Managing the Internal Derangement

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Introduction

A. Questions to be pondered

   a. What is TMJ?

   b. Does clenching and grinding *cause* TMJ?

   c. Where does TMJ pain come from?

   d. What can we (dentists) do to help?

B. Tales of TMJ Dysfunction

   a. Classic Closed Lock

   b. Orthodontic Activation/Exacerbation

   c. Chiropractor Adjustment

   d. Unsolicited Equilibration

   e. Moral of the story: we don't know what the jaw joints actually look like, unless…

C. Problems to be avoided

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My Story

A. Key Concepts

   1. Trivium Method

      _____

   2. Types of Evidence for Belief

      _____

   3. Cross of Life – Pankey

      _____

   4. Trinity of Consciousness – Beliefs-Words-Actions

      _____

TMJ Anatomy Review

A. What is TMJ?
    1. A joint?
    2. A syndrome?
    3. An acronym?

B. Textbooks
    1. Netter's
    2. Dawson
    3. Mahan – Facial Pain
    4. Okeson
    5. Little Black Book (Higdon)

C. Histology
    1. Cartilage
    2. Disc
    3. Retrodiscal Tissues

D. Cadaver Dissection
    1. The "Yoint" Video

    _____

E. Occlusion – The Mechanical Component
    1. Optimal Balance and Force Distribution

    _____

    2. Tooth Root Anatomy

    _____

    3. The Parafunctional Connection

    _____

The Comprehensive TMJ Evaluation

A. Patient Interview

1. Ask questions and ***listen***

    a. ***23 Questions!***

        i. ***How can I help you today? (Primary CC)***

        ii. ***How long have you had this problem?***

        iii. ***Can you think of any event that might have caused it?***

        iv. ***Does your jaw make any noises?***

        v. ***Does your jaw ever get stuck or locked?***

        vi. ***Does your bite feel comfortable to you?***

        vii. ***Has your bite changes recently?***

        viii. ***Are you having any difficulty opening wide?***

        ix. ***Do you have any trouble chewing food?***

        x. ***Do you have any questions about anything in particular?***

        xi. ***Have you found anything that helps?***

        xii. ***Is there anything you've found that makes your symptoms worse?***

        xiii. ***Have you every had any injury to your jaw?***

        xiv. ***Have you ever had braces?***

        xv. ***Do you have any awareness of clenching your teeth?***

        xvi. ***How do you feel when you wake up?***

        xvii. ***Has anyone ever told you that you snore?***

        xviii. ***What would you consider a successful outcome?***

    b. ***Treat them like the keys on a piano!***

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2. Identify the patient's PRIMARY DISCOMFORT (the reason they made the appointment)

3. Identify the patient's PRIMARY EXPECTATION (what they hope you can do for them)

B. Imaging

1. CBCT – review AT THIS VISIT
    a. TextBook – Specialty Imaging: Dania Tamimi, BDS, DMSc
    b. <u>Beam Readers</u>
2. MRI – will need referral, hard to get approval

C. Clinical Examination

1. Airway and Breathing Assessment
    a. Nasal Breathing
    b. Mallampati Score
    c. Tonsil Score
2. Digital Scan of Dentition
    a. Photo documentation of teeth
    b. Photo documentation of gums
    c. Evaluation of occlusion
3. Evaluation of the Joints
    a. Auscultation using fingers (compared with JVA, Doppler, or Stethoscope)
        i. Is there clicking? If so, describe.
        ii. Is there crepitus? If so, describe.
        iii. DON'T OVER-ANALYZE!
    b. Joint Palpation
        i. Lateral Pole
        ii. TM Ligament
        iii. Retrodiscal from EAM (tenderness, clicking, prominence)
        iv. Rotation and Translation assessment
    c. Joint Loading – Krogh-Poulson Test
    d. Joint Mobility – Like testing ACL

4. Evaluation of the Muscles
    a. 2-3 pounds of force, 1 second
    b. Temporalis 3 regions
    c. Masseter-superficial
    d. Anterior Digastrics
    e. SCMs
    f. Lateral Pterygoid-provocation
        i. Can it be palpated?
        ii. MRI study
        iii. Show TikTok of chiro “releasing LP”
    g. Masseter-deep
    h. Temporalis-insertion
    i. Bimanual Guidance – release?
5. Evaluation of Stomatognathic Mechanics
    a. Clench Test (decompression)
    b. Overjet, Overbite, Midlines
    c. Comfortable Opening
    d. Max Opening – deflection vs deviation
    e. Laterals
    f. Protrusive
6. Review of Findings with patient
    a. Are the joints causing the symptoms?
    b. Are the muscles causing the symptoms?
    c. Neurological component?
    d. Observe and Report – do not make treatment recommendations until asked!

7. Answer any questions the patient has…and if you don't know the answer, TELL THE PATIENT YOU DON'T KNOW!!
8. Discuss types of solutions for different problems
9. Financial Discussion – **should be done by someone other than the treating clinician**

Generating a Report

A. Software – I use Azalea EHR Medical Suite

B. Medical versus Dental coding

   a. Diagnosic Codes – ICD-11 (Effective 2022 WHO)

      International Classification of Diseases

   b. Procedural Codes – CPT (Current Procedural Technology)

   c. Dental Codes – also use ICD-10 (11)

   d. Dental Procedural Codes – CDT-10

      Current Dental Technology

C. SOAP Format

   a. **Subjective**: patient experiences, as well as **PATIENT GOALS**

   b. **Objective**: data gathered during exam

   c. **Assessment**: Clinical impression of what's going on

   d. **Plan**: Treatment Recommendations including **Therapeutic Objectives**

Treatment of the Internal Derangement

A. An Orthopedic Approach

   1. Conservative Treatment First

      a. Protect structures from parafunctional strain – Orthotic Device

      b. Physical therapy – TMJ Rehab

      c. Reduce Parafunctional Intensity

         i. BOTOX

         ii. Muscle Relaxants

iii. Relaxation Techniques

iv. Topical Compounded Medications

d. Manage Inflammation

i. NSAIDs

ii. Joint Injections

iii. TCM's

iv. Voltaren Gel OTC

2. Surgical discussion if conservative treatment fails

a. Arthrocentesis

b. Diskectomy

c. Arthroplasty

d. Total Joint Replacement

e. Orthognathic Surgery

B. Types of Oral Appliances for TMJ

1. Deprogrammer

2. Permissive Splint

3. Mandibular Advancement Device

4. Directive Orthotic

The Directive Orthotic

A. Pre-Clinical Workup

1. Need to examine occlusion

2. Need to do a wax bite

3. Articulators

a. Fully Adjustable – Artex (usually for permissive)

b. Plasterless – Galetti (usually for directive)

4. Wax – Baseplate Wax #3

5. Water Heater
6. *Smooooth* is important!

B. Clinical Verification of Wax Bite
   1. Assess Clicking if present
   2. Assess comfort of position
   3. Watch swallowing musculature
   4. Assess midline
   5. Compare with CBCT
   6. Scan on duplicated virtual models

C. Construction
   1. Digital Design
      a. 3-Shape is what I use
      b. 1.8mm-2.0mm thick
      c. ***Max*** retention
      d. Occlusal Clearance 1.5mm-2.0mm
   2. Digital Printing
      a. SprintRay Pro2 – proprietary materials (Firm2, Flex2)
      b. Ackuretta Sol – Verified with several different materials, I used KeySplint Soft
   3. Lab Finishing Work
      a. Remove sprues
      b. Smooth
      c. Pumice
      d. Soft polish
      e. Refine occlusion
      f. High polish
      g. Steam clean *(Steaman Jr)*

h. Disinfect

i. Ultrasonic Pod before delivery

4. Delivery – ***Comfort, Retention, Stability, Occlusion***

    a. Retention and comfort first, patient can insert and remove easily

    b. Evaluate stability (rock)

    c. Refine occlusion – Red and Blue for permissive, blue for directive

    d. DO NOT ask patient to evaluate the occlusion!!

5. Follow Up Visits

    a. First follow up in 2 weeks – critical!

    b. TMJ Rehab 12-week program

    c. Follow up as needed per patient request throughout program

    d. Follow up at 3-6 months for re-evaluation *(objectives met?)*

    e. Review additional treatment options if objectives not met

Course Recap

A. Review Learning Objectives

B. Questions and Answers

C. CE Information