

Modern Views on the Etiopathogenesis of Three-Horned Nerve Neuralgia

Matchanov G. T.¹, Niyazov Sh. T.²

¹Basic Doctoral Student at the Department of Neurology, Samarkand State Medical University, Samarkand, Uzbekistan

²D.M.Sc., Associate Professor of the Department of Neurology, Samarkand State Medical University, Samarkand, Uzbekistan

Abstract Orofacial pain, according to the international pain community, accounts for about 20% of the world population. the main pathomechanism of facial pain, is a violation of the relationship of several parameters of muscles, bone, occlusion, adjacent joints, psychoemotional lability, age-related jaw deformity, periodontal disease, etc. The nature of the pain syndrome itself is also not unambiguous, the chronicization of the process in terms of formation, as well as the frequency of recurrences of the disease, independent of age, climatic conditions.

Keywords Clinical and differentiated diagnosis, Facial pain, Trigeminal neuralgia

1. Introduction

There are two forms of three-horned nerve neuralgia: Central (damage to the Gasser ganglion) and peripheral (damage to the peripheral branches of the three-horned nerve). In one disease, it is impossible to mix three-horned nerve neuralgia of Central and peripheral Genesis, since each of these forms has its own characteristics of clinical course and etiological development [5,12].

There is growing evidence that psychosocial factors have a significant impact not only on treatment outcomes but also act as predictors of pain syndrome [1,3]. Many patients with this problem have comorbid conditions, and there are also psychiatric or personality disorders that predispose to pain chronicity and thus affect treatment outcome [4,6]. The results of epidemiological studies indicate that along with pain syndromes of various localizations, facial pain is one of the causes of disability. It should also be noted that mostly women of working age (27 to 50 years) suffer from prosopalgia [6]. Only 46% of patients with orofacial pain seek medical help, with dentists, neurologists, and family physicians prevailing among specialists [3]. In 17% of patients, pain significantly limits their ability to work [2]. To date, many authors have pointed to the dominant role of trigeminal neuralgia among prosopalgias, while pain syndrome in the facial region is represented by a much larger number of nosologic forms [5].

The clinical picture of the disease is characterized by the appearance of pain on an acute, incisor face. Patients compare it to "electric shock". Painful paroxysms last from a few seconds to a few minutes. Hurricanes vary in frequency.

Pain can occur spontaneously, but most often when the facial muscles are in motion (talking, eating, washing, shaving, etc.k.), patients are afraid to harden and act in a certain position (holding their breath or breathing hard, pressing on the sore spot or rubbing with their fingers, some perform chewing or closing movements with their lips open more often) [13].

The pain is in a certain part of the face (often in Horns II or III, less often in Horn I) where the three-horned nerve is innervated by one or the other branches of the nerve. Pain is accompanied by vegetative signs - redness of the face, tear discharge, rhinorrhea, hypersalivation (rarely dry mouth). Hyperkinesis of the facial muscles – tremors of the chin, tremors of the eye or other muscles appear. The attack of pain suddenly stops [12].

Three-horned nerve neuralgia, the origin of which is central (occurs in 84% of cases), is characteristic of the presence of trigger (Trigger) zones, which are located in the areas of the skin or mucous membrane, the exposure of which leads to the appearance of pain snoring [11].

On the skin of the face, the tepilic zones have a nasolabial location, that is, they are located in the area of the lip and nose. However, there are also Trigger zones on the mucous membrane of the oral cavity (on the palate, in the alveolar tumors of the upper and lower jaws, or in another area). The trigger zones on the mucous membrane are always located on the side of the lesion of the three-horned nerve. The painful points of the Valle are the projection of the three-horned nerve branches from the bone orifice into the soft tissues of the face [8].

Most often, patients note the appearance of a vegetative aura before a pain attack - hyperthermia or tear leakage on the affected side. Other patients show a "feeling of an ant walking on the skin", paresthesia in the form of itching or

pruritus, before the onset of pain. Kranzl W. established the relationship between changes in blood pressure and attacks of the disease. Even with an increase in air pressure, the frequency of attacks increases. There is no sensation on the affected side between the pain attacks [7].

2. Purpose of the Study

To analyze the clinical and differentiated diagnosis of facial pain in trigeminal neuralgia with the subsequent development of the treatment algorithm.

3. Material and Methods of Research

The basis for evaluating the result of the work was the patients who applied to the private neurological clinic of Samarkand with complaints of facial pain, for the period of 2019-2020. The criterion for inclusion in the study was the presence of facial pain. Criteria for exclusion in the study were congenital anomalies of the facial bone, patients with a history of oncologic disease, patients with COVID-infection, patients who had undergone prosthetics and dental post build-up within 3 months earlier. The total number of applied patients for 3 years amounted to 112 people. Through in-depth history taking, 59 patients were selected for the study. In the majority of cases, the treatment turned out to be non-profile or for the given period had a comorbid background, requiring treatment in a multidisciplinary hospital (arterial hypertension, diabetes mellitus, chronic bronchitis, etc.). There were 39 women in the study group, 20 men, and the average age of those examined was 63 ± 3 years. Taking into account the set goal, for the evidence of the conducted research, the comparison group 26 was taken for consideration, by identical age and gender, where women made the difference 2:1, which coincides with the literature data for the last decade. The duration of the disease in the examined patients occupies a volumetric variable from 1 month to 9 years, in this regard, the patients were determined the mean value of the disease history at the time of examination $6,5 \pm 3,5$ years. An important component for differential diagnostics is the necessity of deep analysis of complaints; anamnesis; neurological status of patients, which was the primary stage of diagnostic methods. Clarification of the factors leading to facial pain, duration of pain attacks, peculiarity of individual (previously, at home) pain management, was carried out with the help of questionnaire, compiled arbitrarily, specifically for this work. The next stage of the examination was to determine the nature and intensity of pain using the following scales: VAS scale (visual analog scale), McGill scale (VHQ), BNT scale (BNT). Paraclinical methods of research included MRI (MSCT) of the brain, cervical spine; ultrasound examination of vessels, ENMG. The (Hamburg) test in doubtful cases was used for evaluation and differential analysis of dento-jaw pathology. Statistical processing of the material was processed on an individual computer, with standardized Student's criterion.

4. Results of the Study

The clinical character of facial pain was marked by polymorphism. The duration of pain on average in the study participants ranged from a few hours a day to 3 (4) months. Patients could not clearly identify the factor contributing to the pain syndrome, in 20% of cases it was explained by hypothermia (especially after bathing in a bath or long stay in a warm room, stuffy car interior). In 90% of cases, patients noted a sudden onset of pain, like "dagger pain", or "sharp prick", "electric shock". The pain was present during the daytime, but intensified in the evening. Patients had to limit themselves in talking (when opening the mouth, the pain syndrome worsened). They resorted to the help of ointments, analgesic drugs, someone was helped by a compress. At the time of examination, the height of pain intensity on the VAS scale ranged from 7 to 9 points. In 50% of cases, the examined patients felt pain only when "pressing" on the face. In 100% of cases, the trajectory of trigeminal nerve exit points indicated a painful sign. In 62% of cases, this zone was the upper-maxillary area, around the nose in 10% of cases; the remaining patients described painful areas in the whole half of the face, that is, the very fact of touching frightened the patients; a request to examine the painful area was perceived emotionally, more often by refusal.

5. Conclusions

Thus, in the case of treatment of group 2, a rapid effect was noted, but the intensity of pain, repeated after a short period of time. In group 1, initially, the effectiveness of the applied therapy is insignificant, but a high positive effect is observed after a long application, which allows not only to relieve pain, but also to reduce the intake of anticonvulsants, NSAIDs, and most importantly, reduces the likelihood of recurrent pain paroxysms, complications, preserves physical and psychoemotional activity.

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