

ASSESSMENT OF THE QUALITY OF LIFE OF PATIENTS WITH TRIGEMINAL NEURALGIA BEFORE AND AFTER DIFFERENTIATED SURGICAL TREATMENT**Mirzaev A.,***Doctor of Medical Sciences, senior researcher, JSC "NMMC" MA "Kyzyl-Kum",
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Tashkent Medical Academy, Republic of Uzbekistan***Abdullayev R.***neurosurgeon, department of neurosurgery, multidisciplinary clinic,
Tashkent Medical Academy, Republic of Uzbekistan.*ORCID ID: <https://orcid.org/0009-0000-1986-136X><https://doi.org/10.5281/zenodo.13326880>**Abstract**

The article on the occurrence of trigeminal neuralgia, its surgical treatment, and the history of the development of other methods. Modern diagnostic methods, treatment tactics, determination of the effectiveness of treatment methods. Methods of assessing the quality of life the impact of a particular treatment method on the quality of life of patients. The analysis of the effectiveness of treatment methods is given. Application of questionnaires and comparative analysis of the results to determine the quality of life before and after the treatment of trigeminal neuralgia.

Keywords: neuralgia, trigeminal nerve, neurosurgery, surgical treatment, quality of life, questionnaires.

Relevance

A serious illness known to scientists for a long time is trigeminal neuralgia (TN) - due to the most severe attacks of pain syndrome, it does not in itself pose a direct danger to life, but is accompanied by such physical and emotional suffering that it sharply complicates the normal existence of the patient, making life unbearable, and can sometimes cause suicide attempts [2,3,5,11,12].

Pain syndrome in neuralgia occurs in short-term attacks of various nature, can be "stabbing", "cutting", "pressing" with a duration of several seconds, sometimes more than half an hour. The criteria for TN diagnostics for the purpose of accurate determination are approved by the International Headache Association [2,3,5,11,12].

Since ancient times, there have been constant disputes and discussions regarding the etiology of trigeminal neuralgia, but there is still no consensus, this is due to the development of diagnostic capabilities and a more accurate determination of the causes of the disease [1,3,6].

Trigeminal neuralgia as a disease is quite widespread, according to statistics from the World Health Organization (WHO), today it is from thirty to fifty patients per hundred thousand inhabitants, and the incidence rate, respectively, is from two to four per hundred thousand people [1,3,6].

A more modern and effective method of surgical treatment of trigeminal neuralgia is microvascular decompression of the trigeminal nerve (MVD) at the brainstem in order to eliminate the vascular-nerve conflict. Along with this, there are also destructive methods. Currently, destructive methods are very rarely

used due to the low efficiency of the destructive effect on the nerve roots [8,9,10,15,17,18,19].

Currently, studying the literature, the authors note that MVD remains the method of choice if the patient is selected correctly, i.e. the established diagnosis is substantiated and proven by instrumental studies. As a result of the analysis, it was concluded that MVD provides the highest patient satisfaction rate in the long term with the lowest frequency of pain relapses in surgical treatment of trigeminal neuralgia [8,9,10,17,18,19].

According to some researchers, MVD should be performed in cases where the patient is healthy and relatively young, this is due to the fact that various concomitant somatic pathologies often appear with age, sometimes they can be a contraindication to giving general anesthesia. In case of contraindications to MVD, it will be possible to perform partial sensory rhizotomy. In other contraindications to MVD, three procedures can be performed through skin ablation with a gamma knife [8,9,10,17,18,19].

In case of contraindications to other methods, manipulations on the peripheral fibers of the trigeminal nerve are performed at the patient's choice. There are no protocols for their implementation, an individual and differentiated approach is always required [1,4,16].

Quality of life reflects the impact of the disease and treatment on the patient's well-being and characterizes his physical, emotional and social well-being, which changes under the influence of the disease or its treatment, therefore, scientists around the world have increasingly begun to study [7,13,14].

Purpose of the study: improving the treatment outcomes of patients with trigeminal neuralgia by a differentiated approach taking into account the severity of the course and assessing the quality of life.

Material and methods

The study is based on the results of observations of 168 patients with trigeminal neuralgia who were treated in the inpatient department of the Tashkent Medical Academy, a multidisciplinary clinic, and the neurosurgery department in the period from 2019 to 2023.

An important place in establishing a diagnosis and determining further treatment tactics is given to magnetic resonance imaging (MRI) data from 1.5 to 3.0 Tesla, by T2 (3D-FIESTA, DRIVE or CISS), time of flight magnetic resonance angiography (MRA) (3D-TOF), as well as contrast enhanced weighted by T1 mode to determine neurovascular conflict.

In our studies, we used electroneuromyography (ENMG), which determines the level of damage to the nerve branches, i. e. central or peripheral type irritation with a reliability of 75%, giving us the opportunity, taking into account the level of damage, to choose the tactics of surgical or conservative treatment of trigeminal neuralgia.

The quality of life of patients was assessed using the questionnaires "Assessment of the quality of life in trigeminal neuralgia" and "Assessment of pain syndrome in trigeminal neuralgia" developed by the Republican Specialized Scientific and Practical Medical Center for Neurosurgery.

Results and discussion

The results of observations of 168 patients with trigeminal neuralgia who were treated in the inpatient department of the Tashkent Medical Academy, a multidisciplinary clinic, and the neurosurgery department from 2019 to 2023 were studied.

To establish a diagnosis and choose a treatment method, all patients underwent a comprehensive examination, including clinical, neurological and instrumental research methods.

All patients were divided into three groups according to treatment methods, the severity of trigeminal neuralgia and the state of their somatic status. The first group included 54 (32.2%) patients who underwent Gasser's node blockade and exeresis of the branches of the trigeminal nerve. The second group consisted of 56 (33.3%) patients who underwent microvascular decompression using a modified approach proposed by Republican Specialized Scientific and Practical Medical Center for Neurosurgery for Trigeminal Neuralgia (TN). The third group consisted of 58 (34.5%) patients who underwent the existing method of microvascular decompression of the trigeminal nerve root.

By age, the patients were distributed according to the WHO classification, which provides for the allocation of age groups: young age 14-19 years; younger middle age 20-44 years; older middle age 45-59 years; elderly age 60-74 years; old age 75-89 years.

Distribution of patients by age and gender showed that among the patients, women predominated - 101 (60.2%), there were 67 men (39.8%), which is 1.5 times less than women. The majority of patients 69 (41.5%)

were of middle-aged and elderly age, the maximum number of patients was in the age group of 60-74 years, 51 (30.4%), which is consistent with the data of world scientists.

When examining the somatic status, it was revealed that among 168 patients, 68 (40.5%) patients had somatic pathology, manifested in the form of arterial hypertension in 52 (31.0%) patients, ischemic heart disease in 13 patients (7.8%). In 18 (11.2%) observations, diabetes mellitus was noted, in 4 (2.6%) patients, liver pathology, and in 1 (0.9%), renal failure. It should be noted that in one and the same patient, a combination of two or more somatic diseases was noted, this was especially characteristic of cardiovascular diseases.

Analysis of provoking factors based on the results of the study showed that almost all patients had: provoking factors such as chewing and talking in more than 93% of cases, the second place is taken by the factor of touch - 8% of observations, the rest are cold, brushing teeth, washing, shaving and opening the mouth in less than 5% of cases.

Before admission to the clinic, all patients received complex conservative treatment, patients were treated by dentists, neurologists, maxillofacial surgeons.

During examination of patients, the following symptoms were identified as the main criteria of trigeminal neuralgia: unilateral paroxysmal facial pain, the presence of a trigger zone in the examined 168 patients, the localization of trigger zones gave the following results, with a total of 32 (19.3%) observations, among 32 patients with the presence of trigger points by localization, the nasolabial triangle ranks first 15 (48.5), the mental area ranks second 8 (24.3%), the frontal-zygomatic region ranks third 2 (9.1%), the remaining zones are the oral cavity, cheek, parotid region, Vale points, neck in the area of the spinous processes of the III-IV cervical vertebrae from 3% to 6% of cases.

We also checked for symptoms of hypertonicity of the masticatory muscles, autonomic disorders, hypesthesia of the innervation zones of individual branches or the entire half of the face. In this case, we were convinced that trigeminal neuralgia is characterized by the presence of short attacks (2-15 min), which can be repeated frequently (up to 30 times a day).

The study of sensitivity disorders in the innervation zone of the trigeminal nerve branches gave the following results. In our study, out of 168 patients in total, 90 (54%) had sensitivity disorders in the innervation zone of the trigeminal nerve branches: 52.2% of cases of hypesthesia, 40.2% of cases of paresthesia, 6.5% of cases of hyperesthesia, and 1 case of anesthesia as a result of previous surgical interventions. This case was observed among patients in the third group. As a result of multiple exeresis operations, sensitivity in the innervation zone was completely lost, and trophic changes in the facial muscles of the face on the side of the lesion of the trigeminal nerve branches occurred. This patient did not feel pain in the trigeminal nerve innervation zone after MVD, but sensitivity was not restored after destructive surgical interventions.

Vegetative disorders in our patients were observed in 17 (10.5%) cases, of which 50.1% were hyperemia,

33.3% were lacrimation, salivation 16.6% if we consider by groups 55.6% in the third group, 27.7% in the second group and the least 16.7% in the first group, after treatment vegetative disorders were restored.

Analysis of the 168 patients examined, by the location of the affected branches of the trigeminal nerve showed the following results.

In 131 (78.4%) patients, trigeminal neuralgia was noted on the right, in 33 (19.8%) on the left and in 3 (1.8%) observations on both sides.

In the patients examined in our observations, the second (33.3%) and second + third branches (4.6%) were more often affected and, as noted above, in most cases right-sided neuralgia was noted, which proves its typicality.

Thus, in our observations, 2 branches were most often affected simultaneously 50.9% of patients. The defeat of all three branches was observed in 31.9% and one branch in 17.2%. Most often, the pain syndrome was on the right in 78.4%, on the left in 19.8% and on both sides in 1.8% of cases. The data we obtained from the study of patients are consistent with the literature data of world authors.

Positive results among the 168 patients studied were noted in 164 (97.5%), without changes in 4 (2.5%). The best indicators were in the second and third groups, all patients in these groups received positive results.

This proves the effectiveness of the surgical intervention method with a differentiated approach to the treatment of trigeminal neuralgia, taking into account the somatic status of the patient.

Analysis of the data obtained showed that 87.8% of patients in the second and third groups showed significant improvement, 12.2% improved, no changes, in the first group 9.3% showed significant improvement, 83.4% improved, 4 (7.3%) patients did not show improvement.

In our studies, microvascular decompression of the trigeminal nerve root turned out to be a more effective method of surgical intervention. The patients operated on with microvascular decompression using a modified approach proposed by the Republican Specialized Scientific and Practical Medical Center for Neurosurgery for trigeminal neuralgia, using the existing approach of microvascular decompression at the brainstem, since 87.8% of the total number of 168 patients treated showed significant improvements in the second and third groups.

In our studies, questionnaires from the Republican Specialized Scientific and Practical Medical Center for Neurosurgery were used to assess the quality of life and pain syndrome in patients with trigeminal neuralgia.

The use of the questionnaire "Assessment of the quality of life in trigeminal neuralgia" showed that the quality of life in all study groups was similar: that is, before the operation, the quality of life, indicators in all groups were low. After the treatment, patients with trigeminal neuralgia immediately began to improve their quality of life, indicators, this was especially noticeable in the second and third groups, and positive results were also shown by the treatment in patients of the first group.

The use of the questionnaire "Assessment of pain syndrome in trigeminal neuralgia" showed that the parameters of pain syndrome in the preoperative period in the studied patients in all groups differed from each other with a difference in scores.

High indicators were recorded in the first group before the operation, which corresponded to a severe degree of severity of pain syndrome, and after the treatment in all groups, a decrease in it to an average degree was observed in both the first and second groups, which was noted by the data obtained as a result of using questionnaires.

Almost all patients underwent therapy at dentists, including tooth extraction. Further progression of pain allowed to correctly establish a diagnosis and subsequently carry out therapy for the underlying disease.

According to the questionnaire "Assessment of pain syndrome in trigeminal neuralgia": a sum of up to 10 points - mild severity of trigeminal neuralgia, 11-21 points - moderate severity of trigeminal neuralgia, 22-32 points - severe severity of trigeminal neuralgia. Assessment of pain syndrome in trigeminal neuralgia according to the questionnaire made it possible to determine in 168 patients mild pain syndrome in 40 (24.4%), moderate pain in 119 (71.3%), severe pain in 9 (5.2%), and in the postoperative period - a complete absence of pain was noted in 164 (97.3%) and in 5 (2.9%) - mild pain syndrome.

According to the questionnaire "Assessment of the quality of life in trigeminal neuralgia": a sum of up to 10 points is a slight deterioration in the quality of life, 11-21 points is a moderate deterioration in the quality of life, 22-33 points is a significant deterioration in the quality of life. Assessment of the quality of life according to the questionnaire in 168 patients with trigeminal neuralgia showed a significant deterioration in the quality of life in the preoperative period in 128 (76.5%) patients, and a deterioration in the quality of life in 40 (24.4%). And in the postoperative period, patients with a significant improvement in the quality of life amounted to 17 (10.4%) and with an improvement - 143 (85.4%), a slight improvement in the quality of life was noted in 7 (4.3%) patients.

Conclusions

1. Distribution of patients by age and gender showed that among the patients, women prevailed - 101 (60.2%), men were 67 (39.8%), which is 1.5 times less than women. Most patients 69 (41.5%) of older middle and old age, the maximum number of patients fell on the age group of 60-74 years, 51 (30.4%), which is consistent with the data of world scientists.

2. Provoking factors such as chewing and talking more than 93% of cases, the second place is taken by the factor of touch - up to 8% of observations, the rest are cold, brushing teeth, washing, shaving and opening the mouth less than 5% of cases.

3. When examining the somatic status, it was revealed that among 168 patients, 68 (40.5%) patients had somatic pathology, manifested in the form of arterial hypertension in 52 (31.0%) patients, ischemic heart disease in 13 patients (7.8%). In 18 (11.2%) cases, diabetes mellitus was noted, in 4 (2.6%) patients liver pathology and in 1 (0.9%) renal failure.

4. The presence of a trigger zone in the 168 patients examined. The localization of trigger zones gave the following results, with a total of 32 (19.3%) observations, among 32 patients with the presence of trigger points by localization, the nasolabial triangle ranks first 15 (48.5), the mental region ranks second 8 (24.3%), the frontal-zygomatic region ranks third 2 (9.1%), the remaining zones are the oral cavity, cheek, parotid region, Vale points, neck in the area of the spinous processes of the III-IV cervical vertebrae from 3% to 6% of cases.

5. In our study, out of 168 patients, 90 (54%) had impaired sensitivity in the innervation zone of the trigeminal nerve branches: 52.2% of cases of hypoesthesia, 40.2% of cases of paresthesia, 6.5% of cases of hyperesthesia, and 1 case of anesthesia as a result of previous surgical interventions.

6. Autonomic disorders in our patients were observed in 17 (10.5%) cases, of which the most common were hyperemia (50.1%), lacrimation (33.3%), and salivation (16.6%).

7. Positive results among the 168 patients studied were noted in 164 (97.5%), with no changes in 4 (2.5%). The best indicators were in the second and third groups; all patients in these groups received positive results.

8. Assessment of pain syndrome in trigeminal neuralgia using a questionnaire allowed us to determine mild pain syndrome in 40 (24.4%) patients, moderate pain syndrome in 119 (71.3%), severe pain syndrome in 9 (5.2%), and in the postoperative period, a complete absence of pain was noted in 164 (97.3%) and mild pain syndrome in 5 (2.9%).

9. Assessment of quality of life using a questionnaire in 168 patients with trigeminal neuralgia showed a significant deterioration in quality of life in the preoperative period in 128 (76.5%) patients, and a deterioration in quality of life in 40 (24.4%). In the postoperative period, patients with a significant improvement in quality of life amounted to 17 (10.4%) and with improvement – 143 (85.4%), a slight improvement in quality of life was noted in 7 (4.3%) patients.

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