



## A Multidisciplinary Approach to the Treatment of Facial Pain in the Elderly

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**Abstract:** Pain in the face, facial pain or orofacial pain, according to the International Pain Society, accounts for about 20% of the world's population (1, 5). In the gender difference, the ratio of women to men is within 2:1. A detailed epidemiological study of scientists over the past 10 years (2, 6) indicates the cause of pain in the face (3, 7), for the most part, trigeminal neuralgia.

**Keywords:** epidemiological study, facial pain, trigeminal neuralgia.

Parallel studies in this area (LASP, 2019) are presented from the results of a large study of chronic facial pain, proving the existence of idiopathic persistent facial pain, occurring in almost more than 6% of all facial pain (4, 8). Such ambiguity is primarily due to the rather complex anatomical and topographic structure of the face, with a large number of musculoskeletal features, the tortuous structure of the vascular bundles, which also depend on an individual hereditary predisposition. Facial pain is dealt with by specialists of various profiles: dentists, maxillofacial surgeons, neurologists, psychiatrists, traumatologists, otorhinolaryngologists, etc., which makes it difficult to form a clear nosology of this disease (3, 4, 6). Many scientists are inclined to believe that the main pathomechanism of pain in the face is a violation of the relationship of several parameters of muscles, bones, occlusions, adjacent joints, psycho-emotional lability, age-related jaw deformation, periodontal disease, etc. (94). The nature of the pain syndrome itself, also ambiguous, is the chronization of the process in terms of the formation time, as well as the frequency of relapses of the disease, independent of age, climatic conditions (1, 5, 7). The multidisciplinary nature of the problem makes it difficult to form a clear classification, and the inconsistency of pain types hinders the possibility of conducting therapy within the standard limitations. Therefore, the search for new answers to the questions of diagnostics, clinics, and new approaches to therapy is an urgent problem in neurology.

**Target.** To analyze the clinically differentiated diagnosis of facial pain in trigeminal neuralgia with the subsequent development of a treatment algorithm.

**Material and research methods.** The basis for evaluating the result of the work was the patients who applied to a private neurological clinic in Samarkand with complaints of facial pain for the period 2019-2020. The criterion for inclusion in the study was the presence of pain in the face. Criteria for exclusion from the study were congenital anomalies of the facial bone; patients with a history of cancer; patients who have had COVID - infection; patients who within 3 months previously had prosthetics and extension on the pin of teeth. The total number of patients who applied for 3 years was 112 people. By in-depth collection of anamnesis, patients were selected for the study in the amount of 59 people. In most cases, the appeal turned out to be non-core or for a given period they had a comorbid background that needed treatment in a multidisciplinary hospital (arterial hypertension, diabetes mellitus, chronic bronchitis, etc.). There were 39 women in the survey group, 20 men, the average age of the surveyed was  $63 \pm 3$  years. Taking into account the set goal, for the evidence of the study, a comparison group of 26 was taken into consideration, according to identical age and gender, where women made up a difference of 2:1, which coincides with the literature data for the last decade (2, 5, 7, 8). The duration of the disease in the examined patients takes a volume variable from 1 month to 9 years, in connection with this, the average



duration of the disease at the time of examination was  $6.5 \pm 3.5$  years for patients. An important component for differential diagnosis, the need for in-depth analysis of complaints; history; neurological status of patients, which was the first step in diagnostic methods. Clarification of the factors brought to facial pain, the duration of pain attacks, the peculiarity of individual (previously, at home) pain relief, was carried out using a questionnaire compiled arbitrarily, specifically for this work. The next stage of the examination was to determine the nature and intensity of pain on scales: VAS scale (visual analog scale), McGill scale (VHQ), BNT scale (). paraclinical research methods included MRI (MSCT) of the brain, cervical spine; UZDG vessels, ENMG. The test (Hamburg) in doubtful cases was used to assess and differential analysis of dento-jaw pathology. Statistical processing of the material was processed on an individual computer, with standard Student's t-test.

**Research result.** The clinical nature of pain in the face was marked by polymorphism. The duration of pain, on average, among the representatives included in the study ranged from several hours a day to 3 (4) months. Patients could not clearly determine the factor contributing to the pain syndrome, in 20 % of cases they explained it by hypothermia (especially after bathing in a bathhouse or a long stay in a warm room, stuffy car interior). In 90% of cases, patients noted a sudden onset of pain, like "dagger pain", or "prick with a sharp object", "electric shock". The pain was present in the daytime, but increased in the evening. Patients had to limit themselves in conversation (when opening the mouth, the pain syndrome aggravated). They resorted to the help of ointments, painkillers, 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 the exit points of the trigeminal nerve indicated a pain symptom. In 62 % this area is the upper zygomatic region, around the nose in 10% of cases; the rest of the patients described pain zones in the entire half of the face, that is, the very fact of touch frightened the patients; a request to inspect the pain zone was perceived emotionally, more often as a refusal. A sensitivity study in 100 % of cases revealed hypersensitivity. In this regard, it was necessary to study the assessment of pain according to the McGill questionnaire, where sensory disorders act at the primary level. So, according to the questionnaire, the sensory register of pain intensity showed a limit of  $7 \pm 2.1$ , and the total register of pain intensity, in terms of indicators,  $16 \pm 4.5$ . Thus, the age of patients with trigeminal neuralgia exceeded the average for 60 years, in addition, the pain intensity according to VAS exceeded 8 points, but the pain interval did not exceed 5 minutes; irradiation of pain was within the exit points of the trigeminal nerve, at the same time, emotional lability, hypersensitivity and a high level of the McGill pain intensity register are considered to be a characteristic feature of the pain syndrome. All this combination causes a symptomatic paraclinical diagnostic choice and further treatment tactics.

MRI examination today is the gold standard in diagnosis. To exclude neurovascular conflict and abnormal vascular disorders, malformations. In addition, the age trend of patients requires the exclusion of chronic changes in the brain structure, an MRI of the brain was performed (targeted at the level of the angiography regimen). When conducting an MRI of the brain revealed changes in the vascular nature, in all patients, dyscirculatory encephalopathy; signs of deepening of the furrows on the convexital surface (in 70% of cases), it is interesting that in patients with a long experience of pain syndrome, this sign is much brighter and more pronounced, almost 2 times ( $p = 0.05$ ), in the temporal region in 25% cases. In one patient, a cyst was found in the temporal region, of idiopathic origin (possibly an accidental finding). Signs of encephalomalacia were also frequent in the examined patients, foci in the subcortical and periventricular areas, in the form of changes around the lateral ventricles, uneven tortuosity along the axis of the lateral ventricles in 47.3 %; leukoryosis in 56.5% of cases, both scattered and merging together in the structure of the white matter. In 76.2%, lacunar foci of infarcts were noted, with foci of gliosis in 30%, and perifocal



edema; again, in patients with a long experience of facial pain, all signs were revealed in a more profound and pronounced perspective, and had a correlation with the frequency, duration and duration of the pain syndrome ( $r = 0.55$ ). Thus, the signs found on MRI of the brain indicate the process of chronic insufficiency of the brain structure, becoming the cause and factor of vascular insufficiency of the neurology of the trigeminal nerve in the elderly. The study of the bone structure of the face in the elderly is of interest, as a consequence of evidence-based osteoporosis in this category of patients with facial pain. The method of computer (MRI) angiography in 3D format, 19 people underwent this study, the method made it possible to determine the level of the size of the exit points of the trigeminal nerve, where due to age-related deformations and excessive osteogenesis there is a thickening of the walls, narrowing of the canal by the infraorbital, that is, there is a fact of compression tunnel syndrome. Before proceeding with the choice of therapeutic tactics, it was necessary to study the level of hemodynamics of the cerebral arteries; for this, the ultrasound diagnostic method was used. In 50% of cases, they showed a level of blood flow decrease in the extracranial regions, with a significant asymmetry of the sides. A decrease in LBF on the main trunk on the right side more often, a decrease in blood flow in the VA and asymmetry up to 40%. In addition, the level of decrease in LCL in the posterior cerebral artery reached 27%, while in PA it was up to 21%. All these indicators confirm the level of hemodynamic changes in elderly patients with facial pain.

In accordance with the goal, elderly patients with TN needed pain relief. In this regard, patients are equally divided into two groups according to age and gender ratio. The first group of patients for the general traditional treatment received Aflutop 2 ml intramuscularly every other day for 2 months, and every 14 days diprospan intramuscularly, a total of 3 (4) injections per course. The second group, for complex therapy, received injections of steroids in small doses, in exact predetermined as classical acupuncture, in addition, during the period of an acute state of pain, an additional solution of lidocaine was used at the same points (blockade principle); Lidocaine 2% 1 ml, dexamethasone 0.5 ml. The use of the above methods of treatment is indicated by foreign authors in their studies (Mchaonrab A., 2015; Romero - Reyes M., 2014). The study was repeated after a week and after 3 months. after the therapy. In group 2, the intensity of pain decreased after a week, the frequency of pain attacks decreased by 35%; by the end of 3 months, in 49% of cases the pain in the face was stopped, in 5% it corresponded to 2-3 points, in other cases the pain syndrome persisted, especially at night (evening) time. Patients had to use tablet analgesics; carbamazepine (200 mg), which caused drowsiness, impaired concentration. In the first group, in the first week, there was little effective sensation, pain in all patients averaged  $3.3 \pm 0.9$  points. Patients concurrently resorted to the use of non-steroidal (NSAID) drugs; taking carbamazepine up to 400 mg per day. By the end of 3 months, 90% of patients felt complete regression, pain intensity averaged  $1.0 \pm 0.1$  VAS scores, there was no need for additional use of analgesics, carbamazepine. Assessment according to the McGill questionnaire showed the dynamics for the better in both groups, after a full course of treatment, but less pronounced dynamics was noted in group 2.

Thus, in the case of treatment of group 2, a rapid effect was noted, but the intensity of pain was 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-term use, which allows not only to anesthetize, but also to reduce the intake of anticonvulsants, NSAIDs, and most importantly, it reduces the likelihood of repeated painful paroxysms, complications, preserves physical and psycho-emotional activity

Comparison of the results of the examined patients in the elderly with pain in the face, neurology of the trigeminal (trigeminal) nerve, revealed features. Pain paroxysms are characterized by high intensity, most often localized in the infraorbital region, which makes it difficult to diagnose with prosonalgia associated with dental causes. The pain syndrome makes it difficult to speak, chew,



radiates to the head and neck on the side of the painful paroxysm. The use of MRI (CT angiography) makes it possible to determine age-related changes and deformities, the presence and level of osteoporosis, where the pathological process violates the volume of the trigeminal nerve opening, thereby creating a compression tunnel syndrome that affects the nature of pain intensity. Treatment of facial pain must be carried out from the position of the mechanism of development. So, in the initial stages, for the rapid relief of pain syndrome, the use of a blockade (regional analgesia) is recommended, in the future, long-term use of Aflutop combined with Diprosan gives a long-term positive effect of pain relief, and as a result, eliminates the likelihood of repeated pain paroxysms of high intensity, reduces the intake drugs anticonvulsants (antidepressants); NSAID drugs. A study of an integrated approach to the treatment of TN in the elderly recommends the inclusion of Aflutop in the basic therapy.

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