

THE NECESSITY TO FORMULATE THE ETHIOLOGICAL DIAGNOSIS OF INTRACAPSULAR TEMPORO-JAW JOINT DISORDERS, ON THE BASIS OF SOME EXISTENT DIFFICULTIES

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Abstract: The authors, after a short presentation referring to the necessity to know the difficulties for discovering the ethiological risk factors responsible for the appearance of the intracapsular disorders of the temporo-jaw joint (TMD) take into consideration three clinical situations that are specific for this pathology: disorders of the articular disk, disk compressions and temporo-jaw osteoarthrosys. As a result of the implication of various local ethyopathogenic risk factors with the general or the sistemye ones, the clinical scene of the manifestation of temporo-jaw disorders becomes a different one, due to which in the dishomeostasis of the stomatognathic system is needed the acquaintance of framing the morbid discovered entities in oro-facial painful pathology.

Key words: temporomandibular disorders, oro-facial pain, ethiological diagnosis

The assessment of the temporo-jaw disorders is still a matter of controversy. They are found in all pathologies characterized through skull-facial pains, chronic or frequent skull. As a result, the diagnosis must be formulated taking into consideration the identified ethiological risk factors, which are able to cause the dishomeostasis of the entire stomatognathic system, and it must also be based on the framing of the morbid clinical entities discovered in orofacial painful pathology.

In the mentioned context, in our opinion is extremely important to take into consideration the following:

- ***the pathogenic capacity of the ethiological sources*** which act through different mechanisms upon rough and soft structures of the T.M.D., disturbing the disco-condylian and jaw dynamics;
- ***the rigorous analysis of the symptomatic polymorphous scene*** which is presented like a syndrom, intensifying due to a systemic affection, making it difficult to establish the positive and differential diagnosis with other syndroms of some morbid entities.
- ***the particular psychomatic situation*** of the patient.

In practice, frequently there is the tendency to consider the diversified pathology of the neuromuscular disorders as a unique intracapsular malady of the T.M.D., due to which the patients are administered the same therapeutic medication.

On the other hand, if the intracapsular implications are due to a systemic affection which has not been sufficiently investigated with the paraclinical modern means, the patients are only symptomatic by the specialist, putting in disadvantage the real ethiology. As T.M.D. pathology implies some sort of combination between the local and systemic risk factors, the difficulty is even higher in appreciating the degree of seriousness of the skulljaw disorder. (Carlsson et al., 1999; Lobezoo et al., 2001; Isberg Annika, 2001).

Some of the local factors are the following:

- the alteration of the jaw structures and/or the cephalic extremity, or of the position of the neck, and of the shoulders;
- functional disfunctions of the skull-facial musculature;
- local or regional neurological disorders;

General or systemic factors characterized through alterations are:

- hormonal or belonging to the immunity system ;
- vasculiferous;
- at the nervous system level (central and/or peripheral) ;
- psychological (psycho-social).

In this way, a painful facial pathology may be the consequence of the local or associated factors with the systemic ones. In other cases, skull-jaw affections appear as a result of some general affections (eg. reumatoid-arthritis, pseudogout, gout, psoriasis, etc).

To complete the evaluation of the taxonomy that satisfies the temporo-jaw disorders or other disorders characterized through chronic facial pain, according to F. Mongini (1996) it must be done a clear distinction regarding the following:

- purely intracapsular injury;
- miogenic disorders;
- the supraposition of two categories of disorders at the same patient;
- other conditions that lead to a facial pain.

As far as the intracapsular disturbances are concerned, it is necessary to make a distinction between three situations that are frequent and that are characterized by the following:

- displacement of the articular disk;
- disk compressions;
- osteoarthritis of the temporo-jaw articulation (T.M.D.).

A. The displacement of the articular disk

The displacement of the articular disk is the most frequent temporo-jaw disorder, being a consequence of the anatomical and functional alteration between the jaw condylium and articular disk. In most of the cases the sprain takes place inside and antero-medial, rarely medium-laterally and exceptionally backward (Farrar, 1983; Dupas, 2000).

The factors that characterize this kind of intracapsular pathology are structural or neoromuscular. In general, it is admitted that the displacement of the disk may be the result of some morphofunctional abnormal relations of the condylium-disk complex, on the basis of structural alterations, the etiology being the traumatogenic occlusion (T.O.). In this way, sometimes, the existence of a malocclusion may generate the disk-condylium disfunction, as a result of the frequent displacement of the jaw in a non-physiological position of forced maximum intercuspitation.

Neuromuscular disorders caused by *bruxism*, accompanied by frequent and intense laterally movements of the jaw, is a source of the alteration of the disco-condylium function, leading to the displacement of the disk.

In the severe form of this parafunction named bruxism, and also in traumatism interested in T.M.D., it may produce an extension and even a rip of the insertion of the superior lamina belonging to the backwards attachment of the articular disk, producing the total or partial luxation before the condylium head, in the frame of a „blocked” articulation without being possible the reduction (Okeson et al., 1996; Israel et al., 1999; Yamada et al., 2001; Emshoff et al., 2002; Celic et al., 2002). In this irreducible acute disk dislocation which tends towards chronicizing, the injuries of the bilaminar zone and of the condylium-disk attachment worsen.

The patient cannot open his mouth more than 15-30 cm, the condylium transition being laterally limited, and the jaw is deflected towards the affected articulation. The patient reports that he had articular noise similar to cracks, but they totally disappeared. Consulting T.M.D., the painful sensitivity is present (Annika Isberg, 2001).

Unlike the normal aspect of the superior position of the articular disk, characterized through the fact that the

middle of the backward band has an orientation position for the top of the condylar head at 12 o'clock, in foregoing dislocation situation, between the concavity of the central zone of the disk and the foregoing prominence of the condylium, there is a space of more than 2mm.

In the displacement of the reductible disk the relation between the condylium and the disk is disturbed when the mouth is shut, but it regulates itself when the mouth is wide opened. When the dental arches are in static gearing, the disk is in most of the cases located in the front and in the middle intercourse with the condylium. While opening the mouth, the translation of the condylium towards the front is made through hitting the backwards of the disk, which is pushed towards the front.

At a certain moment, through the descent of the jaw, the tension of the elastic fibres of the bilaminar zone may overcome the resistance of the condylium and of the articular eminence which are opposed, these elements being abnormally close, as the disk will be abruptly pulled, producing a noise similar to a „crack”.

While closing the mouth the disk is displaced one again before the condylium, repeating the before mentioned mechanism through the reappearance of the second sound, both articulated sounds being called reciprocal cracks.

B. Disk compression

In other cases, the alteration between the disk and the condylium is vertical, with a condylar displacement towards the upper part.

The consequence will be the augmentation of the forces of compression on the disk, which at the beginning is a little bit displaced. This situation is tied to a reduction of the articular vertical resiliation, which at normal T.M.D. is characterized through the capacity of the bone elements to get

closer when they are biomechanically solicited. It is the case of the vertical forces applied on the jaw, which may stuck the condylium in the glenoid cavity due to the resiliation of the articulation (Gerber, 1971). The compression of the disk can be unilateral or bilateral, as a consequence of the loss of the vertical dimension of the occlusion (D.V.O) in a *partial termino-terminal edentation or unilateral terminal straight or extended without being protetic or fixed with prothesis, work that do not have as a basis enough interdental gear.*

Dental use at severe parafunctions is able to generate a disk compression. The structural damaging may appear at natural teeth or on fixed or mobile prothesis (Ciancaglini et al., 2001).

Importance is to be given to the forces that are exercised during *parafunctional activities* that comprise dental contacts (in *bruxism* and at those who tight up their jaws clenching the teeth), which are stronger, deteriorating the consequences of a disk compression.

Due to the fact that the articular disk does not have its own capacity to remodeling or reregenerating itself, the shape modifications that are produced as a result of his compression are passive, being characterized through local thinings, which are sometimes important.

Later can appear disk perforations, putting into contact both articular compartments (superior and inferior).

On the articular surfaces, the compression may lead to an adaptive process, including their remodeling, and the remodeling of the soft wovens (Jeremia et al., 2005;2006), leading to a modification of the form of the superior face of the jaw condylium. In these cases T.M.D. artrosis may appear (Carlsson et al., 1999).

C. T.M.D. Artrosis

Artrosis is a non inflamating degenerative process, which produces

typical alterations in tough and soft wovens. At the beginning the tisular distruction phenomenon does not appear on the articular surface, but in the subiacent wovens an increase of the content of water may be observed, structural and orientation modifications of the collagen fibres (De Bont et al., 1985).

Once with the deterioration of the degenerative process, some macroscopic morpho-patological metamorphosis are remarked, that include loss of substance and the break of the articular surface, which becomes progressively irregular.

In the same way the subiacent wovens are damaged, through the appearance of vertical and horizontal fissures. These lead to the tightening of the articular gristle, with the denudation of the subiacent bone.

Bone injuries are charaterized through progressive fibre distruction, as a result of the loss of the proteoglicani substances, damaging in this way the role as a „vacuum-rejecting pump” of these biochemical elements in the intimacy of the bone structure (Ieremia et al., 1988).

Usually, the collagen woven and the proteoglicanical macromolecular compounds tie a large quantity of water which is eliberated the moment when the articular cartilage is compressed, then it is remade once with the end of the sollicitation.

The consequences of a lack of balance between the modeling of the cartilage and its degeneration under the action of the biochemical suprasollicitations are radiologically visible, being characterized through distortions of the bone structure, sclerosis, and erosions.

Various results obtained and published in specialized literature support

the idea that from the ethyologic point of view, the element of the long term biomechanical suprasollicitation of T.M.D. on the exitent basis of a systemic affection in important for generating T.M.D. osteoartrosis.

Anatomic studies have revealed the existence of a relationship between the wear of teeth, the progressive, regressive or combined remodeling of T.M.D, as a biological phenomenon of the adaptation or self-defense from the appearance of epigenetic tisular metamorphoses.

When this capacity of tisular self-protection against the biomechanical constaints is overpassed, it will appear the degeneration of the T.M.D. artrosis (Mongini, 1984; Solberg, 1986; Ieremia et al., 2004).

The degradation scene has been odserved in parallel to the disk dislocation, but there were also cases of arteosclerosis without dispalcements of the articular disk or dislocations without artrosis (De Bont et al., 1985).

The longitudinal research made by F.Mongini (1984) have shown that the atrosic modifications can get better partially after the reestablishment of the biomenchanical conditions through a ptotetic therapy corectly made

Last but not least it must be shown that evethough temporo-jaw O.A. is a non flamable degenerative process, sometimes the inflamation may be present in the sinovite, the articular capsule or in the bilaminar zone, due to which the specification of the diagnosis will be made with the help of artroscopy, after having been partially removed the disfunctional presupositions of the miogenetic T.M.D.

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