeutic modalities is lacking
- A comprehensive approach is recommended

Presentation Finished.

Any questions?