

INTERDISCIPLINARITY IN CONDITIONS OF MORPHO-PSYCHOLOGICAL RECORDS AND ANTHROPOMETRIC ANALYSIS IN PATIENTS WITH ALGO-DYSFUNCTIONAL SYNDROME AND MODERATE DEPRESSIVE DISORDERS

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Abstract

Temporo-mandibular disorders (TMDs) represent a major cause of non-dental pain in the orofacial region, the effects of which may be presumed to form at the site where the greatest forces are exerted, and host resistance is least. The signs and symptoms of TMDs which are observed in patients with psychiatric easy disease observed and measured by anthropometrical methods and correct with specific treatment. The literature reviewed in the present work revealed that suggests a complex relationship between psychological status and treatment outcome and TMDs signs and symptoms in different groups of individuals persists and the specificity and morphological dates also. Timely identification and the management of this condition may improve the comfort and psychic status of the patients, underlined also in our research.

KEYWORDS: psychological status, stomatognathic system dysfunctional syndrome, anthropometrics, depression, temperament, temporo-mandibular disorders (TMDs).

Introduction

Dysfunctional syndrome of stomatognathic system is considered a musculoskeletal pain condition characterized by pain in the temporomandibular joint (TMJ) and/or the masticatory muscles. In this context authors observed that the prevalence of TMDs symptoms among the general population is ~ 40%. The most important symptom is pain, followed by restricted mandibular movements, which can cause difficulty in eating or speaking; noises from the temporomandibular

joints during jaw movement are also recorded [1]. Due to the complexity of the masticatory system, TMDs symptoms may be caused by different physiological and/or psychosocial factors, such as malocclusion and occlusal interferences, alterations in the masticatory muscles, direct trauma to the TMJ, microtrauma caused by continuous parafunctional or stress. The role of stress and personality in the etiology of the temporomandibular pain dysfunction syndrome is important [2,3].

Short history. Laskin (in 1969), proposes a revision of Schwartz's physiological theory, taking into account the descending impulses that the trigeminal motor nucleus receives from the cortex and that the spasm of the masticatory muscles is generated by increased psycho-emotional tensions, stomatognathic dysfunction being primarily psycho-somatic and on the possibility that stomatognathic muscular hyperactivity to be mediated centrally, being the result of stress, aspects supported at that time by Yemm (1969), Rugh and Solberg (1976).

In the classification of the etiopathogenic theories made by Burlui V. it is stated that Laskin later divided the patients with stomatognathic dysfunctions into two categories: (1) the dominant people, perfectionists; (2) dominated, internalized people. In both cases, the waste of energy, respectively its masking, results in hypertension on certain muscle groups, especially in the muscles of the cephalic extremity. Burlui (in 1979) suggests that the mechanism of transfer of conflicting tension from central to muscular level follows the physiological circuit of the gamma loop, with dysfunctional effects manifested later in muscle, temporo-mandibular joints, dento-alveolar arches, periodontium, occlusion. The persistence of the etiological factor of psychic irritation can determine the organization of the above-mentioned phenomena so that the simple removal of the irritating factor can no longer achieve the balancing of the stomatognathic system and may require restorative interventions at the level of systemic elements. So, Burlui (in 1989) concludes, in the dis-homeostasis theory, „the disturbance of muscle play determines the joint trauma that implies signs and symptoms specific to the dysfunctional syndrome of the stomatognathic system” and Dechaume says that these traumas can become pathogenic in the sense of a neurovegetative dystonia. According to Gale (1986), the most widely studied areas are anxiety and depression, admitting that anxiety could be an etiological factor but also that dysfunctional syndrome

could generate anxiety, meaning that increased anxiety reported in these patients may be the result of disorders and not a cause. The same goes for the depression [4-7].

In general, in the literature, studies of morphopsychology, prosopology and biotypology begin with the anatomy of the facial bone, complete myology of facial expressions, to correlate the somatopsychic aspects found. The human face is especially somatic and may have correspondences with the psychic, but not well-defined connections, assuming the perfect and prior knowledge of the genesis and meanings of the bio-physio-psychological facts as Garder says (in 2001). On the other hand, the whole face, the boundary between interiority and the environment, expresses in its own way the relations of the Ego with the environment and the degree of tone or atony of temperament also. Thus, presented in the literature, there are constitutional typologies associated with temperament and ancient concerns for exploring human temperament, as well as the attempt to classify them and correlate them with the constitutional type, the shape of the face (Lefley, 1998):

- I. The classical typology of Hippocrates and Galen.
- II. Biotypologies: (1) Pende Nicola and endocrine biotypes (Martiny M); (2) Ro stand and Sigaude; (3) Mc Auliffe typology; (4) Giovanni and Viola typology.
- III. Kretschmer typology. According to the German physician, mental illness is a pathological exaggeration of temperamental-characteristic traits that occur in normal man, as an expression of his normal somatopsychic constitution. Kretschmer mentions that biotypes are found in both men and in women, however, the most obvious examples are found in men, in whom the morphological differentiation is more pronounced.
- IV. Sheldon typology (morphopsychological).
- V. Corman typology. VI. Pavlov typology. VII. Jung psychological

typology. VIII. Heymans and Wiers typology.

Within, the typology of Hippocrates and Galen, considered the first conception of characterological classification, enunciated 2500 years ago by Hippocrates and, far from being in the field of history, was then resumed by Galen and Celsius in considering four fundamental types: Lymphatic (phlegmatic)- has white skin with lively reflections. Abundant muscle tissue hides bone reliefs, rounds shapes, giving the face a gentle, puffy expression, tending to obesity. The upper lip is swollen, the lower is soft and drooping, the wings of the nose thick. Careless, malleable, dreamy, gentle. He has an excellent memory, poor imagination, slow and deep intelligence. Blood- has a rosy complexion, with golden and warm reflections, supple, well-represented muscles, his figure expresses well-being and health. This strong temperament is associated with the athletic type. Abundant and active blood circulation. It shows optimism, conciliatory, generous nature, but he is irritable, impulsive, with outbursts of anger, without resentment. Very good memory, vivid but superficial intelligence. The bilious (choleric) has a thin body, skin yellowish, it has hard, pronounced features, large forehead, thin lips, sharp nose, mobile nostrils. It is proud, ambitious, authoritarian, violently disobedient, active, despotic, dogmatic, prejudiced, vindictive, stubborn, memory is average, but intelligence is prompt and bright. The nervous (melancholic) has dark skin with reflections of the earth and lead. The muscles are well contoured, but poorly developed. It has tense features, a sad expression, thin lips, thin nose, clogged and dry eyes, staring, restless, downcast. It presents with limited, trembling gestures, studied and difficult gait, low, sad voice, has a pessimistic, bizarre, focused, stingy, selfish, suspicious, resentful, and lonely nature. It is a complicated theorist, constant in his actions, but tortured by abnormal desires. In modern biotypology, whether it is endocrinological- Pende, or embryogenetic- Martiny, an explanation is proposed through the causes of form-character

relationships, founds the legitimacy of the notion of character as bio-physical-psychological reality, relying on solid statistical and biometric methods. Thus, Pende created the bio-typological science inspired by the great constitutionalist traditions, which he structures with the help of some criteria: (1). anthropometric; (2). radiographic; (3). functional; (4). histological. On an anthropometric basis, Viola defines two opposite poles of variation of the human form: longiline and breviline variation. Pende has the merit of stating the constitutional types based on neuroendocrine data and defined the biotype as "the complete figure of the person on the way to continuous realization. "Evolutionarily", the "biotype" takes place at the level of two regions: somatic and psychic, between the antagonistic action of the two neurohormonal assemblies (anabolism-catabolism) and the two types, longiline-breviline. Pende (1939), statistically isolates four basic biotypes: (a) the hyposthenic breviline biotype; (b) the stenic breviline biotype; (c) the hyposthenic longiline biotype; (d) the hyperstenic longiline biotype. Rostand (in 1824), and then Sigaud, in 1914, classified the biotypes according to the external aspects offered by anthropometric measurements and the proportions of the four fundamental morpho-functional systems: digestive type- the lower floor of the craniofacial mass is well represented and gives the impression of a trunk pyramid with the base down, with the forehead apparently low; respiratory type- the facial mass is elongated, dominated by the middle and upper floor with the important development of the frontal sinuses; muscle type- the facial mass has a rectangular shape with the large vertical axis and the floors of the face are equal; cerebral type- has developed the upper craniofacial floor and a predominant system central nervous, the forehead seen from the profile has a round shape, the vivid eyes with wide open eyelids, arched eyebrows, the contour of the face is shaped like a pyramid trunk with a small base at the top, has a predisposition for neuro-psychic disorders. Differences in attitude towards life are

obviously related to an essential difference in morphology, according to Kretschmer, the "scheme of the constitution" being an assessment of the measure of body structure, face, skull, limbs, skin etc. Verdun has made progress in the anthropometric method, conducting a study focused on the cephalic extremity, and reaching the establishment of a "model of the linear and volumetric proportions of the craniofacial mass of the middle Frenchman" (Pende, "Traite de médecine biotypologique"). Rohrer (1961) grouped in a table the features of the: cyclothymic and schizothymes' personality- has the ability to taste humour and laugh, very agitated, easily influenced; -picnic face: wide, topped by a large, round, wide skull; well-represented fat deposits; the floors of the harmonious face; poorly contoured profile; the jaw can be enlarged cyclothymic from the depressive pole (sad). It resembles the others, with the same direct reactions to arousals; the same spontaneous and supple impressionability, but they have a slow rhythm, hesitant and sober movements; heavy temperament- they need an orderly life, in which to practice their habits, avoiding the hectic situations that discourage them (corresponds to the asthenic-plastic type) schizothyme of the cold pole- the face of the schizoid is narrow and elongated; pale and weak, with pronounced features; mandibular hypoplasia and sharp nose; the forehead is slightly chamfered, but large and the chin is small; the profile makes an obtuse angle due to the nose. Ixotim (viscous) corresponds to the athletic constitutional type- in the field pathology is found in epilepsy or catatonic schizophrenia without a precise, specific correlation. It is characterized by perseverance, nervousness, tenacity, loneliness, capriciousness, mental slowness, emotional coldness [8-16].

The study of literature data suggests a complex relationship between psychological status and treatment outcome. Patients with mild psychological disorders have better outcomes than those with severe disorders or those who have only a few psychological symptoms. A

possible explanation for these claims is that for patients with stomatognathic dysfunction mild psychological disorders facilitate physical or psychological adaptation, while situations with excessive stress or the absence of psychological symptoms are situations with unsatisfactory adaptation or decreased healing. Thus, Giannakopoul (in 2010) observed that, depression may play an important role in women with chronic myofascial pain whereas anxiety does not seem to be relevant for either females or males. Further anxiety screening of patients with temporomandibular pain could not be justified [11, 17-21]. Literature also that said, during the evolution of prosthetics and implicitly gnathology, a systemic vision has been imposed on orofacial structures, highlighting the interrelationships between different elements of the system, so that today we cannot conceive of affecting one element of the stomatognathic system without the participation of others, either with homeostatic effect, or dysfunctional, dis-homeostatic [22-24].

Aim of the study

In the present study we try a correlation between the structures and facial aspects, their anthropometric evaluation, and the morpho-psychology data in the context of psychiatric disorders

Material and method

Our descriptive study took place in Iasi, in 2020.

In our cases lot we have in observation, 39 patients with TMDs chronic pain: was 25 female (64.10%), and 14 male (35.90%); 29 (74.36%) from urban, and 10 (25.64%) from rural area, and from them 32 (82.05%) were young and the rest middle aged.

Variables

In our study, the demographic factors considered as independent variables were age and gender (masculine/feminine). As dependent variables have been taken: the health indicators (as pain), the symptoms of TMDs, the results of objective TMJ examination for clinical signs or muscular examination and the use of dental prosthesis.

Patients were informed about the study and appropriate consent was taken from all the subjects.

Results

Patients with chronic TMDs usually may present associated psychological factors that should be managed with specific interventions like mouthguards, 33 (84.62%) from patients and also balneo-phisiotherapy association, 37 (94.87%) from patients and also prosthetically treatment fixed 30 (76.92%) patients and mixt 5 (12.82%) patients; 2 (5.13%) female patients had prescription of myorelaxants.

The psychic affectation is secondary to body shape changes (facial features, face level, golden proportions, and intraoral signs) due to the projection of one's own body morphology, which determines the degree of comfort of the individual in the report with the normal body composition.

Cranial dimensions are used to classify facial types and craniofacial anthropometry is considered a reliable method in studies, anthropometric cephalometry, was used to classify the patients' facial types, and verify whether they are correlated with muscle dysfunctional syndrome.



Figure 1. Loco-regional examination: Inspection– Anthropometric Methods: Leonardo Da Vinci /modified method: $Sn - N$ to $Sn - Gn$ / $Sn - N$ / oph = 7.1 cm (+1 cm) / $Sn - Gn$ = 6.9 cm



Figure 2. Loco-regional Examination: Inspection – Anthropometric Methods: Willis Method: $Sn - Gn$ to labial slope- palpebral slope; $St - Gn$ = 5 cm /interpupilar distance = 8 cm

TMDs severity

Before treatment, the severity of TMDs was: 58.97% (in 23 cases) low depression, 41.03% (in 16 cases) medium depression; stress 87.19% (in 34 cases).

After treatment, the severity of algodysfunctional syndrome decreased (with 41%), both in male (with 25.77%) and female gender (with 15.00%) patients.

After treatment, the prevalence of pain detected at palpation by examiner decreased (with 29.71%) in all studied group, both in

male (with 33.33%) and in female gender (with 25.00%) patients.

Neuropsychic affectation

Patients with chronic TMDs may suffer also psychiatric affections, under treatments, or no, and the recurrent pain contribute to distress, anxiety and modify and increase the pathological status also.

Discussions

Face level and anthropometrical revealed that exist a variability of dimensions that classified patients in different typology that we presented before and we suggest that: we obtain a

digestive type in 58.96%, with inferior level face lower, 25.64% respirator type and cerebral in 10.26% and muscular the rest, 5.13%, and also associated the temperamental type in order: phlegmatic 25.64%, melancholic 64.10%, in rest combine temperaments.

The research revealed that in our cases the digestive type of SN -GN facial level is preponderant and also nervous, stressed patients, large prevalence, 59%, of cyclothymic type from the depressive angle evaluated and melancholic temperament type are predominant with these associative pathologies [6, 3-7, 1].

At the beginning of our study, the prevalence of depressive manifestations was high (20.59%) in algo-dysfunctional patients; after treatment (pharmacological, mouthguards followed by prosthetic-aesthetical treatment and balneo-physiotherapy [24], the prevalence decreased (at 14.76%) objectivated by investigative diagnostic tools[25-27].

Conclusion. The specific variables, in our case part of them inspection and anthropometric measurements, for deliver the diagnostic of this category of patients determine the improved health outcomes in patients with the TMDs, not only in terms of TMJ pain and neuropsychic manifestations (distress and depression), but also clinically, meaning at the TMJ function level and in all the facial and oral aspects and the increase the good parameters of mental health also. Finally, there is a need for future research to evaluate the effects of treatment methods also focusing on other substantial problems in teenagers' psychic health, such as TMDs and pain.

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Conflict of interests: nothing to declare.

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