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ORIGINAL ARTICLE

Clinical epidemiological characterization of laryngeal cancer in the province of Pinar del Rio

Caracterización clínico epidemiológica del cáncer laríngeo en la provincia de Pinar del Río

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ABSTRACT

Introduction: Laryngeal cancer has a considerably high frequency, the affection of the main organ of phonation entails important psychological and socioeconomic repercussions, since the ability to communicate is affected.
Objective: To clinically and epidemiologically characterize larynx cancer in the province of Pinar del Río.
Methods: An observational, descriptive, cross-sectional, descriptive study was carried out on patients with a diagnosis of laryngeal cancer seen in the outpatient clinic of Otorhinolaryngology in the province of Pinar del Río, in the period between 2018-2020, we worked with the entire universe, descriptive statistics were used.
Results: the most affected sex was male (65 %), the age group with the highest incidence of this disease was 70-79 (31,7 %), the main risk factor presented by these patients was smoking (90 %), the predominant symptoms were dysphonia (50 %), dyspnea (26 %) and dysphagia (24 %), according to the anatomical location the cancer of the glottic region (60 %) had a higher incidence in stage I (51,6 %).
Conclusions: Laryngeal cancer constitutes a current health problem for the world, the earlier the diagnosis is made, the more chances of survival for patients.

Keywords: Laryngeal Cancer; Risk Factor's; Smoking; Dysphonia.

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RESUMEN

Introducción: el cáncer de laringe tiene una frecuencia considerablemente alta, la afección del principal órgano de la fonación conlleva importantes repercusiones psicológicas y socioeconómicas, pues se afecta la capacidad de comunicación.
Objetivo: caracterizar clínica y epidemiológicamente el cáncer de laringe en la provincia de Pinar del Río.
Métodos: se realizó un estudio observacional, descriptivo de corte transversal a los pacientes con diagnóstico de cáncer laríngeo atendidos en consulta externa de Otorrinolaringología en la provincia de Pinar del Río, en el período comprendido entre el 2018-2020, se trabajó con todo el universo, se utilizó la estadística descriptiva.
Resultados: el sexo más afectado fue el masculino (65 %), el grupo etario donde mayor incidencia tuvo esta enfermedad fue el de 70-79 (31,7 %), el principal factor de riesgo que presentaron estos pacientes fue el hábito de fumar (90 %), los síntomas que predominaron fueron la disfonía (50 %), la disnea (26 %) y la disfagia (24 %), según la localización anatómica el cáncer de la región glótica (60 %) tuvo mayor incidencia en un estadío I (51,6 %).
Conclusiones: el cáncer de laringe constituye un problema de salud actual para el mundo, mientras más temprano se haga el diagnóstico, más posibilidades de sobrevida tienen los pacientes.

Palabras clave: Cáncer de Laringe; Factores de Riesgo; Tabaquismo; Disfonía.

ORIGINAL ARTICLE

INTRODUCTION

The larynx is the most frequent site of non-cutaneous malignant head and neck tumors (30-40 %) and the second most frequent among malignant neoplasms of the respiratory tract, after lung cancer.[1]

Laryngeal cancer is one of the most frequent head and neck neoplasms, excluding skin-derived carcinomas.[2] It represents 2 % of all malignant tumors in the body, and 25 % of head and neck tumors; 98 % of which correspond to squamous or epidermoid carcinomas (generally of the well-differentiated type).[3]

Approximately 12,000 new cases of laryngeal cancer are diagnosed annually in the United States with about 4,000 deaths per year attributed to this disease. Its incidence varies greatly among different countries; in Spain it reaches 25 cases per 100,000 inhabitants, being especially high in Brazil, Poland, France and Italy, among others.[2] The countries with the highest mortality from laryngeal cancer are France, Uruguay, Spain, Italy, Cuba, Argentina, Brazil, Colombia and Greece.[4]

It would be interesting to learn more about the biological behavior of laryngeal cancer, which would allow us to apply new therapeutic strategies to improve survival. In recent years, attempts have been made to identify new biological factors to predict the evolution of the tumor.[3,5] Knowing the size and nature of the "cancer" problem is fundamental in the planning and evaluation of control measures; in this sense, adequate epidemiological characterization and survival analysis play an essential role.[6]

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Laryngeal cancer can be cured if diagnosed in early stages. Diagnosis is relatively simple, so efforts should be made to sensitize the first contact physician to look for this cancer in view of the characteristic symptomatology.[7]

Although preventive medicine is a fundamental part of primary care, timely detection is no less important. Therefore, the identification of a risk profile that alerts to a possible patient with a diagnosis of laryngeal cancer should be favored.[6,8]

This study presents a series of cases diagnosed with laryngeal cancer in the province of Pinar del Rio in order to know the clinical and pathological characteristics of patients with laryngeal cancer, which can help as a guide for the suspected diagnosis in the first and second levels of care.

Therefore, the objective of this article is to clinically and epidemiologically characterize laryngeal cancer in the province of Pinar del Rio.

METHODS

An observational, descriptive, cross-sectional, cross-sectional study was carried out on patients with a diagnosis of laryngeal cancer seen in the outpatient clinic of Otorhinolaryngology in the province of Pinar del Río, in the period from 2018-2020. The universe was constituted by all patients with laryngeal cancer diagnosed in the studied period that represented a total of 60 cases, the whole universe was worked with.

The data obtained from the medical records were summarized and processed in a database with fields created for each of the variables. Microsoft Office Excel 2007 and the tabulated data processor Epidat Version 3.1 were used for this.

The variables studied were: age, sex, risk factors, main symptoms, anatomical location and stage of laryngeal cancer.

The principles of medical ethics and the aspects established in the Declaration of Helsinki were complied with.

RESULTS

Table 1 shows that of the total number of patients there was a predominance of male sex (65 %) and the most affected age group was 70-79 years old (31,7 %).

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Table 1. Incidence of laryngeal cancer according to age group and sex. External consultation of Otorhinolaryngology in the province of Pinar del Río, between the 2018-2020.

Age group	Sex				Total	
	Male		Female			
	No	%	No	%	No	%
40-49	2	3,3	1	1,7	3	5
50-59	10	16,6	7	11,7	17	28,3
60-69	11	18,3	6	10	17	28,3
70-79	14	23,3	5	8,4	19	31,7
80 and over	2	3,3	2	3,3	4	6,6
Total	39	65	21	35	60	100

Source: Medical history.

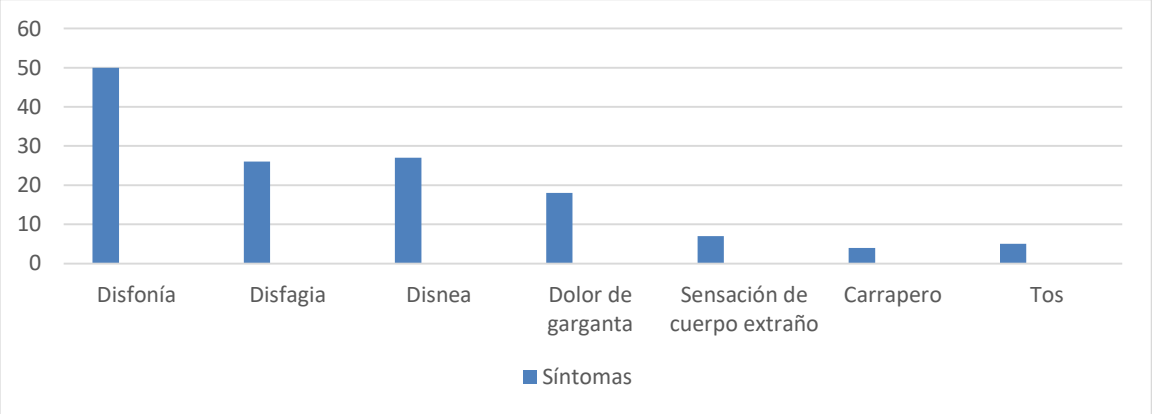
Table 2 shows that among the risk factors for laryngeal cancer, smoking had a high incidence in patients (90 %).

Table 2. Risk factors of patients diagnosed with laryngeal cancer

Risk factors	No	%
Family pathological history of laryngeal cancer	9	15
History of gastroesophageal reflux	6	10
Exposure to irritants	10	16,6
Voice professionals	8	13.3
Noisy environment	5	8,3
Smoker	54	90
Drinker	25	41,6

Source: Clinical History.

Graph 1 shows that dysphonia (50 %), dyspnea (26 %) and dysphagia (24 %) were predominant symptoms of laryngeal cancer.



Source: Clinical history.

Graph 1. Most frequent symptoms presented by patients with laryngeal cancer.

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Table 3 shows that there was a predominance of glottic cancer (60 %) and according to the stage at diagnosis, stage I had a higher incidence (51,6 %).

Table 3. Relationship between anatomical location and stages of patients with laryngeal cancer.

Stages of the patients	Anatomical location						Total	
	Supraglottic		Glottic		Subglottic			
	No	%	No	%	No	%	No	%
Stage I	11	18,3	19	31,6	1	1,6	31	51,6
Stage II	7	11,6	12	20	1	1,6	20	33,4
Stage III	1	1,6	2	3,3	1	1,6	4	6,6
Stage IV	2	3,3	3	5	0	0	5	8,3
Total	21	35	36	60	3	5	60	100

Source: Clinical history.

DISCUSSION

In recent years, an increase in the number of patients with malignant laryngeal tumors has been observed, which has made them an important health problem worldwide.[9]

Alpha Ledo de la LA et al,[10] observed in their study that the predominant groups were those over 60 years of age, followed by those between 51 and 60 years of age. The incidence of sex in this type of cancer corresponded 87 % to men, for a total of 154 cases and 13 % to women, representing 23 patients, data that coincide with the results obtained by the authors. The authors believe that the incidence of laryngeal cancer increases with age, this seems to be linked to carcinogens and the accumulation of premalignant changes generated over a long period of time.[11]

The male to female ratio in large-scale epidemiological studies and national cancer registries varies from 2:1 to 15:1, depending on the location of the disease. Several studies have highlighted a high frequency of laryngeal cancer in the male sex, the authors suggest that this is associated to the higher consumption of tobacco and alcohol in men.[12]

There are authors who consider the presence of premalignant lesions as an unfavorable risk factor and within these, leukoplakia is the most frequent. In the study carried out, the above mentioned is not true, since the absence of these personal pathological antecedents is more frequent, being associated with great frequency with a history of smoking, drinking alcohol and family antecedents.[5,10]

There is molecular epidemiological evidence, which supports the hypothesis of a greater genetic susceptibility. Robles-Santos J et al,[13] have demonstrated risk factors such as tobacco consumption in all its forms; in smoking patients it is three to 12 times higher compared to non-smokers, which is directly related to the age of onset, duration of consumption and daily dose, coinciding with what was evidenced in the present study. Due to the changes that occur in the epithelium as a result of the action of nicotine, the authors believe that smoking is the main risk factor.

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The existence of two oncogenic viruses that can be related to head and neck tumors have been demonstrated: the Epstein Barr virus with nasopharyngeal carcinoma and the human papilloma virus with epidermoid carcinoma in oropharynx in up to 60 % of asymptomatic persons and in 36 % of benign and precancerous lesions.[13]

Alpha Ledo de la LA et al,[10] asserts that environmental, occupational and endogenous factors may play a role in the carcinogenesis of laryngeal carcinoma, high tobacco and alcohol consumption are considered to be the main risk factors for laryngeal epidermoid carcinoma. In addition, alcohol-tobacco intoxication is synergistic in the genesis of epidermoid carcinoma, which increases the risk by 50 % compared to the non-intoxicated population.[12]

Omar RZ et al,[14] report a predominance of dysphonia and dysphagia, in that order, as symptoms in people affected by this type of cancer. However, this variable has been considered subjective, since the symptom that the patient refers as the initial symptom of the neoplastic disease may be the one that began to worry him and prompted him to seek medical attention, but not the first to actually appear. The study coincides with this statement since dysphonia is shown as the main symptom, accompanied by dyspnea.

The bibliography consulted establishes a relationship between symptoms and location of the tumor lesion.[10]

The most affected anatomical site was the glottis. This involvement of the glottis translates clinically into early changes in the tone of voice, therefore, dysphonia was the predominant symptom. It is an early sign that allows early diagnosis of the disease.[13]

Robles-Santos J et al,[13] in their study in relation to the clinical staging of the larynx tumor, 25,1 % were included in stage III and 18,73 % in stage I, where it coincides in a certain way since in the present study stage I tumors predominated. More than 95 % of head and neck tumors are based on the BRODERS classification and are of epidermoid histology. Based on keratinization, three histological grades of differentiation are distinguished: well differentiated (more than 75 % keratinization), moderately differentiated (25-50 % keratinization) and poorly differentiated (less than 25 % keratinization).[6]

Omar RZ et al,[14] also detected a predominance of more frequent localization in the glottis, obtaining glottic involvement in 79 % of the population studied. In addition, Omar RZ et al,[14] presented that about 60 % of patients seek medical attention when they already present advanced stages (III and IV) of the disease. The results of the present study could be in correspondence with the predominance of glottic cancer, which allowed an early diagnosis, in initial stages of the clinical entity.

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Progress is continually being made in the treatment of laryngeal cancer, fundamentally in therapeutics, already aimed at the removal of the tumor by surgery (conventional, microsurgery, laser, partial or radical), radiation (cobalt), polychemotherapy (5-fluorouracil and cisplatin), but this is not enough, science is advancing and there is already research on the use of monoclonal antibodies for this type of disease.[15]

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CONCLUSIONS

Laryngeal cancer constitutes a current health problem for the world; the earlier the diagnosis is made, the greater the chances of survival for patients.

Conflict of Interest
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NDR and EECP: conceptualization, data curation, validation and formal analysis, and supervision.
APP and AEC: research, methodology, project management, and software.
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Additional material
Additional material to this article can be consulted in its electronic version available at: www.revcmpinar.sld.cu/index.php/publicaciones/rt/suppFiles/5847

BIBLIOGRAPHIC REFERENCES

1.Gallegos-Hernández JF. Microcirugía transoral con láser en cáncer laríngeo. Cir. cir [Internet]. 2021 [citado 26/11/2022]; 89(5): 696-697. Disponible en: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2444-054X2021000500696&lng=es .

2. Carías-Díaz J, Naira D, Dubón J, Díaz V, Barrientos J. Factores predisponentes, antecedentes patológicos, clínica, histología e imagenología por banda estrecha en el cáncer laríngeo. Rev. Otorrinolaringol. Cir. Cabeza Cuello [Internet]. 2020 [citado 26 Nov 20226/11/20222]; 4(3). Disponible en: http://www.revotorrino.sld.cu/index.php/otl/article/view/164

3. Santana-Álvarez J, Acosta-Abréu GB, Miranda-Ramos MA, León-Molina M, Quiroga-Meriño E. Eficacia de la radioterapia en los pacientes con cáncer laríngeo en estadio I y II. AMC [Internet]. 2018 [citado 2022 Nov 226/11/20226]; 22(6): 725-742. Disponible en: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1025-02552018000600725&lng=es.

4. Ortega Gonzalo F, Cardemil Felipe M. Estimación de la incidencia del cáncer de laringe en Chile según la aplicación de un formulario de registro digital. Rev. Otorrinolaringol. Cir. Cabeza Cuello [Internet]. 2017 [citado 26/11/2022]; 77(2): 150-156. Disponible en: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-48162017000200005&lng=es

ISSN: 1561-3194 **RNPS:** 1877
Rev Ciencias Médicas. 2023; 27(2023): e5847

5. Orellana GMJ, Chuang ChÁ, Fulle CA, Fernández G, Loyola B, Imarai B. Cáncer de laringe: Serie de casos en 6 años en el Complejo Asistencial Doctor Sótero del Río. Rev. Otorrinolaringol. Cir. Cabeza Cuello [Internet]. 2017 [citado 2022 Nov 2626/11/2022]; 77(1): 35-43. Disponible en: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-48162017000100005&lng=es.

6. León-Céspedes I, Rivero-Granado C, Vázquez-Blanco E. Caracterización clínica y epidemiológica del cáncer de cabeza y cuello en el Hospital Celia Sánchez Manduley. Rev. Otorrinolaringol. Cir. Cabeza Cuello [Internet]. 2022 [citado 26/11/2022]; 6(1). Disponible en: http://www.revotorrino.sld.cu/index.php/otl/article/view/340

7. Meireles-López L. Caracterización de pacientes con carcinoma epidermoide laríngeo. Rev Cub de Otorr y Ciru de Cab y Cuell [Internet]. 2019 [citado 26/11/2022]; 3(3). Disponible en: http://www.revotorrino.sld.cu/index.php/otl/article/view/107

8. Contreras R, Muñoz S, Contreras R, Rahal E. Momento de inicio de radioterapia posoperatoria como factor pronóstico en pacientes con cáncer de laringe avanzado. Rev. Otorrinolaringol. Cir. Cabeza Cuello [Internet]. 2018 [citado 26/11/2022]; 78(4): 406-412. Disponible en: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-48162018000400406&lng=es.

9. Contreras-Álvarez P, Iznaga-Marín N, Hernández-Armstrong L, Aguirre-Muñoz C. Tratamiento con radioterapia en pacientes con neoplasia laríngea. Rev. Otorrinolaringol. Cir. Cabeza Cuello [Internet]. 2020 [citado 26/11/2022]; 4 (1). Disponible en: http://www.revotorrino.sld.cu/index.php/otl/article/view/130

10. Alpha Ledo de la LA, Alfonso Muñoz E. Caracterización clínica y epidemiológica de pacientes con cáncer laríngeo. Rev Cub Med Mil [Internet]. 2018 Sep [citado 26/11/2022]; 47(3): 1-9. Disponible en: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0138-65572018000300008

11. Cepeda-Uceta M, Añel-Uria A, González-Hechavarría Y, Mustelier-Cardona L. Comportamiento clínico epidemiológico del cáncer de cabeza y cuello. Rev Cub de Otorr y Ciru de Cab y Cuell [Internet]. 2021 [citado 26/11/2022]; 5(3). Disponible en: http://www.revotorrino.sld.cu/index.php/otl/article/view/275

12. Sotomayor J, Cabezas C, Fernández A, Schuller, Torrejón W, Papuzinski C. Análisis de supervivencia de carcinoma escamoso de laringe en una cohorte retrospectiva chilena del Hospital Carlos Van Buren de Valparaíso. Rev. Otorrinolaringol. Cir. Cabeza Cuello [Internet]. 2020 [citado 26/11/2022]; 80(3): 286-294. Disponible en: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-48162020000300286&lng=es.

13. Robles-Santos J, Pérez-García T, Iznaga-Marín N, Contreras P. Caracterización clínica del cáncer de cabeza y cuello. Rev Cub de Otorr y Ciru de Cab y Cuell [Internet]. 2020 [citado 26/11/2022]; 4(1). Disponible en: http://revotorrino.sld.cu/index.php/otl/article/view/128

14. Omar RZ, Camejo CAB, Neyra BRM. Características clínico epidemiológicas de pacientes con cáncer de laringe. MediSan [Internet]. 2020 [citado 26/11/2022]; 24(01): 57-64. Disponible en: https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=96041

15. Sánchez Díaz A, Panadés Ambrosio LE, Domínguez Rodríguez M, Figuerola Camué A, Arias Oliva L, et al. Otorrinolaringología. La Habana: Editorial de las Ciencias Médicas; 2013.