IT'S A TOOTHACHE...OR IS IT REALLY?

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DISCLOSURES

I do not have any conflicts of interest or disclosures

Basic Concepts

- Acute pain
  - pain of short duration

- Chronic pain
  - pain of long duration ~6 months
  - pain that lasts longer than expected healing period

ALLODYNIA

- Pain to innocuous stimuli

HYPERALGESIA

- Heightened pain in response to painful stimuli

- Hyperesthesia
- Hypoesthesia
- Paresthesia
- Dysaesthesia

SITE OF PAIN VS. SOURCE OF PAIN

- Site of pain
  - area where the pain is felt
  - eg- pain from a traumatic ulcer/cut/burn
- Source of pain
  - eg- heart attack felt in the arm

Etiology of non odontogenic toothache

SOME RULES FOR NON ODONTOGENIC TOOTHACHE

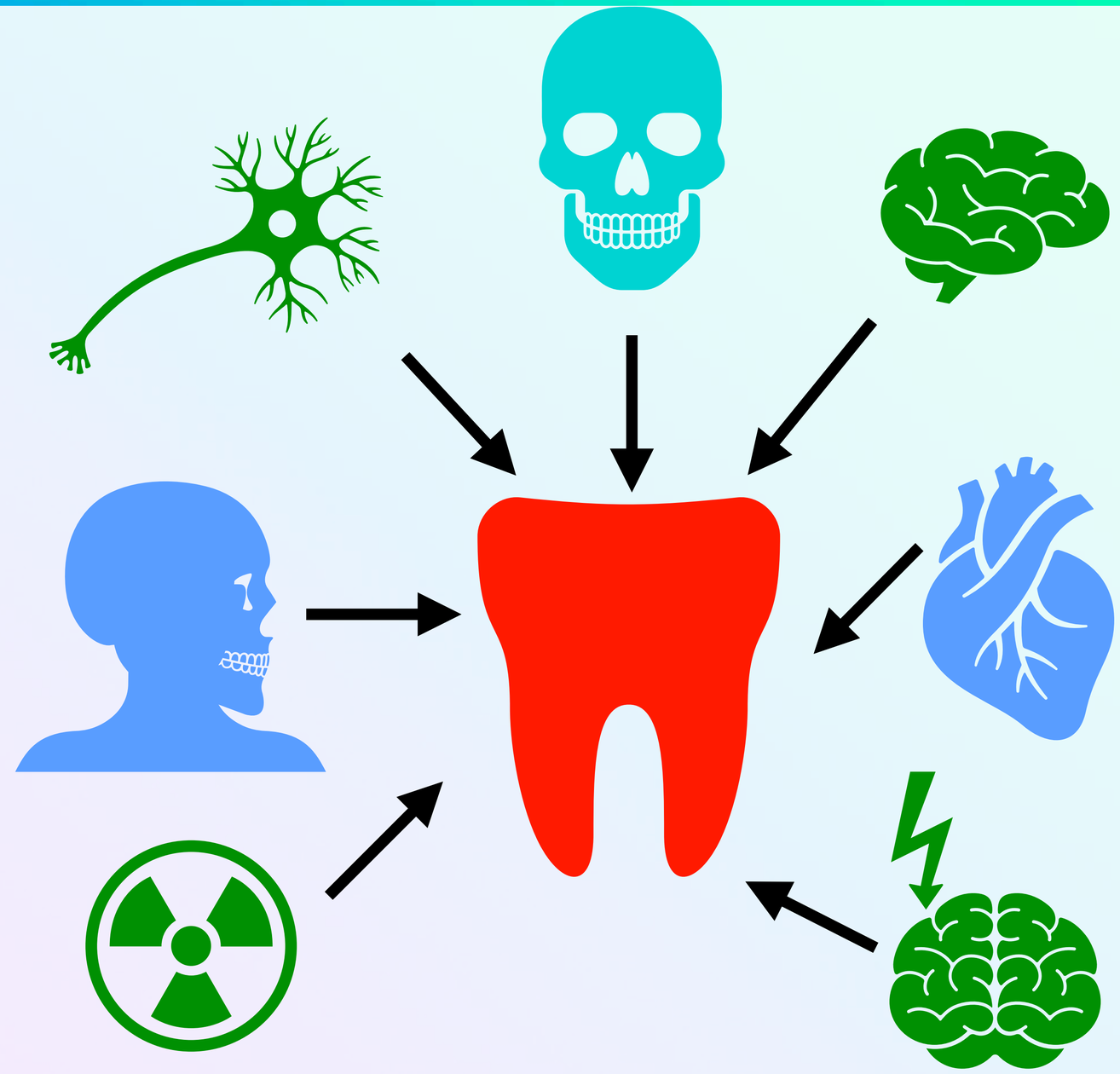
Cannot reproduce pain by manipulation of tooth or gums (site of pain)

Pain increases by manipulating the source of pain

Anesthetizing tooth/site of pain will not decrease the pain

Anesthetizing source of pain will decrease pain

- Musculoskeletal/myofascial pain
- Neuropathic pain
- Headaches
- Rhinosinusitis
- Cardiogenic
- Somatoform disorders
- Malignancy



ANTOON DE LAAT AND TATA RENTON

MUSCULO SKELETAL PAIN

BESIDES TOOTHACHE NEXT MOST COMMON PAIN COMPLAINT

II. MASTICATORY MUSCLE DISORDERS

MASTICATORY MUSCLE DISORDERS

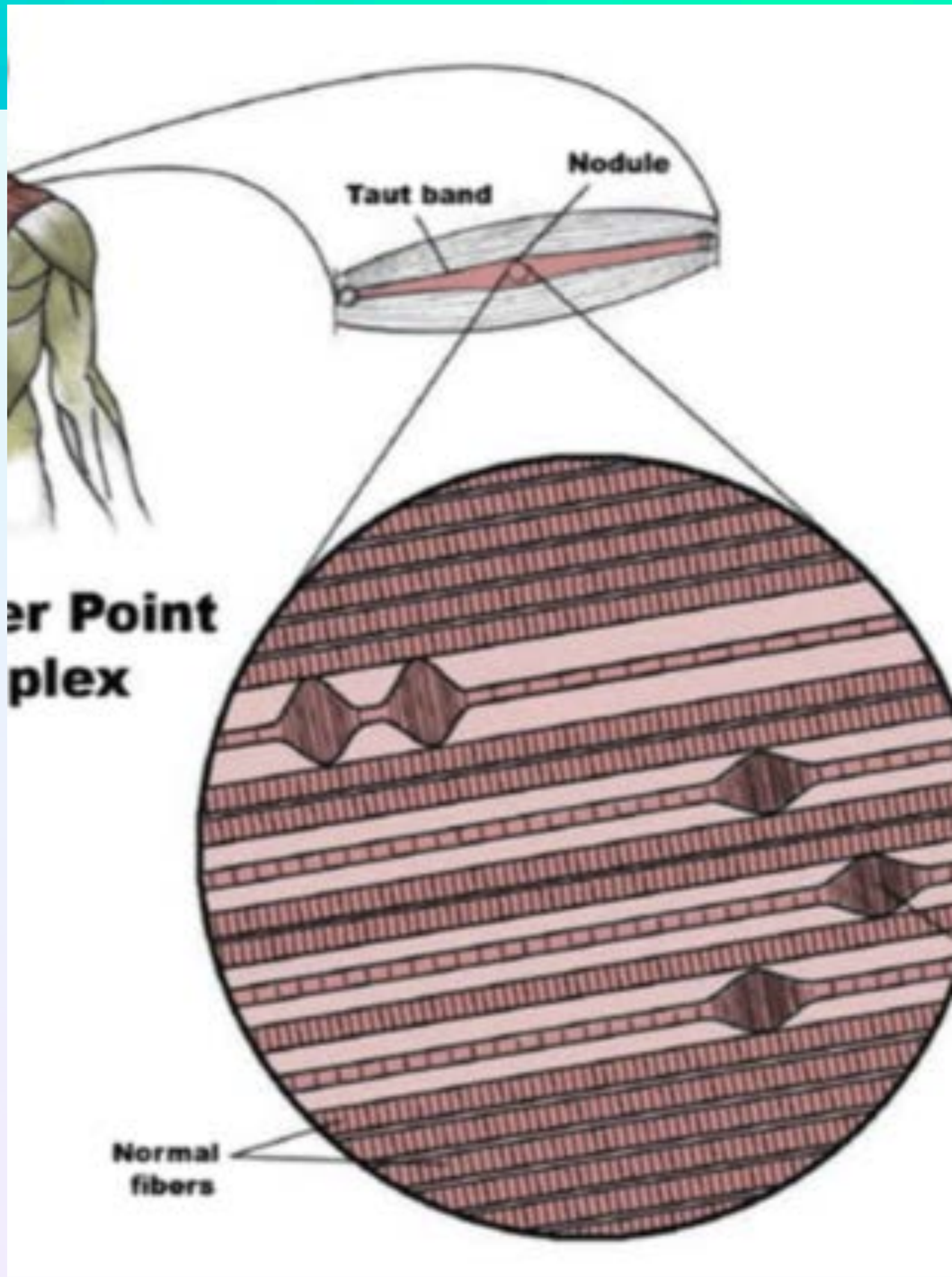
1. Muscle pain
   - A. Myalgia
     1. Local myalgia
     2. Myofascial pain
     3. Myofascial pain with referral
   - B. Tendonitis
   - C. Myositis
   - D. Spasm
2. Contracture
3. Hypertrophy
4. Neoplasm
5. Movement disorders
   - A. Orofacial dyskinesia
   - B. Oromandibular dystonia
6. Masticatory muscle pain attributed to systemic/centra pain disorders
   - A. Fibromyalgia/widespread pain

- TMD most common, persistent orofacial pain
- No significant racial differences
- Signs and symptoms found in all ages, peaks at 20-40 years
- 3-11% of patients need tx
- Decreases with age
- Masseter muscle is the most common culprit

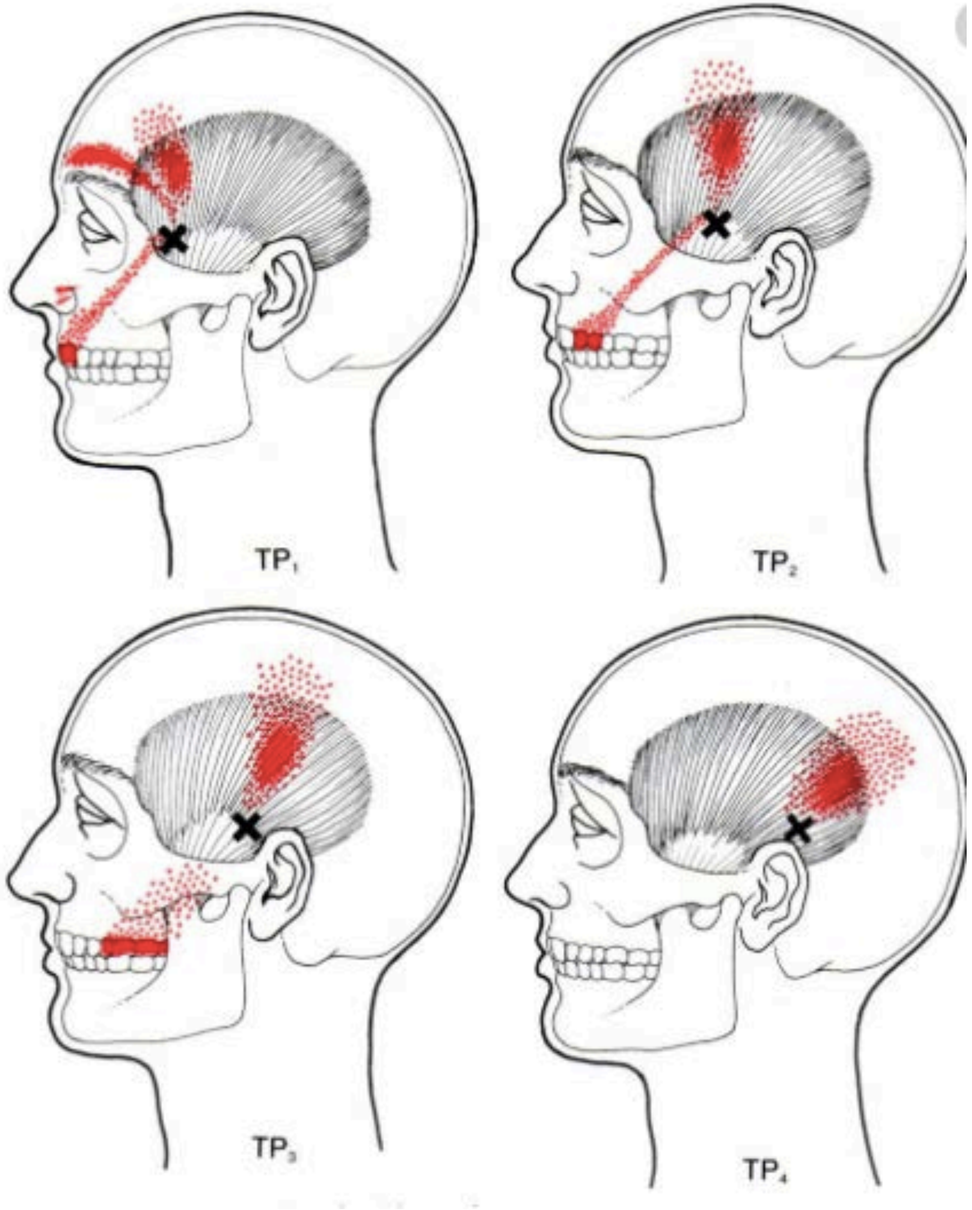
- Muscle pain can mimic or co occur with
  - Joint disorders
  - Headaches
  - Neuralgias
  - Temporal arteritis
  - Spinal disk disease
  - Sinusitis
  - Dental pain
- Leads to poor diagnosis and management
- It’s important we as health care professionals are able to diagnose and manage muscle pain

TRIGGER POINTS

- Hyper irritable nodule
- Found in taut band of skeletal muscle
- Palpable and tender
- Can be active or latent
- Can cause stiffness, dysfunction, decreased ROM



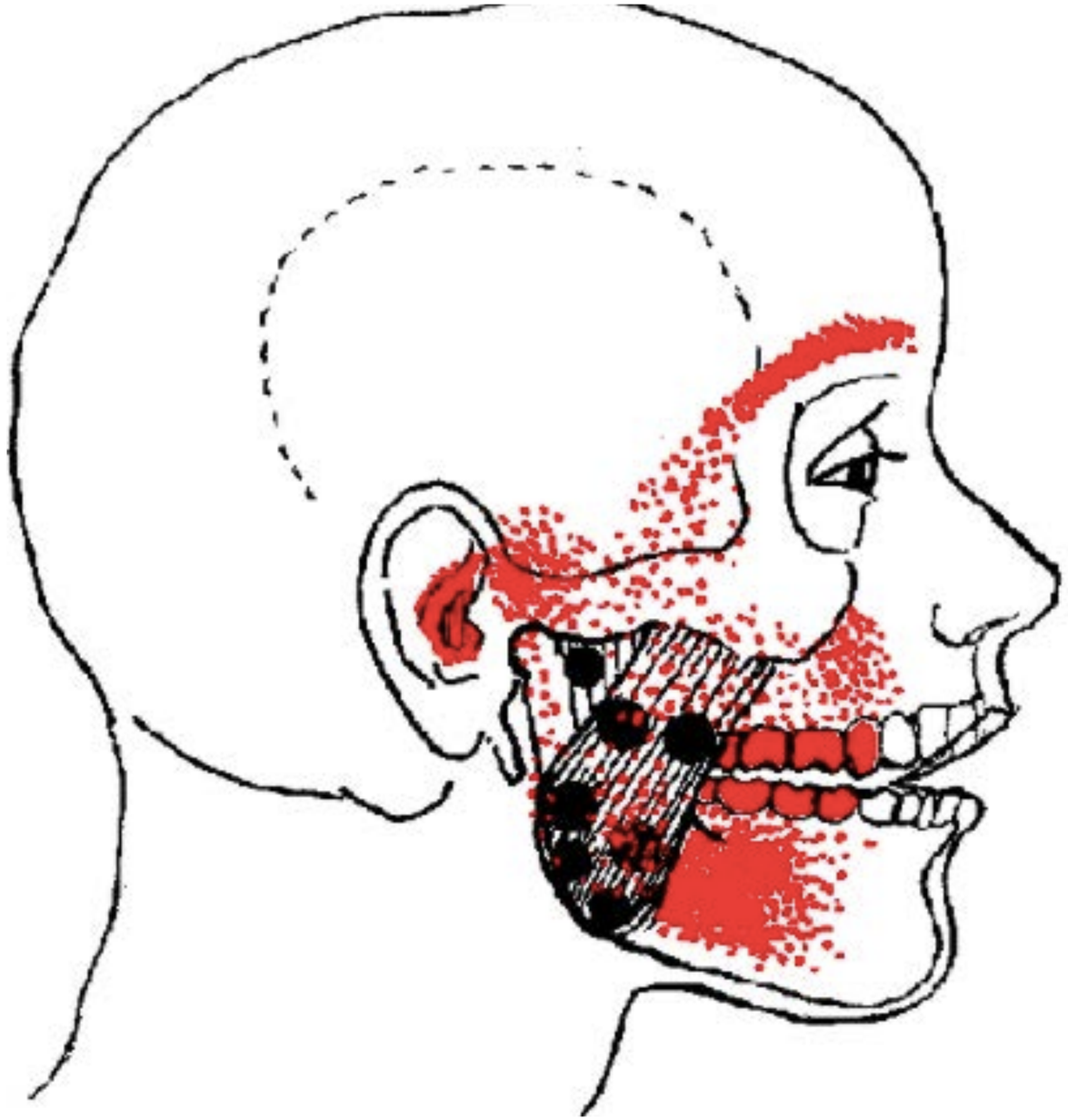
Shah et al. Myofacial trigger points then and now



Trigger points in temporalis

Image source pintrest.com

Trigger points in masseter



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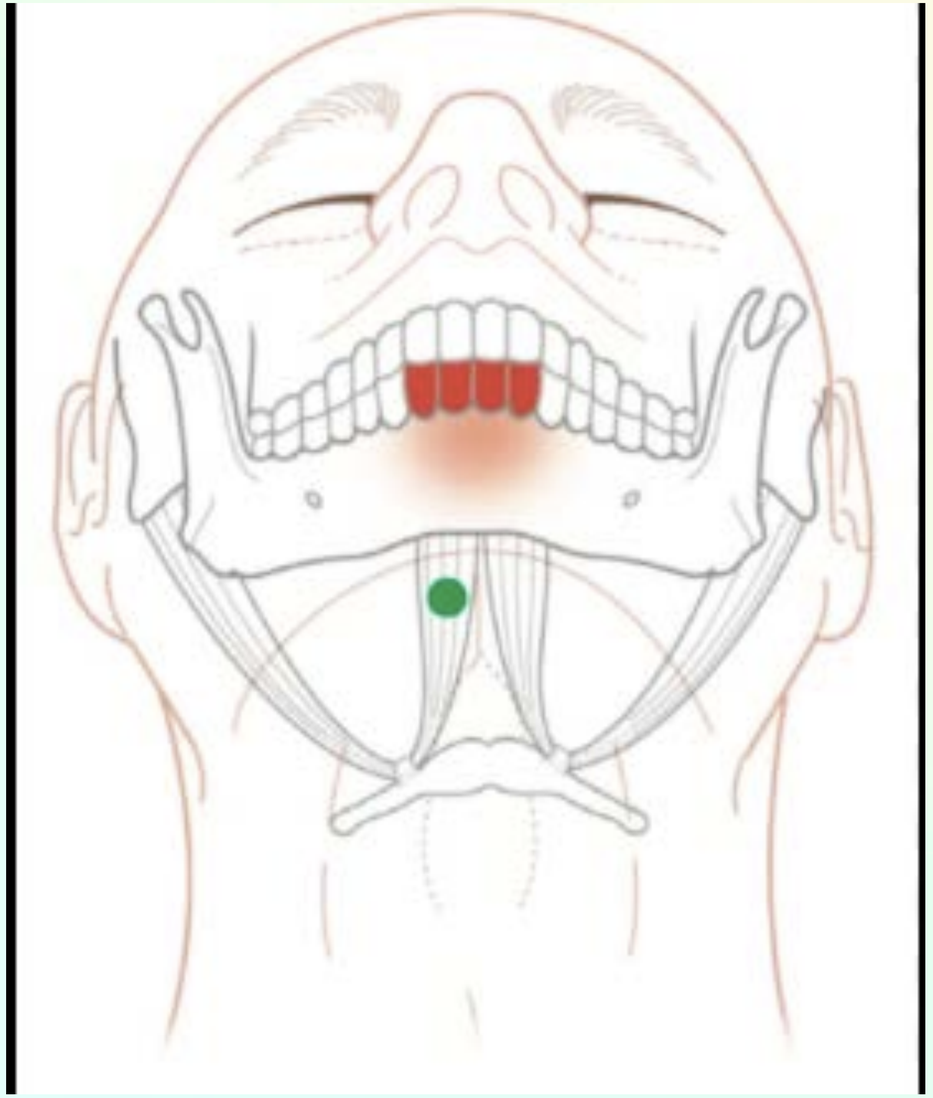

TRIGGER POINTS OF ANTERIOR DIGASTRIC

Contributing factors

- Trauma
- Repetitive stress
- Poor posture
- Disuse
- Poor sleep
- Psychological factors

TREATMENT OPTIONS

IN OFFICE

Conservative treatment

Appliances

Trigger point injection

Prescription for Tricyclic Antidepressant or muscle relaxant

Onabotulinum toxin A

TREATMENT OPTIONS

INTERDISCIPLINARY

- CBT for insomnia (CBTI)
- Stress management
- Exercises
- Ergonomic instructions
- Iontophoresis
- Ultra sound
- Dry needling

NEUROPATHIC PAIN

- According to International Association for Study of Pain (IASP), neuropathic pain signifies pain due to disease or lesion of somatosensory system

Peripheral neuropathic pain is due to lesions of peripheral nervous system

from trauma, metabolic disease

Central neuropathic pain can result from spinal cord injury, stroke or multiple sclerosis

Pain can be episodic or continuous

EPISODIC NEUROPATHIC PAIN

Trigeminal Neuralgia

SYMPTOMS

Sudden excruciating pain

Spontaneous / evoked

Lasts for a fraction of a second to 2 minutes

Has a refractory period

Can have several attacks in an hour

Can be shooting, electric shock like or stabbing

Can be a background continuous pain described as burning, aching or dull

Occurs commonly in middle ages women

Intra oral or extra oral locations

MANAGEMENT

MEDICAL MANAGEMENT

gabapentin and gabapentin extended release

Dosage 1200- 3600mg in 3 divided doses, extended release in 2 doses

carbamezapene, oxcarbazepine

Dosage carbamezapene- 200-1200mg/ day

oxcarbazapene - 600-1800mg/day

baclofen

Dosage- max 10- 60mg slowly titrated or withdrawn

SURGICAL MANAGEMENT

PERFORMED BY EITHER NEUROSURGERY OR INTERVENTIONAL ANESTHESIOLOGY

Nerve blocks

Alcohol/peripheral glycerol injection

Radio frequency ablation

Glycerol injection

Balloon decompression

Micro vascular decompression

Gamma knife

CONTINUOUS NEUROPATHIC PAIN

Persistent post traumatic trigeminal neuropathy (PTTN)

Persistent idiopathic face pain (PIFP)

Persistent dentoalveolar pain (PDAP)

PERSISTENT POST TRAUMATIC TRIGEMINAL NEUROPATHY

Intra oral PTTN occurs with close temporal relationship with invasive procedure

It’s well localized to tooth/ extraction area

Could move from tooth- tooth following procedures

Can have spontaneous pain +/- dysaesthesia or numbness

Typically unilateral

PERSISTENT POST TRAUMATIC TRIGEMINAL NEUROPATHY

Pain is moderate- severe

Described as burning or shooting

Pain is continuous, lasts most of the day, present for several days

May have paroxysmal pain from touch

May report sense of swelling, foreign body, redness hot/cold

If intra oral may have consulted many providers, had many treatments

We cannot predict in advance who will/ will not get PTTN

Do a good consent form, informing pts that pain maybe persistent

PIFP/PDAP

? Trauma may be the trigger

Patient may not recall a triggering event

No sensory deficit

Deep pain

Typically unilateral, 40% reported bilateral

Described as throbbing, aching, burning

Mild to severe pain

Can be aggravated by emotional stress

SOME SUGGESTIONS

Aggressively manage acute pain, so it won’t chronify

Early nerve injury can be managed with steroid prednisone 40-60 mg or dexamethasone 12-16mg to start and tapered off

Larger nerve trunk can be repaired

Pain beyond 12-18 months may not recover

Can be managed topically

MANAGEMENT

Selective serotonin norepinephrine re uptake inhibitors

E.g.- duloxetine, venlafaxine
Dosage Duloxetine- 60-120mg
Venlafaxine (extended release) 150-225mg both once a day

MANAGEMENT

Tricyclic Antidepressants

E.g.- Amitriptyline, nortriptyline
Dosage -
amitriptyline
nortriptyline

MANAGEMENT

Relaxation training

Psychological therapies

Physical therapy

HEADACHES

The Most common headache you will see are
Tension type headache
Migraine

Less common headache you will see are
Trigeminal Autonomic Cephalalgia that includes
Cluster headache

WHY SHOULD DENTISTS CARE ABOUT HEADACHE

- Unilateral pain, can have side shift, bilateral is rare
- Intra orally occurs in teeth and alveolar process and mucosa
- Can be referred to peri orbital/ peri oral/pre auricular areas
- Strong throbbing, episodic pain
- Can wake pt up from sleep
- Pain lasts minutes to hours, rare for pain to stay 24+ hours
- Can be accompanied by tearing, nasal congestion, fullness, sweating
- Cold allodynia

In clinical practice we see the following cross over patients:

- Headaches presenting with face pain ipsilateral to headache
- Headaches replaced by face pains of the same quality, intensity and length and associated symptoms
- Face pains without associated headaches but resembling a primary headache with/ without associated symptoms of the headaches

SOME DIAGNOSES TO BE AWARE OF

TYPICALLY OCCUR IN OROFACIAL REGIONS WITHOUT HEADACHE

Orofacial migraine can be episodic or chronic

Tension type orofacial pain—>can be similar to myofascial orofacial pain

Trigeminal autonomic orofacial pain

- Orofacial cluster attacks
- Paroxysmal orofacial pain
- Short-lasting unilateral neuralgiform facial pain attacks with cranial autonomic symptoms (SUNFA)
- Hemifacial continuous pain with autonomic symptoms—> isolated facial equivalent not described

MIGRAINE

Diagnostic criteria:

A. At least five attacks[1] fulfilling criteria B-D

B. Headache attacks lasting 4-72 hr (untreated or unsuccessfully treated)[2;3]

C. Headache has at least two of the following four characteristics:
   1. unilateral location
   2. pulsating quality
   3. moderate or severe pain intensity
   4. aggravation by or causing avoidance of routine physical activity (eg, walking or climbing stairs)

D. During headache at least one of the following:
   1. nausea and/or vomiting
   2. photophobia and phonophobia

E. Not better accounted for by another ICHD-3 diagnosis.

WHAT ARE TACS?

TAC= Trigeminal Autonomic Cephalalgias

Primary headache disorders

Characterized by unilateral pain +

Cranial autonomic symptoms

- **lacrimation**
- **rhinorrhoea/stuffy nose**
- **eye redness/conjuntival injection**
- **aural fullness**
- **redness of face**

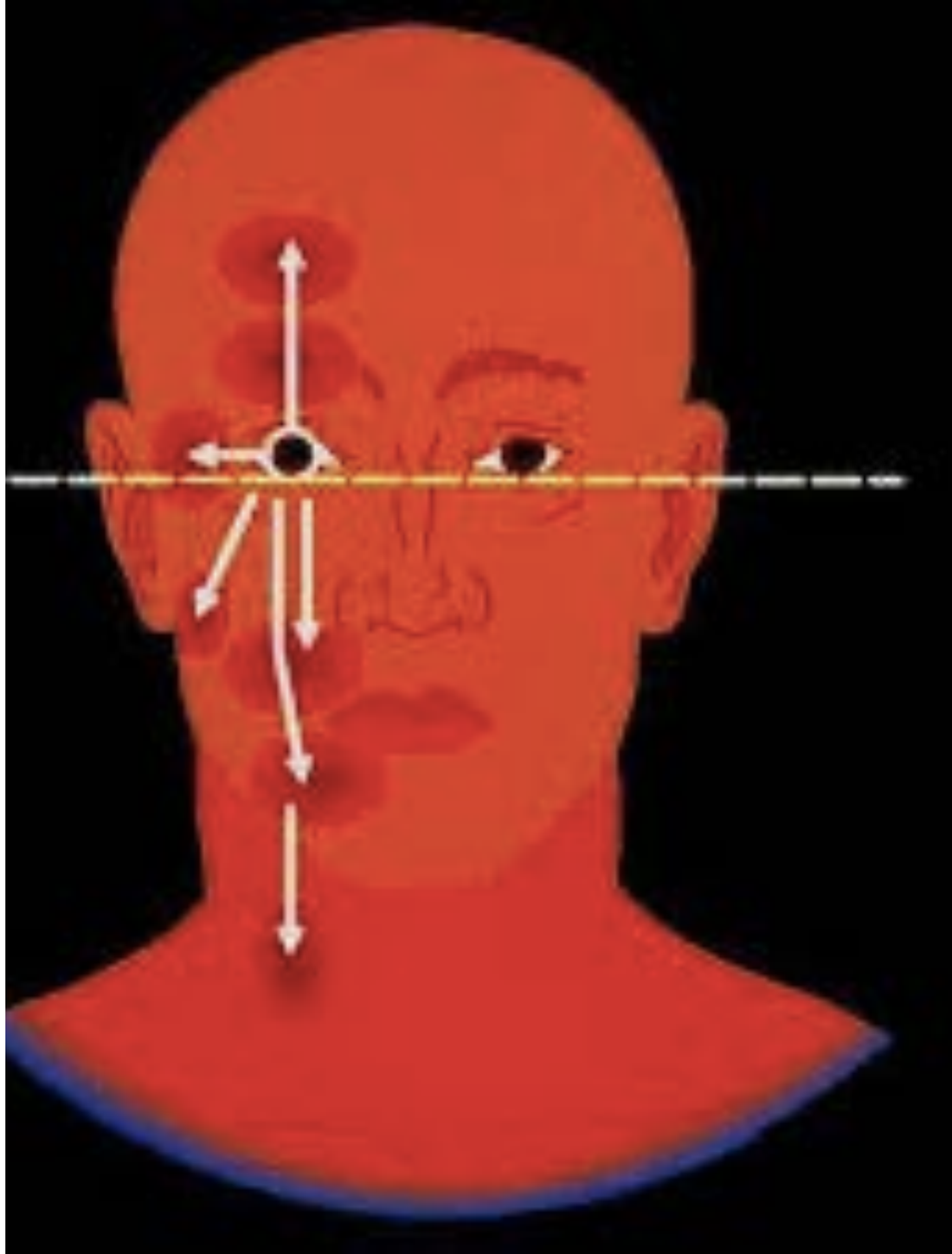

Image from ahsnet.org

DIAGNOSTIC CRITERIA

A	At least five headache attacks fulfilling criteria B–D
B	Severe or very severe unilateral orbital, supraorbital, and/or temporal headache pain lasting 15 to 180 minutes (when untreated)
C	Either or both of the following: 1. At least one of the following symptoms or signs ipsilateral to the headache: a) Conjunctival injection and/or lacrimation b) Nasal congestion and/or rhinorrhea c) Eyelid edema d) Forehead and facial sweating e) Miosis and/or ptosis 2. A sense of restlessness or agitation
D	Attacks have a frequency between one every other day and eight per day for more than half of the time when the disorder is active
E	Not better accounted for by another ICHD-3 diagnosis

ICHD

TREATMENT

MIGRAINE

- acetaminophen 1000mg
- aspirin 500mg
- ibuprofen 200, 400mg
- diclofenac 50, 100mg
- Triptans eg- sumatriptan, rizatriptan
- propranolol 120-240mg
- Botox
- CGRP medications

TREATMENT

TENSION TYPE HEADACHE

- acetaminophen
- ibuprofen
- diclofenac
- amitriptyline

TREATMENT

CLUSTER HEADACHE

sumatriptan 6mg sc

sumatriptan 20mg nasal spray

oxygen inhalation 7-10 l/minute for 15 mins

verapamil 200-900mg

lithium 600-900mg

topiramate 50-200mg

melatonin 10mg

CARDIAC PAIN

This atypical presentation can occur in women

Has pressure like quality, can be burning or throbbing

Toothache worsens with exertion/exercising

Relieved by rest

Could be associated with chest/anteior neck/shoulder pain

Past history or family history of heart disease

Recommended urgent referral to cardiologist

KREINER ET AL.

SINUS PAIN

Pressure is felt below the eye, on the eye brow

Application of pressure on the involved sinus, increases pain

Pain increases by lowering the head

Teeth respond normally to endo testing

SOMATOFORM DISORDERS

No identifiable source for pain

Pain can be migratory- jumping from tooth to tooth or other locations

No response to reasonable dental treatments

Can also have unusual or unexpected response to treatment

Does not fit any other conditions

Comorbid, anxiety, depression, OCD, conversion disorder

Refer to Psychologist or psychotherapist

SLIDE COURTESY DR. OKESON

MALIGNANCY

ALSO KNOW AS THE ONE THING THAT KEEP ME UP AT NIGHT

These are some of the most vexing diagnoses you will encounter

Tumor can be in the same or adjoining area or distant metastasis

Patients could present with constant burning, aching, crawling pain

Could have attacks of paroxysmal pain

Could have neurological deficits

No/ inadequate response to conventional treatments

Red flags- trigeminal neuralgia like pain in patient's younger than 50

Sudden onset, severe pain with neurological deficits

Worsening or change of existing pain

KHAN ET AL., BULLITT ET AL.

ALSO LOOK OUT FOR

Swelling

Loose teeth

Any past/ family history of cancer

SO WHAT TO DO?

First of all take a careful history

Ask for imaging ; consider the area of interest both local and distant

Panoramic/PA/Bite wing

CBCT

CT of relevant area

MRI- brain (for us root of TN V, VII and pituitary occasionally)

May need MRI of face/neck

Consider referral to neurology or ENT thru PCP

Consider serology thru PCP CBC with differential, ESR, C- reactive protein, basal metabolic panel, TSH

Mnemonic BLT KP= Breast, Lung, Thyroid Kidney and Prostrate metastasis can be from any of these sites

Write a formal letter to physician /talk on the phone (document) and advice them of your recommendations

THANK YOU

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