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Frequency and histopathological type of laryngeal tumours at the University Clinics of Kinshasa

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Abstract

Background and objective: *Laryngeal tumours are common and affect people of all ages. The objective of this study was to determine the frequency, clinical and histopathological profile of laryngeal tumours at the University Clinics of Kinshasa (CUK).*

Methodology: *This is a descriptive and analytical documentary study conducted over an 11-year period from 2013 to 2023, including all the records of patients followed for histologically documented laryngeal tumours.*

Results: *105 patients with laryngeal tumours were included, among whom 27 (25.7%) had benign tumours and 78 (74.3%) had malignant tumours . The mean age of the patients was 55.9 ± 16.5 years with extremes of 5 and 79 years. Male gender predominated with a proportion of approximately 3/4 of the series. The median consultation time was 12 months with extremes of 1 and 60 months. All patients with laryngeal tumours reported dysphonia. Inspiratory dyspnea was reported by 92.3% of patients with malignant tumors and 74.1% of patients with benign tumours. Approximately 2/3 of malignant tumours and ¾ of benign tumors were located in the glottic area.*

The most common histological types were squamous cell carcinoma (89.7%) for malignant tumours and papilloma (85.2%) for benign tumours.

Conclusion: *Laryngeal tumours are more common in adult males and dominated by malignant tumors, hence the need for awareness on preventive measures.*

Keywords: tumor, clinic, larynx histopathology, Kinshasa.

INTRODUCTION

Laryngeal tumours represent a worrying condition due to their frequency and severity. Despite early warning signs, a large number of laryngeal tumours are diagnosed at a relatively advanced stage, especially in resource-limited countries [1]. The diagnosis of laryngeal tumours is essentially based on endoscopy and anatomopathological examination. The latter specifies the characteristics of the tumor [2].

Benign tumours of the larynx constitute a heterogeneous group of tumors, most of which are rare [3]. They affect all structures of the larynx, and include pseudo-tumorous inflammatory formations and true benign tumours such as vocal polyps (the most common benign tumor lesion) [4]. While the most predominant histological type among cancers is squamous cell carcinoma [1]. Laryngeal cancer represents 30 to 40% of head and neck cancers, and remains the most common cancer in the otolaryngology. Worldwide, 184,615 new cases of laryngeal cancer are recorded, which corresponds to 1.1% of all cancer cases [5]. In Europe, 35,981 cases were reported in 2017. In the United States, 13,150 cases were recorded in 2018 [6] . In Africa, in Nigeria, 101 patients with laryngeal cancer have summer listed In a study carried out from 2011 to 2020 [6]. Two studies conducted in the DRC reported respectively 100 patients with benign laryngeal tumors from 1964 to 1984 and 49 patients with laryngeal cancers in 1980[7,8].

Given the increasing number of cases of laryngeal tumours observed in our consultation records, the present study aims to determine the frequency, clinical and histopathological profile of laryngeal tumours in CUK.

METHODOLOGY

A descriptive and analytical documentary study was conducted at the Otorhinolaryngology Service of the CUK in the DRC, over a period of 11 years from 2013 to 2023. The files of patients followed for histologically confirmed laryngeal tumors were used to collect sociodemographic and clinical variables such as patient complaints, consultation time, history, tumor location, macroscopic appearance of the tumor on endolaryngeal examination and the results of histopathological analysis of the biopsy specimen.

This work had received approval from the National Health Ethics Committee (n°605 /CNES/BN/ PMMF/2024).

For statistical analyses, data encoded using Excel 2016 software were analyzed with SPSS 22.0 software. Quantitative variables with normal distribution were summarized as mean (± standard deviations), those with non-symmetrical distribution as median with extremes. Qualitative variables were presented as frequency and percentage. The Chi-square test or Pearson Fisher test was used for the comparison of proportions while the Student t test for the comparison of means. The significance threshold was set at $p < 0.05$.

RESULTS

During the study period, out of a total of 311 records of patients with ENT tumors, 105 (33.8%) patients had a laryngeal tumor with histological evidence. Of these laryngeal tumours, 27 (25.7%) were benign and 78 (74.3%) malignant. The mean age of patients with laryngeal tumours was 55.9 ± 16.5 years with extremes of 5 and 79 years. Patients with benign tumors (46.4 ± 18.9 years) were significantly younger than those with malignant tumors (59.2 ± 14.3 years; $p < 0.001$).

Table I shows that malignant tumours were more represented in patients aged over 60 years with 50.0% of cases. While benign tumors dominated in the age group of 41 to 60 years with 48.1%. The male gender, the most preponderant, represented about 3/4 of the patients without statistical difference. Marital status and the notion of profession with or without vocal strain had no significant difference in the two groups of tumors (Table I).

Table I: Sociodemographic characteristics of patients with laryngeal tumours

Variables	Total N=105 n (%)	Benign tumor N=27 n (%)	Malignant tumor N=78 n (%)	p-value
Age groups (years)				
≤ 20	4 (3.8)	4 (14.8)	0 (0.0)	0.002
21 – 40	13 (12.4)	3 (11.1)	10 (12.8)	
41 – 60	42 (40.0)	13 (48.1)	29 (37.2)	
> 60	46 (43.8)	7 (25.9)	39 (50.0)	
Sex				
Male	89 (84.8)	20 (74.1)	69 (88.5)	0.073
Female	16 (15.2)	7 (25.9)	17 (21.8)	
Marital status				
Married	82 (78.1)	21 (77.8)	61 (78.2)	0.166
Live alone	23 (21.9)	6 (22.2)	17 (21.8)	
Occupation				
With vocal strain	37(35.0)	7 (25.9)	30 (38.5)	0.288
Without vocal strain	68(6.47)	20 (74.1)	61.5)	

Dysphonia was the main complaint of all patients with laryngeal tumours, followed by inspiratory dyspnea. Patients with malignant tumors had significantly more Inspiratory dyspnea ($p = 0.036$) and mixed dysphagia ($p = 0.029$) in contrast to patients with benign tumors. Other symptoms had no statistical difference in the two groups (Table II).

The median consultation time for patients with laryngeal tumours was 12 months with extremes of 1 and 60 months.

Alcohol use was more reported in patients with malignant tumor (71.8%) than in those with benign tumor (48.1%). This difference was statistically significant (p = 0.035). The other variables did not show any statistical difference between the two tumor groups (Table II).

Table II. Clinical characteristics of laryngeal tumours

Symptoms	Malignant tumor n (%)	Benign tumor n (%)	*p*
Dysphonia	78 (100.0)	27 (100.0)	-
Inspiratory dyspnea	72 (9 2.3)	20 (74.1)	0.036
Productive cough	26 (33.3)	4 (14.8)	0.077
Mixed dysphagia	21 (26.9)	2 (7.4)	0.029
Dysphagia to solids	11 (14.1)	1 (3.7)	0.164
Dry cough	10 (12.8)	4 (14.8)	1,000
Neck pain	10 (12.8)	-	0.061
Earache	9 (11.5)	1 (3.7)	0.783
Adenopathy	1 (1.3)	-	1,000
Dysphagia to liquids	1 (1.3)	2 (7.4)	0.269
Background			
Alcohol use	56 (71.8)	13 (48.1)	*0.035*
Tobacco use	30 (38.5)	6 (22.2)	*0.236*
Chronic laryngitis	29 (37.2)	8 (29.6)	*0.498*
Vocal strain	30 (38.5)	7 (25.9)	*0.291*
Alcohol and tobacco use	28 (35.9)	6 (22.2)	*0.237*
Gastroesophageal reflux disease	12 (15.4)	1 (3.7)	*0.176*
Hypertension	22 (28.2)	5 (18.5)	*0.445*
Diabetes	3 (3.8)	1 (3.7)	*1,000*
Pulmonary tuberculosis	3 (3.8)	1 (3.7)	*1,000*
Duration of symptoms (months)			
<6	10 (12.8)	6 (22.2)	*0.377*
6-12	29 (37.2)	11 (40.7)	
> 12	39(50.0)	10 (37.0)	
Median (Minimum; Maximum)	12.5 (2-60)	12.0 (1-60)	*0.347*

Tobacco use and chronic laryngitis were observed in low proportions in both groups of patients.

Endolaryngeal examination performed showed macroscopically (Table III) that the appearance of benign laryngeal tumors was budding in 81.5% and polyploid in 18.5 %. Approximately ¾ of the malignant tumors had a budding appearance and ¼ an ulcero -budding appearance. Most of the laryngeal tumours were located in the glottic area (2/3 of the malignant tumors and ¾ of the benign tumors). However, the supraglottic area came in second place (19.2% for malignant tumours and 14.8% for benign tumors).

Histopathologically , papilloma was the predominant tumor in 85.2% among benign tumors while for malignant tumors, squamous cell carcinoma came first (89.7%) followed by adenosquamous carcinoma (5.1%).

Table III. Anatomopathological characteristics of laryngeal tumours

Variables	Malignant tumor n (%)	Benign tumor n (%)	Total n (%)
Macroscopic aspect			
Polypody	-	5 (18.5)	5 (4.8)
Budding	59 (75.6)	22 (81.5)	81(77.1)
Budding ulcer	19 (24.4)	-	19 (18.1)
Site of laryngeal tumor			
Glottic	52 (66.7)	19 (70.4)	71 (67.6)
Glottic Substance	15 (19.2)	4 (14.8)	19 (18.1)
Subglottic	5 (6.4)	1 (3.7)	6 (5.7)
Two site	4 (5.1)	3 (11.1)	7 (6.7)
Three site	2 (2.6)	-	2 (1.9)
Histology			
Papilloma	-	23(85.2)	23(85.2)
Inflammatory pseudotumors	-	2(7.4)	2(7.4)
Polyp	-	2(7.4)	2(7.4)
Rabdomyosarcoma	1(1,3)	-	1(1,3)
Squamous cell carcinoma	70(89.7)	-	70(89.7)
Well differentiated	61(78.2)	-	61(78.2)
Moderately differentiated	9(11.5)	-	9(11.5)
Well differentiated adenosquamous carcinoma	4(5.1)	-	4(5.1)
Adenocarcinoma	3(3.8)	-	3(3.8)
Well differentiated	1(1,3)	-	1(1,3)
Moderately differentiated	2(2.6)	-	2(2.6)

DISCUSSION

The present study aimed at determining the frequency, clinical and histopathological profile of laryngeal

tumours at the University Clinics of Kinshasa reported that among patients with laryngeal tumours, 1/4 had benign tumors and 3/4 had malignant tumours. The frequency of malignant tumours noted in our series is higher than that reported in the study of Otouana et al [9] in Congo Brazzaville (46 cases) but lower than the frequency reported in the work of Abdulrazak in Nigeria (101 patients) [6] over a similar duration to ours. The frequency of benign tumors in our study is also lower than those reported by Sachdeva et al [4] and Doloi et al [10] in India, which had collected respectively 36 patients over a period of 4.5 years, and 80 patients with benign tumours over 2 years. These generally low frequencies of cases of laryngeal tumours in the present study could be explained by the late transfer of patients to ENT specialists by general practitioners and by the inaccessibility of said ENT specialists due to lack of financial means.

In our series, benign tumors mainly affected subjects aged 41 to 60 years. On the other hand, many studies report a maximum of patients in the under 40 age group [4,10,11] . This difference may be due to the relatively smaller sample size of our study. While the frequency of malignant tumours tended to increase with age with a mean age of patients of 59.2 ± 14.3 years and the majority of patients were over 60 years old (50%). This corroborates with other studies [6.9].

A predominance of male sex in our patients was noted. This is also reported in several studies [7,11,12]. In our environment, men consume more alcohol and tobacco than women, which may explain this predominance.

Dysphonia was the symptom found in all patients regardless of the nature of the tumor. This is consistent with the studies of Sharma et al [11] , and Abdulrazak et al [6] who made the same observation. Dysphonia is justified by the fact that the majority of laryngeal tumours in this study were located mainly at the glottic level with reduced and/or fixed vocal cord mobility in approximately ¾ of laryngeal tumours, which can thus disrupt good glottic sound emission. On the other hand, Karatzanis et al[13] and Gourin et al[14] had reported that the supraglottic level was the most affected level.

The median time to patient consultation was 12 months (range 1 to 60 months). This is close to the time reported by Pegbessou et al (median time 13.5 months, range 1 to 96 months for patients with laryngeal papillomas) [15] in Togo and slightly lower than the time reported by Abdulrazak et al [6] in Nigeria (mean time of 16.9 ± 9.9 for patients with malignant tumors) . On the other hand, for the studies by Kalombo et al [7] in the DRC, and Sharma et al [11] in India, patients with benign laryngeal tumours had consulted earlier (6 months or more). This long consultation time in our environment could be justified in several ways, including the trivialization of presenting symptoms (dysphonia, dysphagia), the use of traditional medicine and certain beliefs.

In the present study, only alcohol use was statistically associated with the occurrence of malignant tumors. Our results are consistent with a systematic review of several studies, which also concluded that light to moderate alcohol consumption was associated with elevated risks of laryngeal cancers [16]. In our setting, this could be explained by the consumption of certain types of alcohol, which would contain carcinogenic substances and chronic irritation of the laryngeal mucosa by alcohol [17].

In contrast to our study, Sachdeva et al [4] and Nachalon et al [17] found that smoking was the most implicated factor . Sharma et al [11] found the association of alcohol and tobacco use as the main predisposing factor (73.2%).

Among the benign tumours in our series, papilloma was the most frequent histological type followed by polyp and inflammatory pseudotumors. On the other hand, other studies where the diagnosis of tumors was based on endoscopy and/or anatomopathological examination report the polyp as the predominant tumor lesion [4,7,11].

Our results corroborate with several studies; Arnold et al [18] , and Nerurkar et al [19]. This predominance of papilloma in our work can be explained by the fact that, we included in our series only benign tumors confirmed by histopathological examination.

Among malignant tumours, squamous cell carcinoma was the most reported histological type in our study as reported by numerous publications [6, 8,9, 11].

In conclusion, laryngeal tumours are common and more represented by malignant tumours. Laryngeal papilloma and squamous cell carcinoma are the most common histological types. Given the magnitude of these tumors in our environment, it is therefore necessary to intensify mass education and plan early screening in order to combat this scourge.

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