

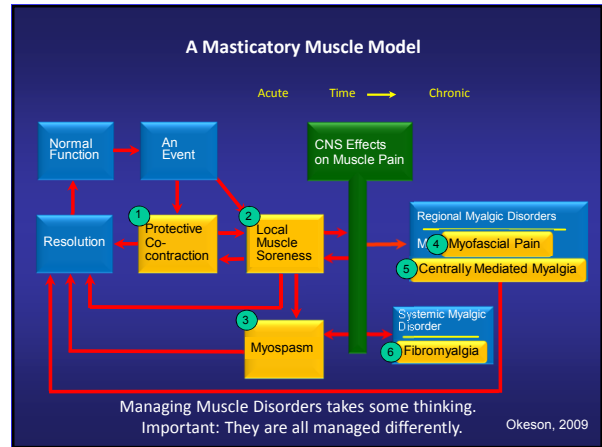
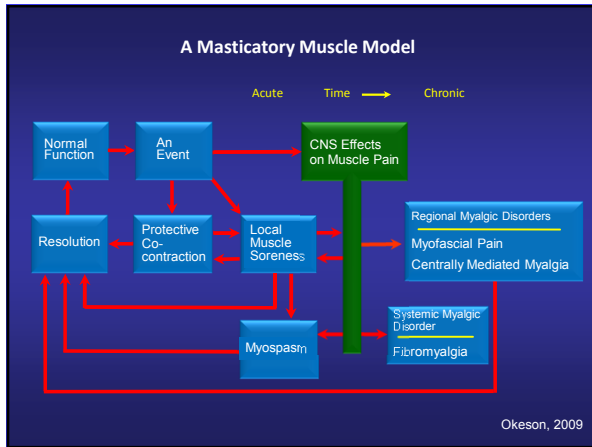
Management Considerations for TMD

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Lecture Notes for the
 The 143 Annual Session of the South Carolina Dental Association
 May 3, 2012
 1:30 to 4:30 PM
 Myrtle Beach, South Carolina

Classification of Temporomandibular Disorders

- ➔ I. Masticatory Muscle Disorders
 1. Protective Co-Contraction
 2. Local Muscle Soreness
 3. Myofascial Pain
 4. Myospasm
 5. Chronic Centrally Mediated Myalgia
- II. Temporomandibular Joint Disorders
 1. Derangements of the Condyle-Disc Complex
 - a. Disc Displacement with Reduction
 - b. Disc Displacement without Reduction
 2. Structural Incompatibilities
 3. Inflammatory Disorders



A Masticatory Muscle Model

Acute Time → Chronic

Local Muscle Soreness

1. Description
2. Etiology
3. History
4. Examination findings
5. Treatment

Because of our limited time, we can only discuss the most common disorder.

Local Muscle Soreness

- etiology -

1. Prolonged co-contraction produces changes in the muscle tissue, such as fatigue, ischemia, resulting in the production of algogenic substances.
2. Deep pain input (may lead to "cyclic muscle pain")
3. Local tissue trauma
 - a. local injury (e.g. injections, strain)
 - b. unaccustomed muscle use (e.g. bruxism, chewing gum) (Delayed onset local muscle soreness)
4. Increased levels of emotional stress

Local Muscle Soreness

- history -

1. The pain began several hours or days following an event associated with protective co-contraction. (e.g. altered sensory input, high crown)
2. Tissue injury (injections, opening wide, or unaccustomed muscle use - *pain may be delayed*).
3. Secondary to another source of the pain.
4. Associated with an increased level of the emotional stress.

Local Muscle Soreness

- clinical characteristics -

1. *Structural dysfunction*: a decrease in the velocity and range of mandibular movement. The full range of movement cannot be achieved by the patient. Passive stretching by the examiner can often achieve a more normal range of movement (soft end feel).
2. Minimal pain at rest.
3. Increased pain with function.
4. Local tenderness to palpation.

Local Muscle Soreness

- treatment -

The general goal of therapy is to reduce sensory input that can lead to cyclic muscle pain by:

1. Eliminate any ongoing altered sensory or proprioceptive input.
2. Education patient and encourage physical self regulation.
 - a. decrease jaw use to within painless limits.
 - b. stimulate proprioceptors with normal muscle use.
 - c. promote emotional stress awareness / reduction.
 - d. encourage reduction of non-functional tooth contacts (cognitive awareness).
3. Occlusal appliance therapy.
4. Considered the use of mild analgesics. (ibuprofen 600mg tid)

Local Muscle Soreness

- treatment -

Expect results in 1-3 weeks.

If the therapy is not successful, consider that either:

1. The etiologic factors are not being controlled
or
2. You have misdiagnosed the disorder.

Final Criteria for the Stabilization Appliance

1. The appliance is stable and retentive.
2. All the teeth contact evenly on flat surfaces.
3. Eccentric contacts are on the anterior teeth
4. In the upright position, posterior teeth contact heavier than the anterior teeth.
5. The appliances smooth and polished.

The Final Stabilization Appliance

Right lateral movement Left lateral movement


Managing the patient with Local Muscle Soreness

Week	VAS	Treatment
0	6/10	education, physical self regulation reduce use to painless limits reduce non functional tooth contacts introduce the stabilization appliance, night time use
1	3/10	reinforce physical self regulation reevaluate the stabilization appliance, adjust PRN
2	1/10	reinforce physical self regulation reevaluate the stabilization appliance, adjust PRN
3	0/10	reinforce physical self regulation reevaluate the stabilization appliance, adjust PRN
4	0/10	What do you do next?

Reasons that could explain why your occlusal appliance reduced the muscle pain.

So why did the patient respond?

1. A change in the occlusal condition
2. A change in the condylar position
3. A change in the vertical dimension
4. A change in cognitive awareness
5. Altered sensory input to the CNS (bruxism)
6. Natural musculoskeletal recovery
7. Placebo effect
8. Regression to the mean





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So why did the patient respond?

Dental Etiologies

Non-Dental Etiologies

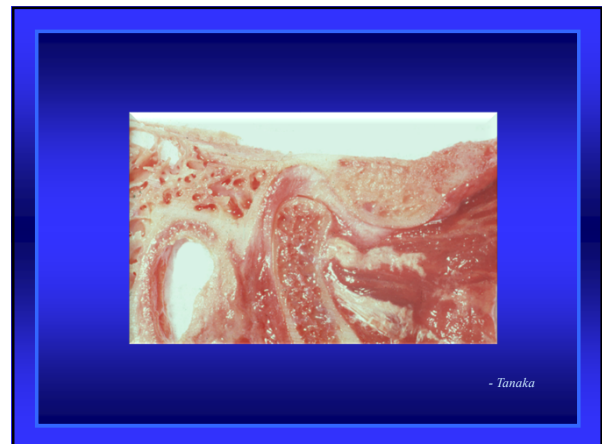
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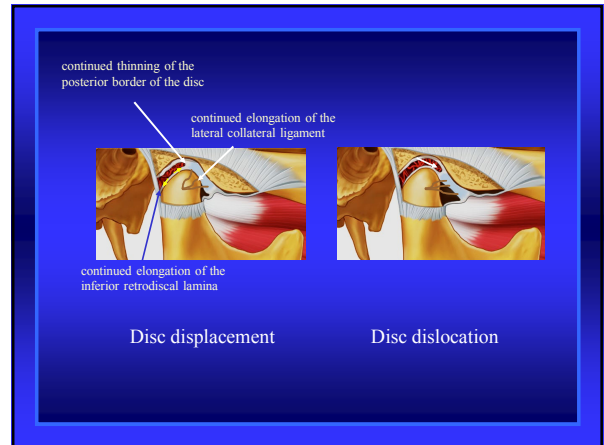
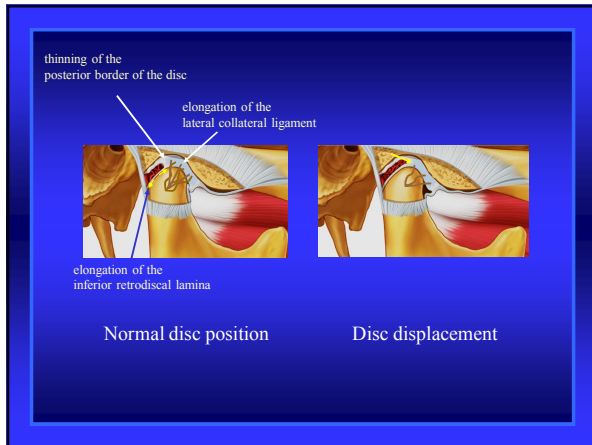
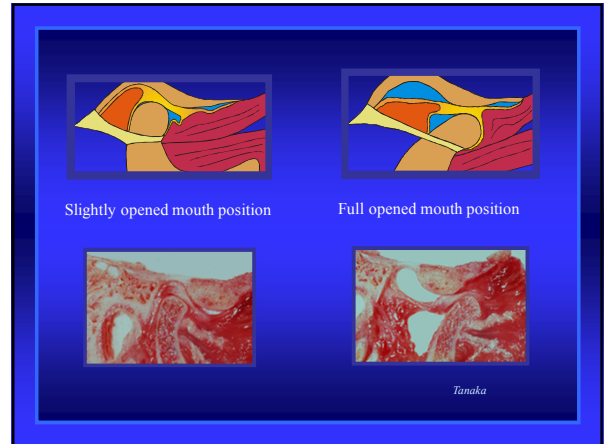
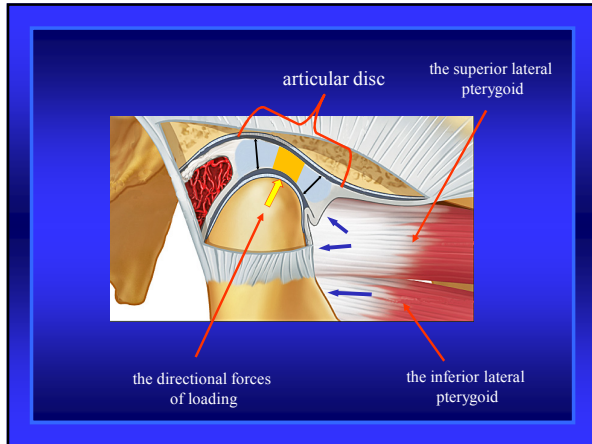



Management of Temporomandibular Disorders

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Anatomy and Biomechanics of the Temporomandibular Joint - Function and Dysfunction -





Two very important questions that influence treatment considerations.

→ 1. What is the etiology of disc derangement disorders?

2. Are disc derangement disorders always progressive?

Etiology of Disc Derangement Disorders

1. Macrotrauma
 - a. Gross trauma
 - b. Iatrogenic trauma
2. Microtrauma
 - a. Chronic Muscle hyperactivity
 - b. Orthopedic Instability

Two very important questions that influence treatment considerations.

1. What is the etiology of disc derangement disorders?
- 2. Are disc derangement disorders always progressive?

- Adaptation -

destruction of cells = repair of cells

Long-term Outcome of Disc Displacement with reduction

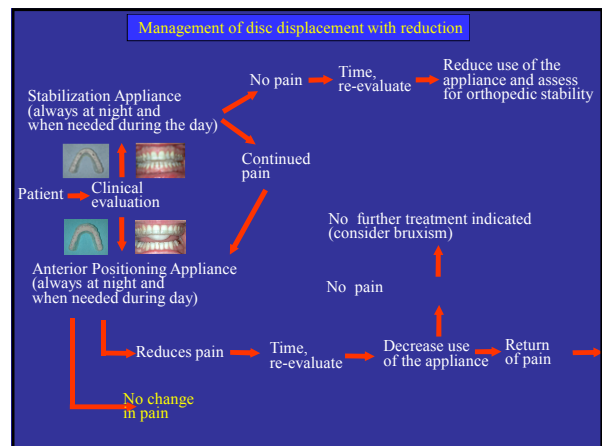
- conclusions from results of long-term studies -

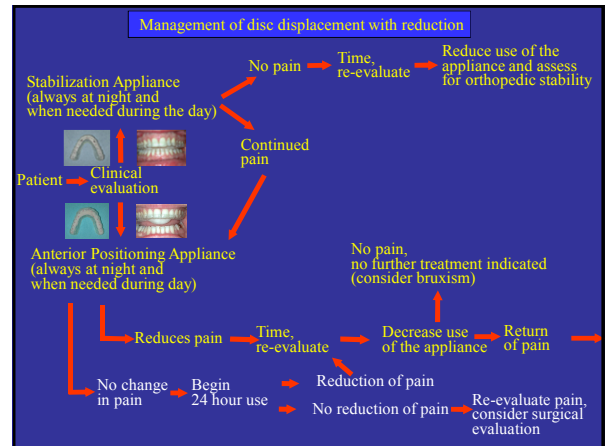
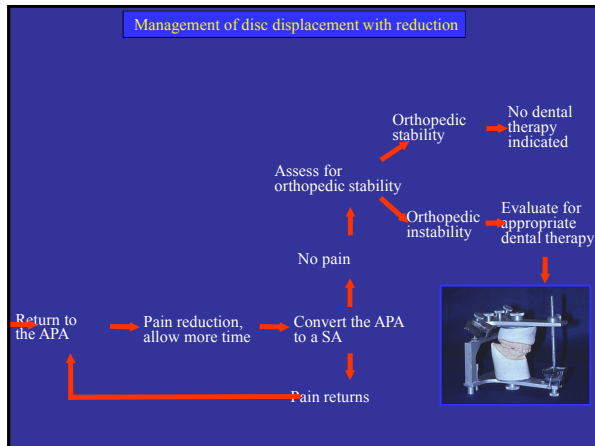
Our goal should be to help the patient adapt the retrodiscal tissues by reducing loading forces.

1. Educating the patient to the problem
2. Reduce heavy chewing
3. Reduce non-functional tooth contacts
4. Appliance therapy

Anterior positioning appliances may be helpful but only on a part time basis.

How should anterior positioning appliances be used in patients with anterior disc displacement with reduction?





Long-term Outcome of Disc Displacement with reduction

- conclusions from results of long-term studies -

Our goal should be to help the patient adapt the retrodiscal tissues by reducing loading forces.

1. Educating the patient to the problem
2. Reduce heavy chewing
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Anterior positioning appliances may be helpful but only on a part time basis.
Permanent occlusal changes are seldom indicated.

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