RIGID NASAL ENDOSCOPY; EFFICACY IN SINONASAL PATHOLOGIES

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ABSTRACT

OBJECTIVE: To evaluate efficacy of nasal endoscopy in diagnosing nasal pathologies.

DURATION OF STUDY: 01 November 2013 to 30 Jun 2014

STUDY DESIGN: Prospective

PLACE OF STUDY: ENT A Unit Hayatabad Medical Complex, Peshawar, ENT unit Saidu group of teaching hospitals, swat.

MATERIAL & METHODS: Eighty (80) patients were included in the present study, with fifty six male and 24 female. They presented with nasal obstruction 54 (67.5%), persistent rhinorrhea 16 (20%), Nasal bleed 50 (62.5%), headaches, 18 (22.5%) foul breath 6 (7.5%) and olfactory disturbances 7 (8.75%). Anatomic variations were found on nasal endoscopy, Concha bullosa 9 (11.25%) was the commonest anatomic variation followed by enlarged bulla.

RESULTS: Enlarged adenoids were found in 3 (3.75%) patients, Hypertrophy of posterior end of inferior turbinate 5 (6.25%), Discharge in middle meatus 12 (15%), Polyps in 9 (11.25%), Nasopharyngeal mass 4 (5%), Mass in nasal cavity 7 (8.75%), Posterior spur 11 (13.75%), Angiofibroma 3 (3.75%), Nasal synechia 4 (5%), Antrochoanal polyp 3 (3.75%), Inverted papilloma 3 (3.75%), Rhinolith 2 (2.25%), Atrophic rhinitis 3 (3.75%) and Allergic rhinitis 13 (16.25%).

CONCLUSION: Nasal endoscopy can find nasal and sinus pathology that might easily be missed with routine speculum and nasopharyngeal examination. For patients with unexplained nasal sinus symptoms, the general otolaryngologist might consider rigid nasal endoscopic office examination as part of the routine office examination.

KEY WORDS: Nasal Endoscopy, Nasal Pathologies.

INTRODUCTION

Hirschman performed the first attempt at nasal and sinus endoscopy in 1901 using a modified cystoscope¹. The most significant development in nasal endoscopy was noticed during 1950's when Hopkins'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. Based on the experience and teaching of Messerklinger, Stammberger and Kennedy^{3,4} the diagnosis and treatment of inflammatory sinus disease continue to evolve. Nasal endoscopy allows detailed and complete evaluation of intranasal anatomy and identification of pathology that is impossible to see using standard techniques with headlight or head mirror. With the endoscope, the surgeon gains

capacity for precise anatomy identification and angled, illuminated, magnified viewing of the internal nose preoperatively, intraoperatively, and postoperatively. As an added benefit, an attached camera can provide a photographic demonstration to the patient or create documentation for the permanent record.⁵ Recently combination of diagnostic endoscopy and imaging study has become the corner stone in the evaluation of the paranasal sinus diseases.⁴

MATERIALS AND METHODS

This study was conducted in ENT unit Hayatabad Medical complex and Saidu Group of Teaching Hospitals Swat from 1st November 2013 to 30th Jun 2014. All patients with nasal symptoms like nasal obstruction, persistent rhinorrhea, Nasal bleed, headaches, foul breath or olfactory disturbances and above 10 years of

age were included. All patients with acute infection of nose and paranasal sinuses, and age less than 10 years were excluded from this study. A detailed history and ENT examination was done. The procedure was performed with 4 mm, 0 and 30 degree endoscopes. Endoscope of the size 2.7 mm, 0 degree was used in cases where it was not possible to pass 4 mm endoscope because of narrowing of nasal cavity. Illumination was provided with Karl Storz light source. Decongestion of the patient's nose with 4% xylocaine with 1:1,00,000 adrenaline was done. The patient was placed in the supine position with head raised 15 degree and neck slightly flexed. The endoscopy was done in three passes and, in all the three passes various structures were examined and any abnormality found was noted. First Pass: Inferior meatus, floor of nose, post-nasal space, Eustachian tube orifice, mucus channel, septum, nasolacrimal duct opening and previous antrostomy. Second Pass: (a) Lateral wall of nose including agger nasi, polyps, accessory ostia and uncinate process. (b) Middle meatus including hiatus semilunaris, bulla ethmoidalis, natural OS and ground lamella. (c) Middle turbinate deformity. Third Pass: Superior turbinate / meatus, sphenoethmoidal recess and sphenoidal ostium. The findings of nasal endoscopy were recorded in the proforma.

RESULTS

A total of 80 patients were included in the present study. Majority of the patients were male 56 (70%) and 24 (30%) females Table 1.

Table 1: Sex of patients

Gender	No	Percentage
Male	56	70 %
Female	24	30 %

Mainly patients presented with nasal obstruction 54 (67.5%), persistent rhinorrhea 16 (20%), Nasal bleed 50 (62.5%), headaches, 18 (22.5%) foul breath 6 (7.5%) and olfactory disturbances 7 (8.75%) shown in table 2.

Table 2: Presentation of Patient

Presentation	No	Percentage
Nasal blockage	54	67.5 %
Nasal bleed	50	62.5 %
Rhinorrhea	16	20 %
Headache	18	22.5 %
Foul breath	6	7.5 %
Olfactory disturbances	7	8.75 %

Anatomic variations found on nasal endoscopy illustrated in table 3, Concha bullosa 9 (11.25%) was the commonest anatomic variation followed by enlarged bulla.

Table 3: Anatomical variations:

Findings	No	Percentage
Concha bullosa	9	11.25 %
Enlarged bulla ethmoidalis	4	5 %
Paradoxical middle turbinate	3	3.75 %
Accessory ostia	2	2.25 %

In our study on nasal endoscopy we found Enlarged adenoids in 3 (3.75%) patients, Hypertrophy of posterior end of inferior turbinate 5 (6.25%), Discharge in middle meatus 12 (15%), Polyps in 9 (11.25%), Nasopharyngeal mass 4 (5%), Mass in nasal cavity 7 (8.75%), Posterior spur 11 (13.75%), Angiofibroma 3 (3.75%), Nasal synechia 4 (5%), Antrochoanal polyp 3 (3.75%), Inverted papilloma 3 (3.75%), Rhinolith 2 (2.25%), Atrophic rhinitis 3 (3.75%) and Allergic rhinitis 13 (16.25%) as shown in table 4.

Table 4: Findings on Nasal Endoscopy.

Nasal endoscopic findings	No	Percentage
Enlarged adenoids	3	3.75 %
Hypertrophy posterior end of inferior turbinate	5	6.25 %
Discharge in middle meatus	12	15 %
Polyps in middle meatus	9	11.25 %
Nasopharyngeal mass	4	5 %
Mass in nasal cavity	7	8.75 %
Posterior septal spur	11	13.75 %
Angiofibroma	3	3.75 %
Nasal synechia	4	5 %

Antrochoanal polyp	3	3.75 %
Inverted papiloma	2	2.25 %
Rhinolith	2	2.25 %
Atrophic rhinitis	3	3.75 %
Allergic rhinitis	13	16.25 %

DISCUSSION

Rhinology has undergone revolutionary changes in the last 20 years, especially after the development of the rod optic endoscope in 1960s by Hopkins. Nasal endoscopy allows a detailed examination of the nasal and sinus cavities not possible by standard examination such as anterior rhinoscopy using headlight or head mirror. It is more sensitive than computed tomography (CT) for the evaluation of accessible disease and provides valuable information regarding persistent asymptomatic disease postoperatively.

In our study majority of patients were male, while female number were less and usual presentation was with complaints of headache and nasal bleed similar to the study of Ritesh Shelkar et al. ³. Contrary to Aminnu Bakari et al. ⁶ showed 42 (55.2%) male and 34 (44.7%) female and had ratio 1.2:1. ⁴

Main presentation of the patients were nasal blockage alone or with other symptoms as well. Kirtane et al. ⁵. In his study also discussed nasal obstruction as main symptom. Nasal obstruction deteriorates the quality of life by causing discomfort, interference with the senses of smell and taste. The nasal obstruction as a symptom usually has a benign course but sometime life threatening problems such as neoplasm, first come to the attention of the patient as nasal obstruction. We found on nasal endoscopy mass lesion in nose and nasopharynx along with other conditions like atrophic rhinitis, polyps and allergic rhinitis similar to the observation given by Sevil Ari et al. ⁶. Another major symptom in our study was nasal bleed, more percentage were female and in male commonly in teens with angiofibroma and interestingly noted in 2 cases with adenoidal

hypertrophy at teen age also. Diagnostic nasal endoscopy was of great significant in patients of epistaxis. It helped in accurate diagnosis of cause of nasal bleed and proper management of the same. This measure was better tolerated and less uncomfortable. This conclusion was consistent with those of McGarry et al. ⁷. Others were diagnosed as mass lesions. Our cases also presented with persistent nasal discharge, foul breath and olfactory disturbances which was then diagnosed as Allergic rhinitis, chronic rhinosinusitis and atrophic rhinitis as mentioned with similar complaints in study by Levine & Cleveland ⁸. A headache case has interestingly diagnosed as anatomical variations causing the symptom. Concha bullosa was main anatomical variation we found in our patients followed by Enlarged bulla ethmoidalis, this was similar with the study done by Lolyd et al. ⁹.

We found on nasal endoscopy discharge in middle meatus in 12 cases and all those patients had diagnosed as chronic rhinosinusitis. Posterior spur and allergic rhinitis were the second most common findings in our study. Nasal masses in nose and nasopharynx on endoscopy were biopsied for further diagnosis. Nasal endoscopy showed exact site in the region of pathology from where biopsy had to be taken which help in accurate histopathological diagnosis and help to minimize the bias. This conclusion was supported in the study conducted by Abtin Tabae et al. ¹⁰ who stated that office based nasal endoscopy with biopsy represent a safe and important tool in evaluation of sinonasal neoplasm and this procedure provides diagnostic information that may alter treatment decision. Angiofibroma kept for further radiological workup ¹¹. Cases found to have nasal synechia were released on same endoscopic session. Patients with crusts and scabs in nasal cavity for subjected for further workup of atrophic rhinitis. Antrochoanal polyp and ethmoidal polyps were later referred for surgical workup.

CONCLUSION

Nasal endoscopy represents a safe and important diagnostic tool in the evaluation of sinonasal

pathologies. The procedure is generally safe and provides diagnostic information that may alter treatment decisions. Limitations of the procedure do exist, notably issues related to accuracy. Nasal endoscopy has become increasingly popular because of the development of fiber optic rigid nasal endoscopes. These same nasal endoscopes play an important role in the office diagnosis of nasal and sinus disorders.

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