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Epidemiological Profile and Management of Oropharyngeal Cancers

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Abstract **Original Research Article**

Introduction: Cancers of the oropharynx account for around 25% of all cancers of the upper aerodigestive tract. The aim of our work is to study the epidemiological and therapeutic particularities of oropharyngeal cancers. ***Methods:*** This is a retrospective study carried out in the onco-radiotherapy department of the oncology and hematology hospital of CHU Mohammed VI in Marrakech, during the period from January 2019 to December 2023. ***Results:*** Our study included 46 patients. The mean age was 56.8 years, with a male predominance. Among the etiological factors, smoking intoxication was found in 31.2% and alcohol intoxication in 18.7%. The most frequent presenting sign was dysphagia (41.3%). The median delay between the appearance of the first symptoms and the first consultation was 8.5 months. The site of the tumour was the tonsils in 50% of cases, the base of the tongue in 39.5%, the pharyngeal wall in 6.5% and the soft palate in 4%. Almost all were squamous cell carcinomas. Tumors classified as T4 accounted for 31.2% of cases, 37.5% were T3, 18.7% were T2 and 12.5% were T1. Lymph node involvement was found in 78% of patients. 22% of patients were treated surgically, of whom 16% received adjuvant radiotherapy. 78% were treated exclusively with radio-chemotherapy. Progression was marked by complete remission in 46% of patients, recurrence in 18% and death in 12%. ***Conclusion:*** Oropharyngeal cancers have a severe prognosis due to delayed diagnosis and treatment difficulties. Early diagnosis and multidisciplinary management are key to improving prognosis.

Keywords: Oropharyngeal cancer, Squamous cell carcinoma, Epidemiology, Therapeutic, Marrakech.

INTRODUCTION

Oropharyngeal squamous cell carcinoma is a type of head and neck cancer that refers to the cancer of the base and posterior one-third of the tongue, the tonsils, soft palate, and posterior and lateral pharyngeal walls. More than 90% of oropharyngeal cancers are squamous cell cancers, which are the cell lining of the oropharynx [1]. Cancers of the oropharynx account for around 25% of all cancers of the upper aerodigestive tract. [2] Long associated with tobacco and alcohol consumption, this cancer is now experiencing a resurgence linked to infection with the human papillomavirus (HPV), in particular genotype 16. As a result, there are two main categories of oropharyngeal cancers: HPV-induced and non-HPV-induced. They are distinguished from each other by epidemiological, biological, histological and prognostic differences.

Curative treatment of localized forms relies essentially on surgery and radiotherapy.

METHODS

This is a retrospective study conducted at the Oncology and Hematology Center of the CHU Mohammed VI of Marrakech, during the period from January 2019 to December 2023. Our study included 50 patients.

RESULTS

A total of 50 patients were included in this study. The mean age at diagnosis was 59.8 years, the age group most affected was between 60 and 70. There was a male predominance (66.6%). The majority of our patients come from urban areas (61.28%). Regarding etiological factors, tobacco use was reported in 31.2% of cases, while alcohol consumption was found in 18.7%.

Clinically, the most common presenting symptom was dysphagia, observed in 41.3% of patients. This is often followed by other signs such as pharyngeal tingling, a sensation of a foreign body, referred otalgia, blood-streaked sputum, the presence of a cervical lymphadenopathy, or a slowly evolving phlegmon. In

some cases, the tumor was incidentally discovered during a routine examination. The median delay between symptom onset and the first medical consultation was 8.5 months. The primary tumor site was the tonsil in 50% of cases, the base of the tongue in 37.5%, and the pharyngeal wall in 12.5%.

Histopathological analysis revealed that almost all tumors were squamous cell carcinomas, with only one case of non-Hodgkin malignant lymphoma of the tonsil. Tumor staging showed that 31.2% of patients had T4 tumors, 37.5% were classified as T3, 18.7% as T2, and 12.5% as T1. Node involvement was found in 78% of patients, with 52% classified as N1, 18% as N2 and 8% as N3.

In terms of metastatic extension, the radiological work-up revealed one case of distant pulmonary and bone metastases.

In terms of treatment, 37.5% of patients underwent surgical intervention, while 62.5% received non-surgical treatment. Among the latter group, 80% were treated with concurrent chemoradiotherapy, and 20% received induction chemotherapy followed by chemoradiotherapy.

In our study, 46% of patients progressed favorably to complete remission, 6% had locoregional recurrence, 12% progressed to metastatic disease and 12% died.

DISCUSSION

Oropharyngeal squamous cell carcinoma (OSCC) is a constantly evolving clinical entity, both epidemiologically and therapeutically. Historically, the main risk factors identified were tobacco and alcohol consumption. However, human papillomavirus (HPV) infection, particularly genotype 16, is now recognized as a major etiological factor, particularly in high-income countries [3].

The incidence of HPV-positive OSCC has risen sharply over the past two decades. In the United States, for example, the incidence of HPV-related oropharyngeal cancers is expected to exceed that of cervical cancer in certain age groups, particularly among white men aged 65 to 74, with projections exceeding 70 cases per 100,000 by 2030 [4]. At the same time, there has been a decline in the incidence of HPV-negative forms, reflecting efforts to combat smoking and excessive alcohol consumption [5].

However, even in HPV-positive cases, smoking and alcohol remain cofactors that worsen prognosis. The epidemiological transition observed is also accompanied by a change in patient profile: younger, often non-smokers and non-drinkers, and with a better response to treatment.

Geographical distribution is heterogeneous. Industrialized countries, notably North America and Western Europe, report the highest incidence of HPV-positive OSCC [4]. In contrast, data are limited in low- and middle-income countries, partly due to the lack of systematic HPV screening for ENT cancers, which is unfortunately the case in our study.

In our series, the mean age of patients was 59.8 years, with a predominance of males (66.6%), this result is in line with the literature. Risk factors such as smoking (31.2%) and alcoholism (18.7%) remain present, although human papillomavirus (HPV) infection is now recognized as a major factor, particularly in younger, non-smoking patients.

Dysphagia, the most frequent revealing symptom in our study (41.3%), is in line with the literature, underlining the importance of early clinical evaluation. The median consultation time of 8.5 months reflects a delay in diagnosis, often linked to the insidious nature of the symptoms.

Histologically, the predominance of squamous cell carcinoma is in line with current data. Tumor classification reveals a significant proportion of advanced tumors (T3-T4: 68.7%), underscoring the need for appropriate therapeutic management.

Treatment options for OSCC include surgery, radiotherapy and chemotherapy, used alone or in combination. In our series, 37.5% of patients underwent surgery, while 62.5% received non-surgical treatment, mainly concomitant radiochemotherapy (80%). Robot-assisted transoral surgery has emerged as a promising option for T1-T2 tumors, enabling precise resection with reduced morbidity [7].

The management of oropharyngeal squamous cell carcinoma has evolved significantly in recent years, notably due to the recognition of the role of human papillomavirus in the etiology of many cases. This evolution has led to the exploration of de-escalation therapeutic strategies aimed at reducing morbidity while maintaining oncological efficacy.

Concomitant radiochemotherapy remains the standard treatment for locally advanced OSCC. It combines radiotherapy with chemotherapy, usually cisplatin-based, to potentiate the cytotoxic effect. This approach has demonstrated a significant improvement in overall survival compared with radiotherapy alone [7].

The better response to treatment and favorable prognosis of HPV-positive OSCC have led to the exploration of therapeutic de-escalation strategies. However, a recent meta-analysis revealed that de-escalation treatments were associated with a decrease in overall survival (HR = 1.33) and progression-free survival (HR = 2.11) compared to standard treatments

[7]. These results suggest that de-escalation should not be adopted across the board without careful patient selection.

The "Quarterback Trial" protocol evaluated an approach consisting of induction chemotherapy followed by reduced-dose radiochemotherapy in high-risk HPV-positive patients. Results showed a 3-year overall survival of 87% and a progression-free survival of 78%, suggesting that this strategy could be effective while reducing toxicity [8].

The MC1273 protocol explored reduced-dose adjuvant radiotherapy (30-36 Gy) combined with weekly docetaxel chemotherapy in HPV-positive surgical patients. Results showed excellent overall survival at 2 years (96.1%) and a significant reduction in side effects, notably improved swallowing function [9].

Robotic-assisted transoral surgery has become an important treatment option for early CEOP. It enables precise tumor resection with reduced morbidity. Studies have shown that this surgery, followed by adjuvant radiotherapy tailored to pathological risk, offers oncological results comparable to those of radiochemotherapy, with improved quality of life [10].

Approaches aimed at reducing irradiation fields, such as the SAVER (Selective Avoidance of Nodal Volumes at Minimal Risk) technique, have been developed to minimize toxicity without compromising tumor control. One study showed that no contralateral lymph node recurrence was observed with this technique, suggesting its efficacy [11].

CONCLUSION

In recent years, squamous cell carcinoma of the oropharynx has undergone a profound transformation, both epidemiologically and therapeutically. While the forms associated with tobacco and alcohol, which have historically been in the majority, are tending to decline in industrialized countries, there has been a marked increase in cancers associated with human papillomavirus infection, with a profile of patients who are often younger, non-smokers and have a better prognosis.

This development has profoundly impact treatment strategies. While radiochemotherapy remains the standard treatment for locally advanced forms, HPV-positive forms are now the focus of numerous studies aimed at reducing treatment while maintaining efficacy.

In addition, the development of minimally invasive surgical techniques, such as robot-assisted transoral surgery, offers new prospects, particularly for early-stage cases, by reducing functional sequelae. Similarly, targeted and personalized irradiation strategies are paving the way for better-tolerated management, focused on quality of life.

Ultimately, CEOP management is moving towards increasingly personalized medicine, guided by HPV status, the clinical and molecular characteristics of tumors, and patient preferences. Implementing this approach, however, requires solid data from long-term randomized trials, as well as close collaboration between the disciplines involved. Only then will it be possible to offer each patient a treatment that is effective, less toxic and tailored to his or her profile.

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