IJACT, Volume 1, Issue 2, 2023 ISSN: XXXX-XXXX
http://medicaljournals.eu/index.php/IJACT

INTERNATIONAL JOURNAL OF ALTERNATIVE AND CONTEMPORARY THERAPY

The Use of Radiowave Surgery in Patients with Vasomotor Rhinitis

Nurova Guzal Ubaydullayevna
PhD, Assistant of the Department of Otorhinolaryngology, Bukhara State Medical Institute, Bukhara, Uzbekistan

Abstract: Vasomotor rhinitis is one of the most common diseases and in recent years the number of patients with this pathology has been increasing. This disease is characterized by a pathological condition of the nasal mucosa of a non-inflammatory nature, which is based on a violation of nervous mechanisms that causes a normal physiological state, as a result of which stimuli of exogenous and endogenous origin cause a hyperergic reaction. The aim of the study was to evaluate the clinical effectiveness of radiowave surgery in patients with vasomotor rhinitis. Patients of the main group (n=122) were treated with the method we proposed, in the comparison group (n=94), traditional treatment was performed, consisting of basic treatment of this ailment according to the generally accepted standard. The clinical efficacy of radiowave surgery for vasomotor rhinitis was evaluated on the basis of the functional state of the nasal mucosa, determination of the blood supply to the oral cavity by ultrasound Dopplerography, rhinoscopic (endoscopic) examination, medical and social study of vasomotor rhinitis and statistical methods. The effectiveness of treatment by the method of destruction of the lower nasal conchs using radio wave surgery significantly exceeds the traditional method (ultrasonic disintegration of the lower nasal conchs). This is confirmed by the disappearance of symptoms 14 days after treatment in most patients, as well as high percentages of patients who have a stable improvement in their condition.

Keywords: vasomotor rhinitis, radiowave surgery, lowers shells, dopplerography, ultrasound disintegration.

Introduction. According to the World Health Organization (WHO), to date, studies have found that despite the implementation of a set of measures, vasomotor rhinitis is one of the most common diseases and in recent years the number of patients with this pathology has been increasing. On a global scale, it has been studied that vasomotor rhinitis contributes to the development of pathological conditions of other parts of the respiratory system, negatively affects the functional state of almost all organs and systems of the body, thereby significantly impair the quality of life of patients. In the structure of chronic rhinitis, currently vasomotor rhinitis is 21-22% and its frequency is increasing mainly among the most able-bodied young and mature people. Violation of nasal breathing in patients affects sleep and performance and serves as a predisposing factor for the development of complications: sinusitis, otitis media, descending respiratory tract infections. When nasal breathing is turned off, according to scientists, lung ventilation decreases by 24-30%, the percentage of oxygen absorption decreases, the tone of the respiratory center decreases.

Numerous studies have proved that vasomotor rhinitis is characterized by a triad of symptoms - paroxysmal sneezing, rhinorrhea and difficulty in nasal breathing (Zhuravlev A.S., 2014). This disease is characterized by a pathological condition of the nasal mucosa of a non-inflammatory nature, which is based on a violation of nervous mechanisms that causes a normal physiological state, as a result of which stimuli of exogenous and endogenous origin cause a hyperergic reaction. Numerous researchers emphasize that the following symptoms are characteristic of vasomotor rhinitis: paroxysmal sneezing, rhinorrhea, difficulty in nasal breathing (Kunelskaya H.JL, 2008; Fenixova L.V., 2008; Kochetkova P.I., Korkmazov M.Yu., 2013).

Currently, various diagnostic and treatment methods are widely used for the diagnosis and treatment of patients with vasomotor rhinitis. The most common diagnostic methods of vasomotor rhinitis are rhinoscopy, endoscopy, radiography of the paranasal sinuses. In addition, rhinomanometry is used to determine the microbial landscape that is separated from the nose (PalchunV.T., Kryukova.I., 2008).

The most frequent surgical intervention for vasomotor rhinitis, which is performed in practical healthcare, is the disintegration of nasal conchs. It is performed mechanically, by laser beams, ultrasound. The use of these technologies in the surgical treatment of patients with vasomotor rhinitis is not effective enough: complications and relapses of the disease requiring repeated surgical intervention are noted (Zakharova G.P. et al., 2015).

Radiosurgery is based on the use of the energy of high-frequency waves with a frequency of 3.8 MHz. The effect of exposure is achieved due to the heat generated by the resistance of tissues to the penetration of directed high-frequency waves into them. When exposed to radio waves, intracellular fluid boils in the thickness of the nasal shells, at a fairly low temperature, which leads to a soft wrinkling of the tissue and a decrease in its volume. At the same time, there is no direct contact of the electrode with the cells and the electrode itself does not heat up (Rybalkin S.V., Fenixova L.V., 2014).

The purpose of the study. Evaluation of the clinical efficacy of radiowave surgery based on clinical and functional data in patients with vasomotor rhinitis.

Materials and methods of research. To study the effectiveness of the treatment, 216 patients with vasomotor rhinitis aged 19 to 60 years with different periods of the course of the disease were studied.

The main group consisted of 122 patients with vasomotor rhinitis who were treated with the method we proposed, the comparison group consisted of 94 patients with vasomotor rhinitis who underwent traditional treatment consisting of basic treatment of this ailment according to a generally accepted standard. The control group consisted of 30 practically healthy individuals who did not suffer from vasomotor rhinitis. Comparative parameters of the occurrence of complaints of patients with vasomotor rhinitis showed that in patients of the main group, constant difficulty of nasal breathing was determined in all patients (100%, n=122). Periodic difficulty of nasal breathing was detected in 40.2% of the examined patients (n=49), almost the same indicators were found for difficulty of smell (41.8%, n=51).

It is noteworthy that complaints such as headaches and the negative effect of symptoms on sleep were also detected in most cases - 86.1% (n=105) and 86.1% (n=105), respectively. Some symptoms, such as sneezing and itching in the nasal area, were rare.

At the next stage of clinical studies, we conducted rhinoscopic (endoscopic) studies in the examined patients. The analysis of the results showed that the parameters of the patients included in the main group and the comparison group were significantly higher than the data of healthy individuals involved in the study for comparison with the data of patients.

In patients with vasomotor rhinitis, curvature of the nasal septum was found in most cases - respectively in the main group in 92.6% (n=113) and in the comparison group in 91.5% (n=86) cases. Also, in most cases, cyanosis of the nasal conchae was detected during rhinoscopy, which was 77.1% (n=94) and 75.6% (n=71) cases, respectively, according to groups.

Hypertrophy of the lower nasal concha was found in 2/3 of the patients, and in more than half of the cases, swelling of the nasal mucosa was detected. The above-mentioned rhinoscopic parameters can be considered the main symptoms and risk factors for the development of vasomotor rhinitis in patients.

In addition, the indicators of the functional state of the nasal mucosa in healthy and patients with vasomotor rhinitis were studied in a comparative aspect.

The conducted studies on the study of respiratory function (rhinomanometry) showed that in healthy people the volume of the air jet passing through the nasal cavity on exhalation was 630.0 ± 20.0 ml/s. The same parameter in patients of the main group and the comparison group were significantly lower

compared to healthy ones, respectively, by 2.4 times (P<0.001) - 258.12±24.0 ml/s and 263.4±22.0 ml/s

The calorific function of the nasal mucosa in patients with vasomotor rhinitis also significantly differed from those of healthy individuals - respectively, in the main group 33.39 ± 0.4 ° C, and in the comparison group 33.32 ± 0.5 ° C, in healthy individuals 31.2 ± 0.3 ° C (Table 3).

The same significant differences were found in the concentration of hydrogen ions (pH of the medium) of the nasal mucosa (P<0.05) of the examined adult patients.

Note: * is a sign of reliability between the data of healthy individuals and groups of examined patients.

Determination of the motor function of the atrial epithelium of the nasal mucosa, conducted by a saccharin test, showed that the difference between the indicators of patients with vasomotor rhinitis and healthy individuals was significant-respectively, in the main group it was 1.5 times higher (20.72±0.7 min vs. 13.70±0.5 min, P<0.05), and in the comparison group 1.4 times (19.67±0.8 min vs. 13.70±0.5 min, P<0.05).

Thus, the obtained results showed that the functional state of the nasal mucosa in patients with vasomotor rhinitis deteriorates sharply in all studied parameters. All indicators were 1.4-2.5 times significantly different from those of healthy individuals. This fact indicates that vasomotor rhinitis worsens the functional state of the nasal mucosa, which leads to a violation of well-being, disability and deterioration of the quality of life of patients, and this, in turn, requires mandatory medical intervention, consisting in effective treatment.

Note: * is a sign of reliability between the data of healthy individuals and groups of examined patients.

Determination of the motor function of the atrial epithelium of the nasal mucosa, conducted by a saccharin test, showed that the difference between the indicators of patients with vasomotor rhinitis and healthy individuals was significant-respectively, in the main group it was 1.5 times higher (20.72±0.7 min vs. 13.70±0.5 min, P<0.05), and in the comparison group 1.4 times (19.67±0.8 min vs. 13.70±0.5 min, P<0.05).

Thus, the obtained results showed that the functional state of the nasal mucosa in patients with vasomotor rhinitis deteriorates sharply in all studied parameters. All indicators were 1.4-2.5 times significantly different from those of healthy individuals. This fact indicates that vasomotor rhinitis worsens the functional state of the nasal mucosa, which leads to a violation of well-being, disability and deterioration of the quality of life of patients, and this, in turn, requires mandatory medical intervention, consisting in effective treatment.

The results of the study show that in the main group (n=122) of the study after treatment (after 14 days) there were noticeable positive changes. If we analyze the comparative parameters of the occurrence of complaints of patients with vasomotor rhinitis before and after the proposed treatment, it can be seen that the constant difficulty of nasal breathing decreased from 100.0% (n=122) to 22.1% (n=27), that is, the decrease was 4.5 times (P<0.001).

Almost the same trend was observed for periodic nasal breathing difficulties in patients, where the decrease was 3.3 times (respectively, before and after the treatment we proposed, 40.2%, n=49 and 12.3%, n=15) - the reliability was high (P<0.001). The same positive dynamics in reducing the occurrence of symptoms of vasomotor rhinitis was observed for other symptoms, but with different intensity.

If, after treatment, the occurrence of symptoms such as difficulty of smell decreased (respectively 41.8%, n=51 vs. 8.2%, n=10, a decrease of 5.1 times), nasal congestion (respectively 55.7%, n=68 vs. 6.6%, n=8, a decrease of 8.4 times), sneezing (respectively 19.7%, n=24 vs. 4.1%, n=5, 4.8-fold decrease), irritability (50.8%, n=62 vs. 10.7%, n=13, 4.7-fold decrease), constant nasal discharge (18.9%, n=23 vs. 2.5%, n=3, a decrease of 7.6 times), the negative effect of symptoms on sleep (respectively 86.1%, n=105 vs. 16.4%, n= 20, a decrease of 5.2 times) by more than 4.5 times, then

some other symptoms, such as headaches associated with the symptoms of the disease under study, periodic nasal discharge, general weakness decreased by 3.3 times or less ($P<0.05$).

A significant decrease in the percentage of detectability was observed when studying symptoms such as difficulty of smell (decrease by 1.7 times; 48.9%, n=46 vs. 28.7%, n=27), nasal congestion (decrease by 2.2 times; 53.2%, n=50 vs. 24.5%, n=23), sneezing (decrease 1.7 times; 20.2%, n=19 vs. 11.7%, n=11), itching in the nose (decrease by 1.7 times; 10.6%, n=10 vs. 6.4%, n=6).

The remaining symptoms also noticeably changed, but with a lower intensity, the decrease was 1.5 times or less.

Another sign of the comparative determination of the effectiveness of the treatment is the identification of the percentage of patients who have improved after treatment compared to the baseline data before treatment. To calculate, we used quantitative indicators of patients with vasomotor rhinitis, in which certain symptoms disappeared.

The results showed that after the treatment, such a symptom as persistent difficulty of nasal breathing was not detected in 95 patients out of 122, which is 77.9% of patients, whereas after traditional treatment, improvement occurred in 21.3% of cases (in 20 of 94 patients).

A similar result was observed when analyzing data on the occurrence of periodic nasal breathing difficulties (Fig.1), respectively, in the main group of 27.9% (in 34 of 122 patients) and in the comparison group of 8.5% (in 8 of 94 patients).

The most striking differences were also observed in such symptoms as nasal congestion (49.25% in the main group, 28.7% in the comparison group), headaches (47.5% and 7.4%, respectively), irritability (40.2% and 9.6%, respectively) and negative effects on sleep (69.7% and 27.7%, respectively). According to other symptoms, there were also significant differences, but with less intensity.

Thus, the analysis of indicators of comparative study of complaints of patients with vasomotor rhinitis before and after 14 and 30 days of different treatment methods showed that the effectiveness of the proposed treatment significantly exceeds the traditional method.

Conclusions. The effectiveness of treatment by the method of destruction of the lower nasal conchs using radio wave surgery significantly exceeds the traditional method (ultrasonic disintegration of the lower nasal conchs). This is confirmed by the disappearance of symptoms 14 days after treatment in most patients, as well as high percentages of patients who have a stable improvement in their condition. In the long term (after 30 days) of the study, all 12 studied symptoms remained at the level of the previous study period (after 14 days). A sufficiently high efficiency of both methods of treatment has been established, in which almost all indicators of the functional state of the nasal mucosa significantly changed after treatment in a positive direction. After radiowave surgery, rhinoscopically established the disappearance of edema, hyperemia of the mucous membrane and cyanosis of the nasal shells 14 days after treatment, this positive trend continued 30 days after treatment. In patients who used ultrasound disintegration of the lower nasal conchs, such a vivid dynamics of changes in the rhinoscopic picture was not observed. Ultrasound Dopplerography of the vessels of the nasal mucosa in patients with vasomotor rhinitis before and after different methods of treatment found that mainly in this pathology, only the average blood flow rate (Vmean) changes.

References

1. Valieva S. Sh. et al. Diagnostic tactics of nasal cavity examination in children with congenital cleft palate //European science. – 2021. – №. 3 (59). – Pp. 49-52.
2. Kryukov A. I. et al. Modern aspects of surgical treatment of vasomotor rhinitis //Russian rhinology. – 2017. – Vol. 25. – No. 2. – pp. 10-14.
3. Mezentseva O. Yu. Vasomotor rhinitis //Regional Bulletin. – 2019. – no. 12. – Pp. 11-12.
4. Nurova G. U. Comparative Characteristics Of Minimally Invasive Surgery Of Vasomotor Rhinitis //Topical issues of critical condition medicine. – 2021. – pp. 53-53.

5. Nurova G. U., Nurov U. I., Analysis of social and medical aspects of vasomotor rhinitis //Problems of biology and medicine. - 2020. – Vol. 116. – No. 1. – p. 103.
6. Nurova, G. U. "Possibilities of modern light diagnostics in acute and chronic diseases of the nasal adjuncts." *JOURNAL OF HEALTHCARE AND LIFE-SCIENCE RESEARCH* 2.4 (2023): 55-58.
7. Nurova G. U. et al. Features of diagnosis and treatment of allergic rhinitis in childhood //Finland International Scientific Journal of Education, Social Science & Humanities. – 2023. – Vol. 11. – No. 4. – pp. 455-466.
8. Pryanikov P. D. et al. Modern approach to the treatment of patients with vasomotor rhinitis by electrosurgery //Bulletin of Otorhinolaryngology. – 2015. – Vol. 80. – No. 2. – pp. 63-66.
9. Shodieva M. B., Nurova G. U. Epidemiology, environmental aspects and modern methods of treatment of polypous rhinosinusitis //Research Journal of Trauma and Disability Studies. – 2023. – Vol. 2. – No. 6. – pp. 165-17.
10. Nurov , U. I., Ikramova , F. S., & Alimova , S. A. (2022). Immunological Aspects of Chronic and Recurrent Acute Rhinosinusitis in Children. *Central Asian Journal of Medical and Natural Science*, *3*(3), 31-35.
11. F. S., I., & Sh. A. , A. (2023). Clinicofunctional Efficacy of Complex Treatment of Chronic Adenoiditis Using Phototherapy. *European Journal of Medical Genetics and Clinical Biology*, *1*(1), 53–56.
12. Nurov U. I., Nurova G. U., Rashidov D. R. THE INCIDENCE OF RHINOSINUSITIS AMONG ENT DISEASES IN SCHOOL-AGE CHILDREN //Scientific progress. – 2022. – Т. 3. – №. 4. – С. 28-31
13. Нурова Г. У. Сравнительная Характеристика Малоинвазивной Хирургии Вазомоторного Ринита //АКТУАЛЬНЫЕ ВОПРОСЫ МЕДИЦИНЫ КРИТИЧЕСКИХ СОСТОЯНИЙ. – 2021. – С. 53-53.
14. Нурова Г. У., Нуров У. И., Нурова Г. У. Анализ социальных и медицинских аспектов вазомоторных ринитов //Проблемы биологии и медицины. – 2020. – Т. 116. – №. 1. – С. 103.
15. Нурова Г. У., Эркинов Н. Н., Нуров У. И. ПРИМЕНЕНИЕ РАДИОВОЛНОВОЙ ХИРУРГИИ ПРИ ЛЕЧЕНИИ ВАЗОМОТОРНОГО РИНИТА //Новый день в медицине. – 2019. – №. 2. – С. 237-239.
16. Bahodirovna, T. Z. (2022). CURRENT TRENDS IN FORMATION OF URINARY SYSTEM DISEASES IN SCHOOL AGE CHILDREN AND FEATURES OF THEIR COURSE. *Galaxy International Interdisciplinary Research Journal*, *10*(11), 293-297.
17. Nurova, G. U., & Shodieva, M. B. (2022). MODERN DIAGNOSIS AND TREATMENT OF VASOMOTOR RHINITIS. *Евразийский журнал медицинских и естественных наук*, *2*(10), 79-82.
18. Арифов С. С., Нуров У. И., Нурова Г. У. Ангиофиброма носоглотки у монозиготных близнецов //Новый день в медицине. – 2020. – №. 4. – С. 279-280.
19. Дурова Г. У., Карабаев Х. Э. Современное состояние диагностики и лечения вазомоторного ринита //Новый день в медицине. – 2019. – №. 3. – С. 30-34.