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Short Communication

Epidemiology of Cancers of the upper Aerodigestive Tract at Conakry University Hospital

Diallo AO[1]*, Diallo OR[2], Diallo OA[1], Bah AT[2], Traoré M[1], Sinayoko A[1], Diallo KP[1], Condé B1 and Dabo I[1]

[1]ENT & CCF service, Ignace Deen National Hospital., Guinea
[2]Department of Odonto-Stomatology and Maxillofacial Surgery, Donka National Hospital, Guinea

***Corresponding author**

Diallo Alpha Oumar, Department of ENT & Head and Neck Surgery, Ignace DEEN National Hospital, BP: 2267 Conakry, Guinea, Tel: 628 52 94 46; Email: dalphao@hotmail.com

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Abstract

Introduction: The seriousness of cancers of the upper aerodigestive tract justifies in-depth epidemiological investigations in order to refine knowledge of individual susceptibility to known carcinogens and to constantly search for other possible factors in order to best adapt future information, prevention and screening campaigns. The aim of this study is to describe the epidemiological aspects of upper aerodigestive tract cancers at Conakry University Hospital.

Materials and methods: This is a retrospective, descriptive and analytical study, over a five-year period (January 2012-December 2016), carried out at the Conakry University Hospital. It involved all patients admitted with a malignant lesion of the upper aerodigestive tract. We used the records of patients admitted and treated in our services during the study period.

Results: During our study period, 108 cases of upper aerodigestive tract cancers were collected, representing a hospital incidence of 21.6 cases per year. The mean age of the patients was 53.7 ± 4 years with extremes of 13 and 80 years. The age group of 51-60 years was the most affected (40.5%). There was a clear male predominance (85.1%) with a sex ratio of 5.75. Risk factors were dominated by alcohol and tobacco intoxication in 52.4% of cases.

Regarding the localization of cancers of the upper aerodigestive tract, the larynx was, by far, the most common location (65.3%). These lesions were ulcer-burgeoning in 85.2% of cases. Histological examination revealed squamous cell carcinoma in 79% of cases.

Conclusion: This study has made it possible to research the factors favoring the appearance of these cancers in our work context and to update our local epidemiological data, as epidemiology is one of the keys to progress in cancerology.

INTRODUCTION

Cancer is becoming a global health problem, increasingly reaching people in low-income countries where poverty, inadequate health systems and training of health professionals, poor health education, social or cultural prejudice are common. It is estimated that there are approximately 500,000 new cases of cancers of the upper aerodigestive tract worldwide each year, with a clear predominance of oral and pharyngeal sites, resulting in an annual incidence of 8.1 per 100,000 inhabitants [1]. In Africa, the incidence of cancers of the upper aerodigestive tract ranges from 8.7% to 54.4% [2-4]. Their genesis is largely dominated by chronic alcohol-smoking, although other factors are now known or suspected. The seriousness of cancers of the upper aerodigestive tract justifies in-depth epidemiological investigations in order to refine knowledge of individual susceptibility to known carcinogens and to constantly search for other possible factors in order to adapt future information, prevention and screening campaigns as effectively as possible. The aim of this study is to describe the epidemiological aspects of cancers of the upper aerodigestive tract at Conakry University Hospital.

MATERIALS AND METHODS

This is a retrospective, descriptive and analytical study, over a five-year period (January 2012-December 2016), carried out at the Conakry University Hospital. It concerned all patients admitted to the department for a malignant lesion (or cancer) of the upper aerodigestive tract. We used data from the interview (age, sex, consultation time, risk factors), the site of the lesion and the histological type. The material sent to the pathologist was mainly biopsies and surgical specimens, usually fixed with formalin. All the samples were examined in the pathological anatomy laboratories of the 2 national hospitals and in foreign laboratories (Senegal, Morocco, France).

The study was approved by the Ethics Committee of the Faculty of Medicine, Pharmacy and Odonto-stomatology of the University of Conakry.

The data analysis was carried out by the Epi info software in its version 3.5.4. A value of $p < 0.05$ was considered statistically significant.

RESULTS

During our study period, 108 cases of cancers of the upper

aerodigestive tract were collected, representing a hospital incidence of 21.6 cases per year. The mean age of the patients was 53.7 ± 4 years with extreme ages of 09 and 80 years. The age group of 51-60 years was the most affected, (40.5%). There was a clear male predominance (85.19%) with a sex ratio of 5.75. Family history of cancer was reported in 7.4% of our patients. Risk factors were dominated by alcohol and tobacco intoxication in 45.37% of cases. However, in 26.85% of the cases, no factors favoring the occurrence of cancer were found (Table 1).

Concerning the localization of cancers of the upper aerodigestive tract, the larynx is, by far, the most represented localization with 44.44% of cases, followed by the pharynx, 26.85% of cases (Table 2).

These lesions were ulcer budding in 85.2% of cases. The T1T2 tumors accounted for 22% while the T3T4 represented 78%. Histopathological examination had recovered squamous cell carcinoma in 79% of the cases, 59% of which were well differentiated and keratinizing. Histologically confirmed lymph node metastasis was 46.8%, regardless of the location of the primary tumor.

Squamous cell carcinoma was found in patients who smoked (16.3%) and in those with alcohol-smoking intoxication (53.2%). In 24.4%, carcinoma was not associated with any promoting factors.

Table 1: Population characteristics.

Characteristics	Number	Percentage
Age		
≤ 30 ans	10	9,26
31-40 ans	12	11,11
41-50 ans	21	19,44
51-60 ans	38	35,19
61-70 ans	19	17,59
71-80 ans	8	7,41
Sex		
Male	92	85,19
Female	16	14,81
Risk factors		
Tobacco+ Alcohol	49	45,37
Tobacco	12	11,11
Alcohoo	8	7,41
Salted and smoked food	6	5,56
Poor oral hygiene	04	3,70
None	29	26,85

Table 2: Upper aerodigestive cancers localization.

Group	Localization	Number	Percentage
Group I (n=83)	Oral cavity and lips	6	5,56
	Oropharynx	15	13,89
	Hypopharynx	10	9,26
	Larynx	48	44,44
	upper glottis	6	5,56
	glottis-sub-glottis	9	8,33
	total	33	30,56
	Esophagus	4	3,70
Group II (n=15)	Nose- sinus =	15	13,89
Group III (n=10	Cavum	10	9,26
	Total	108	100

DISCUSSION

Cancers of the aerodigestive tract are regularly the subject of a global epidemiological approach because of their common characteristics [1]. It is the fifth most common cancer in terms of incidence worldwide [1]. In our region, the frequency of these cancers are, however, difficult to estimate with precision because of weak national cancer registries data. We can only rely on the cases collected in the services that usually manage this type of cancer in the country. Thus, over a five-year period, 108 histologically confirmed cases were collected, representing a hospital incidence of 21.6 cases per year. This result is comparable to that found in Benin [4] with 24.28 cases per year, but lower than that reported by Kouassi-Ndjeundo in Côte d'Ivoire [5] with 29.14 cases per year. Our findings are underestimated due to referral of patients to traditional healers, underreporting of cases and the fact that many clinically suspect cases could not be confirmed histologically.

Patient ages ranged from 09 to 80 years with a mean age of 53.7 ± 4 years. The age range of 51 - 60 years was the most affected, accounting for 40.5% of the cases. Our results are comparable to those of Kouassi-Ndjeundo J et al. [5] in Abidjan, who had an average age of 51.9 and a peak incidence of between 40 and 60 years (54.3%) (Figure 1).

Our study confirms the male predominance reported in the literature [1,4,6].

Risk factors such as tobacco and alcohol, taken alone or in combination, were frequently found. They intervene not only by direct action on the upper aerodigestive tract mucosa, but also indirectly through the metabolic disturbances they cause [1]. In our series, the association of alcohol with tobacco was found in 45.37% of cases and tobacco alone in 11.11% of cases. These findings were also reported in Togo [2] and Côte d'Ivoire [5]. However, in 26.85% of the cases, no factor favoring the occurrence of cancer was found in our series. This would probably be linked to the lack of research into other factors described in the genesis of cancers of upper aerodigestive tract, such as environmental and viral factors (Human Papilloma Virus, Epstein Barr Virus) [1]. These risk factors have an influence on the topography of upper aerodigestive tract cancers [1].

From an epidemiological point of view, cancers of the upper aerodigestive tract can be divided into 3 groups: the "oral cavity - pharynx - larynx" group, the "nasal fossa - nasal cavity - nasal cavity" group and the "nasopharynx" group. In our series, the first group was by far the most affected (76.85%). Alcohol and tobacco are major risk factors in the occurrence of this group of

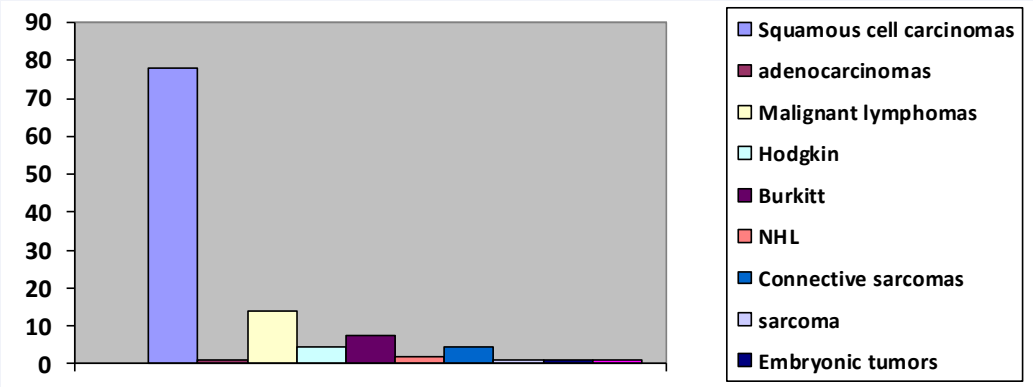

Figure 1 Histological types.

cancers. Apart from alcohol, HPV is implicated in the occurrence of oropharyngeal cancers. This reopens the debate on the new epidemiological entity corresponding to oropharyngeal cancers associated with this virus [7]. Also, poor oral hygiene is strongly incriminated in the occurrence of cancers of the oral cavity. The same applies to a diet low in vegetables and fruit, chewing gum and chronic micro trauma [8]. In cancers of the nasal fossa and nasal-sinus cavity, dominated by lymphomas, the phenotypic study of the cells opens up further research perspectives on the origin of Reed Sternberg cells and the responsibility of the Epstein Barr virus in the development of Hodgkin's disease [9]. Salted, dried or smoked fish and the search for the early antigen of EBV have been reported in the occurrence of cavum cancers [10].

The diagnosis of certainty of cancers is histological; therefore, we have preferred to eliminate from this study all non-histologically confirmed cases even if the clinical picture is suggestive. In order to minimize this epidemiological bias, some authors prefer to take this non-negligible quota into account, but this is not without criticism. This high quota is mainly linked to the lack of pathological anatomy laboratories and qualified personnel in our context, whereas analyses outside the country are too expensive. In our series, while squamous cell carcinomas appear ubiquitous, adenocarcinoma had developed from the naso-sinus cavities. Among the malignant lymphomas, we had found, like most African authors [9], that Burkitt's tumor occupies the first place.

CONCLUSION

Cancers of the upper aerodigestive tract are relatively common in our daily practice. They mainly concern adult males with a history of alcohol and tobacco intoxication. Ulcerous lesions of the larynx have been the most common, and more or less differentiated squamous cell carcinoma has been the most common histological type. This study has made it possible to search for factors favoring the appearance of these cancers in our work context and to update our local epidemiological data.

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