



Particularities of Larynx Cancer in Women in Senegal

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Summary

Introduction: Laryngeal cancer is the second most common cancer of the head and neck. It is a predominantly male cancer; its occurrence in women is rare. The purpose of this work is to present the results of the analysis of 20 cases of women with laryngeal cancer.

Material and Method: Between 2009 and 2018, 20 patients were treated for laryngeal cancer in our department. We studied the socio-demographic characteristics of this population and determined the risk factors that may have influenced the occurrence of laryngeal cancer in these women.

Results: This study involves 20 women with an average age of 51.2 years. In 70% of the cases they are housewives, in 15% of the shopkeepers, and in 5% of the matrons. A notion of exposure to smoking was found in 15% of cases. Exposure to wood smoke was found in 80% with an average exposure time of 30 years. The major symptom was dysphonia, present in 100% of patients at the time of diagnosis. It was associated in 80% with laryngeal dyspnea, in 30% with dysphagia, in 40% with reflex otalgia. Laryngeal endoscopy revealed a budding and hemorrhagic tumor in 47.51% of cases. A total of 55% of the patients had stage 4 cancer; distant metastasis was found in 3 patients. Treatment consisted of total laryngectomy in 60% of cases, and organ preservation in 1 case. The evolution was marked in 10% by recurrence and 40% by death.

Conclusion: Although in our study exposure to wood smoke appears to be a significant risk factor for the occurrence of this cancer, further study would confirm the exact role of this factor and improve the prognosis.

Keywords: Cancer; woman; larynx; wood smoke

Introduction

Cancer of the larynx, the second most common cancer of the head and neck, has long been considered a cancer of the human body in relation to the classic risk factors of alcohol and tobacco [1-5]. In women, this cancer is rare and ranks 26th, but its incidence rate seems to be increasing over the years [6]. To this end, we focused on the Senegalese female population suffering from this cancer. The aim of this study is to show the existence of this cancer in Senegalese women who are practically not exposed to the classic risk factors.

Patients and Methods

This retrospective, descriptive and monocentric study concerns 20 cases of laryngeal cancer in women with histological evidence, collected over a period of 10 years (from January 1, 2009 to December 31, 2018), in the university ENT department Lamine Sine Diop of the National UHC of Fann (Dakar, Senegal). We have excluded from this work all the laryngeal cancer files of the male subject and incomplete files without histology. The following

parameters were studied: age, risk factors, clinical and paraclinical data, treatments carried out, histological results, and evolution after treatment. The data obtained were entered into Excel and analysed by the statistical package for social science (SPSS version 20).

Results

Epidemiological aspects

During this period, we counted 20 women suffering from laryngeal cancer, i.e. 3.89% of all cases of laryngeal cancer diagnosed during these 10 years. The average age was 51.7 years with extremes of 32 and 70 years. Concerning the profession or occupations of our patients, they were housewives in 70% of cases, shopkeepers in 15% of cases, cooks in 10% and matrons in 5% of cases. A notion of tobacco intoxication was found in 15% of the patients. Exposure to wood smoke was reported in 16 patients, i.e. 80% of the cases (Table 1) with an average duration of exposure of 30 years and extremes of 2 years and 60 years.

Table 1: Distribution of Patients by Risk Factors.

| Risk Factors | Number | Percentage |
|---------------------------------|--------|------------|
| Tobacco | 3 | 15% |
| Alcohol | 0 | 0% |
| Exposure to wood smoke | 16 | 80% |
| Exposure to smoke from gas fire | 0 | 0% |

Diagnostic aspects

The average consultation period was 14.8 months with extremes of 1 to 60 months. The major symptom was dysphonia, present in 100% of patients at the time of diagnosis. It was associated in 80% of cases with laryngeal dyspnea, in 30% of cases with dysphagia, in 40% with reflex otalgia. Examination of the larynx using indirect laryngoscopy or nasofibroscope resulted in a budding lesion in 13 patients (65%) and an ulcerous lesion in 7 patients (35%). Palpation of the lymph node areas revealed palpable lymphadenopathy in 5 patients, i.e. 25% of cases. As part of the medical imaging work-up, 10 patients had undergone cervico-thoracic CT scan (Figure 1) and in one of them the CT scan showed pulmonary metastases. The remaining 10 patients had chest X-rays with no objective abnormalities. All the patients in our series had undergone panendoscopy under general anaesthesia and the tumour lesion was localized in 60% of cases in the glottosus glottic stage, in 20% of cases in the supraglottic stage, in 15% in the glottis and glotto-subglottic stage in 5% of cases. Tumour extension to the digestive tract (pharynx and esophagus) was noted in 3 patients. The histological findings of the biopsy specimen were in favor of squamous cell carcinoma in all patients.

Table 2: TNM Classification of Patients.

| | N0 | N1 | N2 | N3 | Total |
|-------|-----|-----|----|----|-------|
| T1 | 5% | 0 | 0 | 0 | 5% |
| T2 | 0% | 0 | 0 | 0 | 0% |
| T3 | 30% | 5% | 5% | 0 | 40% |
| T4 | 40% | 10% | 0% | 5% | 55% |
| Total | 75% | 15% | 5% | 5% | 100% |



Figure 1: Cervical CT scan in axial section showing a tumour process of the left vocal cord extended to the anterior commissure.

According to the TNM 2017 classification, 55% of the cases were classified as T4, 40% as T3 and 75% as Table 2 summarizes the TNM classification.

Therapeutic aspects

A tracheotomy was performed in 19 cases, 14 of which were emergency tracheotomies for severe laryngeal dyspnea. A total laryngectomy associated with bilateral functional cervical curage was performed in 12 patients (Figure 2). Pathological examination of the surgical specimen and its curage product confirmed the diagnosis of squamous cell carcinoma in all cases with invaded margins of resection in 2 cases and a lymph node carcinoma site in 3 cases. Of these patients who underwent surgery, 4 had received additional radiotherapy and 2 had received chemotherapy in the event of tumor recurrence. A carboplatin and taxane-based chemotherapy protocol were instituted in 4 cases including 2 cases of inoperable lesion and 1 case of pulmonary metastasis. One patient classified as T1 had received exclusive radiotherapy. Three cases in our series presented a refusal to any treatment.



Figure 2: Patient with total laryngectomy and functional cervical lymph nodes excision.

Evolving aspects

For an average decline of 30 months with extremes of 6 months and 5 years, we noted complete remission in 50% of cases. Three cases (15%) of local and lymph node recurrence with a mean delay of 21 months were noted, two cases of invaded margins and one case of lymph node involvement. Two patients were lost to follow-up and we deplored 5 cases (25%) of death in our series.

Discussion

The Morbi-mortality linked to cancer has been clearly on the rise worldwide for several decades [7]. Laryngeal cancer is the second most common cancer of the head and neck and is a cancer with a high male predominance (87%) [5,6,8,9]. It ranks 14th in men and 26th in women. As for its incidence, it will probably increase in the coming years, with an estimated 285,720 new cases/year worldwide in 2040 (87% in men) [6,7]. The median age of women at diagnosis is estimated to be 64 years [10]. Senegal is a country with a low incidence of laryngeal cancer in women compared to countries such as Cuba and Thailand where rates of more than 2 per 100,000 women per year have been reported [1,11,12]. Tobacco consumption is the main preventable risk factor for laryngeal cancer [10,13,14]: 44% of deaths from ADV cancer are thought to be attributable to tobacco use among women [10]. In our series, the low incidence of tobacco intoxication (15%) and exposure to wood smoke in a large number of our patients (80%) suggest the predominant role of wood smoke in the genesis of laryngeal cancer in women. In a study conducted by Kouassi et al. [15] in Cameroon on the effects of smoke-related clinical manifestations, all women using wood (100%) and 98.5% of those using charcoal showed clinical signs compared to 45.5% of butane gas users. In sum, smoke from wood and charcoal is more toxic. The need to use this fuel is both a cause and a consequence of poverty, as poor households generally cannot afford cleaner and more efficient fuels and appliances. However, the exact role of this factor is still controversial in the literature, and large-scale studies are needed to accurately understand carcinogenesis in women's laryngeal mucosa.

The average consultation time varies according to the studies; in our patients, it was 14 months as in the Touati et al study [12]. This is a relatively long time compared to the man who consulted on average 3 months after the appearance of the first symptoms [16,17]. This delay in consultation could be explained by the fact that dysphonia in women is a trivialized symptom and is considered as vocal abuse. The predominant sub-localization of laryngeal cancer remains a subject of controversy between the different studies. In our series, tumors of the glottis stage were the most frequent 60% compared to that of Touati et al. [12] where glottic localization is the most frequent (54% of cases). Other teams have stated that the majority of laryngeal cancers in women originate in the supraglottic stage [11,18]. Female laryngeal tumours are diagnosed at an early stage T1-T2 more frequently than in men [12,19]. This result is not consistent with our series where 95% of cases were classified as T3-T4 and only 5% were classified as T1-T2. Lechuga et al. [20] and Touati et al. [12] found that laryngeal tumours in women were characterised

by the absence of adenomegalia at diagnosis. Our series confirms this result since 75% of the patients were classified as stage N0 lymph nodes. The treatment of laryngeal cancer in women follows the same rules as in men. In our series, 12 patients had undergone total laryngectomy, compared to 47% in the study by Touati et al. [12], which may be explained by the delay in consultation in our patients. Johansen et al. [21], Harwood et al. [22] and Skladowski et al. [23] found a better prognosis in female patients. On the other hand, in a large number of published works, sex does not seem to be a prognostic factor for survival [24,25]. This controversy is difficult to resolve because of the low representation of women in the published series, which makes it difficult to demonstrate a statistically significant difference. After an average follow-up of 30 months, 50% of these patients were in sustained complete remission and none of them benefited from vocal rehabilitation. A review of the literature shows that the prognosis is superimposable on that of male patients and that wood smoke appears to be the most convincing risk factor.

Conclusion

Laryngeal cancer in women is a particular area that is still insufficiently explored. A better knowledge of the risk factors would certainly contribute to improving the prognosis.

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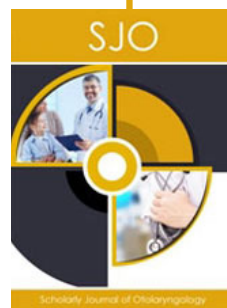
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