Original Article

Flexible nasopharyngolaryngoscopy: diagnostic yield

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Objective
To examine the diagnostic effectiveness of the Flexible Nasopharyngolaryngoscopy in ENT as an OPD procedure.
Method
This descriptive study was conducted at the Department of ENT and Head and Neck Surgery, Shifa International Hospital, Islamabad from June 2003 to June 2008. A total of 182 patients who presented to ENT OPD with symptoms of upper airway disease were selected for nasoendoscopy. Flexible endoscope was used for examination of upper airway under local anesthesia and findings were entered in a proforma. Data was analyzed in SPSS 13.
Results
Amongst the 182 patients 119 (65.4%) were males. The mean age was 45 ±18.272 years. The major findings in order of frequency were structural abnormalities (50.5%) amongst which vocal nodules were commonly seen (19.2%). Nasal pathologies were the next common findings (18.6%) followed by carcinomas of larynx/hypopharynx/nasopharynx (14.8%) and vocal cord paralysis (13%).
Conclusion
Flexible nasopharyngolaryngoscopy is a very effective diagnostic tool in patients with upper airway symptoms. The procedure offers flexibility in use and can be accomplished under local anesthesia in OPD setting. (Rawal Med J 2009;34:148-150).
Key words
Anesthesia, larynx, hypopharynx, vocal cord paralysis.

INTRODUCTION

Diseases of the upper airway can involve any anatomical area from the nose to the carina and require thorough visualization of the affected area. Although complete ENT examination includes indirect laryngoscopy and posterior rhinoscopy, these areas still need to be visualized further for any pathology. Conventionally, if mirror examination fails to visualize the affected areas, rigid direct laryngoscopes under general anesthesia is used to visualize these areas. This methodology cannot be adopted in the case of patients who are unfit for general anesthesia due to co-morbid conditions like ischemic heart disease, poor pulmonary functions etc. For such patients, flexible nasopahryngolaryngoscopy and esophagoscopy can be performed under local anesthesia in an outpatient setting without the harmful effects of general anesthesia.[1] Flexible nasoendoscopy enables examination of the upper airway and hypopharynx, and also provides the capability to concurrently perform a biopsy from any suspicious area or growth. The aim of this study was to examine the diagnostic effectiveness of flexible nasopharyngolaryngoscopy in as an outpatient procedure.

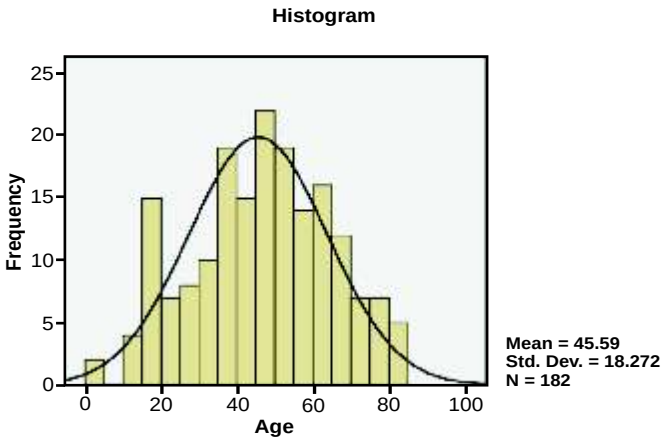
PATIENTS AND METHOD

A total of 182 patients with upper airway related symptoms and for whom the procedure was indicated, were included in the study. Informed consent was then taken for the procedure. The equipment used was Xion Flexible Fiberoptic nasopharyngolaryngoscope with video monitoring. As preparation, the nose was sprayed with a solution of topical decongestant agent and local anesthetic (4% xylocaine solution and xylometazoline) ten minutes before the procedure. The nose was not packed with this solution. The throat was further sprayed with the local anesthetic. Under sterile conditions, the flexible nasopharyngolaryngoscope was passed transnasaly and the required area visualized and examined. Biopsies were taken where deemed necessary. Data was statistically analyzed using SPSS version 13.

RESULTS

Out of 182 patients, 119 (65.4%) were males and 63 (34.6%) were females. Table I summarizes the patient population sampled (mean age 45 years), grouped by age (Fig 1).

Fig 1. Cumulative Distribution by Age.



Structural abnormalities of vocal cords on the whole were common finding (50.5%), amongst which vocal nodules were most frequently seen (19.2%). Nasal pathologies were second common (18.6%) followed by carcinoma of larynx/hypopharynx /nasopharynx 14.8% and vocal cord paralysis (13%). (Table 1).

DISCUSSION

The development of flexible endoscope has increased both the diagnostic and therapeutic indications in clinical practice[2] with advantage of its simplicity in usage[3] and the need for only local anesthesia. Flexible nasoendoscopes are now also used by nurse practitioners in otolaryngology specialty practice as well as by other health practitioners[4] like gastroenterologists[5] and anesthesiologist who use them in difficult airway to assist in intubation.[6,7] Calibrated endoscopes provide useful sizing information for laryngeal structures[8] and help in determining the anatomy of airway lesions.[9] With more use of flexible fibreoptic endoscopes,[10] sterility has been a primary concern, although high-level disinfection is a reasonably effective method.[11] To ensure sterility, single-use sterile sheaths have been used.[12] We followed standard sterilization procedure for the procedure and there were no reported post procedure infections. The use of camera with these scopes has helped in recording and fascilitates in teaching the undergraduate and postgraduate students.[13] Flexible fiberoptic nasolaryngoscopy helps quick visualization of patients with compromised airways[14] and are well tolerated.[15]

	Frequency	Percent
Structural Abnormalities of larynx (50.5%)		
Vocal Nodule	35	19.2%
Vocal Polyp Left vocal cord	09	4.9%
Right vocal cord	08	4.3%
Anterior commissure	05	2.7%
Vocal cord oedema / inflammation	14	7.6%
Vocal cord thickening	13	7.1%
Irregular surface of vocal cord	05	2.7%
Vallecular cyst	01	0.5%
Laryngeal web	02	1%
Vocal Cord Paralysis (13%)		
Right vocal cord	04	2.1%
Left vocal cord	12	6.5%
Bilateral	08	4.3%
Carcinomas (14.8%)		
Laryngeal Carcinoma Supraglottic	12	6.5%
Glottic	09	4.9%
Hypopharyngeal	05	2.7%
Nasopharyngeal	03	1.6%
Nasal Pathologies (18.6%)		
Post Surgical evaluation		
Septoplasty	05	2.7%
Intranasal polypectomy	03	1.6%
Nasal polypi	04	2.1%
Mass nose (fungal)	01	0.5%
Nasal spur	03	1.6%
Epistaxis	16	8.7%
Choanal atresia (unilateral)	02	1%
Re-evaluation after palatal surgery		
Post surgical evaluation of palatal insufficiency	01	0.5%
Re-evaluation before decannulation		
Re-evaluation before decannulation	01	0.5%
Functional Aphonia		
Functional aphonia	01	0.5%

Table 1. Findings of nasopharyngolaryngoscopy

In our study, the most commonly seen upper airway related pathology was the structural abnormality (50.5%) of the larynx amongst which vocal nodules were more frequently seen. Usually the vocal cord edema/inflammation is commonly seen findings in patients presenting with hoarseness of voice. This condition is either self limiting or easily manageable. Since the study was done in a tertiary care hospital and usually those patients visit here who have recurrent or persistent hoarseness. This could have led to the slightly decreased incidence of vocal cord edema/inflammation in our study.

Any pathology in nose like deflected nasal septum or hypertrophic inferior turbinates can hamper the passage of the endoscope transnasaly. However, we were able to pass the nasoendoscope through one of the nostrils after adequate decongestion. Nasopharyngoscope was found to be very helpful in evaluating patients with choanal atresia, epistaxis and adenoids. Nasal pathologies were the next common findings in our study (18.6%) followed by carcinomas of larynx/nasopharynx/hypopharynx (14.8%) and vocal cord paralysis (13%). We examined both post treatment as well as pre-treatment oncology patients.

This study substantiates the contention that flexible nasopharyngolaryngoscopy is a very effective diagnostic tool for the patients presenting with upper airway related symptoms However, this is not amenable for use on patients with laryngeal/hypopharyngeal tumor, which requires rigid direct laryngoscopy under general anesthesia. Some of the tumor patients may not be fit for general anesthesia due to co-morbid conditions; in such patients, flexible nasoendoscopy can prove to be a very effective tool especially to obtain a tissue diagnosis.

CONCLUSION

Flexible nasolaryngopharyngoscopy is a very effective diagnostic tool for patients with upper airway related symptoms. This procedure entails local anesthesia only and can be conducted in an outpatient setting avoiding the potential hazards of general anesthesia.

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