Temporomandibular Joint and Cervico-cranial Instability in the EDS Patient

John Mitakides D.D.S., DAACP
How TMJ and CCI impact the EDS patient - they can occur separately or more often together!
Ehlers-Danlos Syndrome describes an hereditary malformation in the structure of collagen

- This condition affects the body’s collagen, which literally holds body together, resulting in loose, flexible joints, easy bruising and more.

- Among affected joints are those in neck and jaw, often triggering TMJ, Migraines and Neck Pain!
Temporomandibular Joint Disorder (TMJ or TMD) is “shorthand” for a complex syndrome of dysfunction of the jaw to the skull, including the cartilage and related muscles including the related pain and symptoms.
1. Inferior Anterior Synovium
2. Superior Anterior Synovium
3. Lateral Co-lateral Ligament
4. Temporomandibular Ligament
5. Inferior Posterior Synovium
6. Superior Posterior Synovium
7. Posterior Ligament
8. Retro-discal Area
Jaw Movement Dysfunction and TMJ

- “Locked” jaw (open or closed)
- Jaw deviates to affected side
- Problems finding stable bite position
  - Can’t find comfortable “closed” (bite) position
- TM Joint noise when opening or closing
  - “Cracking” or “popping”
- Overall limited or excessive jaw movement
Complex and overlapping symptoms include:

- Frequent headaches, (especially temporal) occurring when upon waking and may possibly redevelop in late afternoon
- Abnormal and/or painful jaw movements
- Ear pain
- Pain in or around eye area
- Cheek pain
- Mandibular pain
What is Cervico-Cranial Instability?

Cervico-cranial Instability or CCI is “shorthand” for a complex disorder emanating from the upper vertebra of the neck, including the related pain in the forehead, eyes and vertex of the head.
Classic Cervico-cranial Symptoms

- Limited head movement, especially rotation
- Trouble swallowing
- Forward head posture
- Upper back pain
- Sore, tender or weak neck
- Frequent “snapping” or “popping” of neck with regular head movement
- Cervical referral pain into facial area - MIGRAINES
The “Map” of CCD Pain
Pain Source/Referral Patterns

C-O (skull)--Forehead
C-1 (atlas)--------Eye
C-2 (axis)--------Cheek
C-3-------------Jaw
Sources of Generation of Head and Neck pain

✓ Muscular spasms & stricture
  • Temples
  • Back of head (Occipital)

✓ Circulatory (constriction OR dilation)
  • Back of head (Occipital)
  • Below the ear (Mastoid)

✓ Neurological aberrations
  • Migraine-like headache
  • Myofacial Referral (source ≠ painSource)

✓ Skeletal (Vertebral) Displacement
  • Occipital (or Cervical) Referral
Ear Pain

- TMJ mimics an earache
- Tinnitus (ringing in the ears)
- Hearing loss
- Itching in ear
TMJ Pathologies, con’t

- **Inflammatory**
  - Synovitis/Capsulitis
  - Arthritis (osteoarthritis and osteoarthritis, RA)

- **Myogenous**
  - Myositis
  - Myospasm
  - Myofascial Pain Dysfunction Syndrome (MFDS)
  - Dystonia
  - Neoplasms
TMJ Pathologies, con’t

- Idiopathic Condylar Resorbsion
  - Spontaneous (associated with trauma)
  - Spontaneous mandibular subluxations with opening, closing, chewing or yawning.
Migraine or Migraine Type Head Pain

- Circle of Willis
- Trigeminal Nerve Sympathetic and parasympathetic effect
- Vertebral Artery blood flow
- Vertebral compression- occipital neuralgias
- Chiari deformity
Convergence Mechanism

• The overlap between Trigeminal nerve and Greater Occipital and Cervical nerves.
• The Trigeminal Nucleus Caudalis extends to the C-2 Spinal segment and to the lateral cervical nucleus in the dorsolateral cervical area
• Symptoms in the Trigeminal or cervical territories produce symptoms that can complex in both areas.
Patient Examination

- A diagnosis of EDS often precedes TMJ
- A preliminary exam of skeletal joint mobility is performed to confirm the diagnosis
  - History & Chief complaints
  - Symptomatology
  - Visual & Physical evaluation
  - Hypermobility, including quantifying measurements
  - Soft tissue imaging
Imaging Techniques for TMJ

- **2D**
  - Panograph, Transcranial, Tomograms, Arthrograms

- **3D**
  - CT
  - MRI T-1, T-2, Gradient, upright preferred
  - Flair (fast T-2), (shows edema)
  - STIR (suppress fat content- good for MS diagnosis)
Dietary Inflammatory Precautions

1) Vitamin D-3, 2000 to 10,000 IU per day
2) Doxycycline (50 mg, BID for 3 months)
3) Omega 3 – 2.6 mg / day
4) NSAIDS
5) Glucosamine (1500mg /day)
6) B Complex
7) Magnesium 400mg/day
8) Muscle relaxants-Flexeril, Valium 5mg HS
9) Aleve, 220 mg/day
10) Tramadol 50 mg /4-6 hrs(max 300mg)
Treatment protocols

- Support and Palliative Treatments Preferred
- Orthopedic positioning of mandible and neck
- Physical therapy
- Medications
- Oral Orthotic
- Supportive Medical/Dental Procedures
- Surgical intervention would be last resort
- Botox
Case Studies
Rebecca
22 year old female

- **Diagnosed EDS Patient**
- **Symptoms:**
  - Temporal & frontal headaches
  - Bilateral neck pain
  - TMJ pain over joint & along mandible
    - Pain increases with repetitive chewing
  - C-2 rotation to left
  - Lordotic curve at C-3/4
  - Opening at exam = 23mm; at last appointment = 42mm
- **Diagnosis:** Right reducing, left non-reducing discal subluxation of the TM joints, Lordosis with C-2 vertebral rotation to the left
Case Study 1: Treatment & Outcome

- Treated with:
  - Pivotal Appliance
  - Anterior stabilizing positioning appliance
  - Cervical stabilization and muscle activation
  - Continued night wear of appliance for stabilization

- Outcome: Less frequent/less intense headaches, jaw and neck pain relief

  **85% Improvement overall**
Sabrina
43 year old female

- **Diagnosed EDS Patient**
- **Symptoms:**
  - Pain in cheek & ear C function
  - Headaches 2-3/week, wakes C in L temporal area
  - Problems began 1.5 years ago when jaw popped out of joint
  - Bite feels off
  - Hyper mobility C jaw motion
    - 40mm opening, but 16-17mm lateral motions
  - Neck tightness & pain in C-3/4 area on left side
- **Diagnosed:** left capsulitis, L retro discitis, bilateral joint hypermobility C spontaneous bilateral meniscal subluxations
Case Study 2: Treatment & Outcome

- Treated with:
  - Pivotal appliance
  - Physical Therapy
  - Stability-specific orthodontics
  - Equilibration of teeth
  - Continued night wear of appliance for stabilization

- Outcome: Near-complete headache relief; significant decrease in neck pain; occlusion and bite stabilized

**90% Improvement overall**
In Summary:

- **Start with in-depth evaluation and diagnosis**
- **In the EDS patient, management is often preferable to surgical solutions**
- **The best outcomes often involve a combination of treatment modalities**

_Work closely with a Craniofacial Pain/TMJ practitioner with EDS-specific experience, and YOU WILL FIND YOUR ANSWERS!_
Dr. John Mitakides, D.D.S., FAACCP
Fellow, American Academy of Craniofacial Pain
Professional Advisory Network, Ehlers Danlos National Foundation

The TMJ Treatment Center
2141 N. Fairfield Road
Beavercreek, Ohio 45431
(937) 427-3131
www.mitakides.com