RHINOGENIC HEADACHE AND ITS MANAGEMENT

Adnan[1], Ihsanullah[2], Saeed Khan[1], Anwarul Haq[3], M. Javaid[1], Isteraj Shahabi[1]

[1]Department of ENT, Hayatabad Medical Complex, Peshawar - Pakistan

[2]Department of ENT, Saidu Group of Teaching Hospitals, Swat - Pakistan

[3]Department of Medicine, Hayatabad Medical Complex, Peshawar - Pakistan

ABSTRACT

Objective: To know the etiology of Rhinogenic Headache and its management.

Material and Methods: This was a prospective study conducted on 18 patients who were diagnosed as contact point headaches, conducted in the department of ENT, Hayatabad Medical Complex, Peshawar from January 2014 to December 2014.

Results: In our study 38% were females and 11% were males. On clinical examination 66% had septal spurs and 27% had enlarge inferior turbinates. The symptoms were relieved by septoplasty and inferior turbinectomy. Two patients after septoplasty and one after turbinectomy were not relieved of the symptoms.

Conclusion: Our experience demonstrates that this is an anatomic problem, no medicine can really help. These headaches can be very difficult to diagnose and as some anatomical nasal abnormalities play a very important role in rhinogenic headache, as long as a precise identification of the anatomical factor can be made. However, surgery can help bring relief from these types of headaches.

Key Words: Rhinogenic, Headache, Concha bullosa, Septal spur.

INTRODUCTION

Rhinogenic headache is a headache or facial pain syndrome secondary to mucosal contact points in the nasal/sinus cavities in the absence of inflammatory sino-nasal, purulent discharge, sino-nasal polyps, sino-nasal masses, or hyperplastic mucosa. It has multiple synonyms used frequently in the literature which include rhinopathic headache, sinogenic headache, middle turbinate headache, nasal spur headache, four finger headache, sinus headache, contact point headache, and Sluder headache. Rhinogenic headache is a controversial, but distinct type of headache that has received an increased amount of attention in the literature over the past 20 years. With the advent of endoscopic sinus surgery, a renewed interest in headache surgery began in the late 1980's. Stammberger and Wolfe described a potential mechanism for nasal mucosal contact point headaches in 1988[1]. According to their theory mechanical contact between two mucosal surfaces in the nose or sinuses creates a sensory stimulus which is known as axonal reflex. Sensory nerve endings primarily from of ophthalmic and maxillary division of trigeminal nerves which extends into the nasal mucosa and nearly to the cell surface. The axonal reflex results in the release of substance P, a vasoactive neuropeptide found in unmyelinated C fibers. Substance P causes vasodilatation, plasma extravasation, histamine release, and other inflammatory events. These vascular phenomenon may be responsible for migraine-like headache symptoms. Since V1 innervates the dura, this mechanism may also involve referred pain described above from V2/V3. Headache is a common complaint which otolaryngologists evaluate in practice. Therefore, it is, the diagnostic criteria is listed below: Diagnostic criteria: A. Intermittent pain localized to the periorbital and medial canthal or temporozygomatic regions B. Clinical, nasal endoscopic and/or CT imaging evidence of mucosal contact points without acute rhinosinusitis C. Evidence that the pain can be attributed to mucosal contact based on at least one of the following. Pain corresponds to gravitational variations in mucosal congestion as the patient moves between upright and recumbent postures. Pain resolves within 7 days, and does not recur, after surgical removal of mucosal contact points.[2]

Address for Correspondence:
Dr. Adnan
Senior Registrar
Department of ENT, Hayatabad Medical Complex,
Peshawar - Pakistan
Cell: 0333-9114909
E-mail: istogna@yahoo.com

MATERIAL AND METHODS

This study was done in ENT Unit, Hayatabad Medical Complex, Peshawar. In this study 18 patients with headache with septal spurs and hypertrophied middle turbinates with in contact with lateral nasal wall were subjected to septoplasty/ partial middle turbinectomy.

All these patients were given nasal decongestions for 15 days to see results for improvement in headaches. Those cases who relieved in their symptoms were labeled as rhinogenic headache. All 18 cases subjected to nasal surgery were then followed for 3 months for their symptom of headache. All patients underwent a detailed history and rhinologic, neurologic, and ophthalmologic evaluation. Otolaryngological examinations comprising X-ray nose and paranasal sinuses were undertaken in all patients. Rhinogenic headache due to anatomical nasal abnormalities was defined as chronic headache, with normal neurologic and ophthalmologic examinations. Inclusion criteria were as follows: (1)Headache was the principal or only complaint, where as other sinonasal symptoms were vague or absent. (2) Long term headache which was refractory to medical treatment and lasted more than 1 year. Exclusion criteria were as follows: (1) A neurologic problem, such as migraine, cluster headache, or brain tumor. (2) Chronic headache that is caused by ophthalmologic disease. (3) Patients had clinical or other evidence of sinusitis, mucocele, or pyocele. (4) Sinonasal tumor was found under preoperative evaluation. (5) Patients refused surgery.

RESULTS

In our study, 18 cases were diagnosed as rhinogenic headaches after clinical examination, neurological and ophthalmological consultation, 7 (38%) were female and 11 (61%) were male shown in Table 1. On examination 12 (66%) patients have septal spurs and 5 (27%) patients were having enlarged middle turbinate as in Table 2. All case were subjected to surgery. 12 septoplasty and 5 were treated with partial middle turbinectomies (Table 3). All cases were followed up to 3 months. 10 (83%) out of 12 cases with septoplasty patients were relieved from headache and remaining 4 were have same complaint of headache. 4 (80%) of 5 patients with concha bollusum were relieved after surgery as shown in Table 3. Two patients after septoplasty and 1 after partial middle turbinectomy remained with same complaints and had no effect of surgical treatment.

Table 1: Sex of patients

Gender	No. of patients & percentage
Male	11(61.11%)
Female	7(38.88%)

Table 2: Nasal Abnormality

Type of abnormality	No. of patients & percentage
Septal spurr	12(66.66%)
Hypertrophied Middle turbinate/	5(27.77%)
Concha bullosa	5

Table 3: Type of surgery and results

Surgery	No.	Releived	Percentage
Septoplasty	12	10	83.33%
Partial middle turbinectomy	5	4	80%

DISCUSSION

Over the years many theories have been proposed to explain exact pathophysiology of primary headaches with a possible nasal origin until the advent of nasal endoscopy and computed tomography scanning (CT) has greatly challenged this problem. Headache is a frequent and common painful state, which affects humans. Headache may remain undiagnosed in spite of detailed examination and elaborate battery of tests. Some of these undiagnosed cases may be of rhinosinugenic origin even when the cause is not suspected on preliminary evaluation. Besides their resistance to the ordinary medical anti-headache measures, rhinogenic headache patients usually show underlying endoscopic and/or radiological sinonasal changes in the form of anatomic variations and/or mucosal disease. Stammberger and wolf, noted that many sinonasal anatomic variations might predispose to headache by narrowing the already narrowed ethmoid recess.[1] These anatomic variations shouldn't be considered disease. Only contact of opposing mucosal surfaces may impede the ventilation and drainage of the larger sinuses with resulting hypoxia that serves as a mechanical stimulus that triggers referred pain. It is believed that contact between two adjacent nasal structures is the source of the pain and if surgically corrected the pain will resolve.

Suspect rhinogenic headache in a patient whose pain seems out of proportion to the allergic/infectious findings. Examine the nose for a “contact point,” the presumed origin of the pain.

In our study we follow the patient with detailed history, a thorough ENT examination with a formal nasal endoscopy. During nasal endoscopy, a routine examination of the septum, turbinates, and osteomeatal complexes is carried out. Contact points or trigger points are looked for, in particular the presence of a septal spur abutting the middle or inferior turbinate, concha bullosa, retroverted middle turbinate, pus exuding from the osteomeatal complex, or any other anatomical abnormality as described above. Therefore, following an extensive history, a thorough ENT examination with nasal endoscopy, diagnosis can be made as to whether or not this facial pain and/or headache may be rhinogenic in nature. Prior to surgery, a full discussion of risks, benefits, and alternatives was explained to patient. Surgery then performed to correct septal deviation or hypertrophied middle turbinate that are felt to be the cause of the headache.

In our study male outnumbered females making figures of 11 (61%) compared to female 7 (38%) similar to studies Moustafa S. Hammad.[3] El Hoseny Sherief et al also has similar number of patients in terms of male to female percentage[4]. In 12 patients with septal spur, septoplasty was performed and 10 (83%)patients

relieved from headache. Low and Willatt evaluated 50 patients who had 64% relief following septoplasty.[5] For cases diagnosed as hypertrophied middle turbinates, partial resection of the concha carried out. We observed 10 out of 12 patients (83%) in septoplasty group and 4 (80%) in partial middle turbinectomy group relieved with surgery as stated by Hosney in his results. Kunachak noted that 55 patients who underwent middle turbinate lateralization had complete resolution of their headache in 87% of cases with a mean follow-up of 50 months turbinate lateralization[6]. Mariotti et al published a case series of 33 patients who underwent surgery for rhinogenic headache. Mariotti theorized that patients with a greater surface area of mucosal contact would tend to benefit the most from surgery.[7] Contrary to our findings Abu-Bakra and Jones concluded that nasal mucosal contact points are coincidental. Abu-Bakra and Jones performed a retrospective review of 973 patients evaluated to determine the correlation of headache complaints and nasal mucosal contact points[8]. Two patients after septoplasty and 1 after partial middle turbinectomy remained with same complaints and had no effect of surgical treatment which support Abu Bakra hypothesis. The evidence in the literature supporting the existence of headaches from mucosal contact points and effectiveness of surgery in correcting them are limited largely to uncontrolled cases series with short follow-up periods. Abu-Bakra and Jones reported a small case series of four patients who underwent surgery for rhinogenic headache.[9] All patients experienced improvement between 2-12 months, but 3 patients had return of symptoms by two years. They argued that improvement in headache after surgery could be from the placebo effect or a temporary alteration in sensory pathways caused by surgical trauma[10,11].

CONCLUSION

History, examination, and nasal endoscopy including computer tomography of the sinuses are essential in determining whether or not the cause of headache is rhinogenic. If a diagnosis of rhinogenic headache is made, then firstly aggressive medical therapy with appropriate referral to a neurologist is indicated, before any surgical therapy is warranted. In this way, the patient's headache will not become your headache.

REFERENCES

1. Stammberger H, Wolf G: Headaches and sinus disease: The endoscopic approach. Ann Otol Rhinol Laryngol 1988.
2. Patel ZM, Kennedy DW, Setzen M, Poetker DM, Delgaudio JM. "Sinus headache": rhinogenic headache or migraine? An evidence-based guide to diagnosis and treatment. International Forum of Allergy and Rhinology 2013; 3(3): 221-30.
3. Moustafa S. Hammad, Mohammed A. Gomaa, Role of some anatomical nasal abnormalities in rhinogenic headache. Egyptian Journal of Ear, Nose, Throat and Allied Sciences 2012. 13 (1); 31-35.
4. El Hoseny Sherief, Yasser Khalil. Ayman Ali, Mohamed Salem. 27 surgical outcomes for rhinogenic contact point headache Menoufiya Medical Journal Surgical outcomes 2012. 25 (2): 75-79.
5. Low WK, Willatt DJ: Headaches associated with nasal obstruction due to deviated nasal septum. eadache 1995.
6. Kunachak S: Middle turbinate lateralization: A simple treatment for rhinologic headache. Laryngoscope 2002.
7. Mariotti LJ, Setliff RC, Ghaderi M, Voth S. Patient history and CT findings in predicting surgical outcomes for patients with rhinogenic headache. Ear Nose Throat J. 2009; 88(5): 926-29.
8. Abu-Bakra M, Jones NS. Does stimulation of nasal mucosa cause referred pain to the face? Clin Otolaryngol 2001; 26: 430-32.
9. Abu-Bakra M, Jones NS. Prevalence of nasal mucosal contact points in patients with facial pain compared with patients without facial pain. The Journal of Laryngology & Otology. 2001; 115: 629-32.
10. Behin F, Behin B, Behin D, Baredes S. Surgical management of contact point headaches. Headache 2005; 45(3): 204-10.
11. Harrison L, Jones NS. Intranasal contact points as a cause of facial pain or headache: a systematic review. Clin Otolaryngol 2013; 38(1): 8-22.

AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Adnan: Design of work, intellectual content, final approval.
Ihsanullah: Bibliography.
Khan S: Statistics.
Haq A: Follow up.
Javaid M: Idea and.
Shahabi I: Overall supervision.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST: Authors declare no conflict of interest

GRANT SUPPORT AND FINANCIAL DISCLOSURE NIL