TMD

Evidence Based Dentistry Rounds
Specialty - TMD
Group 10
Team B-1
Date 10/21/20

Rounds Team

- Group Leader: Dr. Yray
- Specialty Leader: Dr. Thompson
- Project Team Leader: TJ LeMoine
- Project Team Participants: D3-Kabitzke, Emily D2-Nelson, Madison D1-Kick, Isabelle

Patient

- 1-2 slides, patient background
- Age
- Gender
- Ethnicity
- Chief Complaint
- Additional pertinent information
- Information is de-identified throughout presentation

Medical History

- 1 slide describing medical history
- Current & past:
  - Diagnoses
  - Conditions
  - Medications
  - Medical Consults, if any
  - Treatment considerations

Dental History

- 1 slide describing past dental history

Radiographs

- Panoramic image (if available)

Radiographs

- Full mouth series (BWX & PAX)
- Although all BWX and periapical radiographs could be placed on this slide, it will be hard to read.
- Recommendations:
  - Show overall FMX on this slide
  - Show necessary close-up views on separate slide(s)
  - Zoom in on, or enlarge, relevant views of areas of interest.
  - Insert arrow, or other indicator, to draw attention to findings. Correlate with list of pertinent radiologic findings.

Radiographic Findings

- 1 slide summarizing pertinent radiologic findings
- Illustrate with radiograph and/or other graphics as needed

Clinical Findings

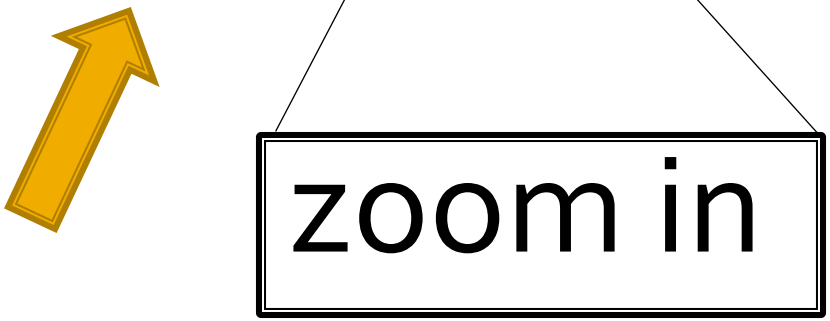
- 1 slide describing all clinical findings
- Clinical photos 1-2 slides
  - Relevant extraoral &/or intra-oral views
- Photos of casts 1-2 slides
  - Mounted on articulator
  - Same views as intraoral photos
    - Occlusal maxilla, mandible
    - Open, closed
      - Anterior, lateral
      - In occlusion, excursions
    - Show excursions from posterior to molar view

Specific Findings

- List findings specific to the Rounds discussion, 1 slide
- To enhance viewing, include close-ups of clinical photos, cast photos, radiographs, add slides as needed

Periodontal Charting

- Ensure that the periodontal charting is readable.
- Highlight, surround, point to, or zoom in on areas of interest.



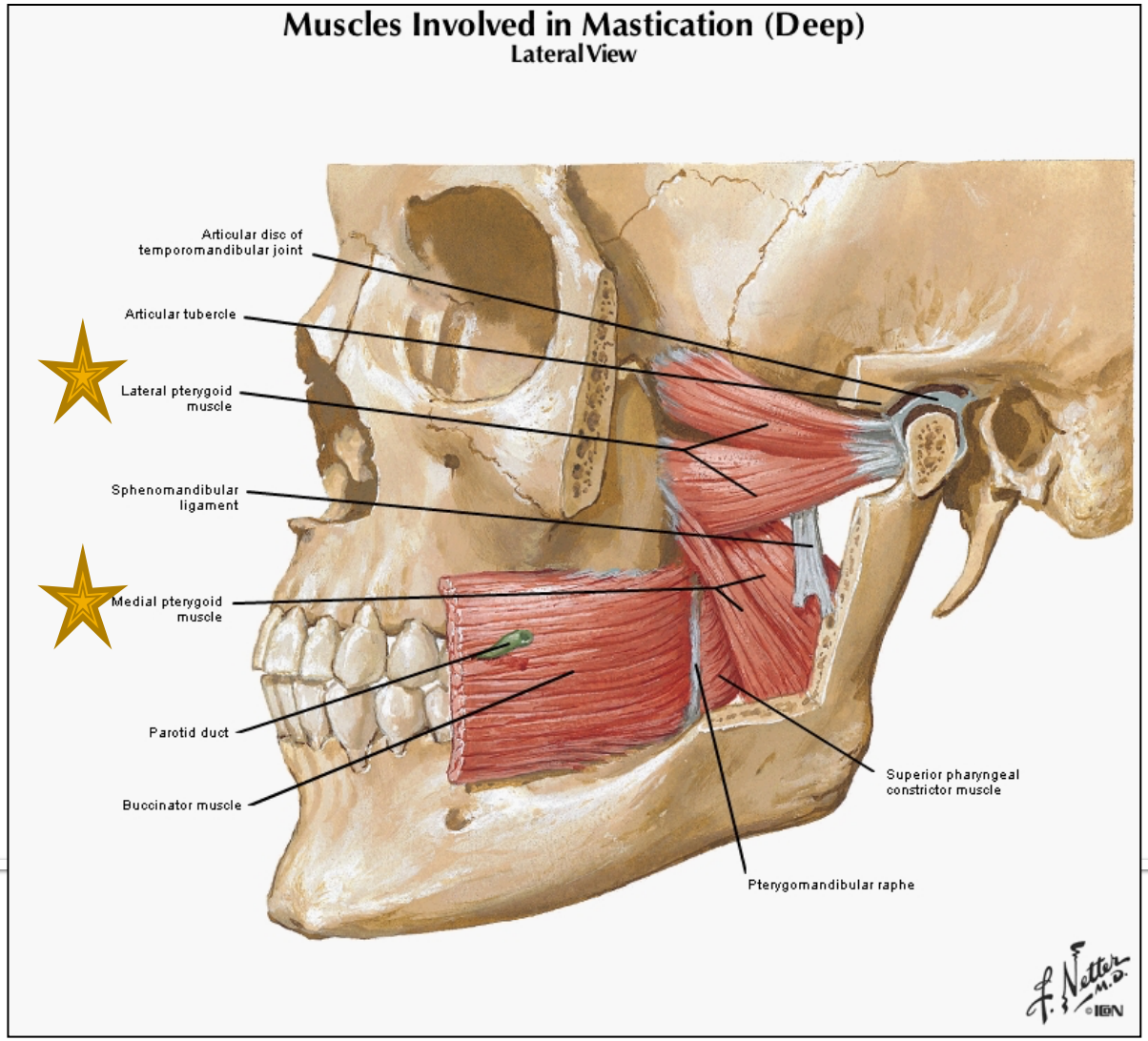
Diagnosis

- Diagnosis pertaining to Rounds discussion, 1 slide

Problem List

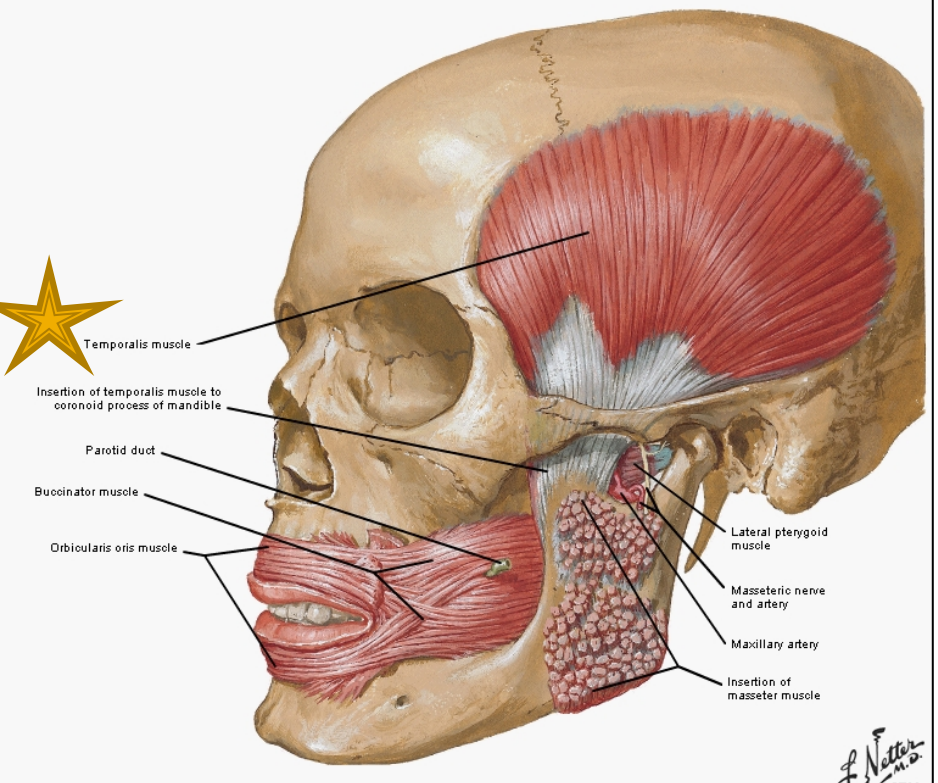
- 1 slide
- Include graphics as needed

Muscles of Mastication



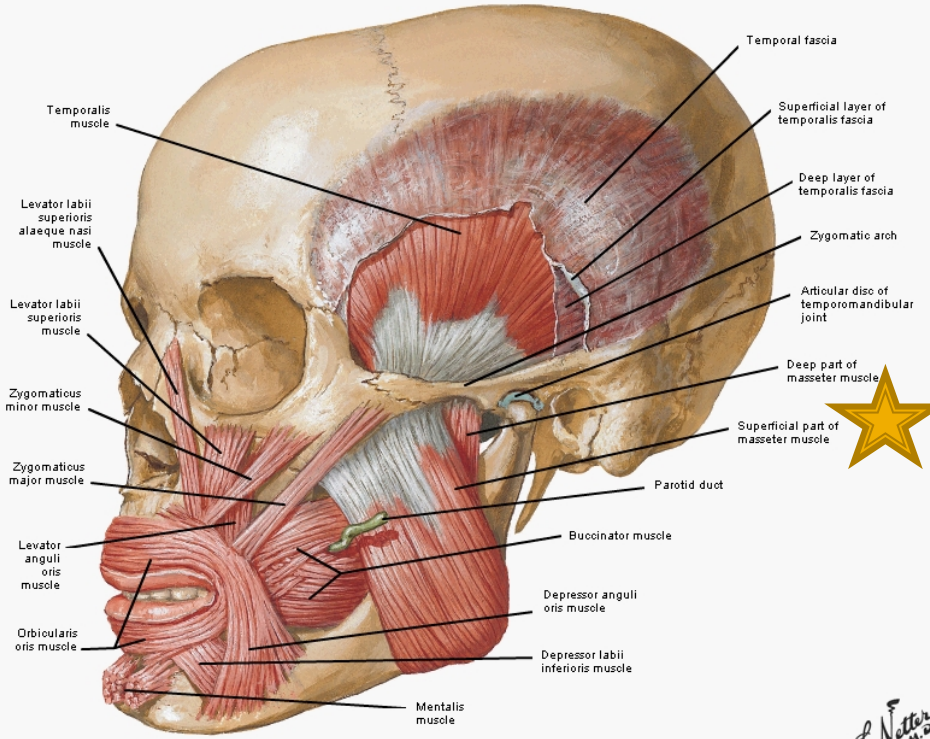
Muscles Involved in Mastication - Masseter Removed

Lateral View



Muscles Involved in Mastication

Lateral View



D2 Pathology- What is the etiology of temporomandibular joint disorder?

- ***Etiology-***
  - ***More common in women between the ages of 20 and 40 years old***
  - ***Previously believed to be heavily caused by malocculsion***
  - ***Today, true etiology is unknown. Believed to be a multifactorial disorder.***

TMD as a multifactorial disorder

- ***Structural misalignment between the mandible and the cranium***
- ***Laxity of the joint***
- ***Rheumatic or musculoskeletal disorders***
- ***Unhealthy lifestyle***
- ***trauma (acute, hyperextension- dental procedures, yawning)***
- ***Parafunctional habits- Bruxing, clenching, and lip or cheek biting***
  - ***Enhanced by emotional distress***

D3 PICO Question

- **PICO Format:**
  - **P:** Patients with temporomandibular myofascial pain
  - **I:** Trigger point injections
  - **C:** Dry needling
  - **O:** Effective treatment modality

- For patients with temporomandibular myofascial pain, are trigger point injections, compared to dry needling, an effective treatment modality?

Article 1:

- **Title:** Effectiveness of dry needling for the treatment of temporomandibular myofascial pain: a double-blind, randomized, placebo controlled study
- **Reason for Article Selection:**
  - Compares dry needling to sham dry needling of a placebo group for the treatment of temporomandibular joint pain
  - Dry needling stimulates a target nerve while sham needling does not stimulate a target nerve and acts as an inert therapy when compared to dry needling

Article 1:

- **MESH terms:**
  - Myofascial Pain Syndromes / therapy
  - Temporomandibular Joint / physiopathology
  - Acupuncture Therapy / methods
- **Level of Evidence:**
  - 1b – Individual RCT
- **Strength of Recommendation:**
  - B – Inconsistent or limited quality patient oriented evidence

Article 1:

- **Methods:**
  - 2 groups of 26 randomly divided into study group (dry needling) and placebo group (sham needling)
  - Pain threshold assessed as a measurement of unassisted jaw opening without pain using pressure algometry and a 10 cm visual analog scale
- **Results:**
  - Mean algometric values were higher in the study group as compared to the placebo group
  - There were no differences between the groups for VAS or opening without pain
- **Conclusion:**
  - Dry needling is an effective treatment method in relieving myofascial trigger points

Article 1:

- **Citation:**
  - Dıraçoğlu D, Vural M, Karan A, Aksoy C. Effectiveness of dry needling for the treatment of temporomandibular myofascial pain: a double-blind, randomized, placebo controlled study. J Back Musculoskelet Rehabil. 2012;25(4):285-90. doi: 10.3233/BMR-2012-0338. PMID: 23220812.

Article 2:

- **Title:** Comparison of lidocaine injection, botulinum toxin injection, and dry needling to trigger points in myofascial pain syndrome
- **Reason for Article Selection:**
  - Directly compares the efficacy of dry needling versus lidocaine trigger point injections and botulinum toxin trigger point injections

Article 2:

- **MESH terms:**
  - Myofascial Pain Syndromes / drug therapy
  - Injections, Intramuscular
  - Temporomandibular Joint / physiopathology
- **Level of Evidence:**
  - 1b – Individual RCT
- **Strength of Recommendation:**
  - B – Inconsistent or limited quality patient oriented evidence

Article 2:

- **Methods:**
  - 3 groups randomly assigned: lidocaine injection (x32 TrP), dry needling (x33 TrP), and BTX-A injection (x22 TrP)
  - Trigger point injections (TrP) performed on cervical and/or periscapular regions
  - Evaluation based on cervical range of motion, pain pressure threshold (PPT), pain scores (PS), visual analog scales for pain, work disability and fatigue (VAS), and quality of life using Nottingham health profile at beginning and end of 4 week trial
- **Results:**
  - PPT and PS improved in all 3 TrP groups
  - PPT values were significantly higher in lidocaine injection group than dry needling group
  - PS values significantly lower in lidocaine injection group than both dry needling and BTX-A group
  - Quality of life scores improved for both lidocaine injection and BTX-A groups, but not dry needling group

Article 2:

- **Conclusion:**
  - Of the 3 treatment modalities tested, lidocaine injection is the most practical method of TrP, as it causes less of a disturbance to the nerve and tissue than dry needling and is more cost effective than BTX-A injection

Article 2:

- **Citation:**
  - Kamanli A, Kaya A, Ardicoglu O, Ozgocmen S, Zengin FO, Bayik Y. Comparison of lidocaine injection, botulinum toxin injection, and dry needling to trigger points in myofascial pain syndrome. Rheumatol Int. 2005 Oct;25(8):604-11. doi: 10.1007/s00296-004-0485-6. Epub 2004 Sep 15. PMID: 15372199.

Article 3:

- **Title:** Trigger point injection therapy in the management of myofascial temporomandibular pain
- **Reason for Article Selection:**
  - This RCT compares the efficacy of treating temporomandibular myofascial pain by stabilization splint alone to stabilization splint combined with trigger point injections

Article 3:

- **MESH terms:**
  - Temporomandibular Joint Dysfunction Syndrome / drug therapy
  - Injections, Intramuscular
  - Facial Pain / drug therapy
- **Level of Evidence:**
  - 1b – Individual RCT
- **Strength of Recommendation:**
  - B – Inconsistent or limited quality patient oriented evidence

Article 3:

- **Methods:**
  - 50 patients randomly assigned to 2 groups: Group 1- treated using stabilization splint alone and Group 2- treated using stabilization splint combined with trigger point injections
  - Evaluated using visual analog scores (VAS) at weeks 4 and 12
- **Results:**
  - Improvement in signs and symptoms noted in both groups
  - Significant reduction in VAS scores in Group 2 (stabilization splint + trigger point injections) at weeks 4 and 12
- **Conclusion:**
  - Trigger point injection therapy combined with stabilization splint therapy is more efficacious than stabilization splint therapy alone

Article 3:

- **Citation:**
  - Ozkan F, Cakır Özkan N, Erkorkmaz U. Trigger point injection therapy in the management of myofascial temporomandibular pain. Agri. 2011 Jul;23(3):119-25. doi: 10.5505/agri.2011.04796. PMID: 21935818.

Conclusions: D4

Based on your D3's bottom line recommendations, how will you ***advise*** your patient?

How will you ***help*** your patient?

Discussion Questions

- 1-2 slides
- List posted discussion questions
- Questions may also be from Group Leader or Specialist

Discussion Questions

THANK YOU