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ORIGINAL RESEARCH

Videolaryngoscopy findings in laryngopharyngeal malignancies in Tertiary Cancer Care Centre – A descriptive study of Annual Data

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Abstract

Aim: Our study was intended to analyze the videolaryngoscopy findings and find annual percentage prevalence of carcinoma larynx, hypopharynx, oropharynx and its sub-sites, also assessing its effectiveness for diagnosis and follow-up.

Materials and methods: Patients who attended ENT OPD and diagnosed later with biopsy-proven carcinoma and patients referred from the oncology department after chemo radiotherapy for follow-up from April 2023 to March 2024 underwent videolaryngoscopy assessment.

Results: A total of 132 patients underwent videolaryngoscopy, of whom 92 (69.7%) were male and 40 (30.3%) female. Carcinoma larynx cases were 54 (40.9%), out of which supraglottis 26 (48%), glottis 27 (50%), and subglottis 1 (2%). Carcinoma hypopharynx cases were 61 (46.2%), out of which pyriform fossa 32 (52.5%), postcricoid 27 (44.3%), and posterior pharyngeal wall 2 (3.2%). There were 15 oropharynx (11.3%) and 2 (1.6%) other malignancy patients. 6 patients (4.5%) had two primary lesions. 25 patients (17.8%) had a T1 lesion, 48 patients (34.3%) had a T2 lesion, 47 patients (33.6%) had a T3 lesion, and 20 patients (14.3%) had a T4 lesion. The overall purpose of videolaryngoscopy was diagnostic in 51 patients (38.6%) and follow-up after chemoradiotherapy in 81 patients (61.4%). Out of 41 diagnostic patients, (80.3%), a biopsy was done with videolaryngoscopy. In follow-up after chemoradiotherapy, 37 out of 81 patients (45.7%) were asymptomatic without any recurrence or residual lesion. 44 out of 81 patients (54.3%) had symptomatic lesions and were advised further follow-up, radiological investigation, repeat biopsy, and radical surgery.

Conclusion: Videolaryngoscopy is a simple outpatient efficacious investigation in the diagnosis follow-up of patients with laryngopharyngeal carcinoma.

Keywords: videolaryngoscopy, carcinoma larynx, carcinoma hypopharynx, carcinoma glottis, carcinoma supraglottis, carcinoma pyriform fossa, carcinoma post cricoid

Introduction

A Global cancer observatory published in May 2019 (1) observed an incidence of 2.2% carcinoma hypopharynx, 2.5% carcinoma larynx, and 1.5% carcinoma oropharynx. Diagnosis and follow-up of these patients are done by examination with videolaryngoscopy (VLS). Hopkin rods have greatly enhanced the magnification and depth for detailed observation during examination of the larynx; they have also been modified to view from different angles. The use of VLS has reserved direct laryngoscopy for therapeutic purposes. We did a study intended to analyze the VLS findings and the find annual percentage prevalence of carcinoma larynx, hypopharynx, oropharynx and its subsites, as well as assess the effectiveness of videolaryngoscopy for diagnosis and follow-up.

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TABLE 1 | Summary of cases.

Sub site	T1	T2	T3	T4	Total
CA HYPOPHARYNX	**0**	**27**	**27**	**7**	**61**
Pyriform sinus	0	11	15	6	31
Post cricoid	0	15	11	1	28
Post pharyngeal wall	0	1	1	0	2
CA LARYNX	**22**	**13**	**11**	**8**	**54**
Supraglottis	0	10	9	7	26
Glottis	22	3	1	1	27
Subglottis	0	0	1	0	1
CA OROPHARYNX (POSTERIOR TONGUE)	**0**	**4**	**10**	**1**	**15**

Materials and methods

All patients who attended ENT OPD and diagnosed with later biopsy-proven carcinoma and patients referred from oncology department after chemoradiotherapy for follow-up were included in the study. Videolaryngoscopy was done using a 45-degree Hopkins rod nasal endoscope, with the patient sitting with tongue held in hand. The period of study was April 2023 to March 2024 and the type of study was analytical cross-sectional. Institutional ethical committee clearance was obtained. There are no conflicts of interest.

Results

A total number of 132 patients underwent videolaryngoscopy in 1 year (**Table 1** and **Figure 1**).

Carcinoma hypopharynx

Carcinoma hypopharynx was diagnosed in 61 patients. Among them, cases of carcinoma involving Pyriform fossa were 32 (Male–26, Female–6), carcinoma Post cricoid were 27 (Male–7, Female–20), and carcinoma of posterior pharyngeal wall were 2 male patients. Among the 32 cases of pyriform fossa malignancy, 17 cases were on right side and 15 cases had a left side lesion, and the clinical staging was T1 = 0, T2 = 11, T3 = 14 and T4 = 7. The symptoms were Dysphagia = 22, Ear pain = 5, Throat pain = 3, Stridor = 3, Neck swelling = 1 and Foreign body sensation = 1. VLS was done for diagnostic purposes in 16 patients who had T2 = 5, T3 = 8, T4 = 3 lesions and biopsy was done for all. VLS was done for follow-up in 16 patients after chemoradiotherapy. 6 patients with T2 lesion previously had no symptoms, 10 patients had persistence of symptoms even after chemoRT. Among the 27 postcricoid malignancies, 26 were in the midline with T1 = 0, T2 = 15, T3 = 11 and T4 = 4. Symptoms were Dysphagia = 27, Voice change = 3 and Dyspnea = 1. VLS was done for Diagnostic purposes in 4 cases. But VLS could not diagnose growth in post-cricoid. Only vocal cord or arytenoid involvement and pooling of saliva are visualized in VLS. All cases underwent a biopsy by flexible UGI scopy. VLS was done for follow-up in 23 cases after chemoradiotherapy. 12 patients had no symptoms, while 11 patients had persistent Dysphagia. There were two cases of posterior pharyngeal wall was midline, with 1 each T2 and T3. The symptom was Dysphagia in both. VLS was done in one for diagnosis and a biopsy was taken. VLS was done for follow-up in one, had persistent Dysphagia, with edema of arytenoids.

Carcinoma larynx

There were 54 patients with carcinoma larynx. 26 patients had supraglottis malignancy (Male–22, Female–4). Among them, 10 had T2 lesion, 9 had T3 lesion, and 7 had T4 lesion. Symptoms were Dysphagia–10, Voice change–7, Throat pain–8, and Stridor–2. Among 26 patients, 10 patients had ventricular band growth. Diagnostic VLS was done in 5 patients. In all cases, biopsy was done with VLS and they were referred for chemo RT. Follow-up VLS was done for 5 patients after chemo RT, 2 patients had no symptoms while 3 patients had persistence of symptoms. The other 16 patients with supraglottis malignancy had epiglottis growth. Diagnostic VLS was done in 10 patients. Biopsy was done with VLS for all and they were referred for chemo RT. Follow-up VLS was done for 6 patients after chemo RT. 5 patients had persistent of symptoms, 1 patient had no symptoms and no lesion. 27 patients had Glottis malignancy (Male–22, Female–5). Symptoms were voice change in 13patients and hoarseness of voice in 14 patients. Diagnostic VLS was done in 5 patients and 3 were prepared for microlaryngeal biopsy, while biopsy was done with VLS in 2 patients. Follow-up VLS was done for 22 patients after chemo RT. 13 patients had no symptoms and there was no evidence of lesion, and 9 patients had persistent symptoms of edema and thickening. 1 patient, a known Ca oropharynx T3, had Chemo RT 1 year ago, then presented with Stridor found to have a subglottic growth T3 lesion (2nd primary). Tracheostomy was done, later planned for microlaryngeal biopsy.

Carcinoma oropharynx

15 patients of posterior 1/3rd tongue growth underwent VLS. Tonsillar fossa growth cases were not included in study. There were 11 Males and 4 females. Lesion was on midline in 12, Right in 2, and left in 1. Symptoms were Dysphagia = 7, Throat pain = 6, FB sensation = 1 and Oral ulcer = 1. VLS was done for Diagnostic purposes in 7 cases and biopsy was done with VLS in all cases. VLS was done for follow-up in 8 cases. 3 patients were asymptomatic, and 5 patients were symptomatic with edema and residual growth.

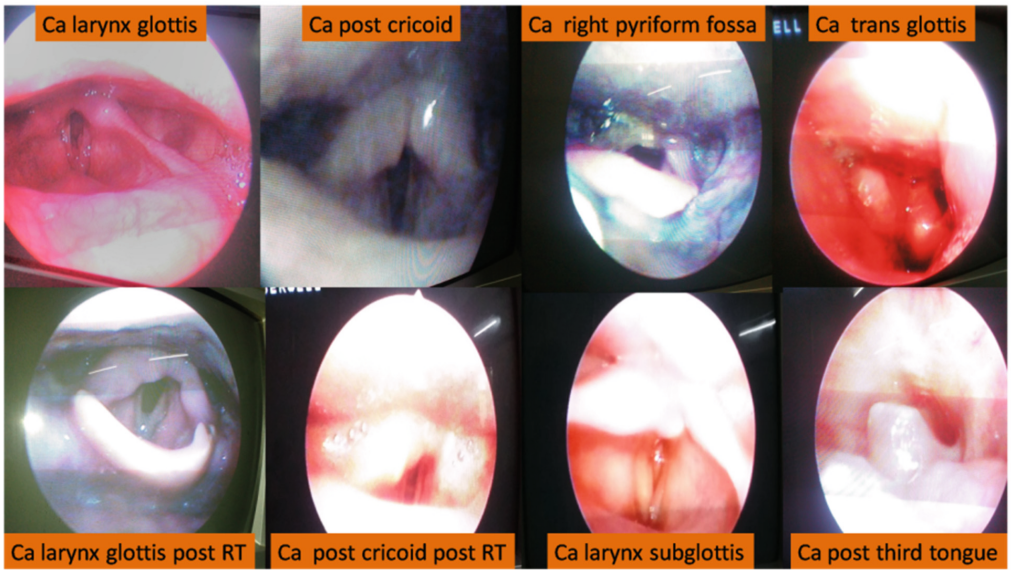

FIGURE 1 | Videolaryngoscopic findings.

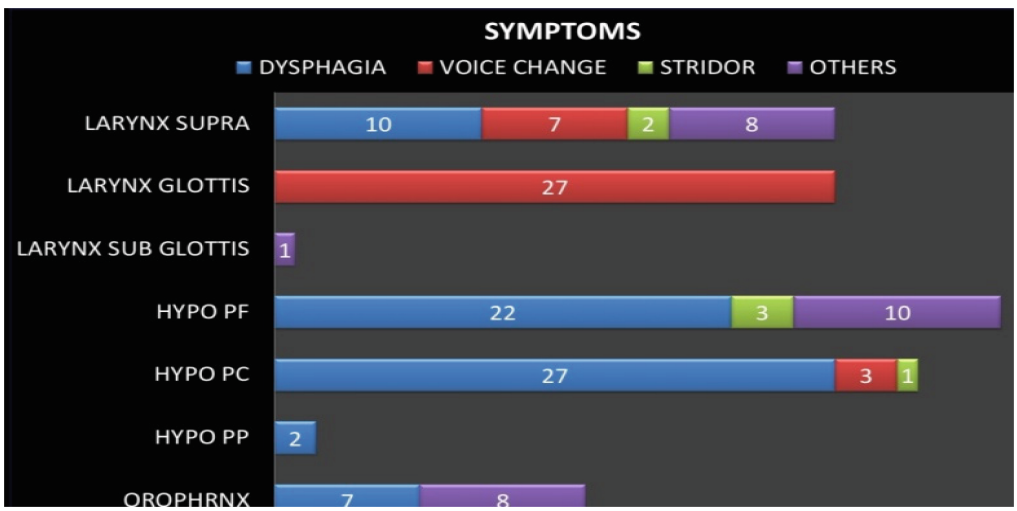

FIGURE 2 | Symptoms of individual carcinomas (PF, pyriform fossa; PC, postcricoid; PP, posterior pharyngeal).

Second primary

6 cases were diagnosed with second primary.

- Previous Carcinoma right Pyriform fossa T2 had growth on the left side of the epiglottis.
- Previous Carcinoma right buccal mucosa T3 had growth left pharyngoepiglottic fold
- Previous Carcinoma of the esophagus had a nodular lesion in the ventricular band
- 2 Previous carcinoma oral cavity after composite resection had growth in the posterior 1/3rd residual tongue.
- Previous Carcinoma posterior 1/3 rd tongue had growth in subglottis.

All cases underwent biopsy with videolaryngoscopy.

Discussion

In 1807, Philip Bozzini used an instrument called "lichtleiter" illuminated by a wax candle (2).

From that time on, different trials of laryngoscopy led to the revolution of videolaryngoscopy. Bastian et al. (3) concluded that Indirect Video Laryngoscopy can guide treatment planning (3). Pardal Refoyo and Munoz Navarro (4) validated videolaryngoscopy as indispensable in laryngeal changes (4). Al-Abbasi et al. (5) published three years of videolaryngoscopic experience in Iran (5). Yaseen (6) compared videolaryngoscopy with flexible fiberoptic laryngoscopy (6). Kaplan and Bryson (7) reviewed the evolution of laryngeal visualization by videolaryngoscopy (7). In September 2019 Shenson et al. (8) published

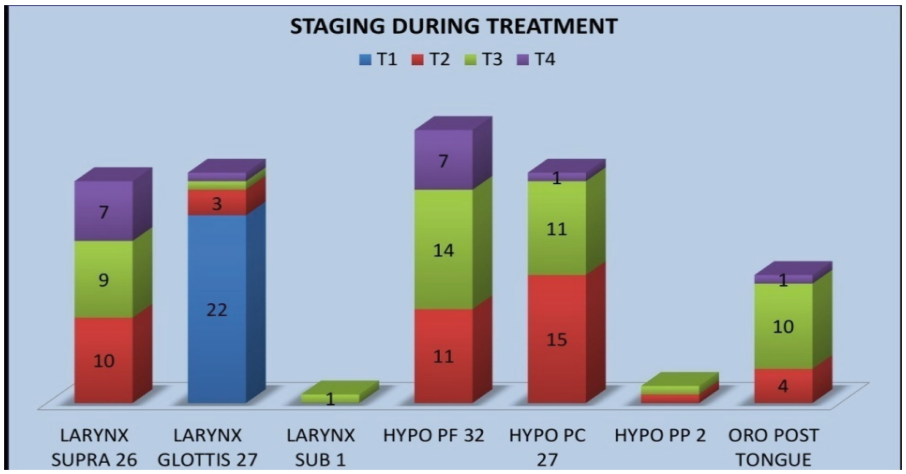

FIGURE 3 | T staging at presentation (PF-pyriform fossa, PC-postcricoid, PP-posterior pharyngeal).

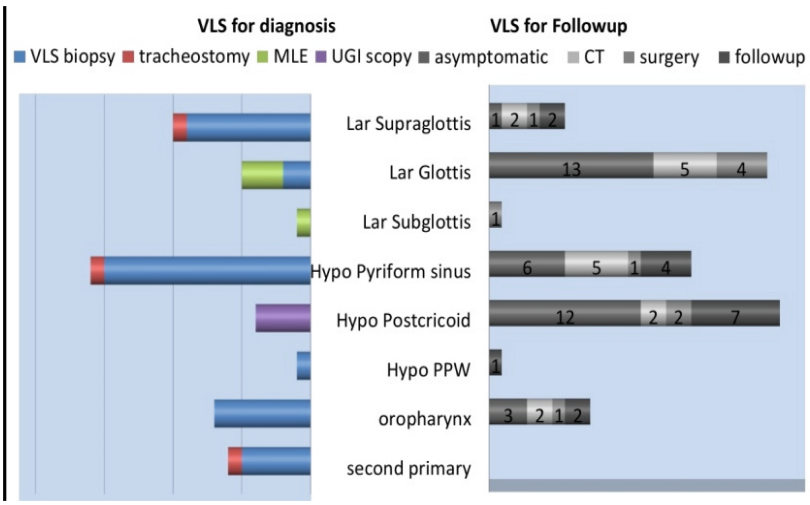

FIGURE 4 | VLS outcome in carcinomas (VLS, videolaryngoscopy; MLE, microlaryngeal examination; UGI, upper gastrointestinal; CT, computed tomography; PPW, posterior pharyngeal wall).

Utility of videolaryngoscopy for diagnostic and therapeutic interventions in head and neck surgery (8).

In our study of 132 patients (**Table 2**), there were 92 (69.7%) male and 40 (30.3%) female patients 80% (104/132) of the population was in 40–60 years. Ogura and Spector (9) found a male-to-female ratio of 7:1 in the 6th decade and Kim et al. (10) found 6th–7th decade common.

Overall symptoms of carcinoma larynx, hypopharynx, and oropharynx ranged from Dysphagia to Neck swelling. Dysphagia = 71, Voice change = 23, Throat pain = 19, Hoarseness = 14, Stridor = 7, Ear pain = 5, FB sensation = 2, Neck swelling = 1, Dyspnoea = 1, Oral ulcer = 1. Dysphagia is the most common symptom, even in laryngeal carcinoma (**Figure 2**).

It is also reported similarly in other studies by Kukereja et al. (11) and Bhagat et al. (12). 61 patients had carcinoma hypopharynx, which was slightly more common than larynx.

The indication for videolaryngoscopy was Carcinoma hypopharynx in 61 (46.2%) patients, out of which 21 were for diagnostic, 40 for follow-up. Among hypopharyngeal lesions, 32 patients had lesions in pyriform fossa (52.5%), 27 patients had lesions in postcricoid (44.3%), and 2 patients had lesions in Post Pharyngeal wall (3.2%). In hypopharynx malignant lesions, lesions in Pyriform fossa are slightly commoner 13: 11 than post cricoid lesions. Saleh et al. (13), Zonunsangi et al. (14) found pyriform sinus as commonest while Verma et al. (15) found post cricoid commoner in hypopharyngeal malignancies.

54 patients who had carcinoma larynx (40.9%) underwent videolaryngoscopy, out of which 21 were for diagnostic and 33 for follow-up. Of all carcinoma larynx patients, 26 had supraglottis carcinoma (48%), 27 had glottis carcinoma (50%), and subglottis 1 (2%). Out of patients with supraglottis malignancy, 10 patients had lesions in ventricular band and 16 had lesion in epiglottis. Among laryngeal tumors, supraglottis cases were 26, almost equal to glottic, which was 27. Ogura and Spector (9) reported glottis (50–60%) and Fasunla et al. (16) reported transglottic as common. Glottis

TABLE 2 | Master chart.

S.no.	Age	Sex	Symptom at presentation	Previous VLS	Diagnosis	Treatment given	Symptoms now	Present VLS	Remarks
1.	45	M	Voice change	ANT.1/3 R VC growth	CA larynx glottis T1A				
2.	48	F	Dysphagia	Epiglottis R ventricular band	CA larynx supra T3	Chemo RT	Dysphagia	Epiglottis R ½ destroyed R VC not seen	
3.	71	M	Voice change	ANT.1/3 R VC growth	CA larynx glottis T1A	Chemo RT	Nil	NO E/O growth	
4.	50	M	Dysphagia	Post cricoid growth	CA hypopharynx post cricoid T3	Chemo RT	Dysphagia	Residual growth in post cricoid	Repeat biopsy taken
5.	52	F	Dysphagia	Post cricoid growth	CA hypopharynx post cricoid T3	Chemo RT	Nil	NO E/O growth 6/18 edema post cricoid 7/18	
6.	60	M	Voice change	ANT.1/3 R VC growth	CA larynx glottis T1A	Chemo RT	Nil	NO E/O growth	
7.	69	M	Dysphagia	PF growth extending to larynx	CA hypopharynx PF T4	Chemo RT	Dysphagia tracheostomy	Edematous epiglottis and ventricular band VC not seen	CT
8.	58	M	Dysphagia	L ventricular band growth	CA larynx supra glottis T2				
9.	45	F	Dysphagia	Post cricoid growth	CA hypopharynx post cricoid T2	Chemo RT	Nil	No E/O growth	
10.	70	M	Dysphagia	Vallecula & R PE FOLD	CA oropharynx T2	Chemo RT	Nil	No E/O growth	
11.	52	F	Dysphagia	Post cricoid growth	CA hypopharynx post cricoid T2	Chemo RT	Nil	No E/O growth	
12.	45	M	Stridor dysphagia	R PF growth extending to larynx	CA hypopharynx PF T3	Chemo RT tracheostomy	Dysnoea dysphagia	Edema larynx hypopharynx	Tube changed
13.	80	M	Dysphagia	L PF growth	CA hypopharynx PF T2				
14.	57	M	Voice change	L vocal cord growth	CA larynx glottis T1A	Chemo RT	Nil	No E/O growth	
15.	51	M	Dysphagia	L PF growth to larynx	CA hypopharynx PF T3	Chemo RT	Dysphagia	Edema L AE PF	
16.	43	M	Voice change	R VC	CA larynx glottis T1A	Chemo RT	Nil	No E/O growth	
17.	60	M	Voice change	R VC	CA larynx glottis T1A				
18.	71	M	Dysphagia	POST 1/3 tongue	CA oropharynx T3				
19.	60	M	Voice change stridor	Ventricular band growth	CA larynx supraglottis T4	Chemo RT tracheostomy		Edema of ARYE epiglottic fold	

(Continued)

TABLE 2 | (Continued)

S.no.	Age	Sex	Symptom at presentation	Previous VLS	Diagnosis	Treatment given	Symptoms now	Present VLS	Remarks
20.	52	F	Dysphagia	Pooling of saliva Both VC paralysed and fixed	CA hypopharynx post cricoid T3				
21.	60	M	Voice change	Growth PF R ventricular band	CA larynx supra glottis T4				
22.	60	F	Dysphagia	L PF Growth	CA hypopharynx PF T2				
23.	64	M	Dysphagia	1.R buccal mucosa growth 2.L PE fold growth	CA oral cavity T3 CA oropharynx T3				
24.	60	M	L ear pain	L lateral pharyngeal wall extending to L PF ventricular band	CA hypopharynx PF T4				
25.	60	M	FB sensation throat	Growth L PF VC	CA hypopharynx PF T3				
26.	52	F	Dysphagia	Post cricoid growth L VC fixed	CA hypopharynx PC T3	Chemo RT	Dysphagia	Diffuse swelling PC	CT Neck
27.	46	F	Hoarseness	Both VC growth	CA glottist1b	Chemo RT	Hoarseness	Lesion both VC	RPT CT Biopsy
28.	79	F	Dysphagia	Post 1/3 tongue	CA oropharynx T3				
29.	47	M	Dysphagia	Post 1/3 tongue	CA oropharynx T3	Chemo RT	Dysphagia	Edema of larynx	
30.	55	F	Hoarseness	Both VC	CA laynx glottis T1B	Chemo RT	Hoarseness	Residual mass ANT commissure	MLE
31.	55	M	Dysphagia	LAT border of tongue L	CA oral cavity tongue T2	Composite resection with neck disc & chem RT	Dysphagia	Growth post 1/3 tongue EXT to R VC	Biopsy CT
32.	49	M	Dysphagia	Growth epiglottis	CA larynx supra glottis T3				
33.	45	M	Stridor	Growth epiglottis	CA larynx supra glottis T4	Chemo RT tracheostomy	Dysnoea	Edema of epiglottis	
34.	60	F	Hoarseness	R VC growth	CA larynx glottis T1A	Chemo RT	Voice change	VC congested	
35.	36	M	Dysphagia	R PF growth	CA hypopharynx	Chemo RT	Dysphagia	Smooth bulge R AE fold	CT
36.	69	M	Dysphagia	L ANT tongue growth	CA oral cavity tongue T3	Composite resection with neck disc & chemo RT	Dysphagia	Edema post 1/3 tongue	CT
37.	65	M	Stridor dysphagia	R PF growth to larynx	CA hypopharynx PF T 3				

(Continued)

TABLE 2 | (Continued)

S.no.	Age	Sex	Symptom at presentation	Previous VLS	Diagnosis	Treatment given	Symptoms now	Present VLS	Remarks
38.	45	M	Hoarseness	Both VC growth L fixed	CA larynx glottis T3				
39.	49	F	Dysphagia	PC growth R VC fixed	CA hypopharynx PC T4				
40.	63	M	Dysphagia	R PF growth	CA hypopharynx	Chemo RT	Nil	No E/O growth	
41.	67	M	Dysphagia	Both ventricular band growth	CA larynx supra glottis T2	Chemo RT	Dysphagia	Edema supraglottis	
42.	43	F	Dysphagia	Post cricoid growth	CA hypopharynx post cricoid T3	Chemo RT	Aspiration	No E/O growth VC GAP +	
43.	52	M	Throat pain	Growth epiglottis	CA larynx supra glottis T4	Chemo RT tracheostomy	Throat pain	Slough covered lesion epiglottis	CT
44.	50	M	Dysphagia voice change	Growth R PF larynx	CA supra glottis T4				
45.	46	F	VOICE change	Both VC	CA larynx glottis T1B	Chemo RT 2 years back	Voice change	Thickening mid 1/3 both VC	CT
46.	65	M	Dysphagia	R PF ventricular band growth	CA hypopharynx PF T 4A	Chemo RT defaulter	Dysphagia	R PF ventricular band growth	RT
47.	74	F	Dysphagia	PC growth	CA hypopharynx PC T2	Chemo RT	Nil	NO E/O growth	
48.	65	M	Voice change	L VC growth	CA glottis T1A	Chemo RT	Nil	NO E/O growth	
49.	80	M	Voice change	Epiglottis growth	CA larynx supraglottis T2	Chemo RT	Throat pain	Small lesion L epiglottis	Surgery
50.	66	M	Voice change	R VC	CA laynx glottis T2	Chemo RT 2 years back	Nil	No E/O growth	
51.	67	M	Voice change	L VC	CA laynx glottis T2	Chemo RT 2 years back	Nil	NO E/O growth	
52.	65	M	Dysphagia	Growth vallecula, epiglottis L PF	CA larynx supraglottis, T4				
53.	52	F	Dysphagia	PC growth	CA hypopharynx PC, T3	Chemo RT	Dysphagia	Edema of PC NO E/O growth	
54.	68	M	Dysphagia	POST 1/3RD tongue growth, epiglottis, lateral pharyngeal wall	CA oropharynx T4				
55.	60	F	L ear pain	Growth L medial wall of PF	CA hypopharynx PF, T2				
56.	43	M	Voice change	Growth entire R VC	CA larynx glottis T1A	Chemo RT 4 months back	Voice change	Thickening irregular R VC full length	
57.	45	M	Dysphagia	Growth R PF	CA hypopharynx PF T3	Chemo RT	Stridor,	Edema of larynx	Tracheostomy

(Continued)

TABLE 2 | (Continued)

S.no.	Age	Sex	Symptom at presentation	Previous VLS	Diagnosis	Treatment given	Symptoms now	Present VLS	Remarks
58.	51	M	L ear pain	Growth L medial wall of PF	CA hypopharynx PF, T2	Chemo RT	Nil	No E/O growth	
59.	50	M	Throat pain	Growth P[OST 1/3RD tongue	CA oropharynx T3	Chemo RT	Dysphagia	Growth R side of post 1/3RD of tongue	
60.	80	M	Dysphagia	Growth PC	CA hypopharynx PC T3	Chemo RT	Dysphagia	Pooling OS saliva both PF	
61.	51	M	Throat pain	Growth post 1/3RD tongue	CA oropharynx T2	Chemo RT	Throat pain	Ulcerative growth IN L PF	
62.	70	M	Throat pain	Growth L PF	CA hypopharynx PF T2	Chemo RT 4 years back	Nil	No E/O growth	
63.	66	M	Hoarseness	L VC growth decreased mobility	CA larynx glottis T2	Chemo RT	Voice change	Edema L VC, R VC restricted mobility	CT
64.	55	F	Dysphagia	PC growth	CA hypopharynx, PC T3	Chemo RT	Dysphagia	Pooling OFB saliva in both PF	
65.	70	M	Dysphagia	Growth R PF,	CA hypopharynx PF T2	Chemo RT	Nil	No E/O Growth J	
66.	61	M	Dysphagia	Growth PC	CA hypo PC T4A	Chemo RT 4 months back	Dysphagia	Pooling	
67.	62	F	Dysphagia	Growth PC	CA hypo PC T3				
68.	44	M	Dysphagia stridor	Growth RPF R hemilarynx fixed	CA hypo PF T4	Tracheostomy			
69.	58	F	Throat pain	R AE fold growth	CA hypo PF T2	Chemo RT	Nil	Edema R AE Fold	
70.	61	M	Throat pain	Growth epiglottis	CA larynx supra T3				
71.	52	F	Dysphagia	PC growth	CA hypo PC T2	Chemo RT	Nil	Pooling	
72.	55	M	Throat pain	Growth epiglottis vallecula	CA larynx, supra T2				
73.	44	M	Ear pain R	Growth R PF	CA hypo PF T3				
74.	69	M	Hoarseness of voice	Growth R VC	CA larynx, glottis T1A				
75.	63	M	Dysphagia		CA hypo	Chemo RT	Nil	Edema of arytenoids	
76.	42	F	Dysphagia	Growth PC	CA hypo VC T2	Chemo RT	Nil	No E/O growth	
77.	63	M	Dysphagia	Growth esophagus	CA esophagus		Throat pain	Nodular lesion R ventricular band	2nd primary
78.	62	F	Dysphagia	Growth PC	CA hypo PC T2				
79.	67	M	Dysphagia	Growth both PF and epiglottis	CA larynx, supra T3				
80.	70	M	Dysphagia	Growth epiglottis	CA larynx supra T3				

(Continued)

TABLE 2 | (Continued)

S.no.	Age	Sex	Symptom at presentation	Previous VLS	Diagnosis	Treatment given	Symptoms now	Present VLS	Remarks
81.	66	M	Dysphagia	Growth PC	CA hypo PC T2	Chemo RT	Nil	Pooling	
82.	40	M	Throat pain	Growth R PF and ventricular band	CA marginal zone				
83.	75	F	Dysphagia	Growth R PF	CA hypo PF T3				
84.	61	M	Dysphagia	Growth L PF	CA hypo PF T3				
85.	70	M	Dysphagia, stridor	growth R PE fold extending T larynx	CA larynx, supra T3	Tracheostomy			
86.	43	M	Hoarseness of voice	R VC growth	CA larynx, glottis T1A	Chemo RT 5 months back	Hoarseness	Growth R VC	Surgery
87.	65	M	Dysphagia	Growth posterior pharyngeal wall	CA hypo PP T3				
88.	52	F	Dysphagia	Growth PC	CA hypo, PC T3	Chemo RT	Nil	No E/O growth	
89.	60	M	Dysphagia	Growth L PF	CA hypo PF T4A				
90.	38	M	Oral ulcer	Growth tonsilar fossa	CA oropharynx T3	Chemo RT	Stridor	Subglottic growth	Tracheostomy
91.	75	M	Hoarseness	Growth L VC	CA larynx glottis T4				
92.	50	M	Change in voice	Growth ventricular band	CA larynx supra T2	Chemo T	Nil	No E/O growth	
93.	50	M	Change in voice	Growth L ventricular band	CA larynx supra T3	Chemo RT	Change in voice	Edema L ventricular band	CT
94.	68	M	Dysphagia	Mass R PF	CA hypo PF T2				
95.	28	F	Dysphagia	Upper V esophageal mass	CA hypo PC T2	Chemo RT	Nil	No E/O growth	
96.	45	M	Hoarseness	Growth L VC	CA larynx glottis T1A	Chemo RT	Nil	No E/O growth	
97.	63	F	Dysphagia	Growth L PF	CA hypo PF T3	Chemo RT	Dysphagia	Edema L AE fold and PF	CT
98.	49	F	Dysphagia	Growth PC	CA hypo PC T3	Chemo RT	Dysphagia	Bulged R PF PC, R VC	Advised OHNGS
99.	43	F	Dysphagia	Growth PC	CA hypo PC T2	Chemo RT	Nil	Pooling saliva in L PF	
100.	58	M	Dysphagia stridor	Growth R PF	CA hypo PF T4A	Chemo RT tracheostomy	Dysphagia	Edema of epiglottis	
101.	67	M	Change in voice	Growth VC	CA larynx glottis T1A	Chemo RT 4 months back	Nil	No E/O	
102.	60	M	Dysphagia	Growth PPW	CA hypo PPW, T2	Chemo RT	Dysphagia	Edema of arytenoids	
103.	60	M	Hoarseness	Growth L VC	CA larynx, glottis T1A	Chemo RT 6 weeks	Nil	No E/O growth	
104.	55	F	Dysphagia	Growth PC	CA hypo, PC T2	Chemo RT	Nil	No E/O growth	
105.	51	F	Dysphagia	Growth PC	CA hypo, PC T2	Chemo RT	Nil	No E/O growth	
106.	42	M	Dysphagia	Growth L PF	CA hypo, PF T3	Chemo RT	Throat pain	Edema L PF	

(Continued)

TABLE 2 | (Continued)

S.no.	Age	Sex	Symptom at presentation	Previous VLS	Diagnosis	Treatment given	Symptoms now	Present VLS	Remarks
107.	65	M	Dysphagia	Growth R PF and L side of epiglottis	CA larynx, supra T2, CA hypo R PF T2				
108.	55	M	Dysphagia	Growth R arytenoids	CA hypo PC T2	Chemo RT	Dysphagia	PC growth	CT
109.	65	F	Dysphagia	Growth post 1/3D tongue	CA oropharynx T3				
110.	60	M	Throat pain	Growth post 1/3RD tongue	CA oropharynx T3	Chemo RT	Dysphagia	Edema tongue epiglottis	Ryles tube
111.	65	F	FB sensation	Bulge mass in post 1/3RD tongue	CA oropharynx T2				
112.	69	M	Hoarseness	Growth VC	CA larynx glottis T1A	Chemo RT	Nil	No E/O growth	
113.	75	M	Hoarseness	Growth L AE fold	CA larynx, supra T3				
114.	50	F	Throat pain	Growth epiglottis	CA larynx supra T2	Chemo RT 3 years back	Nil	No E/O growth	
115.	60	M	Throat pain	Growth post 1/3RD tongue	CA oropharynx T3				
116.	66	M	Neck nodes	Growth R PF	CA hypo, PF, T3				
117.	53	M	Dysphagia	Growth R PF	CA hypo PF T3	Chemo RT	Dysphagia	Growth PC	MGE(O)
118.	30	F	Hoarseness	Growth in L VC	CA larynx glottis T1A	Chemo RT	Cough with EXP	Edema L VC (fixed) and ventricular band	CT
119.	67	M	Hoarseness	Growth L VC	CA larynx glottis T1	Chemo RT	Hoarseness	Residual lesion in L VC mobile	Cordectomy
120.	55	F	Throat pain	Growth epiglottis	CA larynx supra T2	Chemo RT	Dyspnea	Edema of epiglottis	CT
121.	70	F	Dysphagia	Growth PC	CA hypo, PC T3	Chemo RT	Dysphagia	Edema larynx hypopharynx	
122.	45	M	Change in voice	Growth VC	CA larynx glottis T1A	Chemo RT	Nil	No E/O growth	
123.	60	M	Dysphagia	Growth PC	CA hypo PC T2	Chemo RT	Throat pain	Pooling of saliva both PF	
124.	67	M	Throat pain	Growth L PF	CA hypo PF T3				
125.	65	M	Dysphagia, bone pain	Growth epiglottis	CA hypo supra T4 N3 M1				
126.	65	M	Hoarseness	Growth VC	CA larynx glottis T1A	Chemo RT	Nil	No E/O growth	
127.	64	M	Throat pain	Growth epiglottis	CA larynx supra T2				
128.	44	M	Throat pain	Growth L ventricular band	CA larynx, supra T2	Chemo RT	Nil	Edema of AE fold	
129.	37	M	Throat pain	Growth epiglottis	CA larynx supra T3	Chemo RT	Dysphagia	Edema partial eroded epiglottis	

(Continued)

TABLE 2 | (Continued)

S.no.	Age	Sex	Symptom at presentation	Previous VLS	Diagnosis	Treatment given	Symptoms now	Present VLS	Remarks
130.	63	F	Throat pain	Growth post 1/3RD of tongue	CA oropharynx T2	Chemo RT	Nil	No E/O growth	
131.	39	M	Throat pain	Growth post 1/3RD of tongue	CA oropharynx T2	Chemo RT	Nil	No E/O growth	
132.	80	M	Dysphagia	Growth right ventricular band	CA larynx supra T3				

is reported as common in Western while in Indian studies, supraglottis is the most common (17).

15 patients who had carcinoma oropharynx involving the posterior 1/3rd tongue (12.9%) underwent videolaryngoscopy, out of which 7 were for diagnostic and 8 for follow-up.

6 patients (4.5%) had two primary lesions.

Among overall 132 laryngopharyngeal malignancy patients, 25 patients (17.8%) had T1 lesion, 48 patients (34.3%) T2 lesion, 47 patients (33.6%) T3 lesion, and 20 patients (14.3%) had T4 lesion (**Figure 3**).

The overall purpose of videolaryngoscopy was Diagnostic in 56 cases out of which biopsy was done in 46 patients, 6 patients were advised microlaryngeal surgery, and 4 patients were advised UGI scope for biopsy of the lesion.

Among diagnostic VLS, glottic malignancy presented early 22 out of 27 (81%) had a T1 lesion. Of 32 pyriform fossa lesions 21 (66%) had T3 or T4 lesions. Among 15 posterior 1/3rd tongue malignancies, 11 (73%) patients presented late with T3 or T4 lesions. Second primary diagnosis was done in 6 patients.

The overall purpose of videolaryngoscopy was follow-up after radiotherapy and surgery in 81 cases. Of them 37 patients were asymptomatic with no recurrence or residual lesion. 44 cases were Symptomatic, of whom CT was advised for 13 patients, salvage surgery for 7 patients, biopsy of residual/recurrent lesion done for 3 cases. Tracheostomy had to be done in 2 patients and others were advised further follow-up as they were symptomatic.

Among all cases in follow-up after chemoradiotherapy, out of 22 cases of glottic malignancy 13 (58%) had no recurrent or residual lesions. Out of 8 oropharyngeal malignancies, 5 (63%) patients had symptomatic lesions (**Figure 4**).

Conclusion

As intended, the annual percentage prevalence of carcinoma larynx was 54 (40.9%), out of which supraglottis cases were 26 (48%), glottis 27 (50%), and subglottis 1 (2%). Carcinoma hypopharynx cases were 61 (46.2%), out of which pyriform fossa 32 (52.5%), postcricoid 27 (44.3%), and posterior pharyngeal wall 2 (3.2%). There were 15 oropharynx (11.3%) and 2 (1.6%) other malignancy patients. Videolaryngoscopy is a simple outpatient efficacious investigation in the diagnosis and follow-up of patients having carcinoma larynx, hypopharynx, and oropharynx.

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