



EUROPEAN COOPERATION
OF MEDICAL OZONE
SOCIETIES

EUROPEAN OZONE CONGRESS
EUROPÄISCHER OZONKONGRESS

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CHARITÉ BERLIN, GERMANY

OZONE IN MEDICINE
EVIDENCE-BASED MEDICINE OF THE
LOW-DOSE OZONE-CONCEPT

OZON IN DER MEDIZIN
DAS NIEDRIG-DOSIS KONZEPT
ALS EVIDENZ-BASIERTE MEDIZIN

LANGUAGE: ENGLISH
DEUTSCHE ÜBERSETZUNG

RESPONSIBLE: ÄRZTLICHE GESELLSCHAFT FÜR OZONANWENDUNG
IN PRÄVENTION UND THERAPIE, BADEN-BADEN, GERMANY
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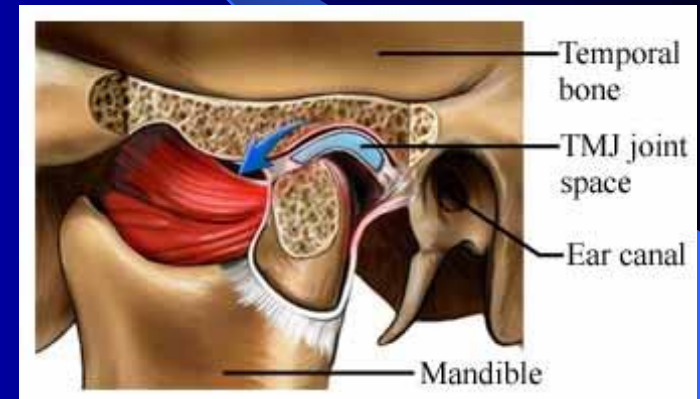
TREATMENT OF THE DISEASES OF TEMPORO MANDIBULAR JOINT WITH OZONE AND PRP INFILTRATIONS

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TMJ

- The Temporomandibular joint also called Cranio mandibular is the joint of the temporal bone with the lower maxillary allowing opening and closing the mouth.
- Is a diarthrodial or mobile joint.
- Located before the external auditory canal and caudal to the glenoid cavity
- The normal function of the TMJ allows to do acts like speak, chew and swallow.



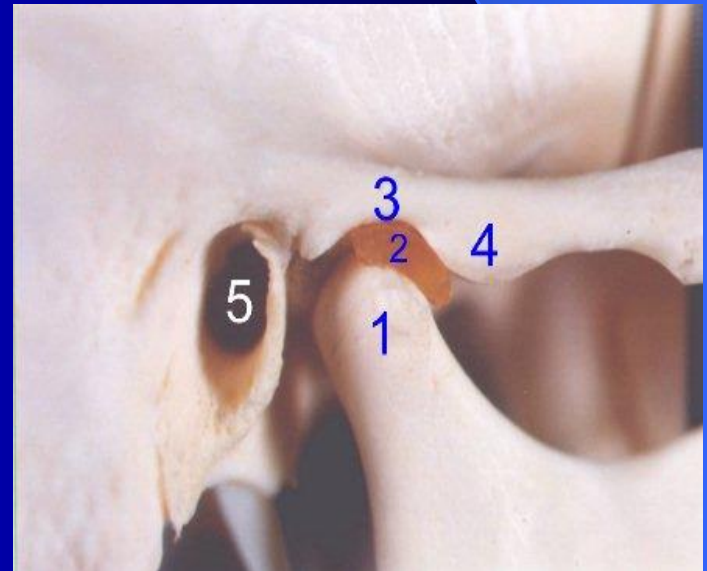
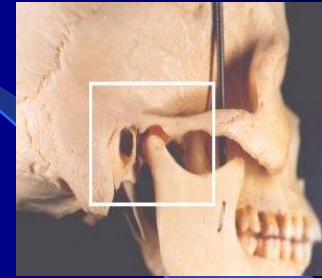
COSTEN SYNDROME

- **Costen ORL (1934) : Group of symptoms**
- **Which are they?:**
Pain before one or both ears and can be irradiated to head, mouth, nose ,
- **Why these symptoms appear?:**
They happen because the sum of neuralgia and TMJ dysfunction.

TMJ

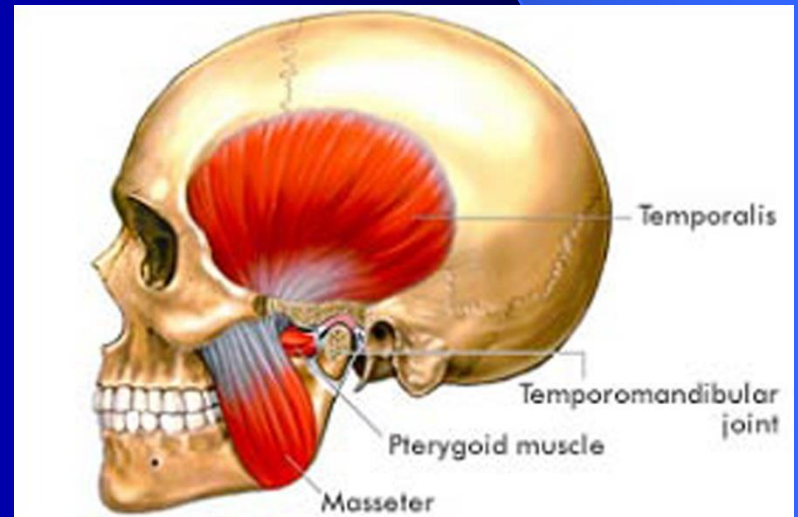
- **Mandibular condyle**
- **Temporal component**
- **Disc**

1. Mandibular condyle.
2. Meniscus or joint disc.
3. Glenoid cavity of the temporal bone.
4. Temporal tubercle
5. External auditory canal



Pain/Dysfunction

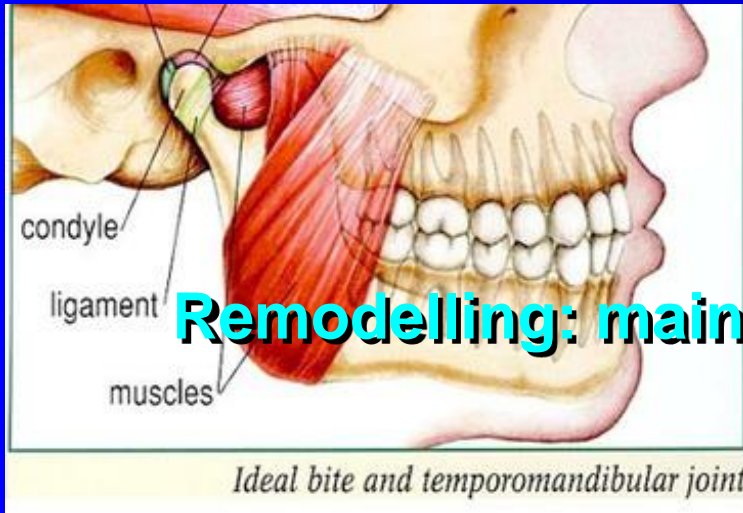
- TMJ
- Basic movements and occlusion
- Chewing muscles
- Cervical Spine



COSTEN SYNDROME

- The TMJ diseases are defined as an alteration of the normal relationship between meniscal component, the mandibular condyle and the glenoid fossa that interfere with the usually soft joint movements
- Is described as a progressive process with a natural history that can be classified in four stages

TMJ Biomechanical load increase



Overload



Remodelling: maintaining the morphology

Overload



Negative adaptation: Morphological or structural adaptative change.

Overload



Arthrosis

COSTEN SYNDROME

- **I Stage :**

With closed mouth the disc is displaced anteriorly respect the mandibular condyle

- **II Stage:**

Locking or jaw movement limitation episodes

COSTEN SYNDROME

- **III Stage:**

A luxation without reduction occurs on the meniscus:

- **Severe**
- **Cronical**

SEVERE :

The disc adopts a biconvex shape allowing a partial displacement of the condyle and produces pain.

CRONICAL:

The retrodiscal tissue stretches and gains mobility.

There is no joint noise but slight crackles can happen.

Pain can persist or it may disappear

COSTEN SYNDROME

- **IV Stage:**

Gradual degenerative changes over a long time produce bone remodeling of condylar and temporal part.

SYMPTOMATOLOGY

- Ear pain (1-2)
- Tinnitus
- Headache
- Stiffness
- Myofascial pain
- Neck pain
- Crackling, popping or joint lock

WHO'S AFFECTED?

- ABOUT 60-80% OF THE POPULATION CAN BE AFFECTED.
- 34 YEARS OLD MEAN AGE BUT USUALLY APPEARS ON TEEN AGE.
- PROPORTION : 3/1 (WOMEN/MEN)

Pathogenesis (Muscular origin)

- Occlusive instability
- Birth defects
- Insufficient adaptive capacity of the neuromuscular system
- Joint hypermobility
- Psychological factors
- Bruxism
- Traumatism

Patients and Method

- Twelve women between 20 to 25 years old with TMJ pain:
 - Ten cases with no traumatic pain-dysfunction
 - One case trauma originated no luxation.
 - One case trauma originated with previous luxation.
- All patients have received previous orthodontic treatment (splints)

Diagnostic

- **Anamnesis: When the pathology begun**

- **Patient examination**

TMJ AND RELATED MUSCLES EXPLORATION

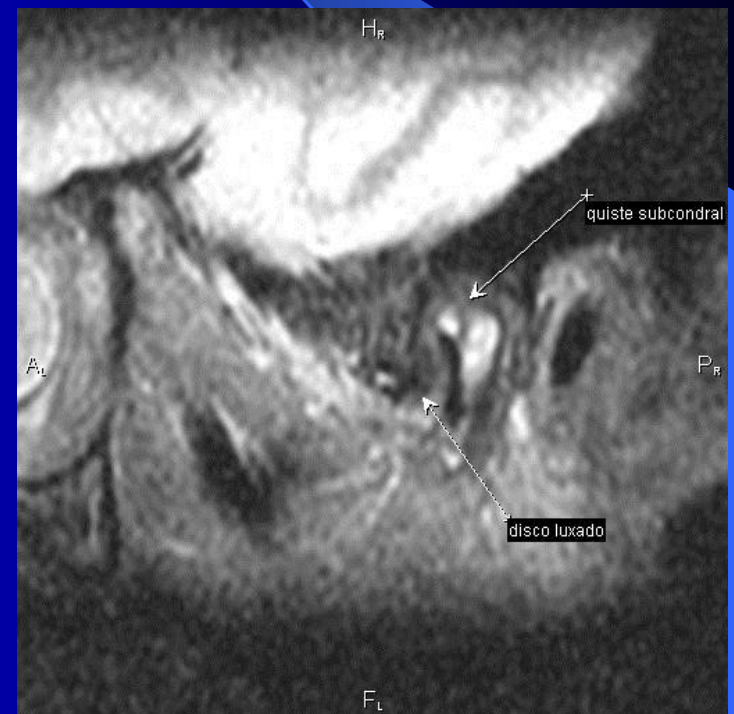
PAIN ASSESMENT OVER V.A.S. INDEX

- **Image study**

X-RAY, ULTRASONOGRAPHY CT, ARTERIOGRAPHY

Diagnostic

- MRI is the best imaging method to diagnose TMJ diseases



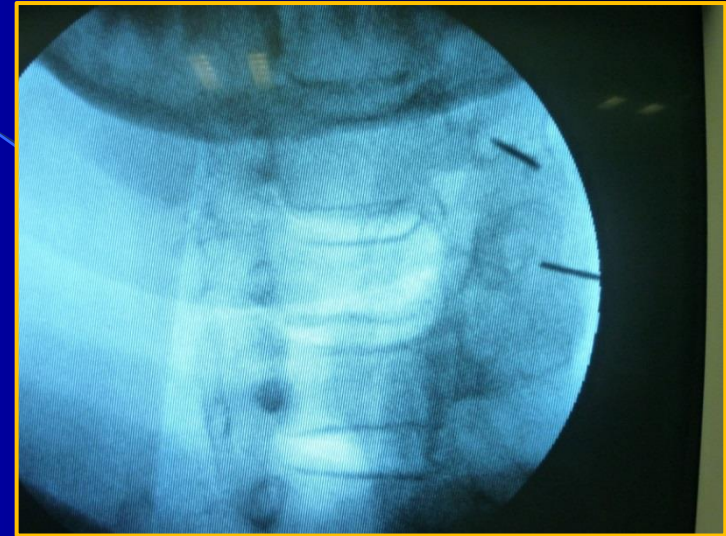
Objective

- Pain treatment
- Complementary to other treatments
- Regenerative treatment (PRP)
- Improve patient's quality of life
- Last resort treatment

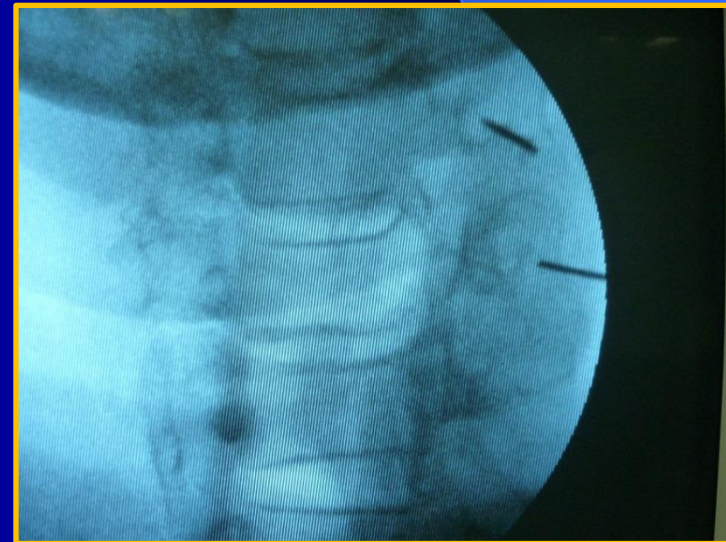
SPINE INTERVENTIONISM O2-O3. FACET INFILTRATIONS



**Sometimes
the joint
pain can
have
cervical
component**



Video



PRP and O3 treatment



- Infiltration of 1-2 cc. of anaesthetic in each side

PRP and O3 treatment



- Infiltration of 2-5 cc. of O3 in each side

PRP and O3 treatment



- Infiltration of 1-2 cc. of PRP in each side

PRP and O3 treatment



- Infiltration of 1-2 cc. of O3 in each side to close the joint.
- Infiltration repetitions over two weeks

Complementary Treatment

- Repeat infiltrations three consecutive weeks on the severe cases.
- New infiltrations past six and twelve months in favourable cases
- Fourth infiltration after twenty months to treat remaining pain

Technique Risks

- Cervical infiltration
- Tympanic membrane damage (CAE)
- Haemorrhage caused by lesion of superficial temporal blood vessels.
- Cardio logical complications (arrhythmias)
- Neurological damage (facial nerve) because an inadequate approach to the temporal fosse with needle.

RESULTS

- Improvement of the cervical pain.
- Relief of the TMJ pain by 40% to 80% after the first infiltration.
- Results can vary in each side.
- Favourable cases can achieve a pain relief of 90%.
- There are two cases treated with PRP and O3 with complete pain disappearance.

DISCUSSION/CONCLUSIONS

- Improve the quality of life of patients by achieving a partial or total pain relief.
- The improvements are maintained in 50% of the cases.
- Long term results are unknown yet.
- Other specialist must intervene to treat the etiology.
- **AVOID Surgery: Results are not always favourable.**

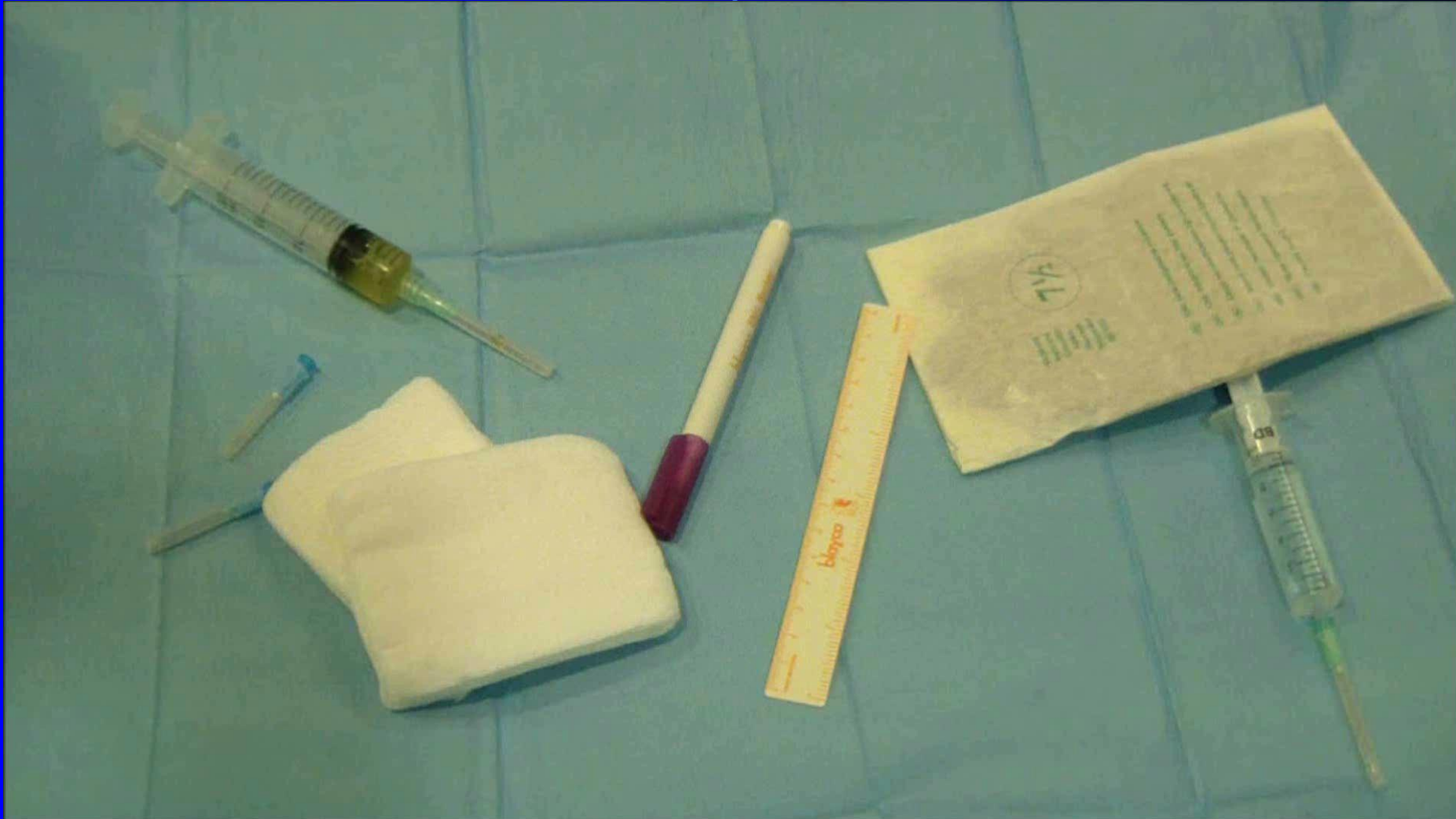
T.M.J

MEDICAL OZONE AND PRP INFILTRATION IN TMJ DISEASES

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T.M.J

MEDICAL OZONE INFILTRATION IN TEMPOROMANDIBULAR JOINT



Thank you for your attention.



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