

## Determine laryngeal carcinoma staging according to the time of presentation

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### **Abstract** Background:

Early laryngeal carcinoma with no cervical lymph node metastasis disease carries more good prognosis in which the disease was eradicable, maintaining function so the prognosis depend on the time of presentation of the disease and considerable importance is attached to the early detection of the disease because comprehensive treatment in its early stage is associated with a very good prognosis. Aim of study:

To know the demographic distribution, types, grading and staging of laryngeal carcinoma at time of presentation.

### Patients & Methods:

Twenty patients diagnosed as carcinoma of the larynx included in current study were seen in outpatient clinic in ENT department Al-Yarmouk teaching hospital from April 2017 to April 2018. History, clinical examination including laryngeal examination (full ENT examination, fiber optic examination of the larynx and neck examination) and general examination. Investigations done for all patients depend on the time of presentation, direct laryngoscopy and biopsy taken from the site of the lesion from all patients under general anesthesia, radiological evaluation (neck CT scan, chest X rays) done for all patients and data collected in questionnaire.

### Results:

Most common type of Ca. larynx is SCC 100% (20 patients), with well differentiated 60% (12 patients); Hoarseness is the most common symptom about 60% (12 patients); the most common region involved is supraglottic 50% (10 patients) followed by glottic 30% (6 patients). The early regional presentation is glottic 57% (4 patients); Ca. larynx staging T1N0 is the common in early presentation 40% (8 patients) and L.N. metastasis as late presentation 30% (6 patients).

### Conclusion:

Supraglottic region is the most commonly demographic area involved in carcinoma of larynx. Squamous cell carcinoma is the most common type with predominantly well differentiated histologically. Glottic tumours is the most early in presentation. Lymph nodes metastasis more in supraglottic as indicate late presentation.

Key word: Ca.larynx, Grading, Staging, Early and late presentation.

### **Introduction:**

Laryngeal carcinoma is the second most common cancer of the upper aerodigestive tract in the U.S. It has been estimated that 11,000 cases are reported each year, the majority of them being Ca. larynx. SCC make up 85-95% of these tumors. Successfully managing laryngeal carcinoma necessate; accurate diagnosis, Staging, and consideration to patient wishes and expectations. As well as selecting the most appropriate treatment for the patient with close post treatment surveillance. (1)(2)(3)

### **Patients and methods**

A descriptive study focused on patients with Ca larynx who presented to us in otolaryngology department in Al-Yarmouk teaching hospital during the period from April 2017 to April 2018.

Twenty patients included in current study, history was taken from each patient after gaining permission; Time of presentation as onset of each symptoms with a chief complaint and divided the time into groups; ENT routine examination was done in general and specific examination of larynx by mirror or fiber optic laryngoscopy or both.

Neck examination for any metastasis and investigate if any suspicion of distal metastasis,

CT scans done to all patients; histopathological evaluation of all specimens which was taken by direct laryngoscopy under general anesthesia.

Data were collected regarding the age groups, gender, risk factors, duration of the disease. The time presentation was divided in to three groups early presentation from 1 – 6 month and late presentation from 6 months – 1 year and more than 1 year depending on first time presented to us; symptoms and chief complaint, examination, lymph nodes if present, type of malignancy and its degree of differentiation then staging of each patient utilizing UICC.

Results collected in tables, and graphs have been made by using piegram and histogram. **Inclusion criteria:** all patients with Ca larynx as first time presentation.

**Exclusion criteria:** 1. All patients who treated by radiotherapy, surgery or both.

2. All patients with recurrence of Ca larynx.

### **Results**

#### **Age and gender distribution:**

Out of 20 patients 17 were male (85%) and 3 were female (15%) the male to female ratio is 5.6:1. The mean age of the patients was 59 year. In all age group the percentage of male patients was higher than females.

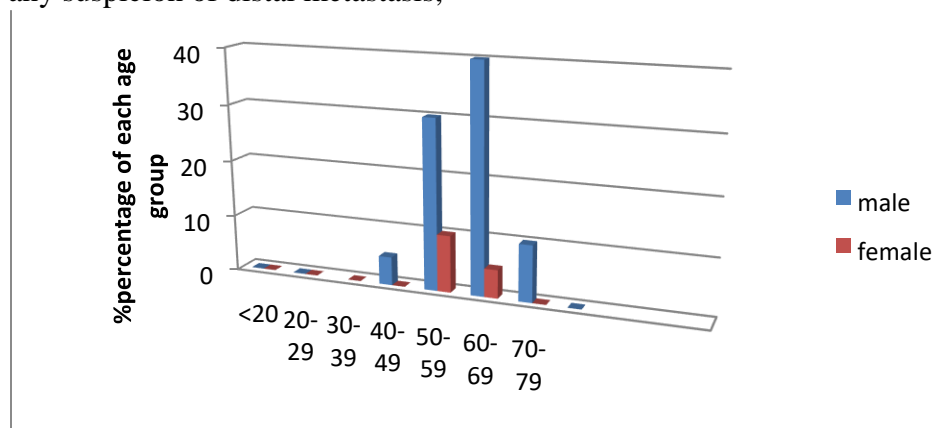


Fig (1) shows the Time of presentation according to the site, gender and their percentages.

**Risk factors**

Seventeen male patients and 1 female smoker and the

remaining 2 female patients (10%) were nonsmoker.

Three male patients were alcoholic

(15%). patient (90%) was

**Duration of complaint**

**Table (1) shows the Time of presentation according to the site, gender and their**

Region Duration		Supraglottic		Glottic		Subglottic		Total	%
		♂	♀	♂	♀	♂	♀		
Early	1 – 6 month	2	1	3	1	0	0	7	35
	Above 6 month – 1 year	6	1	2	0	1	0	10	50
Late	More than 1 year	3	0	0	0	0	0	3	15
Total		11	2	5	1	1	0	20	100

percentages.

Glottic region presented early about 57% (4 patients) of Glottic.

Supraglottic presented late about 53.8% (7patients) of Supraglottic.

**Chief Complaint:**

**Table (2) show clinical presentation according to site**

Clinical presentation Region	Hoarseness	Stridor	Dysphagia	Pain	Lump	Total
	Supraglottic	4	-	6	1	2
Glottic	5	1	-	-	-	6
Subglottic	-	1	-	-	-	1
<b>Total + %</b>	11:45%	2:10%	5:30%	1:5%	1:10%	20:100%

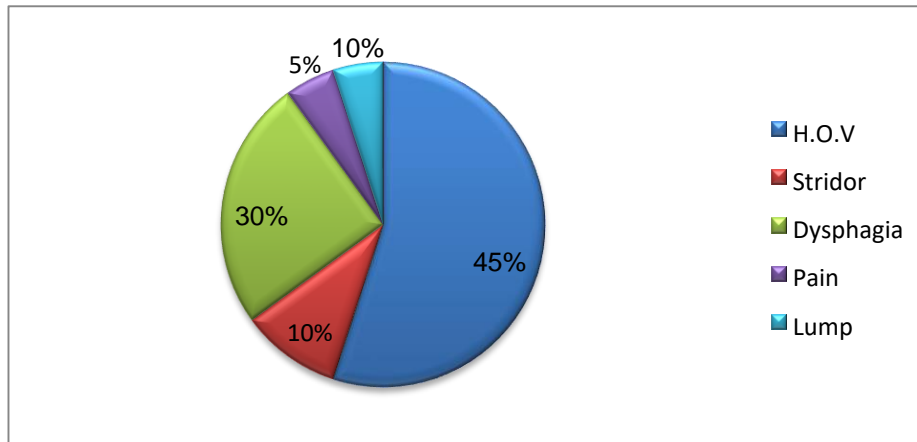


Fig. (2) show clinical presentation in percent

Nodal state Region	No	N1	N2	N3	Total
Supraglottic	7	3	2	1	13
Glottic	6	0	0	0	6
Subglottic	1	0	0	0	1
Total:%	14:70%	3:15%	2:10%	1:5%	20:100%

### The State Of Lymph Nodes:

Table (3) shows the nodal ste according to the region of laryngeal carcinoma.

Table (4) Histopathological types of laryngeal carcinoma:

patients histopathological types	No.	%
Squamous cell carcinoma	20	100
Others	0	0

**Tumour (TNM) Staging**

Table(5) show supraglottic region staging and differentiation according to time presentation

Time	Total No.	Staging	No.	Differentiation		
				WD	MD	PD
1 – 6 month	3	T1N0	1	1	-	-
		T2N0	2	2	-	-
above 6 month – 1 year	7	T1N0	1	1	-	-
		T2N0	3	3	-	-
		T4N1	3	-	3	-
More than 1 year	3	T3N2	2	-	2	-
		T4N3	1	-	-	1
Total	13		13	7:53.8%	5:38.4%	1:7.6%

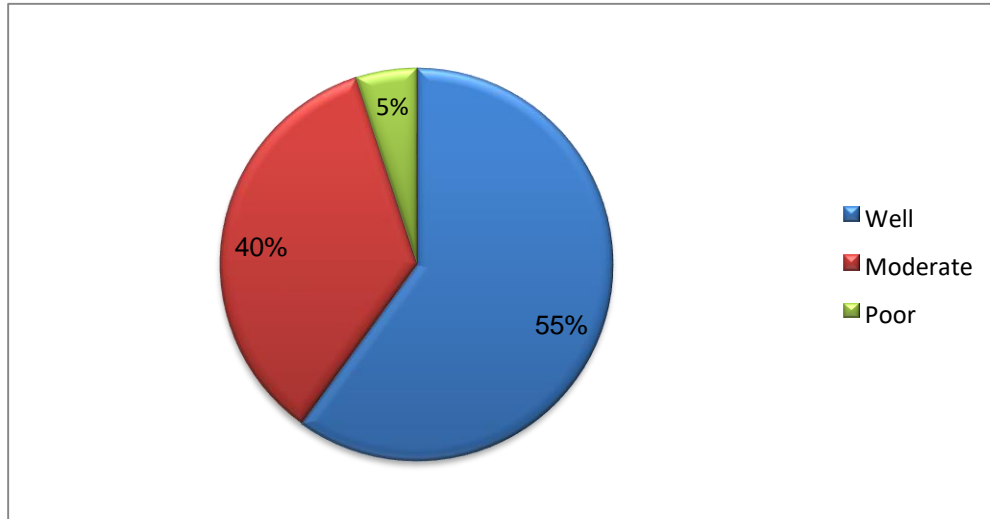
**Table (6)** shows glottic region staging and differentiation according to time presentation

Time	Total No.	Staging	No.	Differentiation		
				WD	MD	PD
1 – 6 month	4	T1N0	4	3	1	-
above 6 month – 1 year	2	T1N0	2	1	1	-
More than 1 year	No Patients					
Total	6		6	4:67%	2:33%	0:0%

**Table (7) shows subglottic region staging and differentiation according to time presentation**

Time	Total No.	Staging	No.	Differentiation		
				WD	MD	PD
1 – 6 month	No Patients					
Above 6 month – 1 year	1	T2N0	1	-	1	-
More than 1 year	No Patients					
Total	1		1	0:0%	1:100%	0:0%

Degree of Differentiation  
**Fig. (3) shows the Degree of differentiation in percent.**



**Table (8) shows grade of differentiation according to region and gender.**

Region	Differentiation		Well differentiated		Moderately differentiated		Poorly differentiated		Total
	♂	♀	♂	♀	♂	♀	♂	♀	
Supraglottic	5	2	4	1	1	0	10		
Glottic	3	1	2	0	0	0	6		
Subglottic	0	0	1	0	0	0	1		
<b>Total &amp; %</b>	<b>11:55%</b>		<b>8:40%</b>		<b>1:5%</b>		<b>20</b>		

### Discussion Age and gender Distribution

Laryngeal carcinoma affects middle age and elderly people mainly as we found. The mainly age affected between (40-75) years. So the peak incidence of male was in 6<sup>th</sup> decade, while in females the peak incidence was in the 5<sup>th</sup> decade. The mean age was 59 years. The same result was found by Dechaphunkul T et al.<sup>(4,5)</sup>, KoiralaK<sup>(6)</sup> and they reported that the highest incidence of laryngeal cancer occurs in the 6<sup>th</sup>

decade and found that average age of the patients was (64) years. The percentage of male with laryngeal carcinoma was 85% while female 15% representing male to female ratio 5.6:1. In IndiaNallathambi, et al.<sup>(7)</sup> found that Male sex was predominant with a male to female ratio of 5.4:1 (98 males and 18 females).

**Presentation of Laryngeal Carcinoma** The commonest presentations were hoarseness 55% and stridor 10% on the other hand dysphagia was symptom in 25%. Most of the patients with glottic,

supraglottic, and transglottic complained from hoarseness.

Similarly Nallathambi et al.<sup>(7)</sup> reported that the most frequent clinical symptom was hoarseness about 60.3% . We found that patients with laryngeal carcinoma in the glottic region presented early with a percentage of 57% (No. =4), While patients that had supraglottic region laryngeal carcinoma presented late with a percentage of 53.8% (No. =7).

Amusa, et al.<sup>(8)</sup> found the same result that the Glottic tumors typically present earlier than supraglottic tumors.

### **Incidence of regions in laryngeal carcinoma**

Out of 20 patients, 13 patients (65%) of them had supraglottic , six (30%) had glottic, one(5%) had subglottic.

Koirala K.<sup>(6)</sup> found that Out of 86 patients, 61 patients (70%) had supraglottic, 24 (28%) had glottic and one patient had subglottic. Supraglottic larynx was the commonest subsite of larynx to develop the disease.

Markou K et al.<sup>(7)</sup> Regarding the location of the tumor, they recorded (60.2%) cases of glottic, (32.8%) cases of supraglottic, and only (1.1%) patients with purely subglottic tumors. Haapaniemi A, et al.<sup>(10,11)</sup> Found that the site of the primary tumor was glottic in 253 (70%), supraglottic in 89 (25%), subglottic

### **Lymph node involvement**

Six (30%) of our patients included in this study presented with cervical lymph node at time of presentation and the metastasis of lymph node was highest in the supraglottic region (100%).

Nallathambi, et al.<sup>(7)</sup> Found that the involvement lymph nodes were in 84.8% of supraglottic cancers. Nodal spread was seen in 19.0% of all glottic cancers.

**Staging of laryngeal carcinoma** The staging of the tumor according to the TNM system regarding the time of presentation, 5 patients (25%) had T1No stage which is common at early presentation (1-6 month), No lymph node involved in early presentation, while in late presentation (6month-1year , more than 1 year) 4 patients (20%) had

T2N0 stage, 1 patient (5%) had T2N2stage, 2 patients (10%) had T3N2 stage, 3 patient (15%) had T4N1 stage Haapaniemi A, et al.<sup>(10,11)</sup> et al. In their study the Stage distribution for **glottis** was as follows: Stage I (45%); Stage II (24 %); Stage III (18%); Stage IV (13%).

The corresponding figures for **supraglottic** were Stage I (8%); Stage II (15%); Stage III (29%); Stage IV (48%). In **subglottic** tumors, the Stage was II in 1, III in 3, and IV in 1 case.

### **Histopathological type of laryngeal carcinoma and degree of differentiation**

All patients (100%) included in our study, histologically had squamous cell carcinoma. The majority of cases (55%) were a well differentiated type of laryngeal carcinoma followed by moderately differentiated (40%) and poorly differentiated (5%).

Menach, et al.<sup>(12)</sup> found in their study, majority of the cases had histological diagnosis of well differentiated (G1) squamous cell carcinoma followed by moderately differentiated (G2), and poorly differentiated (G3) and the least was undifferentiated carcinoma (G4).

### **Conclusion**

- The main age group was (40-75) years; the peak incidence was in the 6<sup>th</sup> decade.
- Eighty five percent of our patients were males and fifteen % were



females and the ratio of males to females were 5.6:1 .

- Supraglottic carcinoma was the common region involved, and the well differentiated carcinoma was commoner than the other grades.
- The most common clinical presentation was hoarseness.
- Lymph node metastasis was more in supraglottic laryngeal carcinoma as a late presentation.
- The early presentation usually in glottic carcinoma mostly T1N0.

### Recommendations

Most of the patients present early with hoarseness in voice this should be taken seriously especially in those patients with a history of heavy smoking.

Public awareness towards the avoidance of alcohol and smoking will reduce the risk of development of laryngeal cancers and head and neck cancers overall in the developing countries

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