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ROLE OF NASAL ENDOSCOPY IN CHRONIC RHINOSINUSITIS: AN OVERVIEW

Dr. Sweta Mary Sabu — PG, department of Otorhinolaryngology, SRM Medical College Hospital and research centre ,SRM Nagar, Kattankulathur, Kancheepuram- 603203, Tamil Nadu, India

Dr. P. K. Purushothaman — Professor & HOD, Department of ENT,SRM Medical College Hospital & Research Centre, ,SRM Nagar, Kattankulathur, Kancheepuram- 603203, Tamil Nadu, India

Dr. Mita Mariam Sabu* — Pg, Department Of Otorhinolaryngology, SRM Medical College Hospital And Research Centre ,srm Nagar, Kattankulathur, Kancheepuram- 603203, Tamil Nadu, India *Corresponding Author

ABSTRACT

INTRODUCTION: Chronic Rhinosinusitis (CRS) is a common disease with a major impact on quality of life. Diagnostic nasal endoscopy emerged as better diagnostic modality for early detection of Chronic Rhino sinusitis.

MATERIAL AND METHODS : The observational study was done among patients who were diagnosed with Chronic rhinosinusitis.All patients were subjected to thorough ENT examination with special emphasis on anterior and posterior rhinoscopy.

RESULTS: A total of 240 people were included in the analysisaged between 18 to 65 years diagnosed with chronic rhinosinusitis.The mean age of study population was 37.36 years with a standard deviation of 11.75. The most common clinical presentation in our study was nasal obstruction (81.7 %%) followed by rhinorrhoea/nasal discharge, headache, sneezing and facial pain. Among 240 study subjects 115 (47.9%) had right nasal deviation and 98(40.8%) had left nasal deviation .i.e. 88.7% had septal deviation.

CONCLUSIONS: The study had documented the nasal endoscopic features of Chronic Rhinosinusitis. The study findings will be useful in understanding the disease profile for health care practitioners at various levels.

KEYWORDS : Chronic rhino sinusitis, nasal endoscopy, diagnosis

INTRODUCTION

Rhinosinusitis is a broad diagnostic term that encompasses spectrum of disorders involving concurrent inflammation of the mucosa of the nose and para nasal sinuses.[1]Chronic rhinosinusitis (CRS) is defined as a group of disorders characterized by inflammation of the mucosa of the nose and one or more of para nasal sinuses for at least 12 consecutive weeks.[2] It may be unilateral or bilateral. It is one of the most commonest disease presentation among patients with major symptoms like facial pressure or pain, nasal obstruction, nasal discharge or purulence on examination, fever and hyposmia or anosmia. The minor symptoms include headache, halitosis, fatigue and dental pain.[3]Structural anatomical obstruction, recurrent respiratory infections,allergies, biofilm formation and less commonly ciliary dyskinesia, mucopolysaccharoidosis and cystic fibrosis are the known etiological agents of the disease.[4,5]

It is estimated that about 134 million Indians have Chronic RhinoSinusitis (CRS) which is more than double the number of people with diabetes in India and 1 in 8 Indians suffer from CRS.[6]Hence diagnosis and treatment of this highly prevalent disease are essential.

The diagnosis often gets delayed in resource limited settings, due to non-availability of definitive investigations. Confirmation of CRS by an objective measure is essential since symptoms can be nonspecific and these symptoms can be mimicked by several other diseases such as upper respiratory tract infection, allergic rhinitis. [2]Diagnostic nasal endoscopy is a routine component of the clinical evaluation of every patient with evident or suspected disease of the nose and paranasal sinuses. [7]Nasal endoscopy is an excellent investigation tool where diagnostic and therapeutic advances can make disease process more accessible.It is a minimally invasive, diagnostic medical procedure and currently the preferred initial method of evaluating medical problems such as nasal stuffiness and obstruction, sinusitis, nasal polyps, nasal tumours, and epistaxis.[8] So, the current study was done to explore the role of nasal endoscopy in diagnosing chronic rhinosinusitis.

MATERIALAND METHODS

The current prospective observational study was conducted in the department of otorhinolaryngology, at SRM medical college and Hospital, Chennai. The patients who were diagnosed with Chronicrhinosinusitis in the department were considered as the study population.A total of 240 cases were included in the final analysis.The study had included patients aged between 18 to 65 years, of either gender, presenting with symptoms suggestive of chronic rhinosinusitis. Patient with a chronic illness like diabetes, hypertension etc, those with history of previous sinonasal surgery, Sinonasal malignancy, Cystic fibrosis, patients with autoimmune disease and patients suffering from immunocompromised disorders were excluded from the study.

All patients were subjected to thorough ENT examination with special emphasis on anterior and posterior rhinoscopy. Nasal Endoscopy was done using Hopkins rod endoscopes (0º and 30º) - diameter 2.7mm/ 4mm, length 18 cm after administering a spray puff of Xylocaine with adrenaline (10 drops of adrenaline to 2 ml of Xylocaine). Presence or absence of (1) mucosal edema (2) watery or purulent discharge and (3) polyps was recorded. The data of 250 patients was entered into Microsoft Excel and analysed using SPSS version 16.Demographic data was summarised descriptively. Continuous variables were expressed as mean±standard deviation. Categorical variables were presented as percentages.

RESULTS

Table 1: Descriptive Statistics (N= 240)

Variable	Category	Frequency (%)
Age(years)	<30	82(34.2%)
	31-40	73(30.4%)
	41-50	48(20%)
	>51	37(15.4%)
Gender	Male	124(51.7%)
	Female	116(48.3%)

The mean age of study population was 37.36 years with a standard deviation of 11.75. The minimum age was 19 years and maximum 71 years. About 34.2% of study populated belonged <30 years .Majority (51.7%) was males. (Table 1)

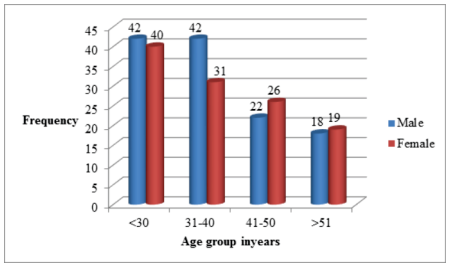

Figure 1 Age-Gender distribution of study subjects

Majority of study subjects were in the age group of <30 years and 31-40 years and number of males and females were equal in these age groups.

Table 2: Symptoms distribution of study subjects

Symptoms	Frequency	Percentage
Nasal obstruction	196	81.7%
Nasal discharge	145	60.4%
Post nasal discharge	39	16.3%
Facial pain	92	38.3%
Sneezing	102	42.5%
Headache	124	51.7%
Anosmia	29	12.1%

Majority (81.7%) of study subjects had nasal obstruction. About 60% had complains of nasal discharge and 51 % had headache. (Table: 2,Figure:3)

Figure 2: Symptom distribution among study subjects

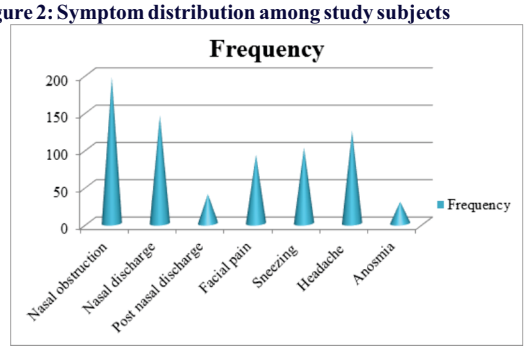

Table 4: Distribution of study subjects based on diagnosis

Diagnosis	Frequency	Percentage
Right nasal deviation	115	47.9
Left nasal deviation	98	40.8
Hypertrophy right inferior turbinate	24	10
Hypertrophy left inferior turbinate	20	8.3
Concha bullosa right middle turbinate	44	18.3
Concha bullosa left middle turbinate	18	7.5
Polyp right middle turbinate	38	15.8
Polyp left middle turbinate	77	32.1
Mucopurulent discharge Right middle meatus	30	12.5
Polyp right middle meatus	37	15.4
Mucopurulent discharge left middle meatus	41	17.1
Polyp left middle meatus	71	29.6

Among 240 study subjects 115 (47.9%) had right nasal deviation and 98(40.8%) had left nasal deviation .ie 88.7% had septal deviation.According to diagnostic nasal endoscopy,71 of 240 subjects had polyp in left middle meatus and 62 had concha bullosa right and left middle turbinate.

DISCUSSION

Nasal endoscopy is an essential part and routinely performed by otolaryngologists for evaluation of various sino-nasal diseases. The use of the endoscopes has been popularised with the advent of endoscopic sinus surgery. This popularity, along with the high incidence of chronic rhinosinusitis, has resulted in the increasing frequency of use of endoscopes for both diagnostic and therapeutic reasons.[9]

In the present study we included 240 patients with 34.2% of study populated belonged <30 years and 51.7% were male. This was similar to a study done by Srivastava et al. [10] The most common clinical presentation in our study was nasal obstruction (81.7 %%) followed by rhinorrhoea/nasal discharge, headache, sneezing and facial pain. Studyby Srivastavaetalshowed that the most common clinical presentation was nasal obstruction (89%) followed by rhinorrhoea, post nasal drip and headache. Post Nasal discharge, and anosmia were also observed among the patients. This was similar to another study done by Gautam et al. [11]

In our study 88.7% had septal deviation which was higher than another study where 45% had deviated nasal septum[10] because all our study subjects where diagnosed with chronic rhino sinusitis.

The current study also revealed that nasal septum deviation was the most common sign among the people with CRS followed by polyp right and left middle turbinate. Other signs like hypertrophied inferior turbinate, mucopurulent discharge were also noted among the recruited patients. Venkatchalam et al observed hypertrophied inferior turbinate and hypertrophied middle turbinate and congested mucous membrane.[12]

Anatomic variations such as deviated nasal septum, concha bullosa, and polyp in middle turbinate can easily be identified with nasal endoscopy but information on their anatomic details and expansion of the sinus disease cannot be obtained.

CONCLUSION

From current study, it is concluded that CRS has a higher preponderance in male patients and is commonly seen in the age group of 21 to 30 years. Septal deviation was found in majority of patients.Diagnostic nasal endoscopy can prove to be a better diagnostic modality compared to CT scan when conditions like middle meatal secretions, condition of mucosa, polyps are looked for. Early detection of polypoidal and other pathological changes help in medical management of sinonasal diseases and prevent unnecessary surgery.Easy availability, cost effectiveness and user-friendliness help patients for early diagnosis. Diagnostic nasal endoscopy can prove useful in taking precise biopsy, to know the exact pathology and to plan further management for benign nasal lesions.

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