

Factors Associated To Diagnostic Delay Of Oromaxillofacial Cancers

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ABSTRACT

Introduction: It is not uncommon in developing countries for patients to consult specialists for extended maxillofacial tumours, known as "historic".

Purpose: To identify the socio-demographic and clinical characteristics associated with the delay in establishing the diagnosis of oromaxillofacial cancers in Brazzaville.

Patients and Methods: This was an analytical cross-sectional study with prospective data collection, conducted at the maxillofacial surgery and stomatology department of the Brazzaville Hospital Center, over a period of 24 months from January 2020 to December 2021, out of 37 oromaxillofacial cancers.

Results: The study involved 37 patients: 23 men and 14 women with a sex ratio of 1.65. The mean age at the time of diagnosis was 45.7±2 years. 79.40% were diagnosed at advanced stages. The diagnostic delay, whether specialized or cumulative, was essentially related to the socioeconomic level ($p=0.04$). Those with a low socioeconomic level were 3 times more likely to be diagnosed late than patients with an acceptable socioeconomic level ($OR=3$). The level of education did not influence the delay ($p=0.30$).

Conclusion: The responsibility for the delay in diagnosis was found with the patient, the provider of non-specialized care and the organization of the health system. These delays were influenced by many factors including the low socioeconomic level for all three components, the follow-up by Brazzaville providers for the delay in providing care.

Keywords

Oromaxillofacial cancers, Diagnostic delay, Socioeconomic level, Patient delay, Healthcare provider delay.

Introduction

Early diagnosis and timely initiation of treatment are fundamental to optimize the benefits of treatment for cancers in general and oromaxillofacial cancer in particular [1]. Despite the exposure of

the maxillofacial region, symbol of close communication with others, it is not uncommon in developing countries, that patients consult specialists for maxillofacial tumors, with quite long evolution, contributing to extensive tumors called "historical" [2]. This state of affairs, negatively impacts the prognosis [1] and seems to be related to multiple individual factors and in connection with the health care system [3-6].

Several international studies have attempted to quantify the average diagnostic delay and to examine factors that may explain delays in diagnosis after the first symptoms of cancers in general [7].

To our knowledge, no study on the diagnostic delay of oromaxillofacial cancers in the Congo has been published, so it is necessary to understand the factors that influence the diagnostic course of these patients.

Purpose

To identify the sociodemographic and clinical characteristics associated with delay in diagnosis of oromaxillofacial cancers.

Material and Method

We conducted a prospective cross-sectional analytical study in the Department of Maxillofacial Surgery and Stomatology of the Brazzaville Hospital Center, over a 24-month period from January 2020 to December 2021.

The study population consisted of all malignant oromaxillofacial tumors admitted for consultation during the study period. An individual survey form was the means of data collection by systematic and progressive filling in as soon as the biopsy was obtained. Patients were included by simple random selection. A sample of 37 oromaxillofacial cancers was thus selected and was separated into two groups for each type of delay. Definition of the different delays [3,5,7-9].

Table 1: Definitions of the different delays.

Différents delay	Descriptions
Patient delay	Time of more than 4 weeks between the perception of the first objective symptoms and the first contact with a health care provider
Care provider delay	Delay of more than 4 weeks between the first presentation of the patient to the health care provider (HCP) and the date of referral to a specialist
Diagnostic delay	Time of more than 4 weeks between the start of all investigations in a specialist management service and the staged confirmation of the diagnosis
Cumulative diagnostic delay	delay Time of more than 4 weeks between the onset of symptoms and staged confirmation of diagnosis

The main parameters studied were: age, gender, origin, education level, socioeconomic level, provider profile, different delays, and stage. Statistical tests and p-values were calculated using SPSS version 2.0 with a significance level of 0.05. The order ration (OR) was calculated to assess the association between two binary variables, namely between the different delays and each epidemioclinical parameter, with a 95% confidence interval.

Result

The study included 37 patients : 23 men and 14 women with a sex ratio of 1.65. The mean age at diagnosis was 45.7±2 years. The sociodemographic characteristics of the patients were listed in Table 2.

Table 2: Distribution of sociodemographic characteristics of the population.

Sociodemographic characteristics of the population		(n)
Educational level	Low	24
	Acceptable	13
Socio-economic level	Low	22
	Acceptable	15

The general characteristics of the patient pathway are shown in Table 3.

Table 3: Distribution of the population according to the overall profile of the diagnostic pathway.

General characteristics of the course		(n)
Provenance	Brazzaville	24
	Outside Brazzaville	13
Mode of admission	Réferred	22
	Not réferred	15
Follow-up mode	Followed	27
	No followed	10
Profile of the care provider	Dental surgeon	18
	Stomatology Nurse	5
	Other doctors	8
	Other Nurses	4

The distribution of the patients according to the various delays was notified in table 4.

Table 4: Distribution of the population according to the different delays.

Different delay	(n)	(N)
Patient delay	34	34
care provider delay	26	27
Diagnostic delay	33	37
Cumulative diagnostic delay	36	37

79.40% were diagnosed at advanced stages (Figure1). Most of the advanced stages were diagnosed on average beyond 12 months.



Figure 1 (1a,1b): Some illustrations of the clinical stage at diagnosis. **1a:** Darrier ferrand tumour, received after 12 months of diagnostic wandering. **1b:** Kaposi's tumour, after 13 months of diagnostic wandering.

The relationship between socio-demographic factors and the different patient delay are listed in Table 5.

Table 5: Sociodemographic factors according the patient delay.

Sociodemographic factors	Delay patient		OR (IC 95%)	p-value	
	yes	no			
Educational Level	Low	21	1	-	0.50
	Acceptable	13	2		
Socioeconomic level	Low	30	1	15	0.02
	Acceptable	4	2		
Followed	oui	24	3	-	0.30
	non	10	0		
Provenance	Brazzaville	21	3	-	0.20
	Houtside Brazzaville	13	0		

The relationship between socio-demographic factors and the care provider delay are listed in Table 6.

Table 6: Sociodemographic factors according the care provider delay.

Sociodémographic factors	Care provider delay		OR (IC 95%)	p-value	
	yes	no			
Educational level	Low	16	6	-	0.50
	Acceptable	10	5		
Socioeconomic level	Low	20	11	-	0.10
	Acceptable	6	0		
Provenance	Brazzaville	20	4	5.83	0.02
	Houtside Brazzaville	6	7		

22 out of 27 patients followed up had a delay in care.

The relationship between socio-demographic factors and the diagnostic delay are listed in Table 7.

Table 7: Sociodemographic factors according the diagnostic delay.

Sociodémographic factors	Diagnostic delay		OR (IC 95%)	p-value	
	oui	non			
Educational level	Low	18	4	-	0.10
	Acceptable	15	0		
Socioéconomic level	Low	31	0	3	0.001
	Acceptable	2	4		
Followed	yes	25	2	-	0.30
	no	8	2		
Provenance	Brazzaville	21	3	-	0.90
	Houtside Brazzaville	12	1		

The Relationship between socio-demographic factors and the cumulative diagnostic delay are listed in Table 8.

Table 8: Sociodemographic factors according the cumulative diagnostic delay.

Sociodémographic factors	Cumulative diagnostic delay		OR (IC 95%)	p-value	
	oui	non			
Educational level	Low	22	0	-	0.30
	Acceptable	14	1		

Socioeconomic level	Low	31	0	1.2	0.04
	Acceptable	5	1		
Followed	yes	27	0	-	0.10
	no	9	1		
Provenance	Brazzaville	23	1	-	0.50
	Houtside Brazzaville	13	0		

The relationship between different delay and the cumulative diagnostic delay are listed in Table 9.

Table 9: Distribution of the different delay between a cumulative diagnostic delay.

Différent delay	Cumulative diagnostic delay		OR (IC 95%)	p-value	
	oui	non			
Patient delay	no	2	1	0	0.001
	yes	34	0		
Care provider delay	no	0	1	0	0.001
	yes	26	0		
Diagnostic delay	no	3	1	0.75	0.01
	oui	33	0		

Discussion

Diagnostic delay, represents an important indicator of the quality of care and performance of the health care system [10-13]. Recently, the concept of delayed diagnosis has become an important issue. The total interval of diagnostic delay has been classified into four components : patient delay, care provider delay, referral delay, and diagnostic delay [7,10,14].

This study, which had some limitations, notably the small sample size and the fact that the health care personnel who consulted the patient before the specialized care was not interviewed to understand their specificity, nevertheless allowed us to identify some factors associated with the delay in diagnosis of oromaxillofacial cancer in Brazzaville.

This study involved a young population, the average age was 45.7±2 years with a slight male predominance, moderately educated, with a relatively low socioeconomic level. This trend of younger and younger cancer patients, low socioeconomic status and male predominance has also been found in many studies [3,6]. This may be explained by exposure to traditional risk factors with probably varying degrees of consumption of foods low in trace elements [7]. Patients (79,40%). were mainly diagnosed at advanced stages beyond (CT3-4).

In spite of their location in a region of exposure, permanently contemplated by others, cancers of the orofacial region are not an exception because they are still diagnosed late in Brazzaville (97.3%).

The delays were noted in all 4 components. Several factors were identified as being associated with diagnostic delay. Patient delay was related to socio-economic level (P= 0.02), those with a low socio-economic level were 15 times more likely to consult late (OR=15). On the other hand, the level of education, the follow-up and the origin did not influence this delay. This could be explained

by the fact that poor patients without health insurance would be reluctant to consult health facilities in a timely manner. They may therefore resort to alternative means, notably the contribution of religious or traditional therapists. Delayed access to health care was related to origin ($p=0.02$). Providers in Brazzaville delayed patients 5.83 times more than those in the interior of the country ($OR=5.83$). The tendency to want to manage patients without specialist advice would explain this phenomenon. An improvement of our clinical practices through continuous training and interaction between professionals is essential to fight against this phenomenon. The diagnostic delay, whether specialized or cumulative, was primarily related to socioeconomic status ($p=0.04$). Patients with low socioeconomic status were 3 times more likely to be diagnosed late than patients with acceptable socioeconomic status ($OR=3$).

The level of education did not influence the delay in diagnosis ($p=0.30$), as this level does not affect knowledge of the diseases and less so the status guaranteeing the ability to pay for care. These parameters at the origin of the delay in diagnosis have also been found in both developing and developed countries, but in variable proportions [6,15-20].

Conclusion

The oromaxillofacial cancers are still diagnosed late at advanced stages in Brazzaville. The responsibility for the diagnostic delay was found in the patient, the non-specialized care provider and the organization of the health system. These delays were influenced by numerous factors, including the low socioeconomic level for all three components, and the follow-up by Brazzaville providers for the delayed care. This would justify the implementation of the necessary corrective measures, notably to improve patient and caregiver delays through better patient information, improved continuing education for caregivers, the use of interprofessional communication and the promotion of available expertise, without forgetting the facilitation of access to universal health insurance.

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