

## A Clinical Study of Headache in Relation to Chronic Rhinosinusitis

Dr. Debdul Chakraborty<sup>1</sup>, Dr. Ruma Guha<sup>2\*</sup>, Dr. Anton Dev X<sup>3</sup>, Dr. Shivaam Kesarwaani<sup>4</sup>

<sup>1</sup>Department of Ent & Head-Neck Surgery, College of Medicine & Sagore Dutta Hospital, West Bengal, India

<sup>2</sup>Department of E.N.T, Calcutta National Medical College, Kolkata, West Bengal, India

<sup>3</sup>Department of E.N.T, Calcutta National Medical College, Kolkata, West Bengal, India

<sup>4</sup>Department of E.N.T, Calcutta National Medical College, Kolkata, West Bengal, India

### Original Research Article

#### \*Corresponding author

Dr. Ruma Guha

#### Article History

Received: 20.09.2018

Accepted: 08.10.2018

Published: 30.10.2018

#### DOI:

10.36347/sjams.2018.v06i10.010



**Abstract:** Headache in Otolaryngology could be of varied origin and the sinogenic type generally presents with symptoms pointing to the site of origin, however it can only be diagnosed by meticulous clinical examination with or without imaging studies. Present study is conducted for a duration of 2 years in a government medical college of West Bengal, India to study & determine the characteristics and causes of Chronic type of Rhinosinogenic headache in Bengali population and the effect of surgery in these patients. Out of the 200 patients 98 patients had headache due to chronic rhinosinogenic causes. Among these majority had either DNS or osteomeatal complex disease. Majority of cases with rhinogenic headache belong to 11-30 years age group. Frequency of localisation of headache was maximum at forehead. Diagnostic nasal endoscopy (DNE) revealed mucosal contact points in 61% patients. Out the patients that underwent FESS following detection of contact points, 80% had total relief from headache, and 20% had significant symptomatic relief. Some of the patients with other pathologies (DNS, osteomeatal complex disease) also underwent FESS. Post-operatively 30% were completely free of pain, 36.6% had significant symptom improvement and 33.3% had no benefit from surgery. It can be inferred that an improvement in headache in 63-67% of operated patients should be expected after FESS. Medical line of treatment only benefits acute cases of sinusitis. Microdebrider should be used for FESS as it provides atraumatic dissection with minimum bleeding, which enables decreased surgical time and lesser postoperative complications.

**Keywords:** Chronic rhinosinusitis, Headache, FESS.

## INTRODUCTION

Headache being a complaint that is consistently associated with several disorders in the purview of Otorhinolaryngology, an all-round understanding of its etiology and characteristics becomes absolutely essential for the Otolaryngologist. Headache may be due to various causes such as Ear disease, Referred Otalgia, Facial pain due TM joint Dysfunction and Rhinological Causes such as Osteomeatal Complex disease, Septal deviation, Post-traumatic Trigeminal Neuralgia and Facial Sympathalgias. When no clear pathologic condition can be identified, headache is considered to be primary headache. Currently 'Rhinosinusitis' is the preferred term to describe the inflammation of mucoperiosteal layer of the Nose and PNS. Diagnosis of Acute sinusitis associated headache can be straightforward but that related to Chronic Sinus diseases is relatively more difficult to establish [1].

The European position paper on rhinosinusitis and nasal polyps (EPOS) has defined rhinosinusitis to be a diagnosis that is made, based on the presence of

characteristic symptoms combined with objective evidence of mucosal inflammation [2]. Rhinosinusitis can then be further classified as acute or chronic based on duration of symptoms: acute being less than 12 weeks duration and chronic being greater than 12 weeks. Our study aim to study & determine the characteristics and causes of Chronic type of Rhinosinogenic headache in Bengali population and the effect of surgery in the patients.

## MATERIALS AND METHODS

A Retrospective Analysis of 200 cases of headache was done in the present study extending for 2 years, in a Government Medical College of West Bengal, India. Out of the study population only 69 patients had headache due to Rhinosinogenic causes.

The subjects of the study were collected from the patients who presented with headache, in the ENT outpatient department of this hospital. All age groups and both sexes were included.

Detailed history with clinical examination was done in all these patients. Special emphasis was laid on

History of episodes of headache including mode of onset, Frequency, Duration, Type, Nature, Progression, Site and radiation, associated symptoms, aggravating and relieving factors and Treatment taken if any. All patients presenting with clinical features other than chronic sinusitis were excluded.

If the headache was suspected to be of Rhinosinogenic origin, the patients underwent detailed Otorhinolaryngological examination. Routine haematological assessment including total leucocyte count with differential count, haemoglobin, erythrocyte sedimentation rate, bleeding time, clotting time & Urine for Albumin, Sugar and microscopy were done in all these patients.

Rigid nasal endoscopy and CT scan of nose & PNS are at the present time the gold standard investigations for CRS. Endoscopy allows the clinician to assess the nose for the presence of polyps, mucopus discharge or middle meatal oedema. Furthermore the endoscope can be used to accurately sample any mucopus for microbiological analysis in all patients of Headache due to Chronic Rhinogenic or Sinogenic causes [2]. Henceforth, Diagnostic Nasal Endoscopy and Radiologic Investigation (i.e) CT-PNS were performed to confirm the clinical diagnosis that had

been made and to determine the primary underlying pathology

In all cases with chronic Rhinosinogenic pathology, Endoscopic Sinus Surgery was done with or without septoplasty depending on the presence of septal deviation or deformity. The patients were followed up post-operatively to determine the outcome of surgery in these patients.

## RESULTS AND DISCUSSION

In our study a Total of 200 patients with headache had been studied over a period of 2 years. Out of the 200 patients 98 patients had headache due to chronic rhinosinogenic causes. Among them majority had either DNS or osteomeatal complex disease. In addition to these a smaller number of patients having nasal polyps (12 patients) and allergic rhinitis (8 patients) had also presented with headache. Similarly, in the study conducted by de Freitas *et al.*, the patients of polyps along with nasal obstruction also had facial discomfort and headache [3]. Thus the patients with nasal polyposis can also present with headache as a complaint, in addition to other symptoms. According to a study conducted by Wolf, 20% of allergy patients also presented with headache [4].

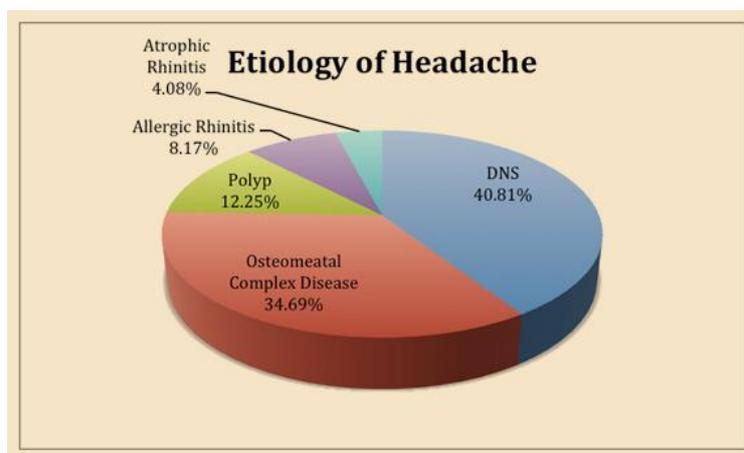


Fig-1: Etiology of Headache in relation to clinical findings

The Highest incidence is present in the age group 21-30years (59.42%), followed by 11-20 years (36.23%), therefore majority of cases rhinogenic headache belong to 11-30 years age group. According

to the study conducted by Pramod Kumar *et al.* the majority of cases of headache belonged to the age group 10-30 yrs[5].

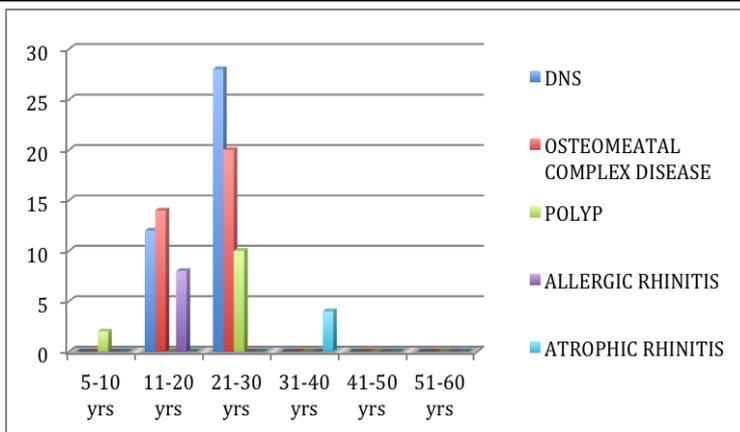


Fig-2: Age Distribution

Table-1: Age distribution

	5-10 yrs	11-20 yrs	21-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs
DNS	0	12	28	0	0	0
Osteomeatal Complex Disease	0	14	20	0	0	0
Polyp	2	0	10	0	0	0
Allergic Rhinitis	0	8	0	0	0	0
Atrophic Rhinitis	0	0	0	4	0	0

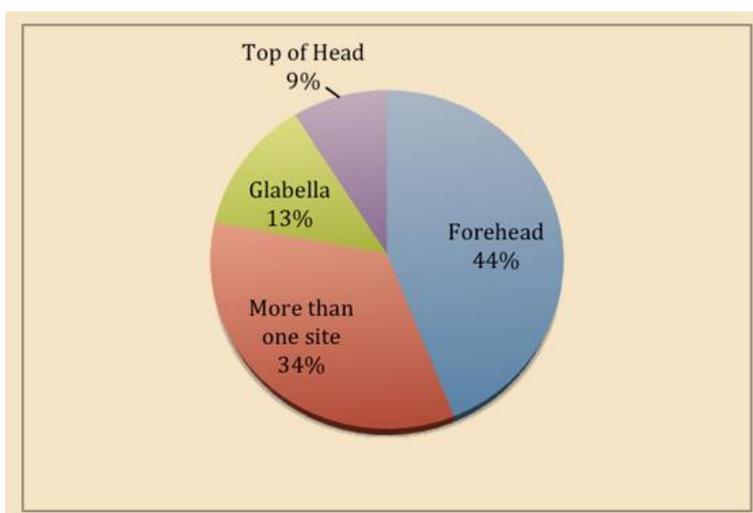


Fig-3: Localisation of Headache

In our study, out of 98 patients of headache due to chronic rhinogenic causes, headache was localised to forehead in 43 patients (43.8%), 33 patients had headache at more than one site (33.6%), 13 patients had headache at Glabella( 13.26%) and 9 patients had headache at top of head (9.18%). In a study conducted by Pramod Kumar *et al.* [5], localization of headache to forehead was seen in 43% of cases, while headache at more than one site was seen in 19%, pain at glabella in 12% and at top of head in 9%[5]. Thus, it can be concluded that headache is localized to forehead in majority of cases.

Diagnostic nasal endoscopy (DNE) was performed on the 98 out of total 200 headache patients, out of which 60 patients (61%) had mucosal contact points. These patients with headache due to mucosal

contact points were advised to undergo Functional Endoscopic Sinus Surgery. Out of 60 patients, 50 patients underwent surgery. Postoperatively, 40 patients (80%) had total relief from headache, 10 patients (20%) had significant symptomatic relief. In a study conducted by Behin *et al.* 23 patients underwent surgical intervention to relieve the contact points. Post operatively eighty-three percent of patients no longer complained of headache. Eight percent had significant relief of symptoms [6]. These studies show that majority of the patients who underwent FESS for mucosal contact points were totally relieved of symptoms.

The remaining 38 patients who had other pathologies (DNS, Osteomeatal complex disease) were also advised to undergo FESS and out of them, 30

patients underwent FESS surgery. Post-operatively, 9 patients (30%) were completely pain-free, 11 patients (36.6%) had significant symptom improvement and 10 patients (33.3%) had no benefit from surgery. Hence there is improvement in 67% of cases. In a study conducted by Welge- Leussen A *et al.* [7], 10 years follow up of 20 patients who had undergone FESS was done. Out of 20 patients, six patients (30%) remained completely free of pain, seven had significant improvement (35%) and seven (35%) received no benefit from surgery (65% improvement).

In a study conducted in Dept. of Otolaryngology, Vajira Hospital, Bangkok, Thailand, FESS was done in 16 patients who had presented with facial pain or headache as principal complaint. Ten patients had no headache postoperatively (62.5%) and six patients (37.5%) had a reduction in severity [8]. Thus, from the above mentioned studies and our own study, it can be inferred that an improvement in headache in 63-67% of operated patients should be expected after FESS.

#### **CONCLUSION**

Headache is nearly a universal human experience. The lifetime incidence of headache is estimated to be at least 90%. Before treating, it should be known if the headache is primary (No clear pathologic condition can be identified) or secondary (metabolic, infectious, inflammatory, allergic, traumatic, neoplastic, immunologic, endocrine or vascular).

A thorough clinical assessment reveals whether the headache is rhino sinogenic or not, then radiological investigations (CT- PNS) is done. Patients also undergo DNE. Medical line of treatment with

antibiotics, antihistamines, anti-inflammatories, nasal decongestants only benefit acute cases of sinusitis.

Ultimately it is FESS that is the cure for headache due to rhinosinogenic causes. Microdebrider should be used for FESS as it provides atraumatic dissection with minimum bleeding, which enables decreased surgical time and lesser postoperative complications.

#### **REFERENCES**

1. Seiden AM, Martin VT. Headache and the frontal sinus. *Otolaryngol Clin North Am* 2001; 34(1):227-41.
2. Carl Philpott. Rhinosinusitis: Scott -Brown's Otorhinolaryngology HNS. 8th edition, p.1025-1034.
3. Freitas MR, Giesta RP, Pinheiro SD, Silva VC. Antrochoanal polyp: a review of sixteen cases. *Rev Bras Otolaryngol.* 2006;72(6):831-5.
4. Donald J, Dalessio. Allergy, atopy, nasal diseases and headache, Wolf's Headache and other Head Pain. 5th edition
5. Kumar P, Chawla P. A correlative study of sinusitis versus headache. *Indian J Otolaryngol Head Neck Surg.* 2000; 52(2):125-7.
6. Behin F, Behin B, Behin D, Baredes S. Surgical management of contact point headaches. *Headache* 2005; 45(3):204-10.
7. Welge-Luessen A, Hauser R, Schmid N, Kappos L, Probst R. Endonasal surgery for contact point headaches: a 10-year longitudinal study. *Laryngoscope* 2003; 113(12):2151-6.
8. Boonchoo R. Functional endoscopic sinus surgery in patients with sinogenic headache. *J Med Assoc Thai.* 1997; 80(8):521-6.