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Original Paper

Flexible Laryngoscopic Findings of Patients with Hoarseness

Dr. Ali Nezar Hasan

Otolaryngologist M.B.CH.B, F.I.B.M.S.(ENT) Alkarkh general hospital

dr.ali_nazar78@yahoo.com.

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Abstract

Background:

With increasing stress due to day life, rising level of pollution and changing habit and life styles hoarseness and voice disorders are becoming more and more prevalent(1). **Aims:** 1- To emphasize the role of flexible laryngoscopy in diagnosis of hoarseness. 2- To determine the incidence of different causes of hoarseness in patients presented to ENT department in Al-Karkh General Hospital. **Patients and Methods:** During the period from November 2018 to November 2019 (100)patients aged between 3-70 years presented with hoarseness were seen in ENT department in Al-Karkh General Hospital. Flexible laryngoscopy was done for all these patients in whom indirect laryngoscopy was unsatisfactory. Only (37) patients required subsequent direct laryngoscopy. **Results:** Out of total number of patients (100), the data were collected and analyzed according to sex , age, duration of hoarseness, associated symptoms and clinical finding on flexible laryngoscopy (54) male ,(46) female , (25%) had squamous cell carcinoma (S.cc) of larynx, (20%) vocal cord palsy, (16%) vocal cord polyp, (12%) vocal cord nodule, (5%) Renkine'sedema, (10%) chronic non-specific laryngitis, (4%) acute laryngitis, (6%) function dysphonic, (1%) V.C. papillomatosis, (1%) V.C. webs. **Conclusions:**

The use of flexible laryngoscopy proved to be of great value in diagnosis of hoarseness and examination of larynx.

Squamous cell carcinoma constituting the majority of cases with hoarseness in elderly patients. Gastroesophageal reflux disease GERD is an important predisposing factor. In chronic nonspecific laryngitis, vocal cord polyp, nodule and functional dysphonia.

Keywords: Hoarseness, laryngoscope, GERD

Corresponding Author: Dr. Ali Nezar Hasan Otolaryngologist M.B.CH.B, F.I.B.M.S.(ENT) Alkarkh general hospital

Email: dr.ali_nazar78@yahoo.com

INTRODUCTION

Hoarseness Vocal office resulting from random variation in the period city variation in the periodic city and/or intensity of consecutive waves by other words yet by other words horses is perceived cuff harsh cuff harsh or a breathing quality to voice oyster regularly cause a wave for vibration with results for vibration will result in a periodic sound that will perceive I want that will be received as horse The more beer the noise component of sound in relation to police and of sound in relation to periodic component sound it is possible the to more measure horse the voice will in a voice degree by of horses calculating the ratio of periodic the issue sound of periodic sound compared to a period of excellent cold balance called harmonic to noise ratio to noise ratio HNR the acoustic at an R measurement will provide some indication this government will provide some indication of the degree of homelessness but not informal horses but no information as yesterday to of the source of the noise component And our measurement has become a popular measure of the disappointment there are measures of the dysphonic severity and of change in voice quality but of change and voice quality during the treatment.

Patients & Methods

During the period from November 2018 to November 2019, 100 patients aged between 3-70 years presented with hoarseness were seen in E.N.T department, Al-Karkh General Hospital. Clinical assessment of the patients was carried according to the following questionnaire

1 –History: which include:

Name, Age , Sex , Occupation , Onset, Progression , Duration: (more than 3 weeks was considered as chronic). Associated symptoms: Pain referred otalgia, fever, stridor, dysphagia weight loss, heart, burn, and cough. Neurological problems. Social history: smoking alcohol, pollution.

- past medical history: * D.M. * Hypertension. * Gastroesophageal reflux disease (GERD). Allergy.

* Tuberculosis. Past surgical history: Thyroid surgery. * Neck trauma.

2- Examination:

General examination. ENT examination. Examination of the neck. Neurological examination including the cranial nerves.

RESULTS

1 - Age: In the present study, the age ranged from 3-70 years. The most common age group seen were the fourth and fifth decade with a mean age value 45 years. After analysis of history, examination and available investigations the causes of hoarseness distributed according to age group shown in **Table (1) : Causes of hoarseness according to etiology and age group 100 patients.**

Causes of hoarseness	Age Group								
	0-10 yrs	11-20 yrs	21-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs	61-70 yrs	Total %	
1- Malignant (squamus cell carcinoma)	-	-	-	-	-	7	18	25	25
Benign lesion									
- V.C. polyp	-	-	2	4	6	4	-	16	16
- V.C. nodule	-	2	7	3	-	-	-	12	12
- Renkies oedema	-	-	-	-	-	2	3	5	5
Total								33	33
3- Neurological causes - Vocal cord paralysis	-	2	2	5	8	3	-	20	20
4- Inflammatory causes									
- Chronic laryngitits (non-specific)	-	-	2	2	6	-	-	10	10
- Acute laryngitits	-	-	2	2	-	-	-	4	4
Total								14	14
5- Functional (muscle tension dysphonia)	-	3	2	1	-	-	-	6	6
6- Congenital									
- Vocal cord web	1	-	-	-	-	-	-	1	1
- Juvenile respiratory papillomatosis	1	-	-	-	-	-	-	1	1

2 - gender:

In our study, there were 54 male and 46 female. Male to female ratio was 1.14. Table-2

Table (2) : Causes of hoarseness distributed according to sex.

Cause of hoarseness	No. of patients	Male	Female	Male/ female ratio %
1- Benign lesion				
- Vocal cord polyps	16	10	6	1.66
- Vocal cord nodule	12	4	8	0.5
- Renkie's oedema	5	2	3	0.66
2- Malignant lesion :				
Squamous cell CA.	25	23	2	11.5
3- Neurological cause vocal cord paralysis	20	6	14	0.42
4- Inflammatory				
- Acute laryngitis	4	2	2	1
- Chronic non-specific laryngitis	10	3	7	0.4
5- Functional	6	2	4	0.5
6- Congenital				
- V.C. web		1	-	1
- Juvenile respiratory papillomatosis		1	-	1

3 - Duration of hoarseness at presentation:

Varies from few weeks to several months Table-3.

Table (3) : Duration of hoarseness at presentation.

Causes of hoarseness	No. of patients	Duration of hoarseness
1- Benign lesion		
- Vocal cord polyps	16	2-4 months
- Vocal cord nodule	12	2-3 months
- Renkie's oedema	5	3-6 months
2- Squamous cell CA of larynx	25	3-9 months
3- Neurological cause vocal cord paralysis	20	2 wks – 3 months
4- Inflammatory		
- Acute laryngitis	4	2 wks
- Chronic non-specific laryngitis	10	2-6 months
5- Functional	6	1 wk – 2 months
6- Congenital		
- V.C. web	1	4-6 months
- Juvenile respiratory papillomatosis	1	5-9 months

Finding of flexible laryngoscopy:

In our study (100) patients presented with hoarseness, flexible laryngoscopy was done for all of them and the finding were variable shown in Table (4).

Table (4) : Finding of flexible laryngoscopy.

Clinical finding	No. of patients	%	No. requiring D.L
1- Glottic and/or supraglottic mass	25	25	25
2- Immobile vocal cord	20	20	--
- Left vocal cord paralysis	14	14	
- Right vocal cord paralysis	4	4	
- Bilateral vocal cord paralysis	2	2	
3- Vocal cord polyp	16	16	8
4- ❖ Chronic non-specific laryngitis	10	10	2
❖ Acute laryngitis	4	4	---
5- Vocal cord nodule	12	12	---
6- Reinkes oedema	5	5	2
7- No abnormality (functional dysphonia)	6	6	---
8- Vocal cord web	1	1	---
9- Juvenile respiratory papillamatosis	1	1	---
	100	100	37

(25) patients had glottic and/or supraglottic mass, proved by direct laryngoscopy with histopathology to be squamous cell carcinoma of larynx. All were smokers, and (4) patients had positive (+) history of GERD (20) patients had immobile vocal cords, (9) of them were smokers, (4) had history of GERD and only (two) had history of voice abuse. (14) patients had left vocal cord paralysis:

- Eight of them had previous thyroid surgery.
- Four had history of neck trauma (blast injury).
- Two had no cause (idiopathic). (4) patients had right vocal cord paralysis.
- Two had history of neck trauma (blast injury).
- One had previous thyroid surgery.

(2) patients had bilateral vocal cord paralysis:

- One had previous thyroid surgery and the other.
- Had no cause (idiopathic).

(16) patients had vocal cord polyp, appeared as solitary swelling
greater than 3mm a raised from free edge of vocal fold mostly
from the anterior commissure. (12) had history of voice abuse, (8) were smokers and (6) patients had history of GERD.

(12) patients had vocal cord nodule appeared as bilateral small swelling less than 3mm, mostly at the junction of anterior one- third and posterior two-thirds of vocal cord. (8) patients had history of voice abuse, (4) had history of GERD and (2) were smokers.

(10) patients had chronic non-specific laryngitis The vocal cord were edematous, erythematous and thickened.

- The arytenoids cartilage and false vocal cord were red

and swollen with increased amount of thick mucus secretion Which might be yellowish or whitish.

5+ve GERD, 2 were smokers, 7 have voice abuse (4) patients had acute laryngitis:

- The vocal cord was erythematous and edematous with increased secretions. (2) patients had history of voice abuse and(2) had GERD and only one was smoker.

(6) patients had functional dysphonia. There are no abnormalities, the vocal cords look and more normally. (4) patients had history of voice abuse (3) had GERD and (2) were smokers.

(5) patients had Reinke'sedema. There were bilateral diffuse swollen vocal folds with bags of fluid that move UP and down through the glottis with respiration and phonation. (4) patients were smoker, (2) had history of voice abuse and (3) patients had GERD. One child had laryngeal web appeared as band of connective tissue between the two vocal cords at the anterior commissure. One child had juvenile respiratory papillomatosis, warty epithelial mass at one or both vocal cords.

Discussion:

In this study, flexible fiber optic laryngoscopy was done for (100) patients presented with hoarseness in whom in direct laryngoscopy was unsatisfactory. Only (37) patients required direct laryngoscopy. William GT et al., (1975) examined (72) patient with flexible in the Royal infirmary of Edinburgh over three months duration, the patient was not a selected group. The study showed that flexible laryngoscopy allows unhurried laryngeal visualization in patient in whom with flexible laryngoscopy, the larynx can be observed in natural action of swallowing, breathing, coughing and speaking(2).

Welch AR, (1982) performed flexible laryngoscopy on (60) patients with hoarseness referred to ENT department of Leicester Royal infirmary over a 2-year period in whom indirect laryngoscopy was unsatisfactory. Only (23) patients of the sixty examined required direct laryngoscopy(3).

Dr. Mohammad Shakir Hammed (1996) performed flexible laryngoscopy on (80) patients presented with hoarseness referred to ENT department of Al-KarkhGeneral Hospital. Only (15) patients required direct laryngoscopy(4).

Kadambari Batra, Gulmotwani and P.C. Sagar (2004) New Delhi performed flexible laryngoscopy on (100) patients presented with hoarseness referred to ENT department at Safdarjung Hospital. Only (18) patient required direct laryngoscopy.

Malignant Lesion: In this study (25%) squamous cell carcinoma of larynx (S.C.C.) which is the largest group. William GT et al., (1975) found that (5.5%) had (S.C.C). Welch AR (1982) found that (5%) had (S.C.C.). Dr. Mohammad Shakir (1996) found that (18.7%) had S.C.C. Kadambari Batra, Gul Motwani, P.C Sagar (2009) found that (18%) had S.C.C. Neurological Cause: - Vocal cord paralysis is the most common cause. - In my study (20%) had vocal cord paralysis (V.C.P.). William GT et al., (1975) found that (9.7%) had (V.C.P.). Welch AR study (1982) found that (6.6%) had (V.C.P.). Dr. Mohammad Shakir (1996) found that (19%) had V.C.P. Kadambari Batra, Gul Motwani and P.C. Sagar (2004) found that only (9%) had V.C.P. (5). Vocal Cord Polyp: Our study (16%) had vocal cord polyp. William GT et al., (1975) (2.7%) had V. cord polyp. Welch AR (1982) (3%) had vocal cord polyp. Dr. Mohammad Shakir (1996) (7.5%). Kadambar Batra, Gul Momani and P.C. Sugar (2004) (13.8%). Vocal Cord Nodule: Our study (12%) had vocal cord nodule. William GT et al., (1975) (8.3%). Welch AR (1982) (3%). Dr. Mohammad Shakir (1996) (1.25%). Kadambar Batra, Gulotwani and P.C. Sugar (2004) (19.6%). Reinke'sOedema: - Our study (5%) had Reinke'soedema William GT, et al., (1975) (5.5%). Welch AR (1982) no one has Reinke'soedema (0%). Dr. Mohammad Shakir (1996) (2.5%). KadambarBatra, Gul Motwani and P.C. Sugar (2004) (1 %).

Inflammatory: Our study (14%) had laryngitis. (10%) had chronic non-specific laryngitis. (4%) had acute laryngitis following upper respiratory tract infection. William Gt et al., (1975) (33.2%) had chronic laryngitis Welch, AR (1982) (16.6%) had chronic laryngitis. Dr. Mohammad Shaker (1996) supervised by Furat AL-Samaraaie showed that (15%) had acute laryngitis (10%) had chronic non-specific laryngitis and (2.5%) had tubercular (T.B) laryngitis.

Kadambar Batra, Gulmotv.ani and P.C Sugar (2004) showed that: (8%) had chronic laryngitis, (7%) had tubercular laryngitis and (7%) had post-irradiation laryngitis.

Functional: In our study (6%) of patients had function dysphonic the diagnosis is by exclusion other causes. (4) patients were female and history of anxiety and depression. (2) patients were boys and had puberophonia. William Gt et al., (1975) (4.1%) had functional voice change: One had hysterical aphonia. One had functional dysphonia. One had functional spastic Welch AR study (1982) showed that (51.6%) had functional dysphonia. Mohammad Shaker (1996)

showed that: (8.75%) had habitual dysphonia, (2.5%) had dysphonia plica ventricularis (1.25%) had hysterical dysphonia. Kadambar Batra, Gulmotwani and P.C sugar (2004) showed that functional voice disorder was the largest group (51 %). They had found a new concept that lesion such as vocal cord polyp, nodular and granuloma, were secondary to vocal abuse , misuse syndrome, that they should be included in functional voice disorders(6).

Congenital:

In our study, two children were identified, both were boys. One was (2) years old had laryngeal web in anterior commissure and the other (4) years old with juvenile respiratory papillomatosis (J.R.P.). In William GL et al., (1975) only (2.7%) had juvenile respiratory papillomatosis.

Dr. Mohammad Shaker (1996) found that (3.75%) had juvenile respiratory papillomatosis(4).

causes	In this study	Kadambari Motwani P.C. sager (2004) new Delhi	Dr.Mohammad Shakir Hamid (1996)	Welch AR (1982)	William Gt et al (1975)
-Malignant lesion(sequamous cell arcinoma)	25 %	18 %	18.7 %	5%	5.5%
-Neurological:vocal cord paralysis	20 %	9 %	19 %	6.6%	9.7 %
- Vocal cord polyp	16 %	13.8 %	7.5 %	3 %	2.7 %
- Vocal cord nodule	12 %	19.6 %	1.25 %	3 %	8.3 %
- Reinke oedema	5 %	1 %	2.5 %	--	5.5 %
- inflammatory:-			15 % acute		
Chronic non –Specific laryngitis	10 %	8 % chronic	10 % chronic	6.6 %	33.2 %
		1 % T.B	Non- specific	chronic	chronic
Acute laryngitis	4 %	1 % post- irradiatio	2 5 T.B		
- Functional	6 %	51 %	12 %	51.6 %	4.1 %
- Congenital					
vocal cord web	1 %	----	----	----	----
Juvenile respiratory papillamatosis	1 %	----	3.75 %	----	2.7 %

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

In approaching the problem of hoarseness, the application of flexible system laryngoscopy has an important role to play in the examination of the larynx.

Many unnecessary hospital admissions for direct laryngoscopy may be avoided by using flexible laryngoscopy which is simple, safe, reliable and economical procedure when indirect laryngoscopy was unsatisfactory.

The incidence of different causes of hoarseness was determined showing that: Squamous cell carcinoma of larynx constituting the majority of cases with hoarseness in elderly patients. Thyroid surgery is still the most common cause of recurrent laryngeal nerve paralysis. Gastroesophageal reflux disease (GERD) is an important predisposing factor in chronic non-specific laryngitis, vocal cord polyp(7), vocal cord nodule and functional dysphonia. Hoarseness in a child must not be dismissed as being the result of vocal abuse since respiratory papillomatosis with its potential risk could be the cause. Functional dysphonia associated with stress, anxiety and depression.

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