Laryngoscopy: appraisal of 202 procedures carried out in two centers in Port Harcourt, Nigeria

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ABSTRACT

Background: *Laryngoscopy is a visual examination of the larynx and its related structures. It is an effective procedure for ascertaining the causes of laryngeal disorders, pain in the throat and difficulty in swallowing and should be used in all ENT clinics routinely.*

Aim and Objective: *This study established the use of laryngoscopy in two otolaryngology clinics in Port Harcourt. It also analyzed the indications, findings and the role it played in the management of patients.*

Patients and Methods: *This was a 2-year (1st January 2013 to 31st December 2014) prospective study of 202 laryngoscopy procedures done in the Ear, Nose and Throat (ENT) surgery clinics of University of Port Harcourt Teaching Hospital (UPTH) Port Harcourt and Kinx Medical Consultants clinic in Port Harcourt. The researchers in a profoma prepared for the study, documented all laryngoscopies done. The data collected were bio-data (age and sex), presenting symptoms/indications for the procedure, types of laryngoscopy and findings at laryngoscopy /biopsy results. The data were entered into SPSS version 14 computer software and analyzed descriptively.*

Results: *There were a total of 202 (60 males and 142 females) with M: F ratio of 1:2.4. The age range was 18-83 years with a mean of (54.5 ± 5.64) years and median age of 32 years. Age group 40-50 years had the highest number of procedures. The commonest type of laryngoscopy done was indirect laryngoscopy and the commonest indication was pre-operative evaluation for thyroidectomy. The commonest positive findings were hyperaemia and indurations in 25 cases.*

Conclusion: *Indirect laryngoscopy using laryngeal mirror remains a very useful cost effective diagnostic procedure in the otorhinolaryngology clinics.*

Key words: *Laryngoscopy, laryngeal mirror, fibreoptic laryngoscopy, rigid laryngoscopy, hoarseness, globuspharyngeus.*

INTRODUCTION

Laryngoscopy is a medical procedure that is used to obtain a view of the vocal folds and the glottis. It may be performed to facilitate tracheal intubation during general anesthesia or cardiopulmonary resuscitation or for procedures on the larynx or other parts of the upper tracheobronchial tree.[1]It is effective for ascertaining the causes of laryngeal disorders, pain in the throat and difficulty in swallowing. The procedure is relatively painless, but the idea of having a mirror or scope inserted into the throat of a patient can be worrisome.

Laryngoscopy can be direct or indirect. The indirect laryngoscopy uses a mirror and it has some advantages which include; wide spread availability in all Ear Nose and Throat departments, low cost to buy and with little or no cost for maintenance of the instrument.[1] The procedure is free of complications except for gagging and failure to visualize the lesion as illustrated.[2, 3] Direct laryngoscopy can be done using a rigid or flexible scope. It has surpassed the mirror examination in optical resolution and sensitivity.[4, 5] Another form of indirect laryngoscopy can be done using either a flexible or rigid laryngoscope with a camera attached for viewing the larynx and its related structures.

Laryngoscopy is an important procedure for anyone at risk for cancer of the larynx and related disorders. The procedure allows the expert to review the vocal cords and other structures related to the larynx. It provides the doctor with an opportunity to take a biopsy of tissues and remove any polyps, tumors or any suspicious growths that may exist on the larynx and its appendages. In children direct laryngoscopies are mainly done using anesthesia because it is difficult for them to cooperate for the procedure. Even though, laryngoscopy is a common otolaryngological procedure worldwide, its use in our clinical setting in the Sub Saharan African regions appears to be more common in the adult population. Furthermore, there were few reports in the literature on laryngoscopy and its findings among adult patients who visited otolaryngology clinics in our environment. Hence, this study was carried out to establish its use in adult patients who presented to ENT clinics of both UPTH and Kinx Medical consultants clinic in Port Harcourt.

PATIENTS AND METHODS

This is a 2-year (January 2013 to December 2014) prospective clinical observational study of two hundred and two laryngoscopies done in the ENT surgery clinics of UPTH and Kinx Medical Consultants clinic in Port Harcourt. The study included all new adult patients who presented with hoarseness and other symptoms suggestive of laryngeal disorders and patients that were referred from the general surgeon as part of their preoperative evaluation for thyroidectomy. Adult patients who did not present with symptoms of laryngeal disorders and children were excluded from the study. Informed consent was taken from all recruited patients.

Indirect laryngoscopy was done using laryngeal mirrors after spraying the pharynx with local anesthetic agent while direct laryngoscopies were done using flexible and rigid fibreoptic endoscopes after spraying local anesthetic on the pharynx and the larynx examined. The researchers in a profoma prepared for the study then documented laryngoscopic findings. Patients with positive laryngoscopic findings in the clinics were later booked for direct laryngoscopy/biopsy as a theatre procedure and the findings also documented. The data collected were bio-data (age and sex), presenting symptoms/indications for the procedure, type of laryngoscopy, findings at laryngoscopy/biopsy results and the role the procedure played in the management of the patients. The data were entered into SPSS version 14 computer software and analyzed descriptively.

RESULTS

Of the 202 subjects studied, there were 60 males and 142 females with M: F ratio of 1:2.4. The age range was 18-83 years with a mean of 54.5 ± 5.64 years, median age of 32 years. Age group 40-50 years had the highest number of cases n=65, (32.2%) (Table 1).The commonest indication for laryngoscopy was pre-operative evaluation for thyroidectomy n=58 (28.7%) (Table 2). The commonest positive finding was hyperaemia/indurations in 25 cases (12.38%) (Table 3). The commonest type of laryngoscopy done was indirect laryngoscopy using the laryngeal mirror n=116, (57.43%) (Table 4). All the patients that presented with globuspharyngeus and those for preoperative assessment for thyroidectomy had normal findings.

Table 1: Age distribution of patients

Age range (years)	Frequency	Percentage (%)
18-28	15	7.5
29-39	45	22.4
40-50	65	32.2
51-61	34	16.9
62-72	30	14.9
73-83	12	6.0
Total	**202**	**100**

Table 2: Indications for laryngoscopy in ORL clinics

Indication/ Symptoms	Frequency	Percentage
Pre-op assessment for thyroidectomy	58	28.7
Globus pharyngeus	44	21.8
Hoarseness	35	17.3
Foreign body sensation in the throat	24	11.9
Chronic cough	15	7.4
Chronic throat pains	7	3.5
Dysphagia	11	5.4
Difficulty with breathing	8	4.0
Total	**202**	**100**

Table 3: Laryngoscopy findings/ Biopsy results

Findings/ biopsy result	Frequency	Percentage
Hyperaemia/ induration	25	12.4
Laryngeal polyp	2	1.0
Leukoplakia	4	2.0
Laryngeal papilloma	3	1.5
Laryngeal carcinoma	6	3.0
Normal findings	162	80.2
Total	**202**	**100**

Table 4: Type of Layngoscopy with the laryngeal findings

Findings/ biopsy result	Indirect laryngoscopy with mirror	Fibreoptic flexible direct laryngoscopy	Fibreoptic rigid direct laryngoscopy
Hyperaemia/ induration	13	7	5
Laryngeal polyp	0	1	1
Leukoplakia	1	2	1
Laryngeal papilloma	0	2	1
Laryngeal carcinoma	1	3	2
Normal findings	101	42	19
Total	116	57	29

DISCUSSION

Laryngoscopy is very important in the visualization of the larynx and pharynx in head and neck examination.[6, 7] The procedure has diverse indications. The commonest indication in this study was preoperative assessment for thyroidectomy (28.7 %), followed by globus pharyngeus (21.8%) and hoarseness (17.3 %). Preoperative assessment for thyroidectomy which is routinely done for the

detection of vocal cord paralysis, being the commonest indication in this study must have been contributed by the high prevalence of thyroid diseases in our environment.[8]

This is similar with the study done by Olaosun et al[9], where preoperative assessment laryngoscopy for thyroidectomy was the commonest indication (46.5%), followed by hoarseness (37.2%) and globuspharyngeus (9.3%). In our series hoarseness, which accounted for 17.3 % of cases may be due to voice abuse, chronic laryngitis and the presence of tumours. Other researchers have also documented similar findings [10, 11,12].

This study also reported high female preponderance (2.4:1). This is probably due to the high incidence of thyroid disease in females[13] whose preoperative assessment in this study had the commonest indication.

The age group 40-50 years had the highest number of cases. Several studies[8, 13, 14] done had reported the average age incidence of thyroid diseases in Nigeria to be within this age group requiring preoperative assessment. Additionally, hoarseness which is an important symptom of laryngeal pathology and the 3rd commonest indication in this study has a mean age of occurrence within this prevalent age group 40-50 years in this study.[15,16]

In this study, 80.2% of the patients had normal laryngoscopic findings while hyperaemia/ induration were found to be the commonest positive laryngoscopic finding. Olaosun et al[9], in their study found majority of their patients to have normal laryngoscopic findings while hyperaemia/induration were found to be the commonest positive laryngoscopic finding as well. These findings go to show that most patients had normal laryngoscopic findings and hypereamia /indurations around the larynx were the commonest laryngoscopic findings. It is therefore, cost effective to carry out laryngoscopic procedures in the clinics to avoid theatre fees, reserving most theatre procedures for those patients who may benefit from further evaluation, excision biopsy and other therapeutic procedures.

However, the patients whose biopsy results revealed laryngeal cancers were further evaluated and were either operated upon or sent out to centers that have radiotherapy facilities to continue the already commenced expert management.

The commonest type of laryngoscopy procedure done in our series was the indirect mirror laryngoscopy which agrees with the findings of other researchers.[2, 3, 8] It is cheap and readily available in all Ear, Nose and Throat clinics and relatively free of complications.[2, 3] The direct fiberoptic flexible and rigid laryngoscopies were done only when mirror examination was inconclusive. We hope to carry out more studies in the future to calculate the statistical significance of the use of laryngeal mirrors for indirect laryngoscopies versus the use of fibreoptic flexible/rigid endoscopes for direct laryngoscopies.

CONCLUSION

Indirect laryngoscopy using laryngeal mirror remains a very useful cost effective diagnostic procedure in the otorhinolaryngology clinics.

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