

STUDY OF CORRELATION BETWEEN NASAL ENDOSCOPY AND RHINOGENIC HEADACHESanthosha Kumar B¹, Manjunath Rao S. V²**HOW TO CITE THIS ARTICLE:**

Santhosha Kumar B, Manjunath Rao S. V. "Study of Correlation between Nasal Endoscopy and Rhinogenic Headache". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 17, April 28; Page: 4657-4662, DOI: 10.14260/jemds/2014/2491

ABSTRACT: AIM: To evaluate the usefulness of nasal endoscopy in diagnosing and managing sinogenic headache. **METHODOLOGY:** The study includes 50 patients who presented to the OPD of two tertiary level centres during the period of April 2009 to December 2012, selected on systematic sampling, who had symptoms and signs of chronic headache. **RESULTS:** Among 50 patients 48 patients had Endoscopic abnormalities. 38 cases (76%) showed anatomical/pathological variations, the commonest cause being abnormal uncinate process other changes are septal deviation, polypoidal changes, mucopurulent discharge, enlarged middle turbinate, paradoxical MT, Concha Bullosa. Ethmoid infundibulum 48 patients were taken up for surgical treatment. 94% have shown significant relief from headache over a period of 6 months. **CONCLUSION:** The study highlights the importance of the anatomical/pathological abnormalities in the nose and Paranasal sinuses. Variations in endonasal anatomy may be functional or anatomical combination of these variations cause narrowing of OMU, which predisposed patients to persistent symptoms. This study also highlights the importance of the use of cold light nasal endoscopy for diagnosis as well as surgical correction for respective endoscopic abnormalities in the improvement of symptoms of sinogenic headache and hence the quality of life.

KEYWORDS: Endoscopy, Headache, FESS in Sinogenic Headache.

INTRODUCTION: Headache is a frequent and common painful state, which affects humans. Headache may remain undiagnosed inspite of detailed examination and elaborate battery of tests. Some of these undiagnosed cases may be of rhinosinogenic origin even when the cause is not suspected on preliminary evaluation. Cold light nasal endoscopy has opened new vistas in peeping into inaccessible areas and niches of fronto-ethmoid complex and sphenoid sinus.

Hirshman performed the first attempt at nasal and sinus endoscopy in 1901 using a modified cystoscope.¹ The most significant development in nasal endoscopy was noticed during 1950's when Hopkin's developed solid rod lens with proximal cold light source. In latter part of twentieth century sinonasal endoscopy has been established as an important component in our diagnostic and therapeutic armamentarium². Anatomically, areas of maxillary contact are most likely to occur in the mucosa lined channels of middle meatus and the ethmoid air cells system, in patients with chronic and recurring sinus infections.^{2,3}

The study was conducted in patients with chronic headache to study the anatomical and pathological abnormalities with the help of nasal endoscope, to correlate Endoscopic findings and finally to assess type of cases requiring surgery in patients who are not responding to medical treatment.

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METHODOLOGY: The study includes 50 patients who presented to the OPD of two tertiary level centre during the period of April 2009 to December 2012, selected on systematic sampling, who had symptoms and signs of chronic headache.

INCLUSION CRITERIA: Patients presenting with sinogenic headache. The data is collected on the basis of detailed history, systemic examination, ENT examination and investigations.

EXCLUSION CRITERIA: All patients presenting with clinical features other than sinogenic headache are excluded.

Subsequently all the selected candidates were worked up on the history, general examination, and ent examination carried out. To confirm diagnosis, x-ray PNS was done in all the patients, CT PNS was done in affordable 27 patients, i.e. 54% of patients to confirm the anatomical abnormalities before surgery. Diagnostic Nasoendoscopy under local anesthesia done to record the condition of nasal mucosa, septum, & inferior turbinates and to assess the condition of the nasopharynx and eustachian tube opening, to look for the presence of mucopus or polyp in the middle meatus/sphenoethmoidal recess/nasopharynx. Also, any co-existing anatomical variations of the lateral wall of the nose were noted. Once the diagnosis and extent of the disease was established, the patients were taken up for FESS.

Method of Statistical analysis in this study was done by Chi-square test of significance. Proportions were compared using chi-square (χ^2) test for (r x c) tables.

RESULTS: In present study, majority of the patients belonged to 15-25 years 48%, followed by 28% in 25-35 years. The lowest incidence is seen in the age group 55-65 years and is about 2%. The average age group of study population were 21.20 ± 12.87 . The mean incidence was 29.2 years with median of 25.5 and standard deviation 12.87, minimum age was 15 years and maximum was 68 years.

In present study majority of patients were female. 26 were females and 24 were males in a total of 50 patients. Male: Mean \pm S.D 30.36 ± 13.97 . Female: Mean \pm S.D 28.

In present study group, patients were graded according to severity of symptoms nasal-Nasal obstruction, postnasal discharge, headache, ear pain, dental pain, cough were taken into considerations. 62% patients had moderate nasal symptoms. 38% patients had severe nasal symptom 66% had no non- nasal symptoms, 34% had mild non-nasal symptoms.

Endoscopic abnormalities	Number of abnormalities	Percentage (n = 50)
Abnormal middle turbinate	37	74
Abnormal uncinata process	38	76
Enlarged ethmoid bulla	16	32
Polyp	12	24
Mucopurulent discharge	21	42
Deviated nasal septum	42	84

TABLE 1: ENDOSCOPIC ABNORMALITIES

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In present study, endoscopic abnormalities were found in 42 patients and 3 patients had no abnormality. Majority of patients had deviated nasal septum, as a most common endoscopic abnormality. About 38(76%) had abnormal uncinata process followed by 37(74%) had abnormal middle turbinate. About 16(32%) patients had enlarged ethmoid bulla, 12(24%) patients had polypoidal changes.

Diagnosis	Frequency	Percentage
CRS	3	6
DNS	3	6
CRS + DNS	42	84
Nil abnormality	2	4
Total	50	100

TABLE 2: DIAGNOSIS

In present study group 84% patients diagnosed as chronic rhinosinusitis with DNS, 6% had DNS 6% had chronic rhinosinusitis. 4% patients had no abnormality in nasal cavity as well as lateral wall of nose out of 50 patients. In present study of 50 patients, all patients underwent medical treatment. Out of this, 48 patients underwent both medical and surgical modalities of treatment.

Out of 50 patients who has taken treatment 11 patients had mild nasal symptoms i.e. 22% nasal obstruction was due to crust formation relieved after saline douching in subsequent visits, 6 patients had non nasal symptoms i.e. 12% complained of dry cough, ear pain, relieved with symptomatic treatment during follow up.

About 46% of patients in the age group of 15-25 years underwent nasal surgery and FESS 28% in the age group 26-35 years and 12% in the age 36-45 and 10% in the age more than 45 years underwent nasal surgery and FESS. So among 50 patients taken up for study, 48 patients had undergone FESS with nasal surgery.

Endoscopic abnormalities	Surgical treatment		
	Yes	No	Total
Positive	42	3	45
Negative	6	0	5
Total	48	2	50
$\chi^2 = 2.83$	p > 0.05 (in significant)		

TABLE 3: COMPARISON OF SURGICAL TREATMENT AND ENDOSCOPIC ABNORMALITIES

Among a total of 50 patients, 48 patients, had endoscopic abnormalities who underwent surgical treatment and remaining 2 patients showed negative findings in endoscopic abnormalities, who did not undergo surgical treatment.

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DISCUSSION: Headache can be arising from the paranasal sinuses, which may be missed even after careful history. Nasal endoscopy plays an important role in recognizing pathological changes following radiographic investigations.

Good nasal endoscopic examination, with CT PNS wherever necessary, has proved best ailment for comprehensive diagnosis of chronic inflammatory disease of PNS. Following these definitive reliable techniques with adequate diagnostic information, to determine which treatment modality is required or necessary and also can avoid radical surgery in majority of instances.

Brain L Mathew et al (1991) documented nasal obstruction as the commonest symptoms (n = 146, 96%) followed by postnasal drip (n=143, 12%) and facial pain/headache (n = 139, 90%) overall, 140 patients (91%) believed that surgery was beneficial. Patients with facial pain preoperatively showed greatest improvement.

Nasser A Fageeh in a study of 129 patients with CRS showed that the commonest complaint was nasal obstruction (76%), followed by headache (74.4%)s anosmia (56.5%) and facial pressure/pain (50%). Post operatively, patients were followed up for 6 months. The most significant improvement was noticed in patients with nasal obstruction (60%). The least improvement occurred in patients with anosmia (40%). All the symptoms were assessed pre and postoperatively according to the severity of their symptoms by allotting grades. 85% of patients had favourable opinion of procedure, recommend it to others with similar problems.

Jakobsen J and Svendstrup F (2000) conducted a prospective study on 237 consecutive patients suffering from chronic sinusitis and or nasal polyposis. Nasal obstruction was the most frequent symptom (61%) followed by purulent nasal discharge, anosmia, frontal pain, headache and maxillary pain. Duration of symptoms averaged 9.3years. At the end of 1 year follow up 45% were totally satisfied with the results and were symptom free and 44% were definitely feeling better.

Damm M et al (2002) conducted a study on patients with CRS to assess impact of FESS on the symptoms profile. Leading symptoms of CRS were nasal obstruction (92%) and postnasal drip (87%). Furthermore, patients reported dry upper respiratory tract syndrome in 68%, hyposmia in 66%, headache in 64% and asthmatic complaints in 34%. After a mean postoperative follow up of 31.7 months, an improvement in quality of life was achieved in 85%, no change in 12% deterioration in 3% mainly responsible for this improvement was the postoperative decrease of nasal obstruction (84%), headache (82%) and postnasal drip (74%). (All symptoms; p < 0.01). Hence it was concluded that symptoms improved in excellent fashion by FESS in majority of the patients, achieving better quality of life in the long term.

The most common minor complication was postoperative bleeding, which was managed successfully with nasal packing. Synechiae were next common complication, released during postoperative follow up. One minor complaint was CSF leak, was managed conservatively, improved without any sequele. Our complication rates are the same as reported by other authors. Average postoperative healing time was 4-8 weeks. A few of them required 12 weeks, during regular visits, nasal toilet was done to remove crusts/debris. This time of healing is consistent with other authors.

Schaffer SD et al(1999), in this study noticed minor complications in 14 patients, the most common complication being synechiae between middle turbinate and septum in 6 patients, resulting in revision surgery in four patients. Brain L Mathew (1991) in his study, hemorrhage occurred post operatively in 2 patients (1.5%). In the series conducted by Howard L Levine (1990) 8.3% developed minor complications and 0.7% developed major complications.

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CONCLUSION: In present study 45 patients were found to have abnormal pathological findings, and 5 patients had typical structure of lateral nasal wall. Among anatomic variants, deviated nasal septum with mucopurulent discharge followed by abnormal unicante process, abnormal middle turbinate resulted in significant narrowing of OMC. Most of these patients were not relieved with medical treatment had anatomical variations and such patients were posted for surgical treatment.

To conclude, combination of thorough nasal endoscopic examination and CT of PNS for diagnosis of functional status of nose and PNS, surgical treatment of functional and anatomical variations include resection of anatomical abnormalities or small pathological lesions in intricate lateral wall of nose may only be required to alleviate nagging chronic intractable headache.

So nasal endoscopy is useful for diagnosis as well as for surgical intervention and management of sinugenic headache.

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Fig. 1: Neck swelling in left supraclavicular

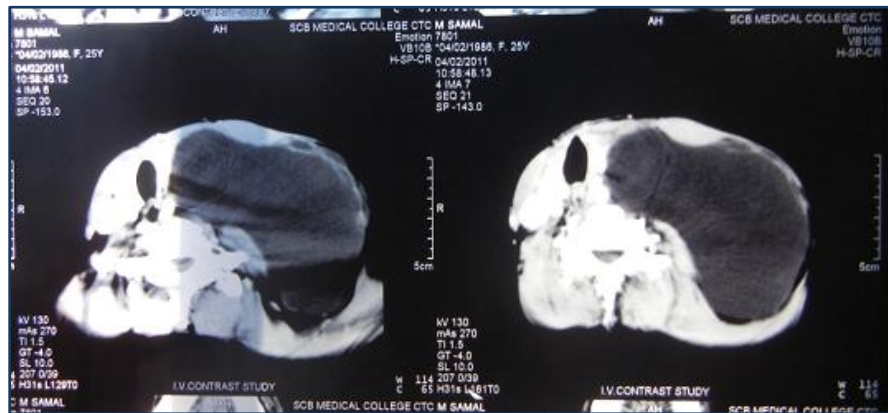


Fig. 2: CT SCAN: 8x9x10 cm lobulated cystic mass deep to the right sternomastoid and lateral to the carotid and jugular vessels space

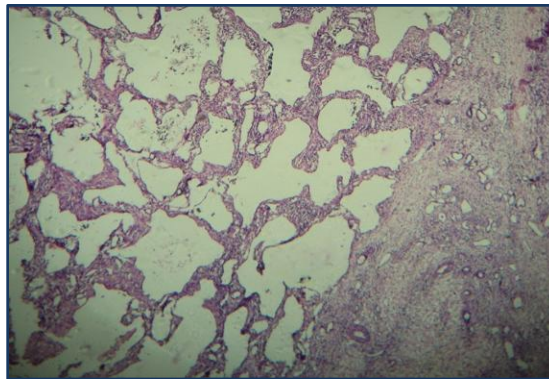


Fig. 3: Histological findings: Dilated lymphatic spaces lined by endothelial cells and separated by intervening connective tissue containing lymphoid aggregates

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