TEPOROMANDIBULAR PAIN

Prof. Zvan Bojana, M.D., Ph.D., senior consultant, FESO
University Medical Centre Ljubljana, Slovenia
Clinical Department of Vascular Neurology
Facial pain

- TMJ pathology
- Other ethiology
Some signs and symptoms of TM diseases

- Facial pain
- Jaw joint pain
- Back, Neck, cervical pain
- Postural problems (forward head posture)
- Pain in the joint(s) or face when opening or closing the mouth, yawning, or chewing
- Headaches
- Pain in the muscles surrounding the TMJ
- Pain in the occipital (back), temporal (side), frontal (front), or infra-orbital (below the eyes) portions of the head
- Pain behind the eyes
- Swelling on the side of the face and/or mouth
Some signs and symptoms of TM diseases

- Clenching/bruxing
- Tender sensitive teeth
- A limited opening or inability to open the mouth comfortably
- Deviation of the jaw to one side
- The jaw locking open or closed
- Tinnitus in the ears, ear pain, diminished hearing, and/or hyperacusis
- Sinus like symptoms
- Dizziness or vertigo
- Visual Disturbances
- Insomnia - difficulty sleeping

http://www.dentalsmiling.com/clinicexpress/TMD_BEST_TREATEMENT.htm
Facial pain

Causes of pain

- Inflammation
- Trauma
- Tumors
- Degenerative causes
- Metabolic causes
- Unknown causes
Facial pain

ACUTE / CHRONIC

- Dental pain
- Sinuses pain
  - **Muscular-joint pain**
- Pain of salivary glands
- Skeletal pain
- Neuralgias (trigeminal, glossopharingical)
- Inflammatory ears pain
- Vascular pain (migraine, gigantocellular artheritis, facial migraine neuralgia)
- Herpes zoster neuralgia
Primary TMJ diseases

- **Developmental abnormalities**: condilar hyperplasia, condilar hypoplasia, condilar aplasia, hyperplasia of coronoid processes, congenital syndrome
- **Inflammation**: bacterial arthritis, rheumatoid arthritis, juvenile chronic arthritis,… others
- **Injuries**: Fractures of condilar processes, trauma of interarticular joint plate
- **Ankyloses**: Fibrous ankylosis, bone ankylosis
- **Tumors**: Primary bone tumors, primary malignant tumors, metastases
- **Cysts**: Ganglial cyst, synovial cyst, epidermoid cyst, aneurysmal bone cyst
- **Other diseases**: SLE, avascular necroses, acromegalia
Developmental abnormalities: condilar hyperplasia
Osteomyelitis
Injuries: fracture of condylar joint
Ankylosis

Excision of the Ankylosis via Gap Arthroplasty

Figure 1. 2D-CT axial view (bone window) shows right TMJ ankylosis with loss of anatomical landmarks (white circle).
Neoplasms

- Histological exam
- CP- cytology
- CT scan
- Neck and abdominal US
- Endoscopy
- Chest X-rays
- Blood exam
Neoplasms

Hyperdense lesion on the ramus, with condyle involvement, osseous expansion and destruction
Secondary TMJ diseases

- Changes of the joint surfaces: Hypertrophy of cartilage, osteoarthrosis, osteoarthritis, ankylosis
- Changes of the joint disc: reformatted disc
- Bilaminar zone (the loose connective tissue in the space between the laminas): capsulitis, perforation, partial disc dislocation with reposition, total disc dislocation without reposition, disc dislocation with adhesias
- Joint capsule: capsulitis, vertical hypomobility, sagittal hypomobility, generalized fibrosis, posterior disc dislocation, sinoviitis, acute arthritis
- Ligaments: joint luxation, condylar hypermobility, vertical capsular hypermobility, posterior capsular hypermobility, clicking of the lateral/medial ligament, insertion tendopathy
- Muscles: myofascial pain, myositis, spasms, functional contraction of muscles, tendinitis, insertion tendopathy
Anatomy of TMJ
Closed Mouth TMJ Anatomy

Ear hole
TMJ in opening and closing of mouth

Normal closing

Normal opening

Anterior disc dislocation

Return after closing
Clinical exam

- In TMJ disease the pain appears from direct pressure on the disc; active and passive movement of the lower jawbone.
- Pain is accompanied by cracking and crunching in the joint and disturbed and/or asymmetrical motility.
- In arthritis pain is constant; worse when moving of the joint.
- In a stronger joint pain reflex increased muscle tone makes it difficult to determine the true origin of the pain!
Changes in joint surface areas

- Decreased joint space, surface erosion, osteofits, flattened condyls head
- Treatment is conservative (soft food, NSAID...), in rare cases surgery
Bilaminar zone

Connective tissue on the back of a joint surface
Anterior dislocation of disc with return

- The disc is located in the middle and front position during mouth closed.
- When mouth opening, condyle moves forward and is in contact with the intermedial part of disc.
- With mouth closed, the condyle moves behind the disc.
Clinical figure

- Pain when opening the mouth and chewing
- Cracking in the TMJ at the opening and closing the mouth
- Maximal mouth opening was inhibited
- X-ray images may be normal
- MRI of joint shows the position of the disc
Anterior disc dislocation with no return

- Anterior disc dislocation
- Condyle can not do translation, therefore the maximal mouth opening is hindered
- Deviation of the lower jaw to the affected side is present
The sudden inability of the full mouth opening (<35mm)
Deviation of the lower jaw to the affected side
Cracking and crunching
Pain when attempting to complete the opening of the mouth
X-rays may be normal
MRI shows sustained dislocated disc
MRI of TMJ
Inability of mouth opening and deviations
Treatment

- Restriction of mouth opening
- Changing harmful habits (bruxism)
- Soft, liquid foods
- **Drugs:** analgesics, NSAIDs, muscle relaxants, antidepressants, limited use of corticosteroids, tranquilizers
- **Physical therapy:** muscle exercises, electrotherapy, ultrasound
- **Splints**
- **Adjustments / corrections occlusion:** prosthetic, orthodontic, ortognatic procedures
- **Surgery:** arthrocentesis, arthroscopy, arthrotomy (open surgical techniques)
Treatment

- Conservative – physiotherapy, soft diet, limited mouth opening, splints
- Prosthetics
- NSAID
Surgery treatment

- Arthrocentesis
- Arthroscopy
- Disc reposition
- Disc reconstruction
Diseases of the joint capsules

- Capsulitis
- Vertical / sagittal hypomobility
- Generalized fibrosis
- Posterior dislocation
- Sinoviiitis
- Acute arthritis
Surgery
Facial muscle pain / TMJ syndrome dysfunction

- The most common pain in the facial area, except of toothache
- It is a dull ache, followed by more severe exacerbations, especially pain located in the joint, the ear, extending into the temporal, occipital and neck area
- The pain is worse during chewing and speaking
- The patient may suffer from headaches, impaired hearing, tinnitus, pain in the neck, back or chest
temporal, masseter, medial pterygoid and inferior head of lateral pterygoid mm. participate in the closing
Facial muscle pain / dysfunction syndrome of TMJ

- Bruxism, different habits, pressing jaw, chewing gum, biting nails, smoking pipes
- This is due to premature contacts of teeth, poor prosthetic care,…
- The intensity of pain affects the emotional and mental condition of the patient, more frequently affected younger women
Diagnosis

- Palpatory soreness of masseter muscles
- Passive and active motility is normally limited
- X-rays may be normal (Abnormal is at 40%)
- MRI normal
- CT normal
Abrasion of teeth
TMJ dysfunction syndrome
TMJ dysfunction syndrome

76 patients: 53 men and 23 women

- 70% women
- 30% men
Most patients with TMJ dysfunction syndrome were in the age group between 20 and 40 years
Types of treatment

- Vaje: 82%
- Mehka hrana: 45%
- Protetična reh.: 25%
- Brušenje zob: 12%
- NSAID: 43%
- Ex. 8: 13%
Treatment

- Explain to patient about the nature of illness
- Miofunctional exercises (Dechaum-Lenarts)
- Soft diet
- Prosthetic
- Biting splint
- Tricyclic antidepressants (amitriptyline - Amyzol) in low doses
- Injection of local anesthetic
- Injections of botulinum toxin

NSAIDs are not effective for a long lasting treatment!
Greetings from LJUBLJANA, SLOVENIJA