ORIGINAL ARTICLE

Surgical Audit of Laryngeal Disorders Examined Through Flexible Fibreoptic Nasopharyngocope / Laryngoscope

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ABSTRACT

Objective: To evaluate the role of flexible fibreoptic nasopharyngocope /laryngoscope in diagnosis of laryngeal pathologies.
Setting: ENT Unit-1 Mayo Hospital, King Edward Medical University, Lahore
Duration: From Sep 2012 to March 2013.
Material and methods: Patients were admitted through ENT outpatient department. The data was collected on the basis of history, physical examination, investigations, flexible fibreoptic naso-pharyngoscopy/ Laryngoscopy findings, management and follow up through standard questionnaire.
Study design: This study is a prospective case series in which 100 outpatients who presented with pharyngeal, laryngeal complaints were reviewed. We examined patients through Flexible nasolaryngoscope, evaluate demographics, procedure indications, FOL findings, complications, advise management and follow up advised.
Conclusion: Flexible fibreoptic nasopharngoscopy/Laryngosopy is safe, noninvasive and best procedure for diagnosis of nasal, pharyngeal and specially laryngeal pathologies. We performed 100 cases with excellent diagnostic accuracy without leading to any serious complication. Flexible fibreoptic nasopharyngoscopy/Laryngosopy should be adopted in all out patient departments of tertiary care hospitals for accurate diagnosis and proper management of patients with laryngeal pathologies. Hoarseness of voice (HOV) is significant presenting complaint of laryngeal disorders and should be investigate if proceed beyond 3 weeks.
Keywords: Hoarseness of voice (HOV), Larynx, Flexiblefiberoptic Nasopharyngoscope/Laryngoscope

INTRODUCTION

The study and interest of laryngoscopy started in 1800s. Before the 1800's physicians could only make assumptions of how the larynx functioned from examinations of autopsy specimens. Airway surgery was limited to tracheostomy which involved the incision of the "arteriaaspera" or "windpipe" . Incomplete information about anatomy and physiology of larynx limited the surgical interventions for larynx pathologies. Manuvel Gracia, a Spanish singing teacher, was the first to report the visualization of larynx with mirrors and reflected sun light. His discovery, reported in 1855. In 1856 direct laryngoscopy done by Truk and Czermak in Vienna. The Berlin laryngolosist Tobold was the first in history who directly visualize the larynx. He did so by positioning his patient on her back while she pressed her tongue against her lower incisors and hyper extended her neck. In 1868 Voltolini used a tongue depressor spatula (larnygoscope) to expose the larynx and was able to directly view the larynx. Following was the introduction of carrying light down the airway. This was achieved through reflection of a headlight, or by the placement of tiny light bulbs into the laryngoscope. Gustave Killian, in Freiburg, demonstrated the endoscopic feasibility of foreign bodies removed from trachea-bronchial tree in 1897. Cheivellier Jackson in Philadelphia introduced the distally lighted laryngoscopes, bronchoscopes as well as telescopes with incandescent bulbs at the turn of the century. His contribution to the whole understanding of laryngo-broncho-esophagoscopy was enormous, and he developed the art of foreign body removal from the air and food passages. A through and detailed laryngeal examination is the key in evaluation when patients present with voice changes such as hoarseness, vocal fatigue, pain etc. Advances in technology and improved understanding of vocal fold anatomy, physiology and sound production have resulted in a dramatic improvement in the ability to visualize the interior of the larynx. Indirect laryngoscopy has been used by otolaryngologist for decades however this method of examination has limitations in comparison to newer methods like flexible nasolaryngoscopy. Limitations caused by large base of tongue, soft palate, over hanging epiglottis and exaggerated gag response limited this examination from being performed in 5-10% of patients which consists a significant population of patients with laryngeal pathologies.

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Flexible fibro-optic nasolaryngoscopy offers and extremely clear view of the nose, nasophrynx and larynx and provides magnified view.

MATERIAL AND METHODS

It was a prospective study conducted upon 100 patients suffering from laryngeal pathologies mostly presented with hoarseness of voice in the department of ENT-Unit-1, Mayo Hospital, King Edward Medical University, Lahore, from Sep 2012 to March 2013. The detailed history, clinical examination, routine investigations and special investigations were carried out to find the etiology. Standard Performa was prepared duly filled for each patient. All the patients of hoarseness of voice in the study were selected randomly. The data was compiled and conclusions were made. The etiological factors were classified as infections, neoplasm, professions of over use of voice, trauma, neck or thoracic surgeries, emotional problems, radiotherapy, GERD, Neurological diseases, smoking, chronic infections, allergies and drugs. All the patients were advised with HBsAg and Anti-HCV before procedure. I/V line maintained and 10% lignocaine spray applied to all patients before the procedure. Emergency trolley was kept in procedure room to counteract any adverse event.

RESULTS

Total 100 patients suffering from Laryngeal pathologies with 70(70%) male and 30(30%) female between 10 to 80 years of age. The highest incidence was seen in males (70%).

Table 1: Sex distribution of the patients (n=100)

Gender	**=n**	**%age**
Male	70	70
Female	30	30

Table 2: Presenting complaints of patients (n=100)

Complaints	**=n**	**%age**
Hoarseness of voice (HOV)	83	74.8
Aphonia	02	1.8
Reduced phonation range	01	0.9
Strain and struggle for speaking	02	1.8
Unexplained cough	04	3.6
Hemoptysis	03	2.7
Stridor	01	0.9
Dysphagia	02	1.8
Stridor	02	1.8
Foreign body	02	1.8
Others	09	8.1

Most common presenting complaint was hoarseness of voice which was 75% .Majority of patients (24%) were from age, range from 31 to 40 years. Most common etiological factor causing laryngeal pathologies were professions leading to vocal abuse (20%). Most common diagnosed case was acute and chronic nonspecific laryngitis (19%). Students most of which were memorizing the Holy Quran and house wives suffered from laryngeal pathologies 19% and 20% respectively. Majority of the patients in our study reported from Lahore (63%). Most common management plans advised to the patients were Micro laryngeal excision and voice rest 16% each.

Table 3: Distribution of the patients according to age

Age (Years)	**=n**	**%age**
10-20	20	20
21-30	13	13
31-40	24	24
41-50	13	13
51-60	18	18
61-70	9	9
71-80	3	3

Table 3: Distribution of patents according to the etiology

Etiology	**Causative agents**	**%age**
Smoking	27	15.3
Alcohol	04	2.3
Profession (vocal abuse)	35	19.9
Tuberculosis laryngitis	05	2.8
Systemic Disease	23	13.1
URTI	29	16.5
GERD	06	3.4
Use of inhaled steroids	02	1.1
Allergies	11	6.3
Neurological disorders	02	1.1
Trauma Neck	04	2.3
Neck or Thoracic surgery	09	5.1
Emotional problems	04	2.3
Radiotherapy	05	2.8
Medications	10	5.7

Table 5: Diagnosis of patients with laryngeal pathologies (n=100)

Disease	**=n**	**%age**
Acute and chronic nonspecific laryngitis	19	19
Vocal Nodule	12	12
Tuberculous laryngitis	05	5
Phonasthenia	02	2
Reflux laryngitis	06	6
Leukoplekia	02	2
papillomatosis	01	1
Vocal Cord paralysis	10	10
Systemic neurological diseases	01	1
Rhinitis	02	2
DNS	02	2
Haemangioma	02	2
CA Larynx	16	16
Hypotonic/Hypertonic dysphonia	03	3
Psychiatric	02	2
Normal	05	5
Others	10	10

Management after flexible fibreoptic nasopharyngo-scopy / laryngoscopy (n=100)

Management	=n	%age
Microlaryngeal excision	16	16
D/L + Biopsy	15	15
Voice rest	16	16
Speech Therapy	05	05
Medical treatment	17	17
Psychotherapy	02	02
Radiotherapy	01	01
Diagnostic Tests (CT, Barium swallow, blood test)	13	13
Endoscopy	01	01
Bronchoscopy	02	02
Others	12	12

Professions of the patients with laryngeal pathologies

Profession	n=	%age
Teacher	07	07
Religious Scholar	02	02
Student (Hafiz e Quran and School)	19	19
Shop keeper	13	13
House Wife	20	20
Businessman	05	05
Labourer	06	06
Farmer	03	03
Lawyer	02	02
Supervisor	02	02
Others	21	21

DISCUSSION

The incidence of Acute and chronic nonspecific Laryngitis is 19% in our study as compare to Muhammad Aslam study[1] which is 18%. Smokers were 15% as compare to 20% in study conducted by Ahmad Nasrat Al-juboori[2]. The incidence of laryngeal tuberculosis in our study was 2.8% as compare to the study of Farooq Ahmad Mian[3] which was 10%. Incidence in laryngeal pathologies due to trauma neck was 2.3% in our study as compare to Farooq Ahmad Mian[3]. The different professions in which there is vocal abuse leading to vocal cord nodules such as teachers, singers, lawyer or young boys memorizing the Holy Quran etc accounts 19.9% in contrast with 17.7% in the study[4]. The contribution of carcinoma of larynx was 16% in contrast to the study of Muhammad Aslam[1] in which it was 69%. Inhaled steroid leaded to HOV in our study was 1.1% contrast with 14.1% the study[5]. Most common presenting complaint in our study due to laryngeal pathologies was HOV (74.8%) as compare to study of Noor Sahib Khan[6] which was 100%. Amongst the 100 patients suffering from laryngeal pathologies 70(70%) were males as compare to 65.4% in a study[7]. Vocal nodules seen in 12% as compare to 19.2% in a study[7]. Nasal pathologies were 4% as compare to 18.6% in a study by Jawad Zafar[7]. Vocal cord paralysis found in 10% as compare to 13% in a study[7]. 17% patients treated medically in our study as compare to 72% in a study[2]. Surgical intervention done in 31% of patients in our study as compare to 7.6% in a study conducted by Ahmad Nusrat Aslam[2]. We referred 2% patients for psychotherapy as compare to 3.8% in a study[2]. Reflux laryngitis was 6% in our study as compared to 42.5% in a study[8].

CONCLUSION

Flexible fibreoptic nasopharngoscopy /Laryngosopy is safe, noninvasive and best procedure for diagnosis of nasal, pharyngeal and specially laryngeal pathologies. We performed 100 cases with excellent diagnostic accuracy without leading to any serious complication. Flexible fibreoptic nasopharyngoscopy /Laryngosopy should be adopted in all out patient departments of tertiary care hospitals for accurate diagnosis and proper management of patients with laryngeal pathologies. Flexible nasopharyngolaryngoscopy is a very effective diagnostic tool in patients with upper airway symptoms. It takes less then 5minutes, patient and surgeon can see the condition of nose, nasopharynx and larynx. The procedure offers flexibility in use and can be accomplished under local anesthesia in OPD setting.

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