Carcinoma of Larynx An epidemiological & Pathological study

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Abstract: This thesis is a prospective and retrospective study of 270 patients with carcinoma of larynx admitted from January 2 , 1991 to May 31 , 1995 in E.N.T. - Head and Neck Surgery Centre in Medical city in Baghdad.

The highest proportion of our patients from the middle part of Iraq . Mean age group between 5^{th} - 8^{th} decades with peak incidence in the 7^{th} decade in males and 6^{th} decade in females.

208(77%) were males and 62(23%) were females and male: Female ratio was 3.3:1. 256(95%) of the patients were cigarette smokers.

262(97%) of carcinoma of larynx was squamous cell carcinoma. Moderately differentiated carcinoma was the commonest grade

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Introduction: Laryngeal cancer is common in Iraq[1]. It constitutes 5.8 % of the cases recorded by the Iraqi Cancer Registry 1989-1991 . It ranked the 5th commonest cancer in Iraq . It was the third commonest cancer in males and the tenth commonest cancer in females [2].

In United states it constitutes 1.2 % of all cancers and it is estimated that about 12.000 new cases are diagnosed annually , and almost 4.000 patients die every year[3].

It has , in common , with many other head and neck cancers , a predominantly squamous pathology as well as early interference with both function and emotion [4].

The causes of cancer of the larynx is not known . A number of possibly related factors (male predominance , some racial predilection , a greater incidence among urban dwellers) have been designated , and there is irrefutable relationship between tobacco and alcohol [5].

The aims of the study:

The aims of the study are to clarify the following points about carcinoma of larynx:

(1) Geographical distribution .

(2) Age and sex distributions .

(3) Association with cigarette smoking .

(4) Types of carcinoma.

Materials and Methods

A prospective study of patients who were diagnosed in E.N.T. Center in Medical City , as having carcinoma of the larynx from January 2 , 1991 to May 31 , 1995 . 77 % of them were males and 23 % were females .

Most of the patients came to our centre were referred cases from different areas of Iraq .

They were analyzed with respect to their age , sex , occupation residence , presence of risk factors such as cigarette smoking and histopathology of the tumor . The diagnosis was according to the clinical E.N.T. examination and direct laryngoscopy which done under general anaesthesia and by using rigid laryngoscopes to determine the site , extent of the tumors , biopsy taking and examination for cord mobility. Direct laryngoscopies were done by different surgeons.

The types of the tumors and their degrees of differentiation were obtained from histopathological reports.Histopathological examinations were done by different histopathologists.

The stage of the disease was based on the clinical findings utilizing the UICC . TNM classifications of carcinoma of larynx , 1978 .

Results were collected in tables and figures have been made by using pie histograms.

Results Geographical distribution

cities	No	%	
Baghdad	105	38.8	
Deyala	16	5.9	
Babylon	15	5.5	16 %
Al – Anbar	10	3.7	
Najaf	8	2.9	
Salah – Aldin	7	2.5	
Kerbala	4	1.4	
Maysan	16	5.9	
Wasit	16	5.9	
Al – Qadisyah	10	3.7	
The – Qar	7	2.5	22 %
Al – Muthana	6	2.2	
Al - Basrah	4	1.4	
Al – Taamim	18	6.6	
Al – Sulimaniyah	15	5.5	
Erbil	7	2.5	17 %
Nineveh	6	2.2	
Dohuk	0	0	

Table-1: shows geographical distribution of patients with laryngeal carcinoma in our study.

Age distribution :

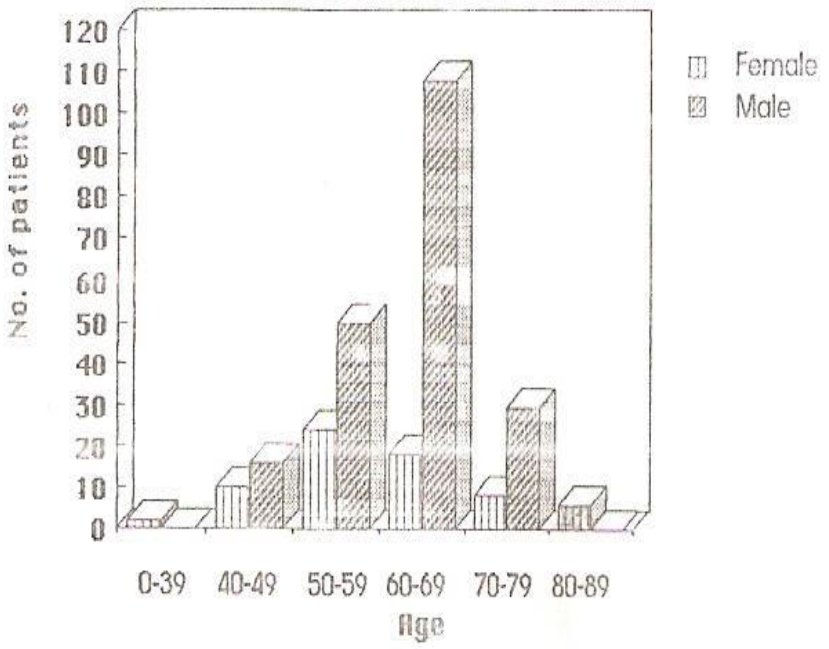

Figure 1 : Shows presentation of patients with laryngeal cancer according to the age

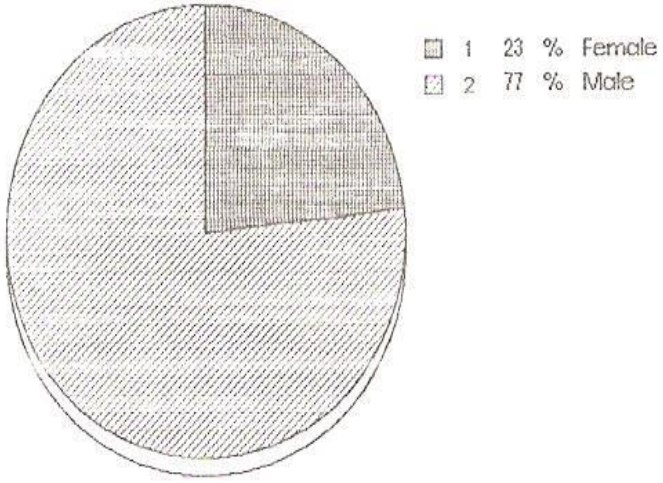

Figure 2 : Shows the incidence of sex in percent

Smoking habit:

No. of cigarette / day	No . of patients	%
Less than 20	56	20
20 – 40	158	60
More than 40	40	15
Non - smoker	14	5

Table 2: Shows distribution of patients by smoking habit.

Duration of smoking in years	No. of patients	%
5	0	0
10	3	1
15	3	1
20	15	6
25	23	9
30	82	32
35	46	18
40	51	20
45	13	5
50	20	8
> 50	0	0

Table- 3 : Shows duration of smoking

Histopathological results of laryngeal cancer:

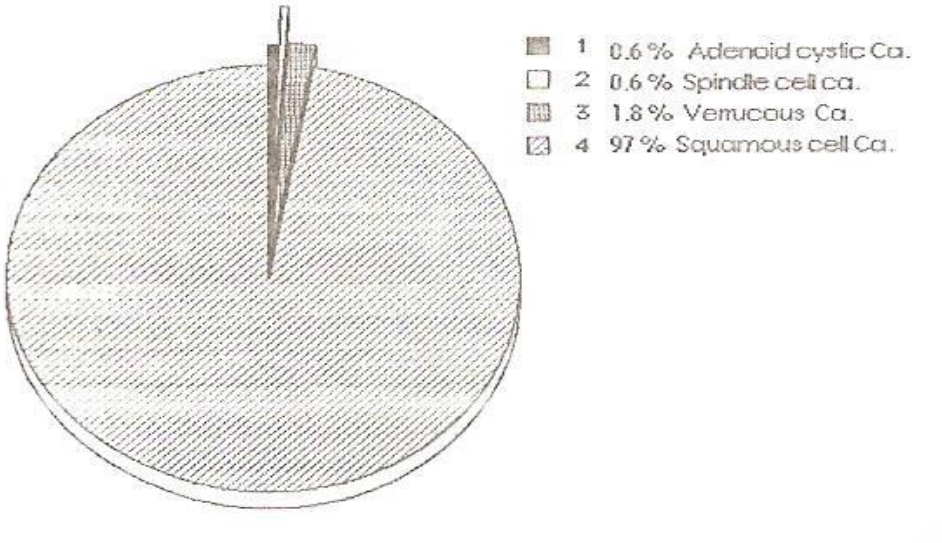

Figure 3: Shows the percentage of squamous cell carcinoma in comparison with other carcinomas

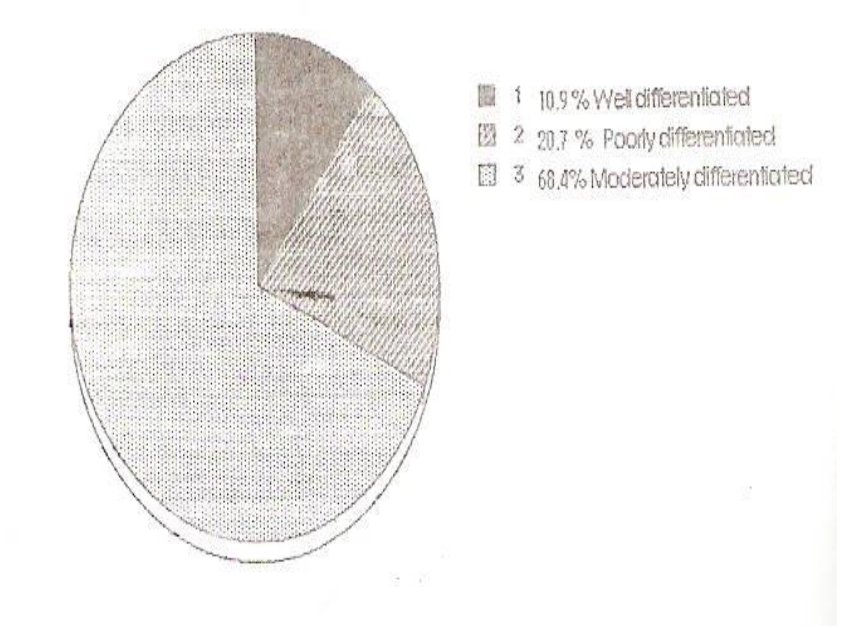

Figure 4: Degrees of differentiation in percentage

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Discussion

Geographical distribution :

The highest percentage of our patients from the middle part of Iraq 165 patients (61%) especially from Baghdad 105 patients (38.8%) whilst 59 patients (22%) from the south and 46 patients (17%) from the North of Iraq .

We thought that these figures do not reflect the real picture of geographical distribution of carcinoma of larynx

in Iraq , because the patients referred to our centre mainly from the middle part of Iraq , while the patients from the south and north of Iraq are mainly referred to the teaching centre their .

Iraq Cancer Registry recorded that 29.2 % of the patients with carcinoma of larynx from Baghdad , 56.4 % from other provinces and 14.4% were unknown residency[2].

Age distribution:

In our study we found that laryngeal cancer is a disease affecting old people mainly. The mean age between 40-79 years . In males, the peak incidence was 7^{th} decade, while in females the peak incidence was 6^{th} decade.

The same results were found by " Rothman K.J. et al 1980 " [6]. Meredith 1987 " reported that the mean age between $6^{th} – 8^{th}$ decades, the peak incidence being in the 7^{th} decade [7].

"Al – MANSOURI, A.1990" reported the mean age between 45-75[8].

The youngest patient in our study was a female aged 22 years.

One of the youngest cases reported was a boy of 10 years [9].

"Nsamba and Marroco 1979" reported a case of 12 years old [10].

"Jones and Gabriel 1969" have about twenty cases in the age of 12 and under age group[11]. This was found by " Rabbet 1965 due to malignant degeneration which is more common in children who had radiotherapy for papillomatosis [12].

Sex distribution:

In our study male patients were 208(77%) while females were 62(23%) and the male: female ratio was 3.3:1. Approximately all studies show male predominance.

Iraqi Cancer Registry 1989 – 1991 recorded 75.4 % were males and 24.6% were females and male: female ratio was 3.3: 1[2]."Meredith1987" reported 88% males and 12 % females [7]. "Al – Mansouri, A. 1990" reported 90% males and 10% females [8].

Saad S. Tahir et al reported 77% were males, 23 % were females and the male: female ratio was 3.3: 1 [1].

It is interesting to notice that in our study we found that in younger age group, less than 40 years, the females were more affected than males.

"Paul J. Carniol 1982" reported increased incidence of laryngeal carcinoma in younger females though there was no history of smoking, alcohol or papilomatosis[13].

"Lederman's 1970" reported that the male: female ratio was higher in older age and it was about 9: 1 but women are proportionately more affected below the age of 40[14].

Smoking habit:

256(95 %) of our patients were cigarette smokers and 14(5%) of them were non smokers. 212(83%) of the smokers smoked for more than 30 years. Saad S. TAHIR et al reported 97.3 % of the patients were smokers and 2.7% were not [1]." Auerbach 197 "reported that histological changes (including cells with atypical nuclei, carcinoma in situ, and early invasive carcinoma) were highly related to smoking habits and they were much higher in cigarette smokers than in men who never smoked and they increased in proportion to the number of cigarette per day[15].

" Gregoriades 1979 " concluded that the length of time of smoking habits plays the main role in the laryngeal cancer than the number of cigarettes smoked per day[16].

" Rothman , J.K. 1980 " reported that cigarette smoking was approximately a 12 - fold increase in risk for carcinoma of larynx[6].

Histopathology:

In our study 97% of carcinoma of larynx were squamous cell carcinoma, 1.8% were verrucous carcinoma, 0.6% adenoid cystic carcinoma and 0.6% spindle cell carcinoma.

Iraqi Cancer Registry 1989 – 1991 recorded 91.2% of carcinoma of larynx were squamous cell carcinoma, 1.1 % undifferentiated carcinoma, 0.1 % fibrosarcoma[2].

"P.M. Stell and A.G.D. Maran in 1978" reported 85% were squamous cell carcinoma , 3% verrucous carcinoma , 3% carcinoma–in–situ , 5% undifferentiated carcinoma , 0.5% adenocarcinoma and 1.5% (adenoid cystic , spindle cell) and 2% were sarcoma[17].

For practical point of view it is considered that all carcinoma of the larynx are squamous cell carcinoma [18].

Of these squamous cell carcinoma we found 68.4% were moderately differentiated, 20.7 % were poorly differentiated and 10.9% were well differentiated.

"Al – Mansouri, A. 1990" reported 36.3% well differentiated, 43.6% moderately differentiated and 20% poorly differentiated[8].

"Jason 1989" reported that 40% moderately differentiated, 28% well differentiated and 28% poorly differentiated[19].

Conclusion

- The highest proportion of our patients from the middle part of Iraq.
- 77 % were males and 23% were females and the male: female ratio was 3.3:1.
- 95% of the patients were smokers .
- 97% of carcinoma of larynx was squamous cell carcinoma, other rare cancers were verrucous carcinoma, adenoid cystic carcinoma and spindle cell carcinoma.
- Moderately differentiated carcinoma was more common than other grades .

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سرطان الحنجرة دراسة وبائية وتشريحية

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الخلاصة : هذه البحث هو دراسة استطلاعية على ٢٧٠ مريض بسرطان الحنجرة اعتبار ا من ٢ كانون الثاني ١٩٩١ إلى ٣١ ايار ١٩٩٥ في الأنف والحنجرة -- الرأس والعنق في مركز جراحة المدينة الطبية في بغداد. أعلى نسبة من مرضانا من الجزء الأوسط من العراق. يعني الفئة العمرية بين ٥ -- ٨ عقود مع حدوث الذروة في العقد ٧ في الذكور والإناث في العقد ٦ ، وكانت ٢٠٨ (٧٧ ٪) من الذكور و ٦٢ (٢٣ ٪) من الإناث والذكور : نسبة الإناث ٣,٣:١. وكانت ٢٥٦ (٩٥ ٪) من المرضى مدخني السجائر،وكان ٢٦٢ (٩٧ ٪) من سرطان الحنجرة سرطان الخلايا الحرشفية.