https://doi.org/10.29309/TPMJ/2026.33.06.10304 www.theprofesional.com

ORIGINAL ARTICLE

To determine clinicopathologic profile of patients presenting with hoarseness of voice using fiber-optic laryngoscopy in Sir Ganga Ram Hospital, Lahore.

Waqas Javaid[1], Mehak Ahmad[2], Ayesha Fayyaz[3], Aamna Durrani[4], Muhammad Rashid[5], Muhammad Muneeb Amjad[6]

ABSTRACT… Objective: To Determine clinicopathologic profile of patients presenting with hoarseness of voice using fiber-optic laryngoscopy in Sir Ganga Ram Hospital, Lahore. **Study Design:** Cross-Sectional Study. **Setting:** Department of ENT Sir Ganga Ram Hospital, Lahore. **Period:** The study was conducted over a six-month period, from July 4, 2025 to January 3, 2026. **Methods:** In this Cross sectional study, 179 patients were selected from OPD having completed the criteria. After informed consent, History taking and thorough physical examination was done and proformas were completed. HIV, HBV and HCV screening was done to ensure proper sterilization protocol. Intravenous access in the patient was maintained and an emergency management tray was arranged before procedure. Flexible Fibreoptic laryngoscopy was performed with topical anesthesia. Findings were noted and a differential diagnosis made which can be later confirmed with biopsy. **Results:** Out of 179 patients, 14.0% (n=25) were in age group of 12-40 years and 86.0% (n=154) were in age group of 41-80 years. Mean age was 47.29±6.70 years. There were 87.7% (n=157) male and 12.3% (n=22) females. Among comorbidities, 5.6% (n=10) TB and 7.3% (n=13) had GERD. We found that out of 179 patients, 8.9 %(n=16) were substance abuse, 15.6% (n=28) alcohol and 36.9% (n=66) were smokers. Among the clinopathological profile, 34.1% (n=61) had chronic laryngitis, 14.0% (n=25) benign lesion, 6.1% (n=11) and malignant tumor. Distribution of duration of hoarseness was 12.11±3.45 weeks. **Conclusion:** We concluded that fiber-optic laryngoscopy found to be helpful technique for identifying different causes of voice hoarseness and to optimize treatment outcomes along with early diagnosis.

Key words: Benign Lesion, Fiber Optic Laryngoscopy, Hoarseness of Voice.

Article Citation: Javaid W, Ahmad M, Fayyaz A, Durrani A, Rashid M Amjad MM. To determine clinicopathologic profile of patients presenting with hoarseness of voice using fiber-optic laryngoscopy in Sir Ganga Ram Hospital, Lahore. Professional Med J 2026; 33(06):1075-1080. https://doi.org/10.29309/TPMJ/2026.33.06.10304

INTRODUCTION

A shift in voice quality is indicated by hoarseness of voice. as described by the patient, which can be raspy, breathy, strained, fatigued, rough, tremulous or weak.[1,16] On the other hand, Dysphonia is an impaired voice production as noted by the clinician.[2] Such patients seem to suffer from social isolation, even depression leading to poor quality of life.[3] Dysphonia with the cardinal symptom of hoarseness has a prevalence of around 1% among patients in general and a lifetime prevalence of around 30%.[4] Paralysis of vocal cord was diagnosed in 10% and reflex laryngitis in 6% which was 42.5% in another study.[5]

Depending on the reasons and length, hoarseness can be classified as either acute or chronic. These can include both acute (42.1%) and chronic laryngitis (9.7%), functional vocal abnormalities (30%), benign (10.7%-31%) and malignant tumors (2.2-3%), as well as neurogenic disturbances including vocal cord paresis (2.8-8%), physiologic aging of the voice (2%), and psychogenic variables (2-2.2%).[4] Physicians generally treat chronic hoarseness empirically, due to lack of availability or skill for direct visualization of larynx, which as per recent guidelines should be done within time frame of 4 weeks, if symptoms fail to resolve or earlier if suspicion of underlying malignancy arises).[8,19]

Fibreoptic flexible laryngoscope examination has an advantage of being a daytime procedure, and is done using topical anesthetic. It is well tolerated in patients, affords the ability to view and palpate the nasopharynx, supraglottis, and glottis with better visualization of subglottis.[9,10]

1. FCPS, Associate Professor ENT, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore.
2. FCPS (ENT), Senior Registrar ENT, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore.
3. FCPS (ENT), Senior Registrar ENT, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore.
4. MS (ENT), Women Medical Officer ENT, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore.
5. MBBS, FCPS, Senior Registrar ENT, Rahbar Medical and Dental College, Lahore.
6. MBBS, FCPS, Senior Registrar ENT, Sharif Medical City Hospital, Lahore.

Correspondence Address:
Dr. Waqas Javaid
Department of ENT, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore.
waqas221@hotmail.com

Article received on:
14/01/2026
Date of revision:
22/01/2026
Accepted for publication:
17/03/2026

This helps in earlier referral to speech therapist and lifestyle modification with implementation of vocal hygiene and voice therapy, in cases of voice overuse which is most common cause behind Dysphonia.[2,11] Patients' quality of life will eventually improve as a result of fewer hospital visits and a lower total disease burden on the healthcare system. An indication of the general population can be obtained by estimating the clinicopathologic profile of patients who arrive to tertiary care hospitals with hoarseness of voice as their principal complaint. This information can be used in public and healthcare awareness initiatives.

METHODS

This Cross sectional study was done in ENT department Sir Ganga Ram Hospital Lahore from July 4, 2025 to January 3, 2026 after approval from Institutional Ethics Review Committee of Fatima Jinnah medical university Lahore No.115/CIERB Dated 28.11.2025. A sample size of 179 cases was calculated using 95% confidence level, 2.5% margin of error and expected percentage of malignant lesions as 3% using Non probability consecutive sampling technique from OPD. Patients fulfilling the criteria i.e in age range of 12 to 80 years of both male and female gender with complaint of hoarseness of voice for greater than 4 weeks duration were included and patients with noncompliance issue in doing Fibreoptic laryngoscopy examination due to excessive gag reflex, inability to follow instructions were excluded. After informed consent, History taking and thorough physical examination was done and proformas were completed. HIV, HBV, HCV and COVID 19 screening was done to ensure proper sterilization protocol. Intravenous access in the patient was maintained and an emergency management tray was arranged before procedure. Flexible Fibreoptic laryngoscopy was performed with topical anesthesia. Findings were noted and Clinicopathological profile was recorded.

Data Analysis

SPSS v25.0 was used to enter and analyze the data. Frequency and percentage was calculated for qualitative variables like gender, comorbidities, substance abuse, alcohol use, smoking as well of chronic laryngitis, benign lesions and malignant tumors. Age and duration of hoarseness of voice as quantitative variable were calculated in mean and standard deviation. Stratification was done for age, gender, comorbidities, substance abuse, alcohol abuse, smoking and its association with clinicopathologic profile was calculated by using Chi square test. A p-value ≤0.05 was considered as a level of significance.

RESULTS

In current study we determined the clinicopathologic profile in patients presenting with hoarseness of voice using fiber-optic laryngoscopy in Sir Ganga Ram Hospital, Lahore.

There were 87.7 %(n=157) male and 12.3 %(n=22) females. Among comorbidities, 5.6% (n=10) TB and 7.3% (n=13) had GERD. We found that out of 179 patients, 8.9 %(n=16) were substance abuse, 15.6% (n=28) alcohol and 36.9% (n=66) were smokers. Among the clinopathological profile, 34.1% (n=61) had chronic laryngitis, 14.0% (n=25) benign lesion, 6.1% (n=11) malignant tumor. We found that out of 179 patients, 14.0% (n=25) were in age group of 12-40 years and 86.0% (n=154) were in age group of 41-80 years. Mean age was 47.29±6.70 years. Distribution of duration of hoarseness was 12.11±3.45 weeks.

Data was stratified for age, gender, co-morbidities, substance abuse, alcohol abuse and smoking shown in Table-I to XIII.

DISCUSSION

In current study we determine the clinicopathologic profile in patients presenting with hoarseness of voice using fiber-optic laryngoscopy in Sir Ganga Ram Hospital, Lahore. The age group in the current study that exhibits hoarseness of voice most frequently is 41-80 years (86.0 %(n=154), while in a study done by Soni S, et.al[12], it was in 50–70 years (55%). Kambic et al.[13] in a series of 591 patients described the age group of 30–40 years in whom maximum incidence of benign lesion of larynx were observed. In present study number of male patients was higher 87.7% (n=157).[16] Male predominance may be explained by a variety of behaviors, such as drinking alcohol, chewing tobacco with lime, and smoking. Men are also subject to workplace risks that women, who spend most of their time indoors,

are not.

TABLE-I

Stratification for chronic laryngitis with respect to age using chi-square test N= 179

Age Group	Chronic Laryngitis		Total	P-Value
	Yes	No		
12-40 years	7	18	25	0.650
	28.0%	72.0%	100.0%	
41-80 years	54	100	154	
	35.1%	64.9%	100.0%	
Total	61	118	179	
	34.1%	65.9%	100.0%	

TABLE-II

Stratification for chronic laryngitis with respect to gender using chi-square test N= 179

Gender	Chronic Laryngitis		Total	P-Value
	Yes	No		
Male	47	110	157	0.003
	29.9%	70.1%	100.0%	
Female	14	8	22	
	63.6%	36.4%	100.0%	
Total	61	118	179	
	34.1%	65.9%	100.0%	

Table-III

Stratification for chronic laryngitis with respect to comorbidities (TB, GERD) using chi-square test N= 179

TB	Chronic Laryngitis		Total	P- Value
	Yes	No		
Yes	1	9	10	0.168
	10.0%	90.0%	100.0%	
No	60	109	169	
	35.5%	64.5%	100.0%	
Total	61	118	179	
	34.1%	65.9%	100.0%	

GERD	Chronic Laryngitis		Total	P-Value
	Yes	No		
Yes	5	8	13	0.766
	38.5%	61.5%	100.0%	
No	56	110	166	
	33.7%	66.3%	100.0%	
Total	61	118	179	
	34.1%	65.9%	100.0%	

TABLE-IV

Stratification for chronic laryngitis with respect to comorbidities (substance abuse, alcohol abuse) using chi-square test N= 179

Substance Abuse	Chronic Laryngitis		Total	P-Value
	Yes	No		
Yes	6	10	16	0.786
	37.5%	62.5%	100.0%	
No	55	108	163	
	33.7%	66.3%	100.0%	
Total	61	118	179	
	34.1%	65.9%	100.0%	

Alcohol Abuse	Chronic Laryngitis		Total	P-Value
	Yes	No		
Yes	9	19	28	1.000
	32.1%	67.9%	100.0%	
No	52	99	151	
	34.4%	65.9%	100.0%	
Total	61	118	179	
	34.1%	65.9%	100.0%	

TABLE-V

Stratification for chronic laryngitis with respect to comorbidities (smoking) using chi-square test N= 179

Smoking	Chronic Laryngitis		Total	P-Value
	Yes	No		
Yes	18	48	66	0.191
	27.3%	72.7%	100.0%	
No	43	70	113	
	38.1%	61.9%	100.0%	
Total	61	118	179	
	34.1%	65.9%	100.0%	

TABLE-VI

Stratification for benign lesions with respect to age using chi-square test N= 179

Age Group	Benign Lesions		Total	P-Value
	Yes	No		
12-40 years	2	23	25	0.615
	8.0%	92.0%	100.0%	
41-80 years	7	147	154	
	4.5%	95.5%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

TABLE-VII

Stratification for benign lesions with respect to gender using chi-square test N= 179

Gender	Benign Lesions		Total	P-Value
	Yes	No		
Male	8	149	157	1.000
	5.1%	94.9%	100.0%	
Female	1	21	22	
	4.5%	95.5%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

TABLE-VIII

Stratification for Benign lesions with respect to comorbidities (TB, GERD) using chi-square test N= 179

TB	Benign lesions		Total	P-Value
	Yes	No		
Yes	0	10	10	1.000
	0.0%	100.0%	100.0%	
No	9	160	169	
	5.3%	94.7%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

GERD	Benign lesions		Total	P-Value
	Yes	No		
Yes	0	13	13	1.000
	0.0%	100.0%	100.0%	
No	9	157	166	
	5.4%	94.6%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

TABLE-IX

Stratification for benign lesions with respect to comorbidities (substance abuse, alcohol abuse) using chi-square test N= 179

Substance Abuse	Benign Lesions		Total	P-Value
	Yes	No		
Yes	2	14	16	0.186
	12.5%	87.5%	100.0%	
No	7	156	163	
	4.3%	95.7%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

Alcohol Abuse	Benign Lesions		Total	P-Value
	Yes	No		
Yes	2	26	28	0.633
	7.1%	92.9%	100.0%	
No	7	144	151	
	4.6%	95.4%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

Table-X

Stratification for benign lesions with respect to comorbidities (smoking, vocal abuse) using chi-square test N= 179

Smoking	Benign Lesions		Total	P-Value
	Yes	No		
Yes	3	63	66	1.000
	4.5%	95.5%	100.0%	
No	6	107	113	
	5.3%	94.7%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

Vocal Abuse	Benign Lesions		Total	P-Value
	Yes	No		
Yes	0	7	7	1.000
	0.0%	100.0%	100.0%	
No	9	163	172	
	5.2%	94.8%	100.0%	
Total	9	170	179	
	5.0%	95.0%	100.0%	

TABLE-XI

Stratification for malignant lesions with respect to age using chi-square test N= 179

Age Group	Malignant Lesions		Total	P-Value
	Yes	No		
12-40 years	1	24	25	1.000
	4.0%	96.0%	100.0%	
41-80 years	10	144	154	
	6.5%	93.5%	100.0%	
Total	11	168	179	
	6.1%	93.9%	100.0%	

TABLE-XII

Stratification for malignant lesions with respect to gender using chi-square test N= 179

Gender	Malignant lesions		Total	P-Value
	Yes	No		
Male	8	149	157	0.138
	5.1%	94.9%	100.0%	
Female	3	19	22	
	13.6%	86.4%	100.0%	
Total	11	168	179	
	6.1%	93.9%	100.0%	

TABLE-XIII

Stratification for malignant lesions with respect to comorbidities (substance abuse, alcohol abuse) using chi-square test N= 179

Substance Abuse	Malignant Lesions		Total	P-Value
	Yes	No		
Yes	0	16	16	0.602
	0.0%	100.0%	100.0%	
No	11	152	163	
	6.7%	93.3%	100.0%	
Total	11	168	179	
	6.1%	93.9%	100.0%	
Alcohol Abuse	**Malignant Lesions**		**Total**	**P-Value**
	Yes	**No**		
Yes	1	27	28	1.000
	3.6%	96.4%	100.0%	
No	10	141	151	
	6.6%	93.4%	100.0%	
Total	11	168	179	
	6.1%	93.9%	100.0%	

In study done by Soni S[12], et.al 60 % were smokers, Pal et al.[14] found smoking habit in 33 % cases with hoarseness. The majority of patients in our study complained of hoarseness of voice for six to twelve weeks. This may be explained by the fact that, in contrast to the Pal research, where the majority of patients have benign lesions, the majority of our patients have malignant lesions. According to a study by Reiter et al., hoarseness was caused by benign (10.7–31%) and malignant tumors (2.2–3%), acute (42.1%) and chronic laryngitis (9.7%), functional vocal disturbances (30%), neurogenic disturbances like vocal cord paresis (2.8–8%), physiologic aging of the voice (2%), and psychogenic factors (2–2.2%).[4]

According to Banjara et al.[15], the majority of patients (61.35%) had problems during three months. 25.1% for three to six months, 10.76% for six to twelve months, and 20.72% for more than a year. A retrospective study conducted by Azhar hameed had 70:30 male: female predominance with 24% cases in ages 31-40 years and Vocal abuse seemed to be the most common culprit.[5] Another study by Syed uzma Naqvi had 64% males with tobacco abuse as the most common etiology.[6]

CONCLUSION

In current study, we determined the clinicopathologic profile in patients presenting with hoarseness of voice using fiber-optic laryngoscopy in Sir Ganga Ram Hospital, Lahore and found that fiber-optic laryngoscopy a helpful technique for identifying different causes of voice hoarseness[17,18] and to optimize treatment outcomes, early diagnosis is essential.[20]

CONFLICT OF INTEREST

The authors declare no conflict of interest.

SOURCE OF FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

REFERENCES

1. Sood S, Street I, Donne A. **Hoarseness in children.** Br J Hosp Med (Lond). 2017; 78(12):678-83.
2. Stachler RJ, Francis DO, Schwartz SR, Damask CC, Digoy GP, Krouse HJ, et al. **Clinical practice guideline: Hoarseness (dysphonia)(update).** Otolaryngol Head Neck Surg. 2018; 158(1_suppl):S1-42.
3. Cohen SM, Kim J, Roy N, Asche C, Courey M. **Prevalence and causes of dysphonia in a large treatment-seeking population.** The Laryngoscope. 2012; 122(2):343-8.
4. Reiter R, Hoffmann TK, Pickhard A, Brosch S. **Hoarseness—causes and treatments.** Dtsch Arztebl Int. 2015; 112(19):329.
5. Hameed A, Aziz B, Mushwani M, Sheikh SI. **Clinico-etiolological Study of Hoarseness in 100 Patients.** J Fatima Jinnah Med Univ. 2013; 7(3).

6. Naqvi S, Zia S, Farrukh MS, Ansari MA, Siddiqui AH. **Utility of flexible fiberoptic nasolaryngoscopy in assessment of laryngeal lesions among suspected patients living in Karachi, Pakistan.** Dysphagia. 2019; 21:24-4.
7. Gevorgyan CA. **Early referral for hoarseness.** CMAJ. 2018; 190(36):E1087.
8. Morgan AP, Rigby MH. **Hoarseness of unclear origin in adults.** CMAJ. 2018; 190(3):E80.
9. Chang JI, Bevans SE, Schwartz SR. **Otolaryngology clinic of North America: evidence-based practice: Management of hoarseness/dysphonia.** Otolaryngol Clin North Am. 2012; 45(5):1109-26.
10. Tasli H, Karakoc O, Birkent H. **A grading system for transnasal flexible laryngoscopy.** J Voice. 2019; 33(5):712-5.
11. Stinnett S, Chmielewska M, Akst LM. **Update on management of hoarseness.** Med Clin North Am. 2018; 102(6):1027-40.
12. Soni S, Chouksey S. **A study of clinicopathological profile of patients of hoarseness of voice presenting to Tertiary Care hospital.** Indian J Otolaryngol Head Neck Surg. 2017 Jun; 69(2):244-47.
13. Kambic V, Radsel Z, Zargi M, Acko M. **Vocal cord polyps: incidence, histology and pathogenesis.** J Laryngeal Otol. 1981; 95:609-18.
14. Pal KS, Kaushal AK, Nagpure PS, Agarwal G. **Etiopathological study of 100 patients of hoarseness of voice in a rural-based hospital.** Indian J Otolaryngol Head Neck Surg. 2014; 66(1):40-45.
15. Banjara H, Mungutwar V, Singh D, Gupta A. **Hoarseness of voice: A retrospective study of 251 cases.** Int J PhonosurgLarungol. 2011; 1(1):21-27.
16. Rathi A, Sharma S. **Clinicopathological profile of hoarseness of voice.** Int J Otorhinolaryngol Head Neck Surg. 2020; 6(3):484-88.
17. Khan RZ, Iqbal A, Saqulain G. **Diagnostic accuracy of fiber optic laryngoscopy.** J Islamabad Med Dental Coll. 2021; 10(2):101-4.
18 Omokanye HK, Alabi SB, Idris SO, Ayodele SO, Nasir AA, Salaudeen GA, et al. **Diagnostic accuracy of flexible fiberoptic laryngoscopy: experience from a tertiary health institution in Nigeria.** Eur Arch Otorhinolaryngol. 2021; 278(8):2937-42.
19. Kotwal S, Rathore A, Hussain A. **Etiopathological study of 100 patients of hoarseness of voice in a rural tertiary care hospital.** J Popul Clin Pharmacol. 2025; 32(9):483-88.
20. Deosthale N, Soni AJ, Khadakkar SP, Wani MK, Dhote KS, Methwani DA, et al. **Clinical profile of hoarseness of voice: A hospital-based cross-sectional study.** Int J Recent Surg Med Sci. 2022; 8(1):44-8.

AUTHORSHIP AND CONTRIBUTION DECLARATION	
1	**Waqas Javaid:** Data collection.
2	**Mehak Ahmad:** Critical revision.
3	**Ayesha Fayyaz:** Literature review.
4	**Aamna Durrani:** Study design.
5	**Muhammad Rashid:** Proof reading.
6	**Muhammad Muneeb Amjad:** Data entry.