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Original Research Article

Comparison of Headache Severity before and after Rhinosinusitis Surgery in Patients Referred to Clinics in Tabriz

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ABSTRACT

Since a large number of headaches caused by rhinosinusitis improve after surgical treatment, it is expected that the headache will also be treated and its severity reduced to a desirable level; Therefore, the present study was performed with the aim of Comparison of headache severity before and after rhinosinusitis surgery in patients referred to clinics in Tabriz. This prospective descriptive study was performed with the participation of 47 patients with headache due to rhinosinusitis. All patients underwent medication due to severe headache and underwent surgery due to non-response to treatment. The severity of preoperative and postoperative headache in patients was assessed. Response to overall treatment was statistically significant ($P=0.005$). The overall success rate of pain reduction in our study was 83%, with a complete recovery rate of 11% and a significant reduction in symptoms of 72%. 17% of cases did not show a clear change. In the first group, only half of the cases had reduced symptoms ($P=0.041$). In the second group, 100% reduction of symptoms, in the third group, 93% results (86% reduction of symptoms and 7% complete recovery) and in the fourth group, 100% response to treatment (60% complete improvement and 40% reduction of symptoms) Was seen ($P=0.005$). Rhinosinusitis headaches are known as unbearable headaches that do not respond to routine treatments; In most cases, it is confused with migraine, and therefore the drugs used to treat migraine are prescribed to these people, which will not work. The results of this study showed that nasal sinus surgery in patients with severe pain could significantly reduce the severity of their headache.

Keywords: Rhinosinusitis, Headache, Sinus Surgery.

Introduction

Sinusitis and headache: Humans have small spaces around their cheeks, nose and even on their forehead that are full of air, which is called sinus. It should be noted that these small cavities have a soft, cellular covering called the mucosa, which naturally has a small amount of discharge that is emptied through the throat or nose. When a person develops sinusitis, the mucous membranes of the nose, throat, and sinuses themselves become inflamed and swollen(1). By creating this problem, the discharge path is blocked and the sinus outlet is closed. Clogged sinuses create a humid environment that is very prone to infection(2). Sinuses that become infected and unable to drain become full of pus, causing symptoms such as thick, green or yellow discharge and pain in the face and other signs of infection. It should be said that if a few days have passed since the onset of symptoms of sinusitis (between 1 to 3 weeks), it is called acute sinusitis, and if for any reason the treatment is prolonged and the patient does not recover and has permanent problems, It is called chronic sinusitis. It is noteworthy that most sinusitis is the same as acute sinusitis(3 , 4). Among the factors that lead to sinusitis is the deviation of the nasal septum, the size of the branches in the nose. Colds can also cause sinusitis, but if the swelling and inflammation from the cold are accompanied by an infection, any cold with a headache may be confused with sinusitis(5 , 6). Inflammation or blockage of the "sinuses" causes sinusitis. Sinuses are hollow cavities in the bones of the face that usually produce secretions, but due to a cold or allergies to various factors, these secretions increase and get stuck in these cavities(7). Accumulation and obstruction of these secretions in the sinus cavities cause mild and chronic pain and eventually sinusitis. Sinusitis and headache are usually together. Sinusitis is usually caused by an allergy or a virus, this disease is basically inflammation of the sinuses(8). Which are attached to the nose and are located around the nose and between the eyebrows and around them. Hands appear everywhere in front of people. Sinus headaches occur when the sinuses, air-filled cavities around the nose, eyes, and cheeks become filled with blood and sputum and become inflamed and blocked(9). Since a large number of headaches caused by rhinosinusitis improve after surgical treatment, it is expected that the headache will also be treated and its severity reduced to a desirable level; Therefore, the present study was performed with the aim of Comparison of headache severity before and after rhinosinusitis surgery in patients referred to clinics in Tabriz.

Material and Methods

This prospective and descriptive study was performed on 47 patients over 3 years based on the following criteria: 1. History of chronic and intermittent headache or facial pain. 2. Absence of acute or benign inflammatory symptoms on examination and CT scan. 3. Ineffectiveness of previous medical treatments. 4. Presence of a point of contact at least in rhinoscopy, endoscopy, CT scan or response to local anesthesia or a combination thereof. 5. Lack of specific cause for headache (ocular, dental, neurological and internal causes). Before the operation, the severity of the headache was assessed based on the visual pain scale, which zero means no headache and 10 means the worst headache severity, and then a questionnaire was filled out and information was collected. All patients underwent rhinoscopy and diagnostic endoscopy. CT scan was performed in all cases in coronary position. If the person presented in the headache phase, tetracaine local anesthesia and nafazoline local narrowing test were performed. After the selection and candidacy of patients, depending on the problem and type of pathology, surgery was performed, which included septoplasty (80%), turbinoplasty (55%), partial turbinectomy (40%) and partial or complete ethmoectomy (65%), all of which were performed endoscopically. Only in cases where there was obvious septal deviation was direct light surgery performed as standard. After surgery, routine care of a rhinoplasty such as antibiotics, painkillers (if needed) and removal of the nasal pack was performed 2-3 days later. Patients were followed up at different intervals and the severity of headache in the period of 14-26 months was measured again with a visual pain scale. CT scan after surgery was performed only if there was no response to treatment and with the patient's consent. To better evaluate the results, patients were divided into 4 diagnostic groups: The first group: those who had only a history and examination of rhinoscopy or point-based endoscopy. The second group: those who tested positive for tetracaine and naphazoline in addition to the first case. The third group: those who, in addition to the first case, showed a CSS scan based on the point of contact. Group 4: Those who had all three of the above conditions.

Results

Of the 47 patients studied, 11 were excluded due to lack of follow-up (a total of 36 patients). Tetracaine and naphazoline were tested in 17 cases, of which 12 were positive and 5 were negative, and were grouped according to CT scan status. The duration of the patients' headache

was 2 to 4 years; The mean age of participants was 31.41 ± 2.96 years. (Age range was between 19 and 52 years) The clients were 24 males and 12 females. Fourteen patients had previously been unsuccessfully treated for migraine and nine had been referred by a neurologist. There were 10 patients in the first group, 7 patients in the second group, 14 patients in the third group and 5 patients in the fourth group. The results were analyzed before and after surgery by ANOVA method. Response to overall treatment was statistically significant ($P = 0.005$). The overall success rate of pain reduction in our study was 83%, with a complete recovery rate of 11% and a significant reduction in symptoms of 72%. 17% of cases did not show a clear change. In the first group, only half of the cases had reduced symptoms ($P = 0.041$). In the second group, 100% reduction of symptoms, in the third group, 93% results (86% reduction of symptoms and 7% complete recovery) and in the fourth group, 100% response to treatment (60% complete improvement and 40% reduction of symptoms).) Was seen ($P = 0.005$). Also, there is a statistically significant difference in the severity of postoperative headache between the groups, which is the largest difference between the first group and other groups ($P=0.001$). But despite the further decline in group 4, no significant difference was seen between groups 2, 3 and 4. In 14 patients who had previously been diagnosed with migraine with unsuccessful treatment, after surgery in 9 cases (64%) significant reduction of symptoms, 2 cases (14%) complete recovery and a total of 78% overall effect was seen.

Discussion

Sinuses are air-filled cavities in the bones of the skull and face. Any factor that causes them to fill and clog with mucus or pus will cause sinusitis. Colds, tenderness and septal deviation are the causes of this disease. Pain, mild fever, runny nose, and runny nose, especially in the morning, are symptoms of this disease(10). Morning headaches when waking up clearly indicate a sinus problem. Also pain in the forehead, in the area of the forehead sinuses when touched, pain in the upper jaw and teeth and painful cheeks when touching (due to infection of the maxillary sinuses), swelling or pain in the tissue around the eyes or around the nose, olfactory disturbance and stuffiness Nose is another symptom of the disease (11). Also, damage to the activity of the larynx and larynx in people who smoke or those who live in an environment with severe air pollution causes dryness of the nasal mucosa and sinuses and eventually sinus infection. Swimming, and especially diving, in contaminated pools where contaminated water is forced into the sinuses can

lead to sinus infection (12). Air sinusitis due to changes in air pressure in high altitude flights can block the sinus holes and cause negative pressure and secretion in the sinuses and eventually sinusitis. In many cases, allergic sinusitis may be confused with infectious sinusitis. Allergic constipation is commonly called allergic rhinitis, and doctors avoid calling it sinusitis. Migraines are also sometimes confused with sinus headaches. Sinusitis can cause different symptoms in children of different ages. Younger children are more likely to have cold-like symptoms, including runny or stuffy nose and a mild fever. The root cause of an acute sinus infection is otitis media. The middle ear and sinuses are normally sterile, but there are a variety of bacteria near them in the mouth and nose. Under normal circumstances, tiny cilia move along the lining of the nose and airways, keeping the sinuses clean. These pulsating lashes, with rhythmic movements back and forth like a microscopic broom, trap microbes, irritants, dust, and allergens and push them toward the nostrils or back of the throat and stomach. When the function of these lashes is impaired, the infection can settle. Following a common cold, reduced ciliary function may allow bacteria to remain on the mucous membrane surfaces of the sinuses, causing purulent sinusitis. Sinusitis-causing organisms include *Haemophilus influenzae*, *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Streptococcus pyogenes*, and many other penicillin-sensitive anaerobic bacteria. Sinusitis can also be caused by an infected tooth. If treatment with antibiotics or repeated lavage does not improve the condition, steroid sprays may be prescribed to relieve the swelling and antihistamines to relieve allergic reactions. Of course, antihistamines, as a side effect, can cause the secretion of dry, thick mucus. In severe cases, endoscopic surgery may be needed to clear the blockage. Traditional medicine introduces some plants as sinusitis therapists, the use of which in the form of hot fumigation can have very good effects on the treatment of sinusitis. Sinus ducts and helping to empty them will help a lot. Also, rinsing the nasal passages with water or a combination of physiological serum (dilute saline) can be effective in reducing the worsening of sinusitis.

Conclusion

Rhinosinusitis headaches are known as unbearable headaches that do not respond to routine treatments; In most cases, it is confused with migraine, and therefore the drugs used to treat migraine are prescribed to these people, which will not work. The results of this study showed

that nasal sinus surgery in patients with severe pain could significantly reduce the severity of their headache.

References

1. W. Qin, M. Baruah, A. Stefan, M. Van der Auweraer, N. Boens, *ChemPhysChem*. 6, 2343 (2005).
2. D. Frath, JE. Yarnell, G. Ulrich, FN. Castellano, R. Ziessel, *ChemPhysChem*. 14, 3348(2013).
3. G. Ulrich, A. Barsella, A. Boeglin, S. Niu, R. Ziessel, *ChemPhysChem*. 15, 2693 (2014).
4. ML. Agazzi, JE. Durantini, NS. Gsponer, AM. Durantini, SG. Bertolotti, EN. Durantini, *Chem Phys Chem*, 20, 1110 (2019).
5. Z-H. Pan, G-G. Luo, J-W. Zhou, J-X. Xia, K. Fang, R-B. Wu, *Dalton Trans.*, 43, 8499 (2014).
6. J. Kabatc, B. Jedrzejewska, A. Bajorek, and J. Paczkowski, *J. Fluoresc*, 16, 525 (2006).
7. EN. Kaya, B. Köksoy, S. Yeşilot, M. Durmuş, *Dyes and Pigments*, 172, 107867 (2020).
8. Y. Liu, L. Yang, C. Ma, A. Tangb, *Dyes and Pigments*, 173, 107981 (2020).
9. A. Ortiz, *Dyes and Pigments*, 171, 107690 (2019).
10. T. Rappitsch, I. Klimant, S.M. Borisov, *Dyes and Pigments*, 174, 108037 (2020).
11. T. Xu, C. Yan, Y. Wu, C. Yuan, X. Shao, *Dyes and Pigments*, 168, 235 (2019).
12. Z. Khanjari, B. Mohtat, R. Ghiasi, H. Djahaniani, F. K. Behbahani, *Main Group Chemistry*, 20, 59 (2021).

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