Overview of Clinical Examination for a TM Disorder

The following is an overview of the clinical examination for a TM disorder and the diagnostic criteria and treatment recommendations for specific joint and muscle problems.

CLINICAL EXAMINATION

The TMJs range of motion (ROM) in opening and in lateral movements along with noises should be noted. Observe the pattern of opening; the mandible will deflect towards the joint that is not translating. Ask the patient to point to the areas that are painful during function. The masticatory muscles and the TMJs should be palpated for tenderness and altered texture. Often TMJ tenderness cannot be evaluated until the patient opens slightly, bringing the TMJs from under the zygomatic arch. They are then palpated on the lateral poles. The retrodiscal tissue is then palpated by having the patient open wide and pressing posterior to the condyle or placing your little fingers in their ear and pulling forward. The cervical muscles and spine may be palpated for tenderness; sometimes masticatory pain is primarily due to referred pain from the cervical area.

Intraoral and extraoral swelling or deflection of the soft palate should be appraised. If pulpal pathosis is suspected, the tooth should be tested for a hyper-responsiveness to cold, heat and palpation. If these tests are positive, consider an anesthetic injection of the tooth to determine the impact it may have on the patient’s pain complaint. If clenching or bruxism is suspected, significant wear facets, ridging on the lateral borders of the tongue, and/or hyperkeratosis on the cheeks should be observed. Panoramic imaging is warranted when the clinical exam implicates a primary joint problem, a progressive open bite development (suggestive of a decreasing condylar height), or a suspicion that the disorder may be linked to prior trauma. Panoramic or additional imaging may be warranted when the patient does not respond to therapy as anticipated and this information has the potential to change the patient’s course of therapy, or if the patient is being evaluated for TMJ surgery.

DIAGNOSTIC CATEGORIES

Identifying the primary and secondary diagnoses are often difficult because TMD disorders tend to have similar symptoms and often occur concurrently. The disc displacement handout provided in the appendix is designed to help explain the mechanics of a TMJ disc displacement to the patient and may also be helpful in explaining a masticatory muscle disorder. The following categories are the diagnostic classifications established by the American Academy of Orofacial Pain. The diagnostic criteria are not meant to be rigid, but rather provide clinical guidance for diagnosis; your clinical judgment should be relied on for final diagnostic decisions.

DIAGNOSTIC CRITERIA FOR JOINT DISORDERS:

1. Congenital or developmental disorders (rarely cause TMD)
a. Aplasia - faulty or incomplete development of mandible or cranial bone
b. Hypoplasia - underdevelopment of mandible or cranial bone
c. Hyperplasia – over development of mandible or cranial bone
d. Neoplasia - abnormal tissue growth

2. Disc displacement:
   a. Disc displacement with reduction: 1) reproducible joint noise that occurs at variable positions during opening and closing and 2) soft tissue imaging reveals disc displacement that reduces during opening and hard tissue imaging does not reveal extensive osteoarthritic changes 3) Deviation on opening to the affected side initially but returns to midline upon full opening
   b. Disc displacement without reduction, acute: 1) persistent marked limited opening (<35 mm) with history of sudden onset, 2) deflection to the affected side upon opening, 3) marked limitation to the contralateral side and 4) soft tissue imaging reveals disc displacement without reduction and hard tissue imaging does not reveal extensive osteoarthritic changes
   c. Disc displacement without reduction, chronic: 1) history of sudden onset of limited opening that occurred more than 4 months ago and 2) soft tissue imaging reveals disc displacement without reduction and hard tissue imaging does not reveal extensive osteoarthritic changes.

3. Dislocation (also known as open-lock or subluxation): a) inability to close the mandible without specific manipulative maneuver and b) radiographic evidence reveals condyle well beyond the eminence.

4. Inflammatory disorders:
   a. Synovitis and capsulitis: 1) TMJ pain increased by palpating the TMJ, loading the TMJ and during function, and 2) hard tissue imaging does not reveal extensive osteoarthritic changes.
   b. Polyarthritides (joint inflammation and structural changes caused by a generalized systemic polyarthritic condition): 1) pain with function, 2) point TMJ palpation tenderness, 3) limited ROM secondary to pain and 4) hard tissue imaging reveals extensive osteoarthritic changes.

5. Osteoarthritis:
   a. Primary osteoarthritis (deterioration of subchondral bone due to overloading joint): 1) no identifiable etiologic factor, 2) pain with function, 3) point TMJ palpation tenderness and 4) hard tissue imaging reveals structural bony changes (subchondral sclerosis, osteophyte, or erosion).
   b. Secondary osteoarthritis (deterioration of subchondral bone due to trauma, infection or polyarthritides): 1) identifiable disease or associated event, 2) pain with function, 3) point TMJ palpation tenderness and 4) hard tissue imaging reveals structural bony changes (subchondral sclerosis, osteophyte, or erosion).

6. Ankylosis:
   a. Fibrous ankylosis: 1) limited ROM, 2) marked deviation to affected side, c) marked limited laterotrusion to the contralateral side, d) radiographic findings that reveal absence of ipsilateral condylar translation on opening.
   b. Bony ankylosis: a) Extreme limited ROM when condition is bilateral, b) marked deviation to affected side, c) marked limited laterotrusion to the
contralateral side, d) radiographic evidence of bone proliferation and absence of condylar translation.

**Treatment for joint disorders**

Management for intracapsular disorders should start with patient education as to the nature of their problem. These are musculoskeletal injuries, which all have a strong potential to become chronic because of ever-present jaw function requirements and contributing factors such as parafunction, anxiety and depression. It is very important to have the patient understand their role in limiting function to allow healing (a pain-free diet) and in doing the therapeutic exercises to rehabilitate the joint. They need to be taught how to use medications such as NSAIDS and muscle relaxers to control their symptoms. A short-term steroid regimen such as Medrol Dose Pack (dexamethosone) can be used to initially decrease the symptoms of capsulitis by reducing inflammation.

Physical therapy can be used to reduce inflammation and increase pain free ROM with ice, ultrasound, and phonophoresis. Gentle range of motion exercises should be done by the patient within pain tolerance (it should not hurt more than 10 minutes after the exercise period). Exercises should be done frequently for short periods (6 times a day for 30-60 seconds). The physical therapist can do gentle distraction and mobilization to increase pain free ROM. Iontophoresis can be considered especially if the patient has a good response to a medrol-dose pack.

An orthotic (night guard) can be very effective in reducing forces on the joint to promote healing. It can control parafunctional behavior at night, temporarily stabilize an uneven occlusion, and just allow the joint to rest.

Lastly, a surgical procedure such as arthrocentesis or arthroscopic lysis and lavage can be considered based on the patient’s response to reversible treatment. Surgical treatment should only be considered if the patient’s complaints are localized to

**DIAGNOSTIC CRITERIA FOR MASTICATORY MUSCLE DISORDERS:**

1. **Myofascial pain:** a) regional dull aching pain, generally aggravated by masticatory muscle function, b) hyper-irritable sites (trigger points) which can increase and refer the pain, c) moderately limited active ROM which can be increased with passive opening.
2. **Myositis:** a) pain in a localized muscle following injury or infection, b) diffuse tenderness over the entire muscle, c) increased pain with muscle use and d) moderate to severe limited ROM due to pain and swelling.
3. **Myospasm:** a) acute pain at rest as well as with function and b) continuous muscle contraction causing a marked decrease in ROM (if involves lateral pterygoid muscle will usually cause malocclusion).
4. **Local myalgia:** this category is for multiple muscle pain disorders for which we have not yet determined diagnostic criteria, i.e., muscle pain from protective splinting, fatigue, autonomic effects, etc.
5. **Myofibrotic contracture:** a) limited ROM, b) unyielding firmness on passive stretch, c) little or no pain unless involved muscle is forcibly stretched and d) Pt
may have history of trauma, infection or long period of not stretching muscle to its full length.

Treatment involves the use of analgesics and muscle relaxants to initially decrease pain so as to encourage compliance with a home rehabilitation program, and to manage acute relapses. There is no scientific support for the use of these medications long term for muscle pain. Associated headaches need to be adequately managed with abortive and preventative medications as needed. A stabilization dental appliance (occlusal orthosis) should be used to reduce influence of occlusal factors and bruxism when they are present.

Behavior modification should include stress management, relaxation training, coping skill development, and the implementation of habit control regimens to decrease aggravating habits such as nail-biting and daytime clenching. The keys to long term successful management is the elimination of contributing factors such as parafunction, poor sleep, anxiety, depression, occlusal instability, headaches, posture problems.

Physical therapy intervention should initially involve the use of modalities to decrease pain and gentle stretching exercises to keep the joint mobilized and gradually increase jaw opening. The physical therapist or clinician should help the patient develop a home rehabilitation program with stretch and spray, postural-re-education, ergonomic awareness, aerobic exercise, and gentle mobilization. The goal of therapy is a gradual increase of pain free range of motion with home rehabilitation and control of contributing factors. Generally, range of motion increases with muscle problems can be aggressively increased when compared to the increase of range of motion with a primary joint problem. One must go much slower when rehabilitating a joint problem; increasing range of motion within pain tolerance.

RECOMMENDED REFERENCES
