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Diagnosis and Interpretation of Sinonasal Diseases by Nasal Endoscopy

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Abstract

Aims

The study aims to emphasize the efficacy of nasal endoscopy in diagnosing nasal pathology over clinical examination. As well as to define applications of nasal endoscopy.

Methodology

Total number of cases were 75 patients retrospectively recorded. The research was carried out at the Al-Salam Teaching Hospital; ear nose and throat department in Nineveh Province, Iraq. Patients who presented with nasal symptoms such as nasal obstruction, runny nose, bleeding from the nose, nasal mass, foul breath, and foreign body in the nose, and patients who were older than 20 years old were eligible for inclusion in the study. Patients who had an acute infection of the nose and paranasal sinuses, as well as patients who were younger than 20 years old, were not allowed to participate. Authors performed both a comprehensive history and an ENT examination.

Results

Highest percent for age range distributed equally between (20-29 and 30-39 Years) with a percent 44.0% for each group. Female show the outmost percent (57.3 %). Nasal discharge; bleeding and obstruction record the peak percent with slight differences subsequently (21.3, 18.7 and 17.3). More than quarter of patients show no complications. Twelve patients manifest synechia as the maximum one.

Conclusion

Nasal endoscopy offers high diagnostic accuracy in patient with sinonasal complaints. Also, can be considered as gold standard tool in patient having sinonasal complaints. Vision control, has less bleeding, minimal complication, and early postoperative recovery reflect why the nasal endoscopy crucial.

Keywords: Sinonasal Disease, Chronic Sinusitis, Nasal Endoscopy, Nasal Passes

Introductions

Hirschmann was the first person to employ the modified cystoscopy during the examination of the middle meatus in 1901 [1]. According to knowledge and experiences of Messerklinger, Stammberger, and Kennedy have gained, continuing advancements are being made in both the diagnosis and treatment of inflammatory sinus infections [2-4]. In comparison between the conventional methods of employing a headlight or a head mirror, nasal endoscopy enables a comprehensive and detailed evaluation of the architecture of the intranasal cavity, as well as the diagnosis of pathology that would otherwise be impossible to notice.

Using the endoscope, the surgeon is able to gain the ability to precisely identify the architecture of the internal nose as well as to observe it in an angled, illuminated, and enlarged manner before, during, and after the operation. An additional advantage is that a camera that is attached to the patient can either create documentation for the permanent record or provide a photographic demonstration to the patient himself or herself [5]. The combination of diagnostic endoscopy and imaging investigation has emerged as the foundational component in the process of evaluating disorders that affect the paranasal sinus chambers. This serves as the foundation for the novel idea that underpins the functional endoscopic sinus surgery (FESS) procedure.

For the purpose of determining whether or not endoscopy is effective in diagnosing a spectrum of nasal and nasopharyngeal pathology, which would otherwise remain unrevealed.

Aims and Objectives

The study aims to emphasize the efficacy of nasal endoscopy in diagnosing nasal pathology over clinical examination. As well as to define applications of nasal endoscopy and highlighting the different complications can affect the use of such manuveour.

Materials and Methods

The study conducted retrospectively. Over the course of the time beginning in January 2019 and ending in December 2019, the research was carried out at the Al-Salam Teaching Hospital; ear nose and throat department in Nineveh Province, Iraq. Authors investigated a total of seventy five patients.

Patients who presented with nasal symptoms such as nasal obstruction, runny nose, bleeding from the nose, nasal mass, foul breath, and foreign body in the nose, and patients who were older than 20 years old were eligible for inclusion in the study. Patients who had an acute infection of the nose and paranasal sinuses, as well as patients who were younger than 20 years old, were not allowed to participate. Ethical approval obtained from the local ethics committee for this investigation in Nineveh Health Directorate with license No. 2025020 in 8 / 1 / 2025.

Authors performed both a comprehensive history and an ENT examination. Prior to the diagnostic nasal endoscopy, the patient gave their assent via written and informed consent. A zero-degree, thirty-degree rigid nasal endoscope with a four-millimeter tip were used.

Administered a local or general anesthetic for each diagnostic nasal endoscopy. Four percent xylocaine with adrenaline (1:1000) to pack the nasal cavity. Researcher successfully carried out a comprehensive examination in an orderly manner, including three specified nasal passes of the endoscope. As well as carried out a number of endoscopic-assisted treatments and surgical operations, depending on the circumstances.

A follow-up was performed on patients at intervals of third day, one week, one month, and six months following the completion of medical or surgical treatment.

Results

In this study seventy five patients are included according to eligibility criteria. Table 1 show a descriptive analysis including age, gender, symptom and complication. Highest percent for age range distributed equally between (20-29 and 30-39 Years) with a percent 44.0% for each group. Also Female give the outmost percent than male (57.3 %).

Nasal discharge; bleeding and obstruction record the peak percent with slight differences subsequently (21.3, 18.7 and 17.3). Complications with nasal endoscopy examination as well as studied. No cranial or orbital injury are recorded, more than quarter of patients show no complications. Excluding pain which seen in twenty patients in follow up period which relieved then and patients recovered; 12 patients manifest synechia as the maximum one. (Table 1).

Table 1: Descriptive Analysis (Age, Gender, Symptoms and Complications) for the sample

Variable		No. of Patients	Percent
Age	20 - 29 Year	33	44.0
	30 - 39 Year	33	44.0
	40 - 49 Year	3	4.0
	50 - 59 Year	6	8.0
Gender	Male	32	42.7
	Female	43	57.3
Symptom	Nasal discharge	16	21.3
	Nasal obstruction	13	17.3
	Nasal bleeding	14	18.7
	Nasal mass	9	12.0
	Foul breath	12	16.0
	Foreign body	10	13.3
	Olfactory Disturbance	1	1.3
Complications	No Complication	26	34.7
	Pain	20	26.7
	Epistaxis	6	8.0
	Vasovagal Syncope	7	9.3
	Adverse Reactions to Medications	1	1.3
	Synechia	12	16.0
	Infection	3	4.0
	Cranial Injury	0	
	Orbital Injury	0	

Discussion

Since nasal endoscopes became widely known as an important diagnostic tool and a useful surgical aid, a lot of progress has been made in the area of rhinology. The nose and paranasal sinuses provide unparalleled lighting, enabling clear vision. In this current study shows that nasal endoscopy can help doctors figure out what's wrong with a lot of different conditions, like sinusitis, epistaxis, olfactory issues, nasal masses, nasal polyps, nasal blockage, nasal discharge, and sino-nasal cancers [2].

The diagnostic process known as nasal endoscopy is very accurate for people who are having problems with their sinuses, diagnostic nasal endoscopy identifies issues in the nose and throat that other methods would miss. Certain diseases of the nasal fossa are easier to describe during diagnostic nasal endoscopy [5].

Endoscopically directed surgeries are very accurate because the surgeons follow what they see and give the best help they can. A clinical exam and diagnostic nasal endoscopy are both necessary and helpful treatments that work together to make a correct diagnosis. This is because diagnostic endoscopy helps figure out how serious sinus problems are and gives details about the differences and important connections between the paranasal sinuses [3].

Results from studies by Bakari *et al.* [6] and Levine *et al.* [7] showed that most of the patients were between the ages of 31 and 40, with 33.3 and 35.6 as the mean age, respectively. In the current study, most of the patients were between the ages of 20 and 40 with a 44% for each group.

More than fifty percent of cases are female participated in this study can be attributed to the idea that female prefer uncomplicated manuveour more than open surgery. On the contrary Kirtane *et al.* [8] did a study with a total of 30 female (38.4%) and 48 male (61.5%). Tabaee [9] did his study and found that there were 39 male (63.9%) and 22 female (36%). In a similar way, Bakari *et al.*'s study showed

that there were fifty-two male and forty-four female [6].

Concerning symptom Nasal discharge; bleeding and obstruction record the peak percent with slight differences subsequently (21.3, 18.7 and 17.3). In the study by Kirtane *et al*, 61% of patients claim that nasal discharge was their main problem [8]. Fifty nine percent of the patients complain from nasal blockage [8]. Based on the research by Bakari *et al*., the most common issue was stuffy nose. The second most common symptom was a blockage in the nose (94.7%) [6].

Diagnostic nose endoscopy was crucial for people who had epistaxis. This helped with both the correct evaluation of the cause of epistaxis and the right treatment of the condition. When compared to the nasal pack this method was easier to handle and caused less pain [10, 11]. Foreign bodies and rhinoliths in the nose that were hidden in the back and unavailable on a clinical exam could be carefully removed. The results of studies by Keck *et al*. and Hade *et al*. [12, 13] added to the evidence for this conclusion. Nasal endoscopy is helpful because it helps find the exact location of a problem, reduces stress on nearby structures, and stops bleeding while foreign bodies are being removed. With nasal endoscopy, the exact spot on the disease area where a biopsy was needed was located. The results of the Tabaee *et al*. [9] study supported this statement. According to them, nose endoscopy with biopsy in the office is a safe and useful way to check for sinonasal neoplasm.

Additionally, this method provides medical information that could possibly change the choice of therapy. In this study, nasal endoscopy was the best way to diagnose and treat different nasal disease. This finding was backed up by the work of different researchers [7, 14, 15] so, nasal endoscopy is better than a clinical test for finding diseases in the nose and back of the throat.

Conclusion

Nasal endoscopy offers high diagnostic accuracy in patient with sinonasal complaints. Also can be considered as gold standard tool in patient having sinonasal complaints. Vision control, has less bleeding, minimal complication, and early postoperative recovery reflect why the nasal endoscopy crucial.

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