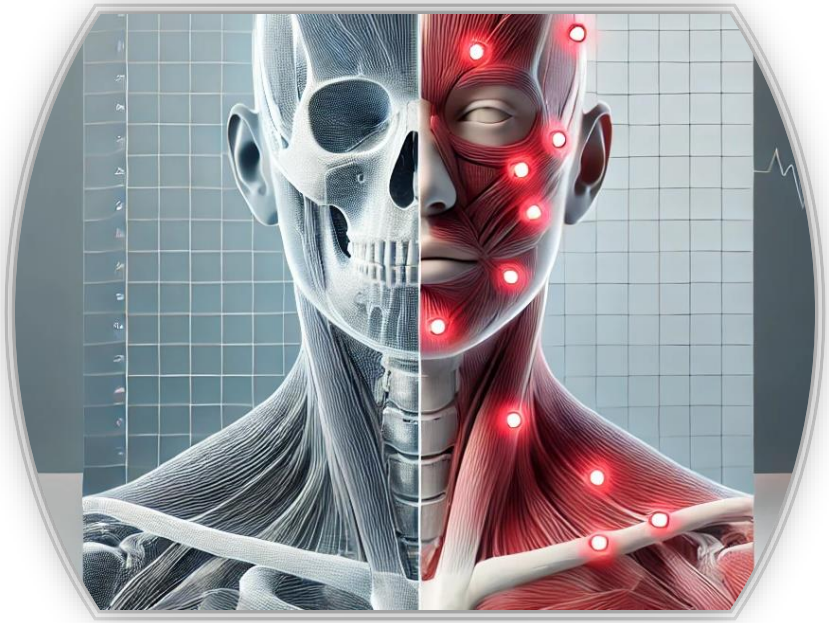
“TRIGGER POINTS AND TOOTHACHE”

The Puzzling Path Of Referred Pain



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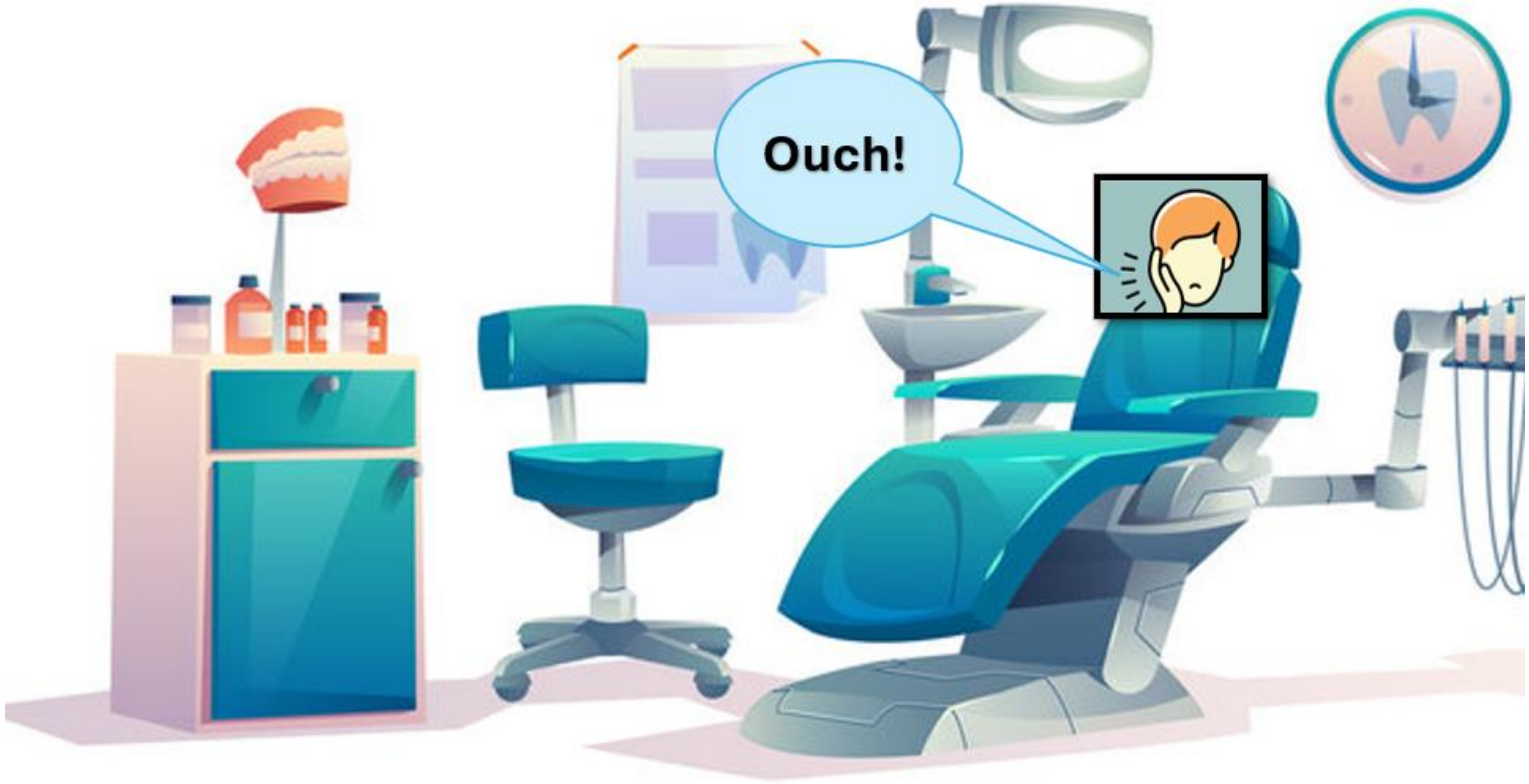
CLINICAL CASE 1



Mrs. Jones, a 65-year-old woman,

presents with the chief complaint of severe toothache.

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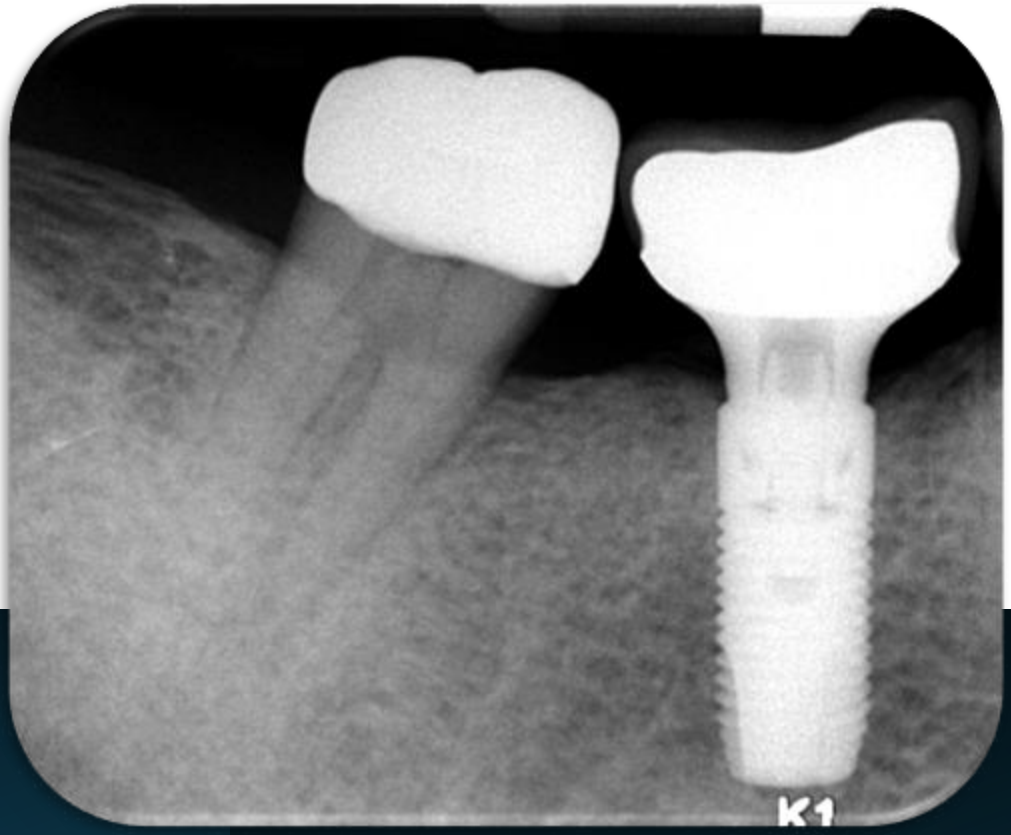

DIAGNOSIS?

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Not all "toothaches" are the same

- Pulpal
- Periodontal

- Musculoskeletal
- Neurovascular
- Neuropathic
- Idiopathic

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Let’s talk numbers!

- Approximately **7%** of cases that present to the **endodontist’s** office are of referred pain.
- **53%–62%** of cases of **persistent pain after root canal treatment** are cases of nonodontogenic referred pain.
- **80%** of this **nonodontogenic pain** was due to myofascial pain syndrome.

Kapos FP, Nixdorf DR. Non-odontogenic “tooth” pain. In: Ferreira JN, Fricton J, Rhodus N, editors. Orofacial Disorders: Current Therapies in Orofacial Pain and Oral Medicine. Cham, Switzerland: Springer International Publishing; 2017. p. 197–211.

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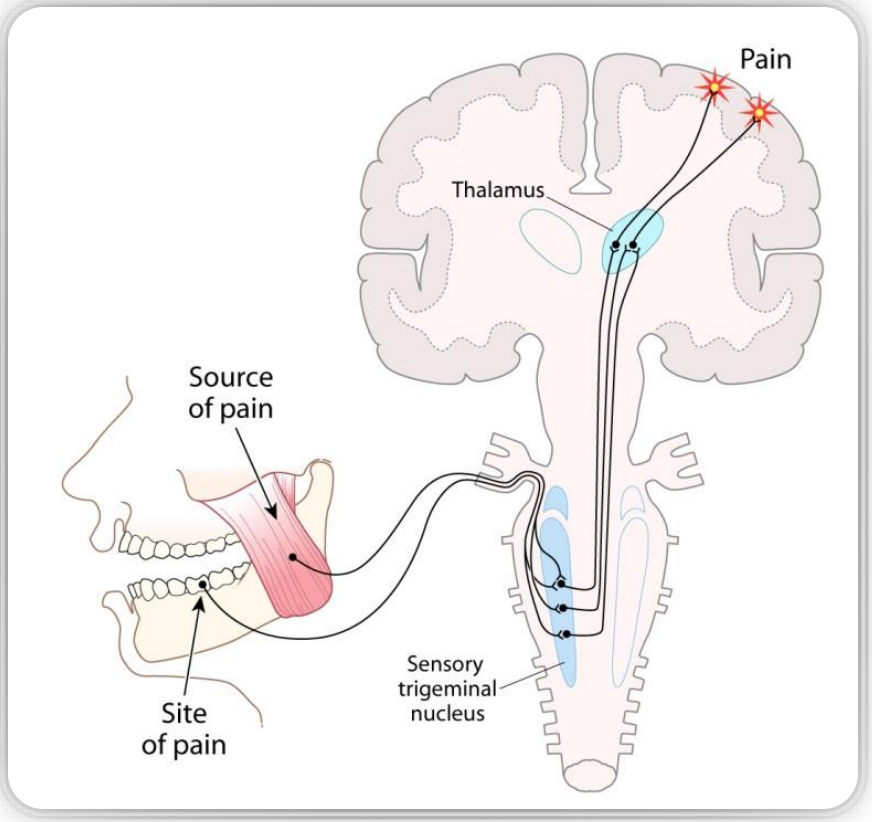
CONCEPT OF CONVERGENCE



SITE V/S SOURCE OF PAIN

❖ **Homotopic Pain**

- **Site = Source**
- Treatment of the pain site → effective

❖ **Heterotopic pain**

- **Site ≠ Source**
- Treatment of the pain site → ineffective

Afferent signals frequently converge onto common second-order neurons within the trigeminal sensory nucleus leading to potential mislocalization of pain.

Journal of American Dental Association 2008;139(4):436-40.

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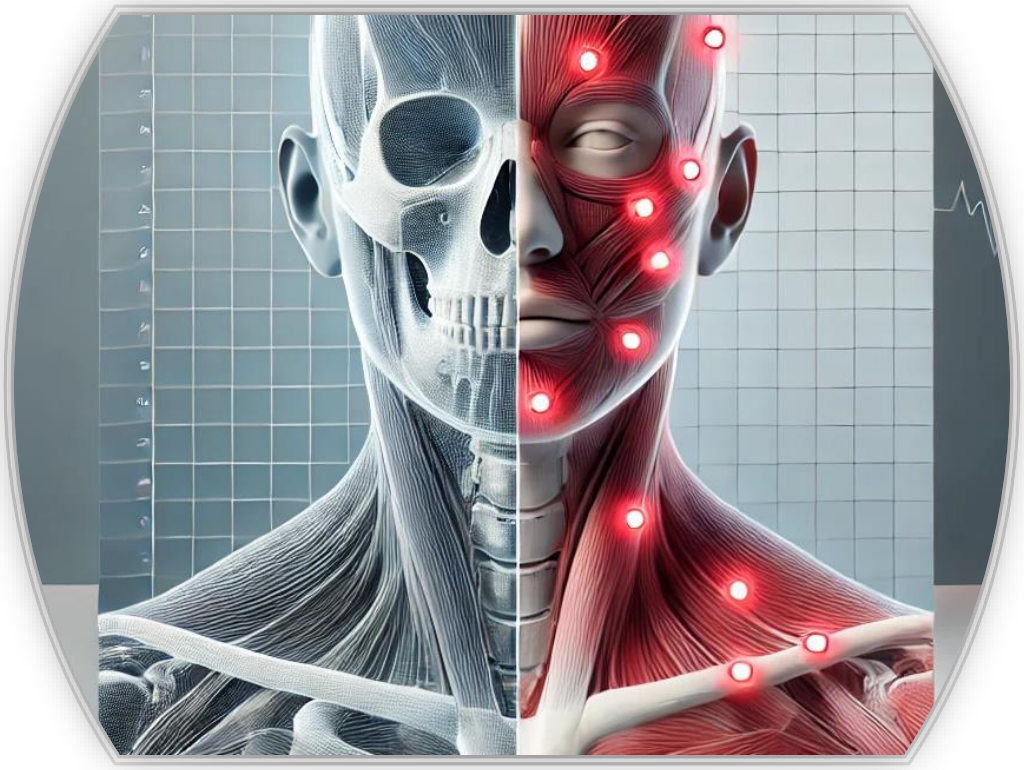
MYALGIA V/S MYOFASCIAL PAIN

Pain of muscle origin localized only to the site of palpation.



Muscle pain spreading beyond the location of the palpating fingers:

- Within the muscle boundary
- Beyond the muscle boundary

Trigger point – a localized hypersensitive nodule in a taut band of skeletal muscle – causing referred pain patterns to other sites.

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CHARACTERISTIC FEATURES OF MYOFASCIAL PAIN

Constant background pain Periods of exacerbation
Dull ache
Diffuse / poorly localized with or without referred pain patterns
Associated symptoms – muscle stiffness, reduced range of motion
Increased by functional activity Talking, chewing, etc

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PERPETUATING CONTRIBUTING FACTORS

- Sleep bruxism
- Awake bruxism
- Gum chewing
- Holding tension in muscles e.g., due to stress
- Nail biting/lip biting/cheek biting
- Systemic contributors, e.g., chronic pain conditions, fibromyalgia

Pic courtesy: Google images

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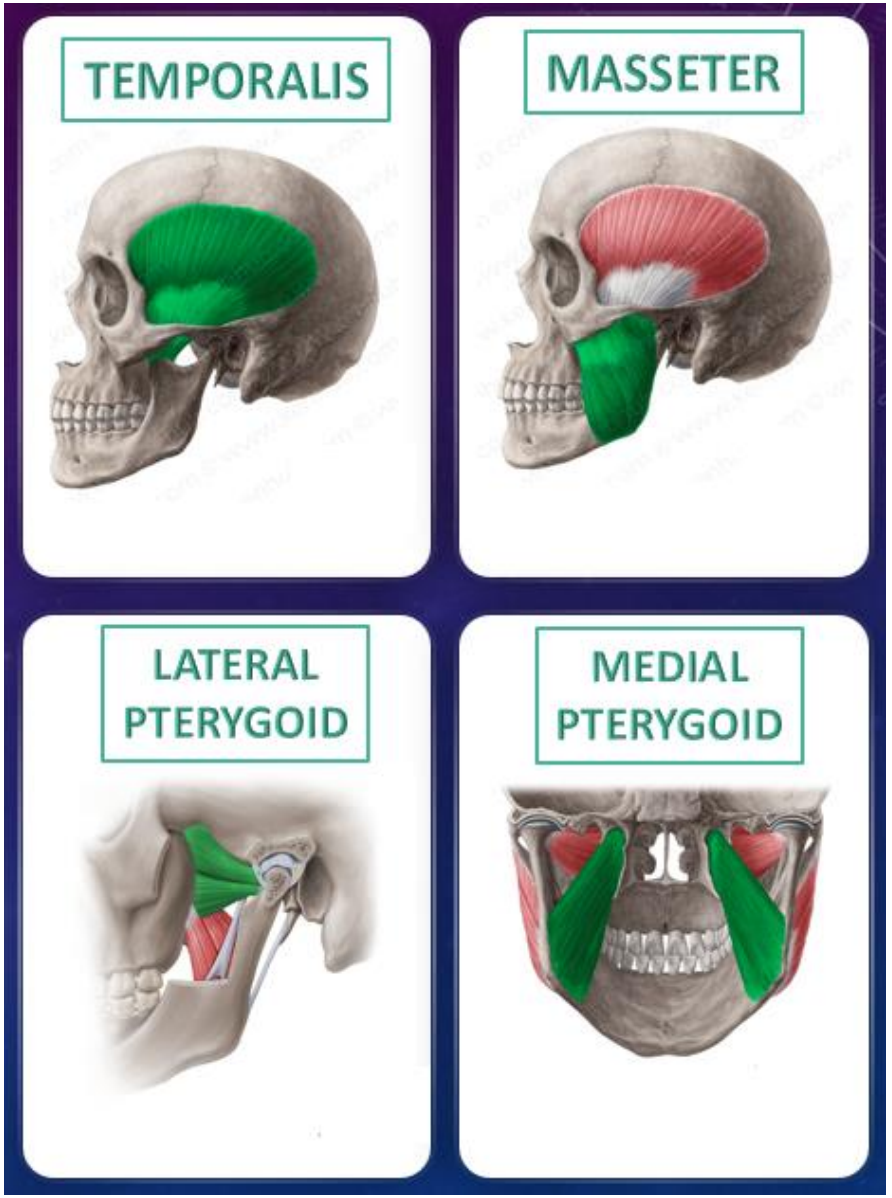
MUSCLES OF MASTICATION



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PALPATION OF MASTICATORY MUSCLES

FREQUENCY AND SOURCES OF PAIN REFERRED TO THE TEETH.

SITE OF PERCEIVED REFERRED PAIN	EVALUATED SOURCE OF REFERRED PAIN (LOCATION PALPATED)										
	Temporalis Muscle	Temporomandibular Joint	Masseter Muscle	Lateral Pterygoid Area	Medial Pterygoid Area	Coronoid Process	Trapezius Muscle	Splenius Capitis Muscle	SCM*	Anterior Digastric Muscle	Posterior Digastric Muscle
Maxillary Molars	3	2	25	6	0	0	0	0	0	0	0
Maxillary Premolars	3	1	11	6	0	0	0	0	0	0	0
Maxillary Anterior Teeth	2	1	4	2	2	0	0	0	0	0	0
Mandibular Molars	1	2	40	1	0	1	0	0	1	0	1
Mandibular Premolars	1	0	8	2	0	0	0	0	1	1	0
Mandibular Anterior Teeth	1	0	8	2	0	0	0	0	1	1	0

* SCM: Sternocleidomastoid muscle.

Wright EF. Referred craniofacial pain patterns in patients with temporomandibular disorder. J Am Dent Assoc. 2000 Sep;131(9):1307-15.

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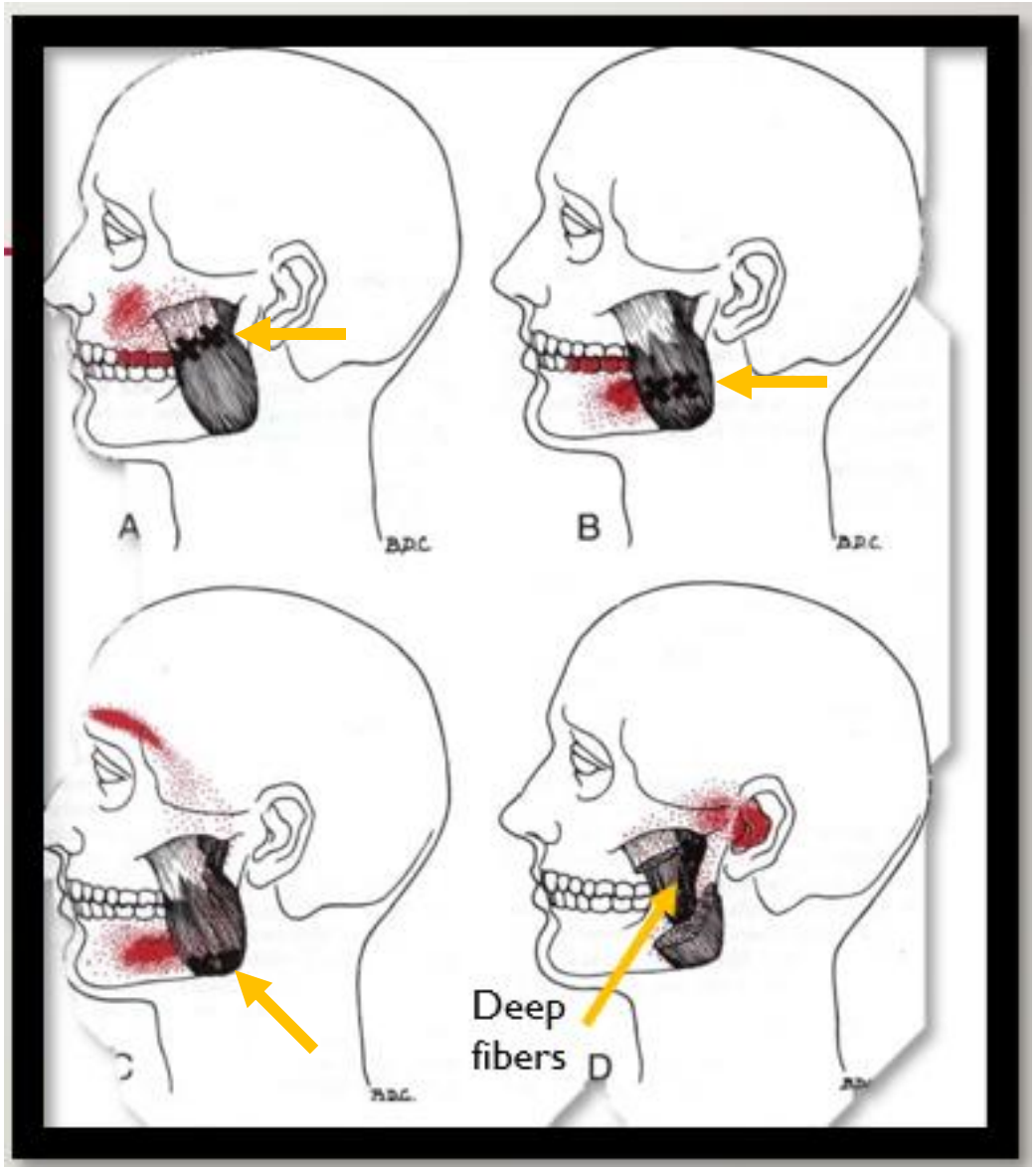
REFERRAL PATTERNS OF MASSETER MUSCLE



Simons DG, Travell JG, Simons LS. Travell & Simons' Myofascial Pain and Dysfunction: The Trigger Point Manual, 2nd ed. Philadelphia: Lippincott Williams & Wilkins, 1996

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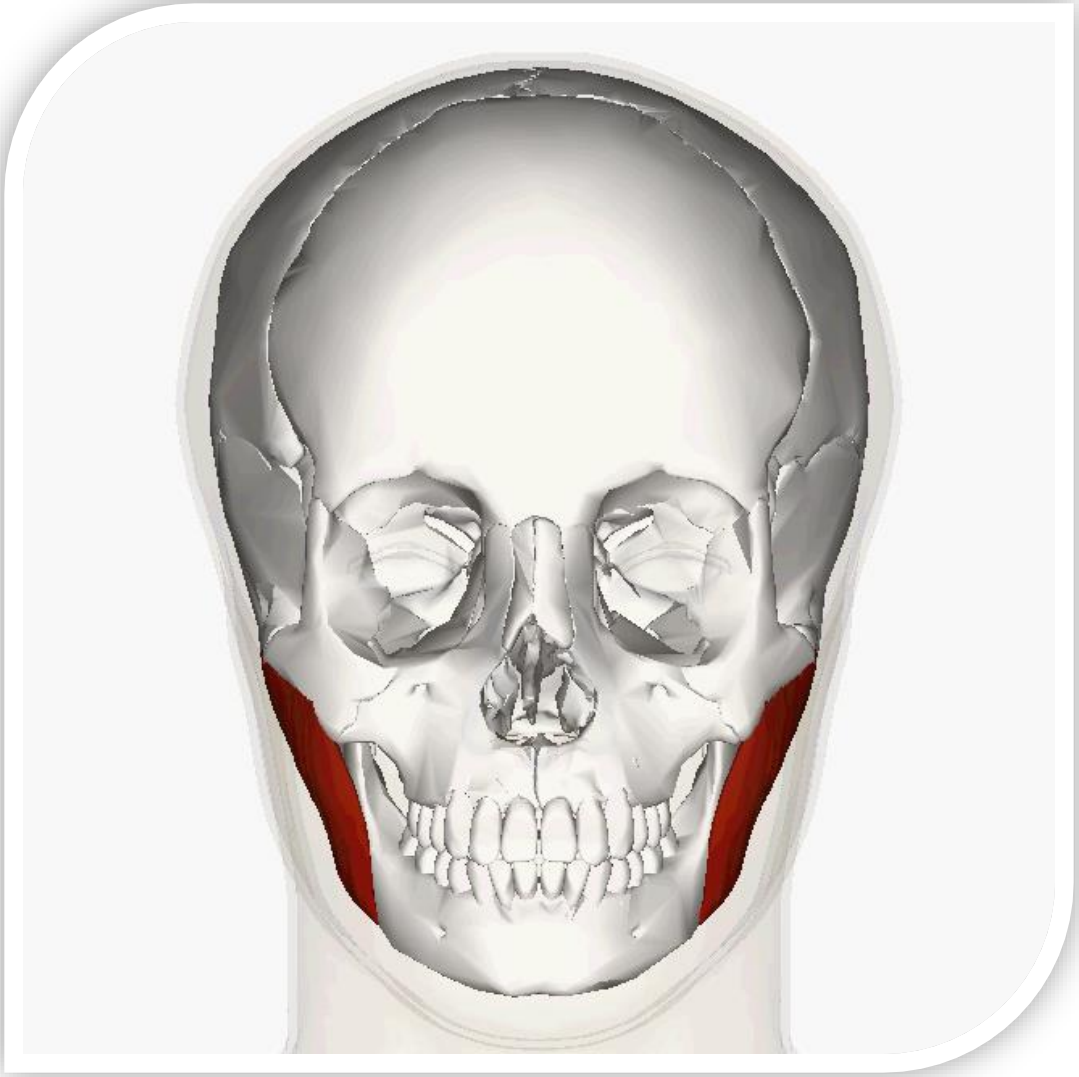
PALPATION OF THE MASSETER MUSCLE



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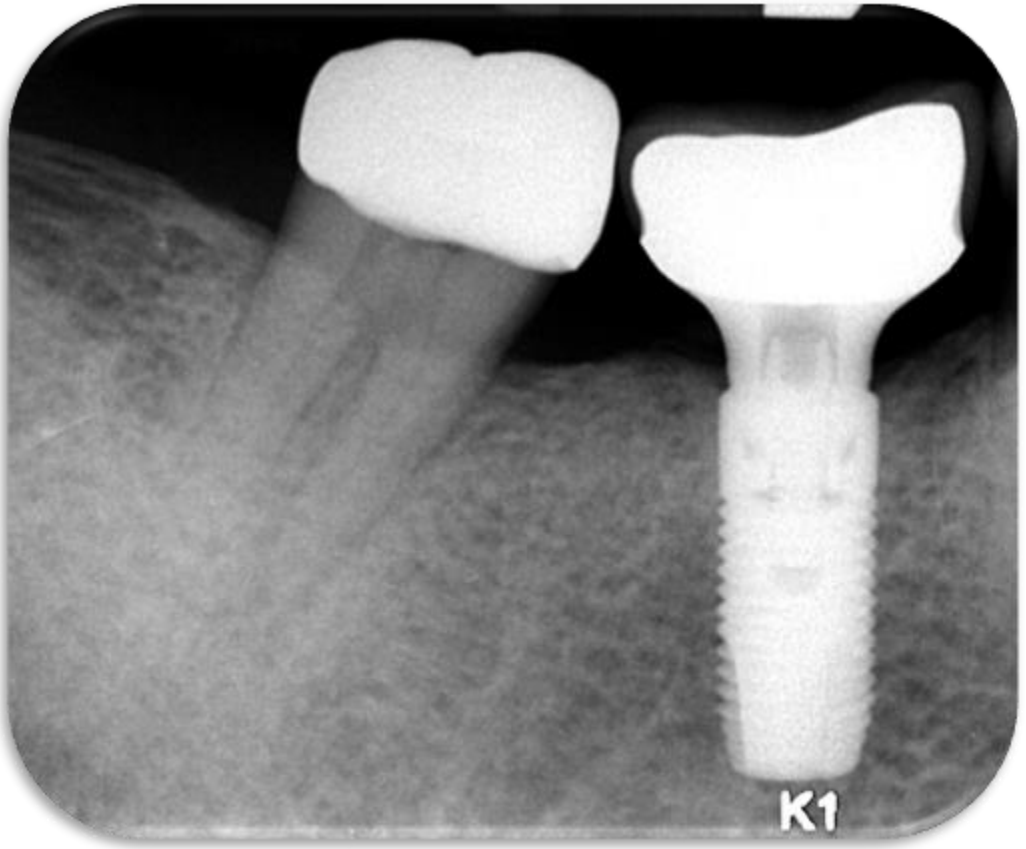
PALPATION OF THE MASSETER MUSCLE

Back to the case 1 with resolution



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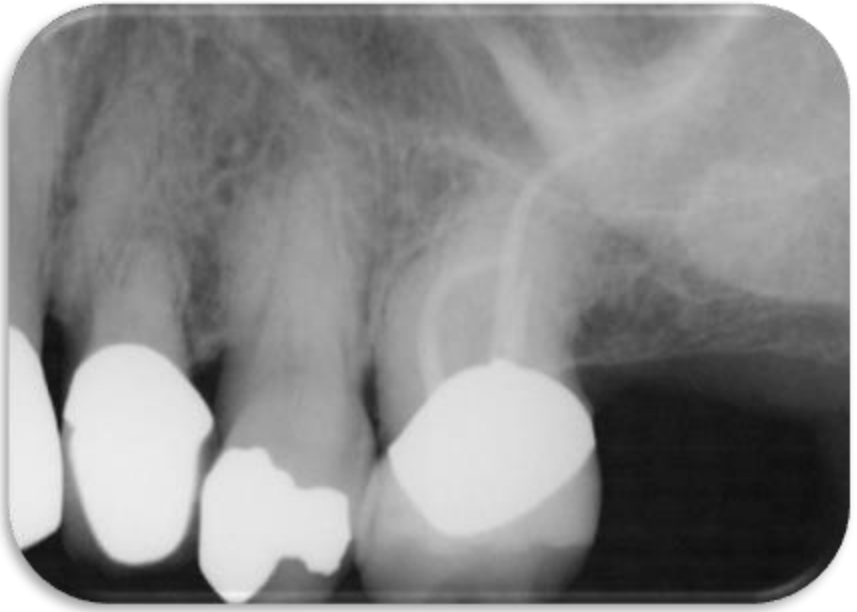
CLINICAL CASE SCENARIO #2



- Patient MK returns to your clinic 6 months after you completed non-surgical RCT
- Chief Complaint - “My tooth still hurts”

What about the other muscles of mastication?

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PALPATION OF THE TEMPORALIS MUSCLE

Pic courtesy: Google images

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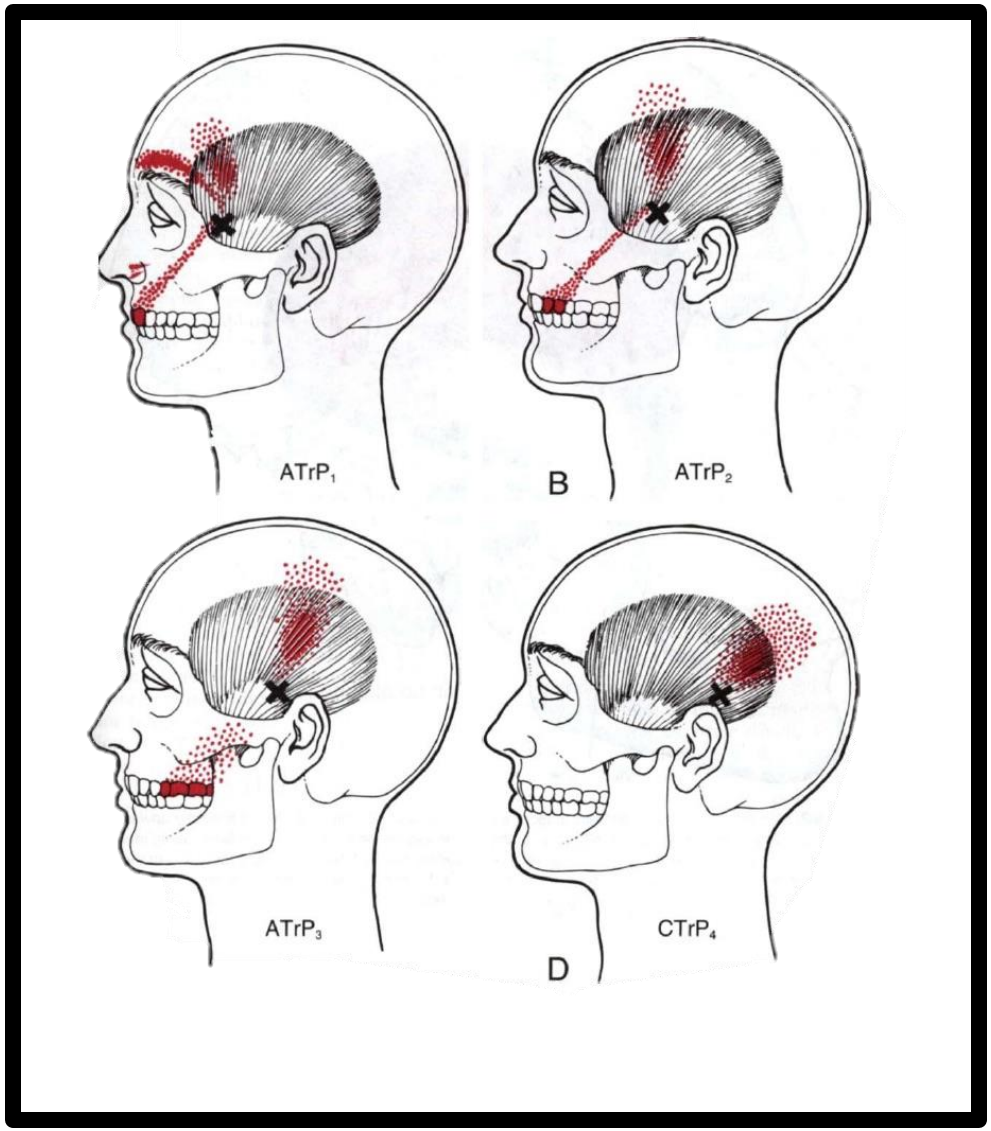
PALPATION OF THE TEMPORALIS MUSCLE

REFERRAL PATTERNS OF TEMPORALIS MUSCLE



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FUNCTIONAL RESISTANCE METHOD FOR LATERAL PTERYGOID MUSCLE

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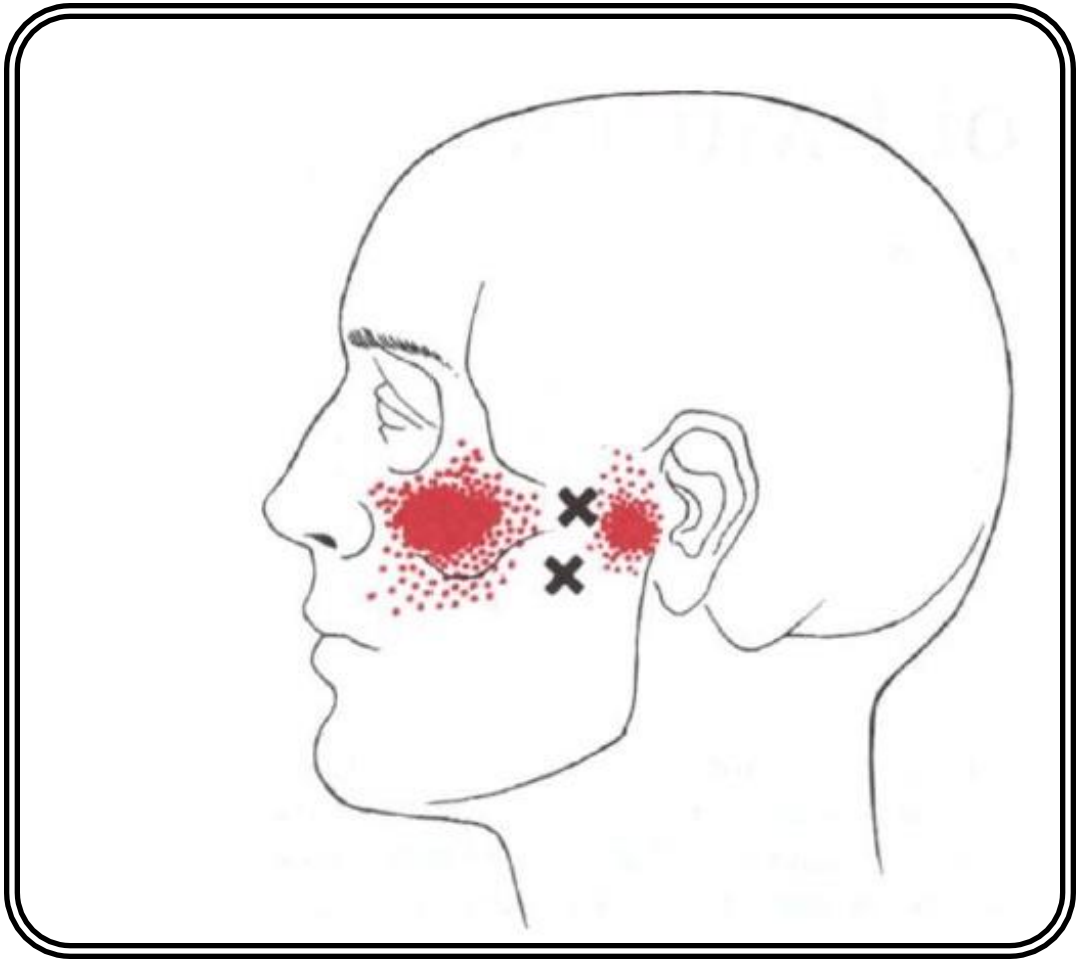
REFERRAL PATTERNS OF LATERAL PTERYGOID MUSCLE



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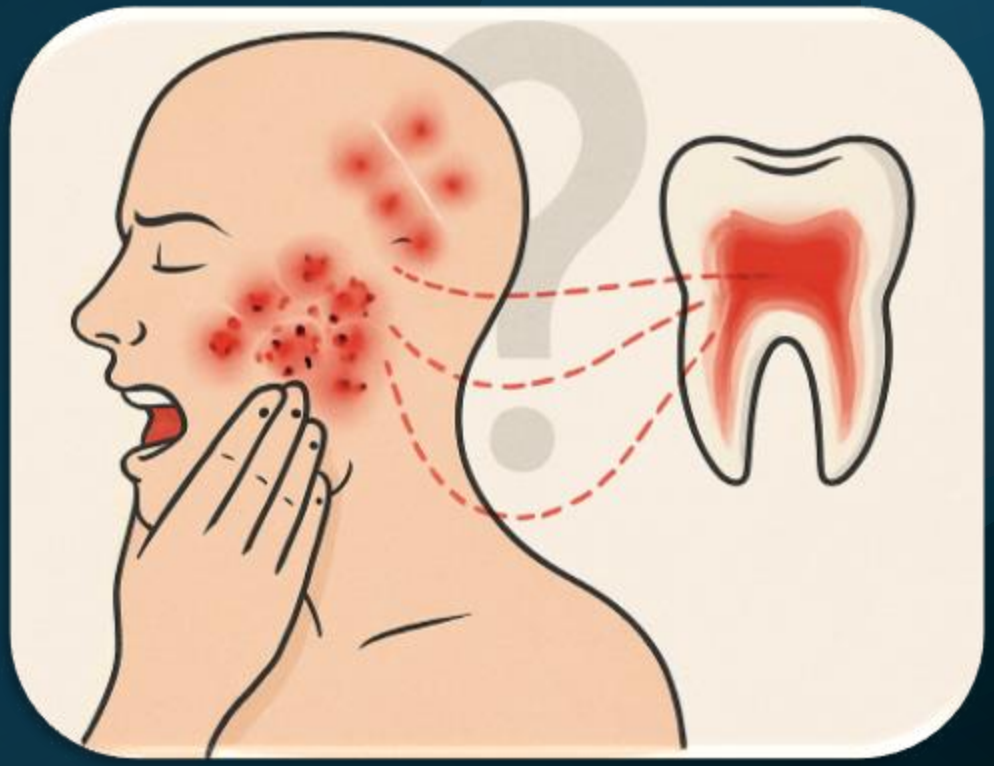

“FROM MUSCLES TO MOLARS”

MANAGEMENT OF REFERRED PAIN

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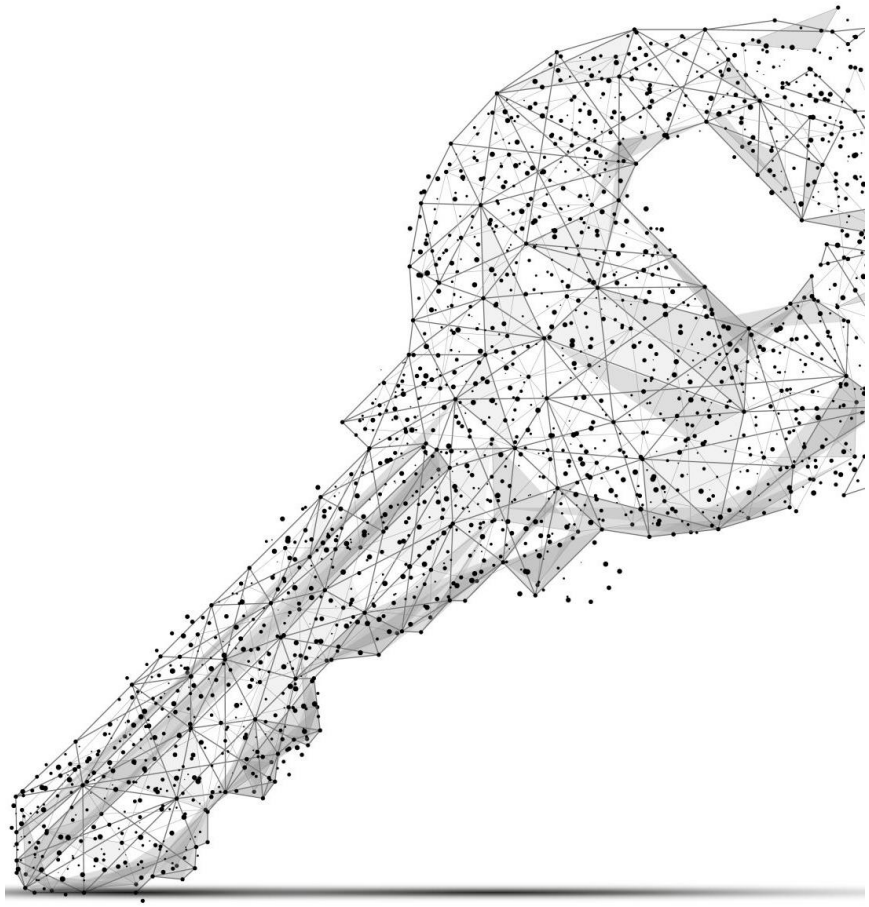
KEY POINTS

- ✓ *No treatment hierarchy*
- ✓ *Multidisciplinary management*
- ✓ *Personalized plans suited for patients' needs.*



MANAGEMENT OF REFERRED PAIN

PATIENT EDUCATION AND REASSURANCE

Explaining the pain to the patient.

Support the patient's mental state

Reduce the patient's pain catastrophizing, fear avoidance, unhealthy attitudes/behaviors.

Increase physical movement

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MANAGEMENT OF REFERRED PAIN

SELF MANAGEMENT

STRATEGIES

Avoid	Avoid other oral habits - keeping teeth together, cheek biting, pushing tongue against teeth
Maintain	Maintain a good posture. Avoid sleeping on your stomach.
Stretch	Apply heat/ice packs. Practice stretching exercises of the muscles.
Relax	Practice the relaxed mouth position with teeth slightly apart, lips sealed and tongue resting against the roof of mouth

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MANAGEMENT OF REFERRED PAIN

ORAL

APPLIANCE THERAPY

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MANAGEMENT OF REFERRED PAIN

PHARMACOTHERAPY

OTC medications	Prescription medications
• Ibuprofen (Motrin IB) • Naproxen (Aleve) • Ketoprofen (Orudis KT)	• Muscle relaxants • Tricyclic antidepressants

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MANAGEMENT OF REFERRED PAIN

PHARMACOTHERAPY

MUSCLE RELAXANTS – What do we know?

Used short-term for acute muscle spasms / flare ups

Cyclobenzaprine 5–10 mg qhs – statistically superior to placebo or clonazepam

Baclofen 5 mg tid - rarely the first choice

Side effect profile – sedation, weakness

LIMITED EVIDENCE OF EFFICACY OF MUSCLE RELAXANTS IN TREATING MYOFASCIAL PAIN

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PHARMACOTHERAPY

MANAGEMENT OF REFERRED PAIN

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LIMITED EVIDENCE OF EFFICACY OF MUSCLE RELAXANTS IN TREATING MYOFASCIAL PAIN

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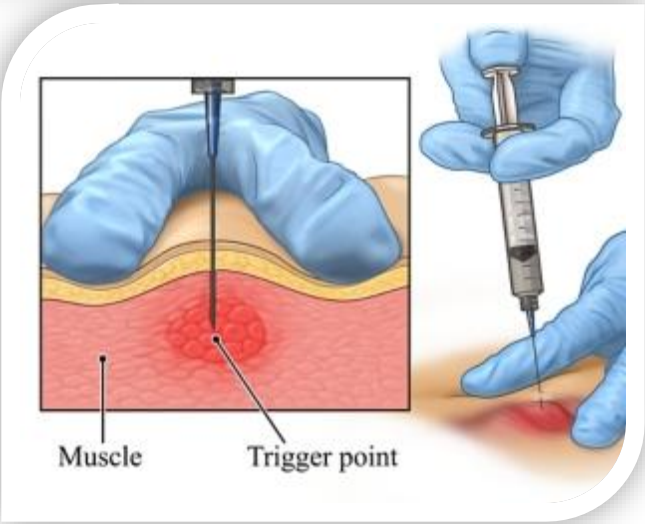
OTHER MODALITIES

MANAGEMENT OF REFERRED PAIN



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RECOGNIZING WHEN TO REFER

- Complexity of diagnosis
- Chronic refractory pain – Biopsychosocial model
- Multidisciplinary management
- Advanced treatment modalities
- Risk of mismanagement
- Professional responsibility and ethics

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Thank you

Questions

Comments

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