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Current Evaluation of patients with Laryngeal Carcinoma in Baqubb Teaching Hospital – Iraq.

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Introduction

The larynx starts from the laryngeal inlet to the lower margin of the cricoid cartilage. (Burdett, 2011)It lies opposed the 3rd to 6th cervical vertebrae, being a slight higher in female than in male. The larynx can be divided anatomically into 3 regions, the supraglottis, glottis and subglottis by limitation of the false and true cords (Monnier, 2011).

The framework of the skeleton of the larynx is made up of numerous cartilages which are: thyroid, epiglottis, cricoid, arytenoid and sesamoid cartilage, and one bone which is hyoid bone. The laryngeal cartilage and hyoid bone are threaded together in series and suspended from the base of the skull and mandible (Inamoto, 2015).

The main laryngeal spaces are the pre-epiglottic space and the para-glottic space. Both spaces are essential pathways for metastasis of carcinoma within the larynx (Friedrich, 1997). The pre-epiglottic space is mainly composed of fatty tissue, loose elastic and collage fibers. The para-glottic space composed of fatty and loose connective tissue, in addition to blood vessels oriented cranio-caudally . The lack of a horizontal anatomical portion at the level of glottis may help the spread of transglottic tumor (Chu, 2008).

The commonest type of laryngeal carcinoma is (squamous cell carcinoma). Which is related primarily to cigarette smoking. The role of alcohol drinking is less significant than other predisposing factors in cancer of other sites in head and neck (Walther, 1995) (Gourin, 2009). laryngeal cancer incidence in seriously industrialized towns is 2 to3 times higher than in rural inhabitants. The ratio of laryngeal carcinoma in men to women is about 10:1 (Chu, 2008). Other non-squamous cancer in the laryngeal region is about 5 to 10% and the predisposing etiology is mostly not related to tobacco and alcohol (Vaezi, 2003).

Hoarseness of voice is considered to be the most common clinical symptoms in laryngeal squamous cell tumor. Squamous cell carcinoma can be detected by endoscopy at early stage. In other hand, Neither MRI nor CT scan can be detect squamous cell carcinoma at the superficial regions (Raitiola, 1999).

Squamous cell carcinoma of the larynx is divided according to the site of origin. Supra-glottic carcinoma is usually originated from laryngeal part of the epiglottis and exhibit typical pattern of metastasis (Chu, 2008). Glottic tumor is typically originated from the anterior part of the true vocal folds (Raitiola, 1999). Endoscopic examination can detect a small glottis mass which may be difficult to detect by CT scan or MRI. The trans-glottic carcinoma is the term referring to involvement of bothspraglottic and glottis at the same time (Gourin, 2009).

Patients and Methods

The study design of the literature is a prospective study. It was conducted in the Department of Otolaryngology-Head and Neck Surgery in Baquaba Teaching Hospital in Diyala- Iraq, from October 2018 to September 2019. The research included 42 patients with laryngeal carcinoma who admitted to the ENT department at this period. Full history was taken from the patients which include: name, age, sex, occupation, smoking habits, living area, alcohol consumption chief complaint and main symptoms (hoarseness of voice, dysphonia, dyspnea, stridor, cough, hemoptysis, dysphagia, weight loss, otalgia and throat pain).

physical examination and oto-rhino-laryngological assessment by using laryngeal mirror and flexible and rigid naso-laryngoscopy. We focused on the site and side of the lesion, mobility of the vocal cords, pooling of saliva and type of mass.

Neck examination has been done for cervical lymphadenopathy which include the level and number of lymph nodes involved. CT scan and MRI has been taken to every patient. Furthermore, biopsy was taken and sent for histopathological assessment.

Statistical analysis

Data were interpreted into a computerized database. A practiced statistical information was searched. Statistical analyses were done using SPSS (Statistical Set for Social Sciences).
Incidence distribution for certain variables was done at first.

Results

In both Table (1) and table (2), 42 patients were included. 34 patients (81%) were men and 8 (19%) were women, consistent to a men/ women ratio of about 4/1. Patients' ages were ranged between 36–78 years among men, while among women were 50– 70 years among, with mean ages of 61 and 63.1 years, respectively, and 62.7 for both genders.

In table (3), the most common presenting symptom was hoarseness of voice which considered (47.6%), after that stridor (42.9%), while hemoptysis (2.4%) , Throat Pain and sore throat comprising (2.4%), (4.8%) correspondingly.

The results in table (4) represent that supraglottic region was consist of (50%) , in other hand, glottic and transglottic regions were comprised (29%), (21%) respectively. Moreover, there were no subglottic tumors in our study.

Table (1): Frequency distribution of study sample by age groups.

Age in years	Number	Percentage
<50	3 7	7.1
50-59	12	28.6
60-69	14	33.3
70+	13	31
Total	42	100
Range (36-78) Mean+/-SD (62.7+/-10.6)		

Figure (1) : Pie chart shows the relative frequency of different age groups with carcinoma of the larynx

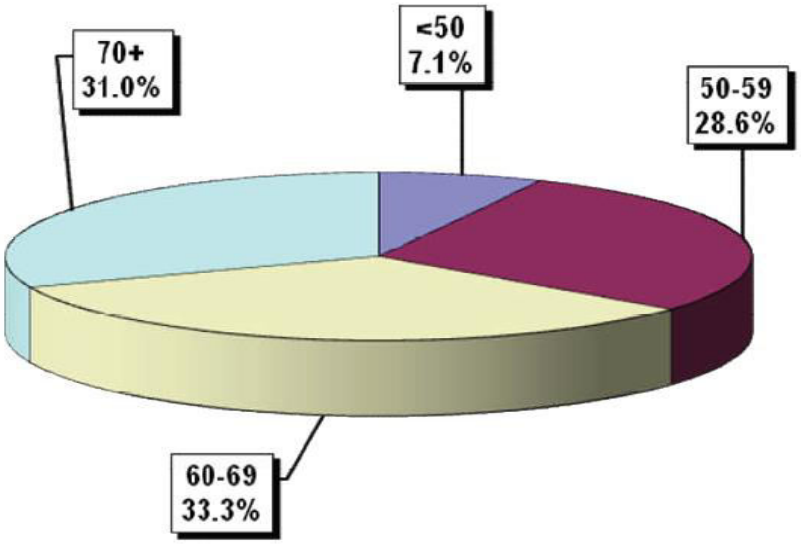

Table (2) shows the frequency distribution of study sample by gender with a mean age for both genders

Gender	Number	percentage	Range	Mean	SD
Female	8	19	(50 - 70)	61	6.8
Male	34	81	(36 - 78)	63.1	11.3
Total	42	100			
Male to Female ratio = 4:1					

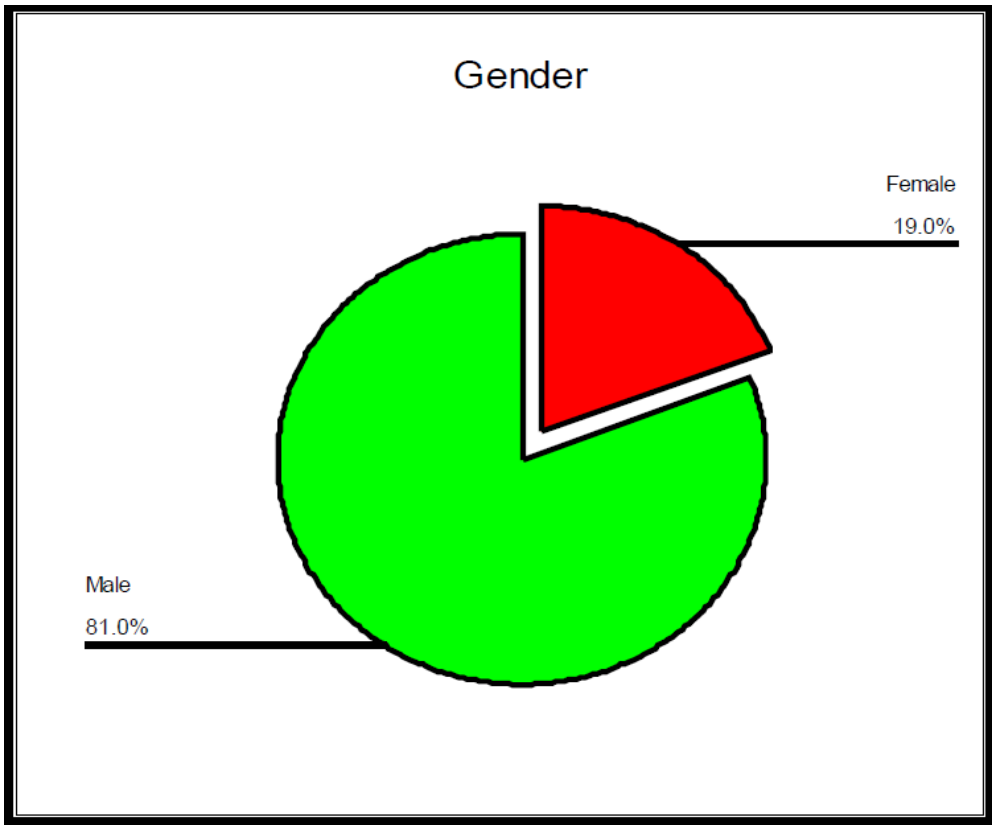

Figure (2) Pie charts shows Sex distribution of involved patients.

Table (3) present the frequency distribution of the study sample by the most common presenting symptoms. (*) HS: Highly Significant at P< 0.01.

Chief Complaint	Number	Percentage	C.S.(*) P- value
Hoarseness	20	47.6	
Throat Pain	1	2.4	K-S (test)
Stridor	18	42.9	K-S=0.329
Hemoptysis	1	2.4	P=0.000
Sore throat	2	4.8	HS
Total	42	100	

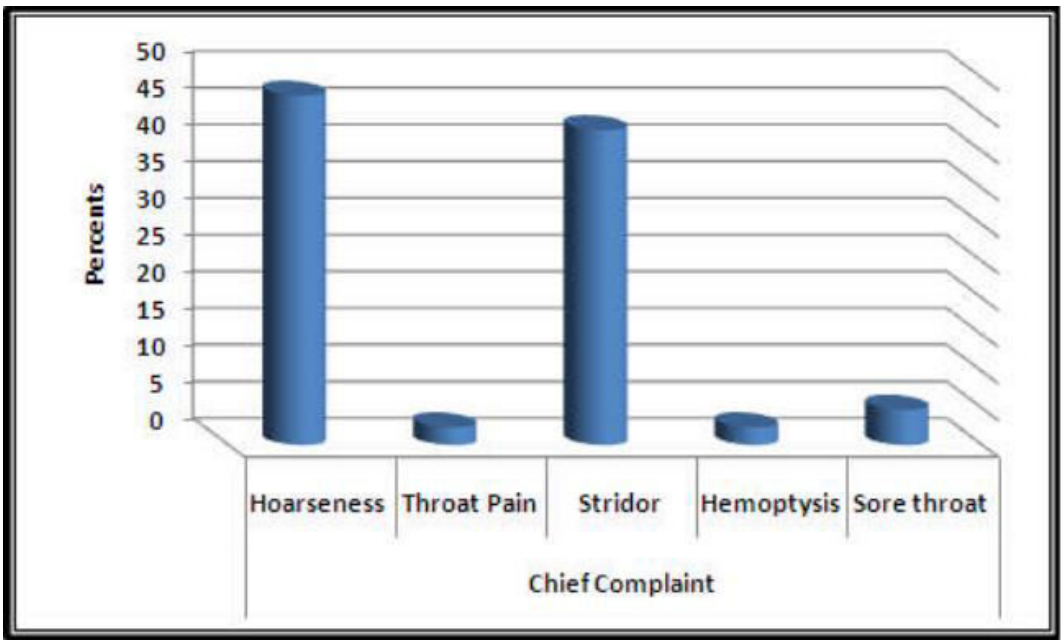

Figure (3):shows the incidence distribution of patient sample by the most common presenting symptom of laryngeal carcinoma.

Table (4) represents the incidence distribution of study sample by the site of laryngeal tumor.

Tumor site	Number	Percentage	C.S.(*) P- value
Supra-glottic	21	50	Chi-Square (test)
Glottis	12	28.6	χ 2=5.571
Trans-glottic	9	21.4	P=0.062
Total	42	100	NS
			C.L. = 93.8%

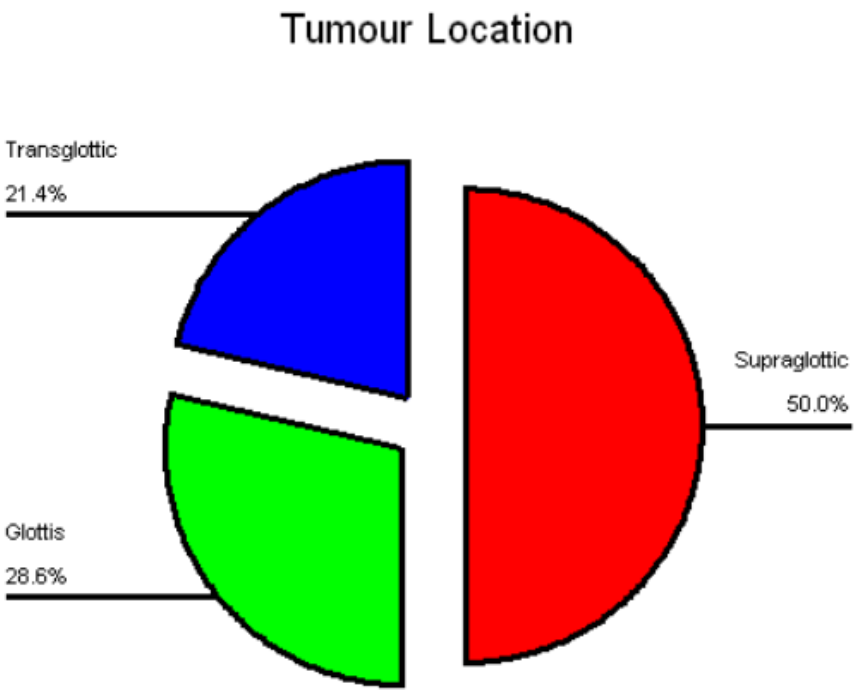

Figure (4): shows the frequency distribution of study sample by the tumor site.

Discussion

In this study, the most common principal complaint was hoarseness of voice (47.6%), after that stridor (42.9%), hemoptysis (2.4 %) with throat pain and soreness of throat comprising (2.4%), (4.8%) correspondingly. This is compatible with other study done by Vaezi, and who reported that the most common chief complaint was hoarseness of voice (35%), followed by shortness of breath and stridor (30%), dysphagia (15%), lump in the neck (10%), otalgia (10%) with sore throat and hemoptysis (5%) for each symptoms (Vaezi, 2003). In other study done byGourin, et al, they found that the most common symptom of laryngeal carcinoma was hoarseness of voice (83.6%) (Gourin, 2009). In other published study they reported the most common presenting chief complaint was hoarseness of voice (74.1%) followed by stridor (33%) and otalgia (22.3%) (Markou, 2013).

There was no subglottic involvement identified in our literature as a solitary involvement. Our results showed that supraglottic region was more involved in malignancy (50%), whereas glottic region was seen involved in (28.6%) and trans-glottic region in (21.4%). This is closely the similar results obtained by Raitiola, et al who reported that supraglottic region was more affected than other regions and comprised (46%), the glottic (37%), subglottic (9.3%) and transglottic (7.7%). Our results were dissimilar with other reports who found that glottis tumor was more common than other types (Raitiola, 1999).

In the previous 50 years, we have observed substantial increase in the occurrence of laryngeal carcinoma especially in east countries and decrease in the ratio of male to female (Markou, 2013). Tumor of the larynx is mostly common in male (Chu, 2008). The ratio between male and female varies internationally , from 5:1 to 30:1, while in the Europe is 7:1 (Peller, 2016).. In this study we reported from 42 involved patients 34 patients (81%) were men and 8 (19%) were women, consistent to a men/ women ratio of about 4/1.This may be related to tobacco smoking which considered to be the most imperative risk factor for laryngeal tumor development. However, in recent years, we have distinguished a significant increase in the women percentage with laryngeal carcinoma (Peller, 2016).

References

1. Burdett, E., & Mitchell, V. (2011). Anatomy of the larynx, trachea and bronchi. *Anaesthesia& Intensive Care Medicine*, *12*(8), 335-339.
2. Monnier, P. (2011). Applied surgical anatomy of the larynx and trachea. In *Pediatric airway surgery* (pp. 7-29). Springer, Berlin, Heidelberg.
3. Inamoto, Y., Saitoh, E., Okada, S., Kagaya, H., Shibata, S., Baba, M., ... & Palmer, J. B. (2015). Anatomy of the larynx and pharynx: effects of age, gender and height revealed by multidetector computed tomography. *Journal of oral rehabilitation*, *42*(9), 670-677.
4. Friedrich, G., &Lichtenegger, R. (1997). Surgical anatomy of the larynx. *Journal of voice*, *11*(3), 345-355.
5. Chu, E. A., & Kim, Y. J. (2008). Laryngeal cancer: diagnosis and preoperative work-up. *Otolaryngologic Clinics of North America*, *41*(4), 673-695.
6. Walther, E. K. (1995). Dysphagia after pharyngolaryngeal cancer surgery. Part I: Pathophysiology of postsurgical deglutition. *Dysphagia*, *10*(4), 275-278.
7. Gourin, C. G., Conger, B. T., Sheils, W. C., Bilodeau, P. A., Coleman, T. A., &Porubsky, E. S. (2009). The effect of treatment on survival in patients with advanced laryngeal carcinoma. *The Laryngoscope*, *119*(7), 1312-1317.
8. Vaezi, M. F., Hicks, D. M., Abelson, T. I., & Richter, J. E. (2003). Laryngeal signs and symptoms and gastroesophageal reflux disease (GERD): a critical assessment of cause and effect association. *Clinical Gastroenterology and Hepatology*, *1*(5), 333-344.
9. Raitiola, H., Pukander, J., &Laippala, P. (1999). Glottic and supraglottic laryngeal carcinoma: differences in epidemiology, clinical characteristics and prognosis. *Acta oto-laryngologica*, *119*(7), 847-851.
10. Markou, K., Christoforidou, A., Karasmanis, I., Tsiropoulos, G., Triaridis, S., Constantinidis, I., ... & Nikolaou, A. (2013). Laryngeal cancer: epidemiological data from Northern Greece and review of the literature. *Hippokratia*, *17*(4), 313.

11. Marioni, G., Marchese-Ragona, R., Cartei, G., Marchese, F., &Staffieri, A. (2006). Current opinion in diagnosis and treatment of laryngeal carcinoma. *Cancer treatment reviews*, *32*(7), 504-515.
12. Baumann, J. L., Cohen, S., Evjen, A. N., Law, J. H., Vadivelu, S., Attia, A., ... &Slebos, R. J. (2009). Human papillomavirus in early laryngeal carcinoma. *The Laryngoscope*, *119*(8), 1531-1537.
13. Peller, M., Katalinic, A., Wollenberg, B., Teudt, I. U., & Meyer, J. E. (2016). Epidemiology of laryngeal carcinoma in Germany, 1998–2011. *European archives of oto-rhino-laryngology*, *273*(6), 1481-1487.
14. Antanavičiūtė, I., Rysevaitė, K., Liutkevičius, V., Marandykina, A., Rimkutė, L., Sveikatienė, R., ... &Skeberdis, V. A. (2014). Long-distance communication between laryngeal carcinoma cells. *PLoS one*, *9*(6), e99196.
15. Müller, R., Paneff, J.,Köllner, V., & Koch, R. (2001). Quality of life of patients with laryngeal carcinoma: a post-treatment study. *European archives of oto-rhino-laryngology*, *258*(6), 276-280.