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Original Article

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Fiberoptic laryngoscopy-- experience in a private hospital

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Abstract

Background: Laryngoscopy is a medical procedure used to obtain a view from nose to voice box (larynx). A thin, lighted tube is usedto view the anatomical detailof the nose, nasopharynx, pharynx andvoice box including motion of the vocal cords in fibreoptic laryngoscopy. Biopsy can also be taken from the suspected lesions. The procedure is usually performed as an OPD procedure under local anesthesia. **Methodology:** This retrospective, cross sectional observational studywas conducted from June 2007 to October 2015 in a private hospital. **Results:** 12265 patients were examined and 625 patientsunderwent biopsy during the procedure. Among them male was55.39% and female was 44.61%. Findings were revealed normal in 69.80%,benign looking lesionsin 11.61%, suspected growth in 16.87% of the cases.54.24% were histologically positive for malignancy. **Conclusion:** Fiberopticlaryngoscopyis a very effective in-office or outdoor procedure for examination of the nose, nasopharynx, pharynx and larynxand also for taking biopsy from the suspected lesions under local anesthesia. [J Shaheed Suhrawardy Med Coll 2015;5(2): 59-62]

Keywords: Fiberopticlaryngoscopy, larynx, biopsy.

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Introduction

Laryngoscopyis a visual examination of the nose, nasopharynx, pharynx and voice box (larynx) containing the vocal cords[1]. The three kinds of laryngoscopy are: indirect laryngoscopy, fiber-optic (flexible) laryngoscopy and direct (rigid) laryngoscopy[2].

The indirect procedure can be performed in a doctor's office using a small hand mirror or a head light to examine the larynx and vocal cords. A rigid viewing tube may be passed through the mouth for a more thorough inspection, a procedure called rigid laryngoscopy[3], which is more often used as part of a surgical procedure in evaluating kids with stridor (a noisy, harsh breathing), removing foreign objects from throat and lower airway[4], collecting tissue samples (biopsies) and laser treatmentsunder general anesthesia.

In flexible laryngoscopy, a thin, flexible optic tube (called a laryngoscope) is passed through the nose and guided to the larynx. Fiberopticlaryngoscopy (FOL) permits a physician to directly inspect the anatomical detail and function of the nose, nasopharynx, pharynx and voice box (larynx) under local anaesthesia. FOL has been used to guide various in-office procedures for the last 3 decades[7]. Since first described in the early 1970s7, it is an effective procedure for discovering the causes of voice and breathing problems, throat or ear pain, difficulty in swallowing, narrowing of the throat (strictures or stenosis), airway blockages[3] and taking laryngeal biopsy[5,6]. FOL is ain-office procedure can effectively be used for taking biopsy[7] and for removing foreign body from hypopharynx and larynx.

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Photograph 1 & 2 : Huge abdominal lump

Fig- Vocal cord polyp

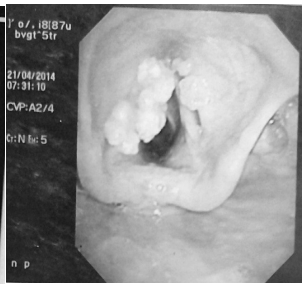

Fig – Vocal cord growth

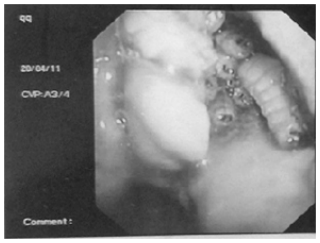

Fig- Maggots in nasopharynx

Methodology

This is a retrospective, cross sectional observational study conducted on the basis of FOL examination (using Olympus CV-150) and biopsy, as aOPD procedure inLabaid Specialized hospital, Dhanmondi, Dhaka from July 2007 to October 2015. Here, 12265 patients were examined in this period. Each patient was counseledabout the procedure and verbal consent was taken for biopsy if needed. The procedure was done under 10% Lidocain spray. Biopsy was taken from 625 patients with suspected growth during the procedure. All the findings were properly written in prescribed data collection sheet and biopsy specimen were properly preserved in preservative material and was sent for histopathological examinations. Collected data were analyzed.

Results

A total number of 12265 patients underwent FOL. The age range was from 4 to 83years. Majority of the patients were between the 16 to 65years age groups with highest number in 26-35 year age group. Male (55.39%)outnumbered female (44.61%). Smoking and or betel nut chewing were the predominant personal habits of the patients examined. Foreign body sensation, feeling something in the throat and pain were the main complaints of the patients. Voice abusers or chemical and garments workers were main sufferers (40.48%) of laryngeal problems. FOL revealed suspected growth in 16.87% and benign looking lesions like vocal cord polyp, noduleor Reinke's edema or others in 11.61% of the cases. In 69.80% of the patients,FOL revealed no abnormalities. A number of 348 diagnosed post treated cancer patients underwent follow up FOL and revealed recurrent growth in 143 (41.09%) cases.Biopsy was taken from suspected growth in625 patients during the procedure. Among them,54.24% were histologically positive for malignancy.

Table IAge distribution of the patients (n- 12265)

Year	>5yr	5-15yr	16-25yr	26-35yr	36-45yr	46-55yr	56-65yr	66-75yr	76yrs+
2007	-	10	169	174	202	195	446	20	27
2008	2	35	272	235	235	191	157	38	61
2009	-	53	280	378	311	325	295	52	40
2010	10	55	311	353	420	388	371	78	63
2011	2	26	234	385	365	275	252	71	27
2012	3	29	284	301	278	243	190	52	42
2013	1	27	221	252	226	259	123	32	35
2014	6	32	171	255	249	248	173	49	23
2015	5	25	147	208	210	165	77	35	16
Total	29 (0.23%)	292 (2.38%)	2089 (17.03%)	2541 (20.71%)	2496 (20.35%)	2289 (18.66%)	2084 (16.99%)	427 (3.48%)	334 (2.72%)

TableII. Sexdistribution of the patients (n- 12265)

Year	Number of patients	Sex	
		Male	Female
2007	898	576	322
2008	1307	697	610
2009	1769	878	891
2010	2095	1183	912
2011	1524	813	711
2012	1437	938	499
2013	1141	668	474
2014	1206	629	577
2015	888	412	476
Total	**12265**	**6794** (55.39%)	**5471** (44.61%)

Table III Personal habits of the patients (n-12265)

Year	Sex				
	Smoking	Betel nut	Alcohol	Oth./Comb.	None
2007	167	245	19	270	197
2008	236	218	21	306	526
2009	295	268	26	223	957
2010	321	343	21	256	1154
2011	327	294	33	255	615
2012	258	271	25	265	618
2013	191	98	31	165	656
2014	174	128	17	159	728
2015	103	199	11	210	365
Total	**2072(16.89%)**	**2064(16.82%)**	**204(1.66%)**	**2109(17.19%)**	**5816(47.41%)**

Table III Personal habits of the patients (n-12265)

Year	Male (n- 6794)			Female (n- 5471)		
	Office workers	Voice abusers, chemical/ garments workers	Business/ others	Office workers	Voice abusers, chemical garments workers	Business/ others
2007	145	211	221	78	194	50
2008	121	298	278	134	292	184
2009	279	311	288	169	479	243
2010	364	408	411	198	431	283
2011	267	296	250	116	310	285
2012	267	313	358	176	216	107
2013	135	287	246	117	221	135
2014	176	243	210	141	242	194
2015	88	125	199	172	190	114
Total	**1842**	**2491**	**2461**	**1301**	**2475**	**1695**

TableII. Sexdistribution of the patients (n- 12265)

Complaints	No of patients
Change of voice	9784
Feeling something in the throat	10877
Pain in the throat	11324
Difficulty in swallowing	4612
Neck swelling	1387
Globus/ Foreign body sensation in throat	9134
Respiratory difficulty	1321
H/O Foreign body ingestion	32
H/O Previous carcinoma larynx/hypopharynx	348
Nasal bleeding	145
Nasal obstruction	1892
Others	987

N.B- Most of the patients came with multiple complaints

Table VI AFOL Findings (n- 12265)

Year	Findings				
	Normal	Vocal cord polyp	Vocal cord nodule	Reinke's Edema/ Vallecular cyst/others	Phonatory gap
2007	499	**60**	72	**11**	46
2008	897	**31**	21	**17**	54
2009	1132	**53**	46	**21**	29
2010	1498	**55**	91	**19**	34
2011	1179	**54**	50	**14**	48
2012	1022	**35**	69	**25**	53
2013	895	**29**	29	**08**	14
2014	925	**41**	31	**06**	15
2015	515	**58**	45	**16**	36
Total	**8562(69.80%)**	**416(3.39%)**	**454(3.70%)**	**137(1.11%)**	**329(2.68%)**

Table VI BFOL Findings (n-12265)

Year	Findings					
	Supra glottic growth	Glottic growth	Pyriform fossa growth	Naso pharyngeal growth	Follow up FOL (n 348)	
					Recurrent growth	No growth /edema
2007	84	18	56	05	12	16
2008	95	37	73	11	04	10
2009	129	76	113	19	21	32
2010	99	48	108	12	19	29
2011	37	12	35	14	11	21
2012	42	11	49	07	15	19
2013	46	19	44	05	08	13
2014	39	17	46	14	13	37
2015	75	11	58	03	14	28
Total	646 **(5.26%)**	**249 (2.03%)**	**582(4.74%)**	**90(0.73%)**	**143(41.09%)**	**205(58.90%)**

Table VI AFOL Findings (n- 12265)

Year	Biopsy taken	Histopathology			
		Benign	Malignant	TB	Keratosis/squamous hyperplasia
2007	**46**	09	27	03	07
2008	58	08	33	06	11
2009	64	11	39	-	14
2010	102	13	58	07	24
2011	57	13	25	-	19
2012	89	14	34	02	33
2013	80	18	43	-	19
2014	71	19	36	01	15
2015	58	11	38	01	08
Total	**625**	**116(18.56%)**	**339(54.24%)**	**26(4.16%)**	**150(24.00%)**

Discussion

Since its introduction more than 150 years ago, laryngoscopy has undergone numerous changes in clinical application. Laryngoscopy was started as an indirect procedure with the manipulation of a laryngeal mirror performed on an awake patient and progressed to direct laryngoscopy,sometimes with an operating microscope under general anesthesia. Now-a-days office based procedure, flexible laryngoscopy is becoming popular. Throughout the globe otolaryngologists are using flexible fiberoptic laryngoscope for routine throat examination and performing biopsy from the suspected lesion, a simple and cost-effective procedure alternative to the traditional direct laryngoscopy in most of the cases, especially for patients who are not fit candidates for general anesthesia. In this country few government and some private set up are using FOL as a special procedure.

In this hospital FOL is used as routine in-office or OPD procedure.Patients from other hospitals or doctor'sconsultation center are also referred here. Most of the patients were 16- 65years old with peak age incidence in 26-35 year group.The age distribution of the patients was consistent with similar studies7,8. Male (55.39%) was more

than that of female (44.61%).Among them large number of patients (69.80%) had normal findings. This huge number of normal findings may be due to the increased level of consciousness of both the patients and the referring physician about the benign and malignant pathology of the larynx and pharynx and increasing 'cancer fovea' among the common people.Endoscopically benign looking lesions were 1007 (8.21%), phonatory gap 329 (2.68%) and suspected malignant lesions 2019 (16.46%). Biopsy was taken from 625 patients, among themmalignancy was foundin 54.24%and tuberculosis was revealed in 26(4.16%) of the biopsy specimen. This finding is nearly similar with a study8 done in Israel.Biopsy was taken in some of the suspected malignant cases as the patient or his attendant did not consented for taking biopsy. Follow up FOL of 348 post treated cancer patients revealed recurrent growth in 143 (41.09%) patients and no growth or showed some degree of edema in 205 (58.90%) patients.Recurrence of growth probably due aggressiveness of the disease or inadequate or treatment failure of the cancer.Smoking, betel nut chewing were the predominant habits of the study population which is similar to astudy8. It may be mentioned that these two personal habits are recognized as the etiological factors of neoplastic lesions in ENT and Head-Neck region especially in this subcontinent9. Voice abusers, chemical or garments workers were the main sufferers. Though the flexible laryngoscope is routinely introduced through nose, sometimes it showed difficultydue to gross septal deviation and some other nasal pathology. In those cases oral route was preferred. Occasionally minor bleeding was occurred during the procedure and managed conservatively. In a very few cases,taking biopsy were little difficult due to severe gag reflex, pain or non-cooperation of the patient and sometimes critical anatomical location of the growth.

Conclusion

Fiberoptic laryngoscopy is a very effective in-office or outdoor procedure for examination of nose, nasopharynx, pharynx and larynx andbiopsy specimen can also be obtained from the suspected lesion under local anesthesiaduring the procedure. Conventionally, biopsy is taken under general anaesthesia from the suspected lesions of the nasopharynx, larynx and hypopharynx which require hospital admission and stay in the hospital. So, if FOL is used judiciously not only for examination but also for obtaining biopsy, it would avoid unnecessary hospital admission and stay and would be cost effective as well in managing ENT and Head-Neck pathology. Moreover, FOL would be a beneficial procedureespecially for those who are not fit for general anesthesia. FOL is also suitable for follow up the post treated carcinoma patients.

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