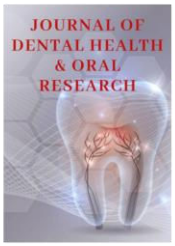

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Research Article

Evaluation of the Oral Health of Hemophiliac Patients in Cameroon

Nokam Abena Marie Elvire[1,2*], Mintya Ndoumba Annick[3,4], Lowe Jacqueline Michele[1,5], Djeukam Ngono Milaine[6], Tayou Tagny Claude[3,4]

[1]Department of Oral, Maxillofacial and Periodontal Surgery, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Cameroon

[2]Odontostomatology Department of the Yaounde Central Hospital, Cameroon

[3]Department of Microbiology, Parasitology, Hematology and Infectious Diseases, Faculty of Medicine and Biomedical Sciences. University of Yaoundé I, Cameroon

[4]Haematology service of the Yaounde University Teaching Hospital, Cameroon

[5]Odontostomatology Department of the Soa District Hospital, Cameroon

[6]University of Mountain, Bangangte, Cameroon

Correspondence author: Nokam Abena Marie Elvire, Department of Oral, Maxillofacial and Periodontal Surgery, Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Cameroon and Odontostomatology Department of the Yaounde Central Hospital, Cameroon; E-mail: nokamabena@yahoo.fr

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Abstract

Introduction: The aim of our study was to identify oral pathologies, determine their frequencies and assess the oral care needs of hemophilia patients in Cameroon.

Method: A descriptive cross-sectional study was conducted from January 2021 to June 2021 in the approved Hemophilia Treatment Centres in Cameroon, one in the Yaounde University Teaching Hospital and the other one in the Gynaeco-obstetric and Paediatric Hospital of Douala. A survey form was used to collect data for the description of our sample. The patients's files were useful for additional information. Mucosal, dental and periodontal conditions were described using the hygiene indices of Silness and Loë, DMFT and CPITN. The data were entered into the Google forms mask and analysed using SPSS 20.

Results: A total of 52 hemophiliac patients were included in our study, all of them males aged between 15 months and 42 years. The mean age of our sample was 14.6 years old ± 10.7. The CAO index was 1.71. 88.46% had episodes of gingivorrhagia caused by brushing. Only 21.15% had a history of dental consultations. Only 7.69% had good hygiene. The oral pathologies encountered were gingivitis 78.85% and periodontitis 1.92%.

Conclusion: In view of these results, it would be necessary to integrate regular oral care into the follow-up of haemophilia patients in order to improve their quality of life.

Keywords: Oral Health; Hemophiliac Patients; Cameroon

Introduction

Hemophilia is an inherited haematological disorder caused by a deficiency of coagulation factors [1]. According to the World Federation of Hemophilia, the prevalence is estimated to be about 1 in 10,000 births. According to annual global surveys, an estimated 1,125,000 people worldwide have hemophilia, but only 25% are diagnosed when financially possible [3]. The severity of the disease is strongly dependent on the severity of the deficiency [4]. In 2018, the hemophilia population in France was estimated to be 7944 [5]. In 2015, the Cameroonian Society of Hematology (SOCAHEMA) was estimating, there would be between 1500 and 2000 hemophiliacs, most of whom would suffer from hemophilia A but only 180 are followed up [5,6]. The main clinical signs of hemophilia are hemarthrosis and hematomas [4]. However, other types of bleeding should not be minimized, particularly oral hemorrhages, which account for about 9% of bleeding episodes [7]. They are mainly caused by poor oral hygiene and trauma and can occur throughout their lives and have different locations [7]. It is therefore essential to take special measures to avoid complications [8]. Luca Fiorillo et al. in a study conducted in Italy in 2019 demonstrated that hemophilia is a predisposing factor for the development of oral diseases both clinically and psychologically [9]. These patients, fear bleeding from brushing their

teeth. This fear often leads them to avoid prophylactic manoeuvres. This may lead to the development and complication of oral diseases, as well as a worsening of their general condition [9]. Oral diseases are a potentially life-threatening factor for hemophiliac patients due to their infectious nature and complications. Adeyemo et al. in a study in 2011 showed that a minimal trauma, while eating or brushing the teeth, can be sufficient to cause gingival hemorrhage. This hemorrhage is characterized by its persistence and the total volume of blood loss can be significant [10].

Hemophilia is still a poorly understood disease, especially in Africa. In Cameroon, many studies have been conducted on this disease but in the field of odontostomatology, they are rare. This study aims to evaluate the oral care needs of hemophiliacs, to contribute to the education of the population, to the improvement of their quality of life as well as to a better management.

Methodology

This was a cross-sectional, descriptive and prospective study, during six months from December 2020 to May 2021. The study was included all hemophiliac patients who consulted and followed-up in two hospitals in two accredited hemophilia treatment centres in Cameroon: one at the Yaoundé University Teaching Hospital (YUTH) and the other at the Douala Gynaeco-Obstetric and Paediatric Hospital (DGOPH). Patients in the above departments were contacted and prepared by the haematologists for an oral and dental consultation. Each patient was given advice on oral hygiene, informed about their oral care needs and given a kit containing 2 toothbrushes and 1 toothpaste.

The data collected was recorded in a pretexted exploitation sheet and included the socio-demographic characteristics of the patients and then, actual orofacial examination (exo- and endobuccal) was performed. During the examination, the mucosal parameters sought were: colouration and texture of the gingival and oral mucosa, presence of non-candidial lesions (canker sores), presence of precancerous lesions (lichen planus, candidiasis); the dental parameters sought were: level of oral hygiene (Silness and Loe index); number of decayed, filled and missing teeth (DMFT or Klein and Palmer index); periodontal parameters were investigated through the Community Periodontal Index for Treatment Needs (CPITN). This enabled the correct diagnosis of mucosal, periodontal and dental lesions to be identified and treatment options to be proposed.

The data were entered and processed with Microsoft office 2016 Excel and analyzed by SPSS 20 software. The administrative authorizations of the hospital structures and an ethical clearance have been obtained.

Results

A total of 52 male hemophiliacs were recruited, including 14 from HGOPED and 38 from CHUY, ranging in age from 15 months to 42 years. The age range from 5 to 15 years was the most represented. The average age was 14.6 ± 10.7 years. Some 94.23% of participants were married, 44.23% of primary school age, followed by 32.69% of secondary school age (Table 1).

The clinical profile revealed several points in the history. Circumcision was the mode of discovery in 40.38%, followed by excessive bleeding due to minor trauma in 32.69% of cases. Hemophilia A was common in 84.62% of cases and 65.38% were in the severe stage of the disease. The hemorrhagic manifestations observed in our population were diverse. In decreasing order of frequency, they were hematomas (92.31%), hemarthroses (71.15%) and gingivorrhagia (44.23%). Among the participants, 92.31% had already received a blood transfusion and 63.46% had a family history of hemophilia (Table 2).

Concerning dental history and main reason for consultation, fear of dental care was observed in 19 participants (36.54%); around 78.85% had a history of dental consultation, only one (1.92%) was actually followed by a dental surgeon, while the rest consulted on request. Regarding oral hygiene habits and the occurrence of gingivorrhagia, all participants brushed their teeth at least once a day, 94.29% with a toothbrush, 46.15% using horizontal brushing, 49 participants (94.23%) brushed their teeth before meals. Fourteen patients (26.92%) reported systematic gingival bleeding (gingivorrhagia) during brushing (Table 3). Hygiene was assessed using the Silness and Loe index (Table 4). Only 4 participants (7.69%) had good dental hygiene. Some 44.23% of haemophiliacs had halitosis. Among the oral pathologies of the population, mucosal involvement was marked by gingival inflammation in 17.3% of participants (Table 5).

Periodontal disease was assessed using the CPITN index (Table 6). Only 19.23% of patients had a healthy periodontium. Some 57.69% needed to improve oral hygiene, 21.15% required scaling and 1.92% root planning. The CPITN index revealed 78.85% gingivitis and 1.92% periodontitis. Dental damage was assessed using the DMFT index. This evaluation was materialized by 82 decayed teeth, 5 missing teeth and 2 filled teeth. The DMFT index was 1.71. Among the oral diseases listed, 29.8% of teeth were affected by dentinitis, followed by 20.21% by pulpal necrosis (Fig. 1).

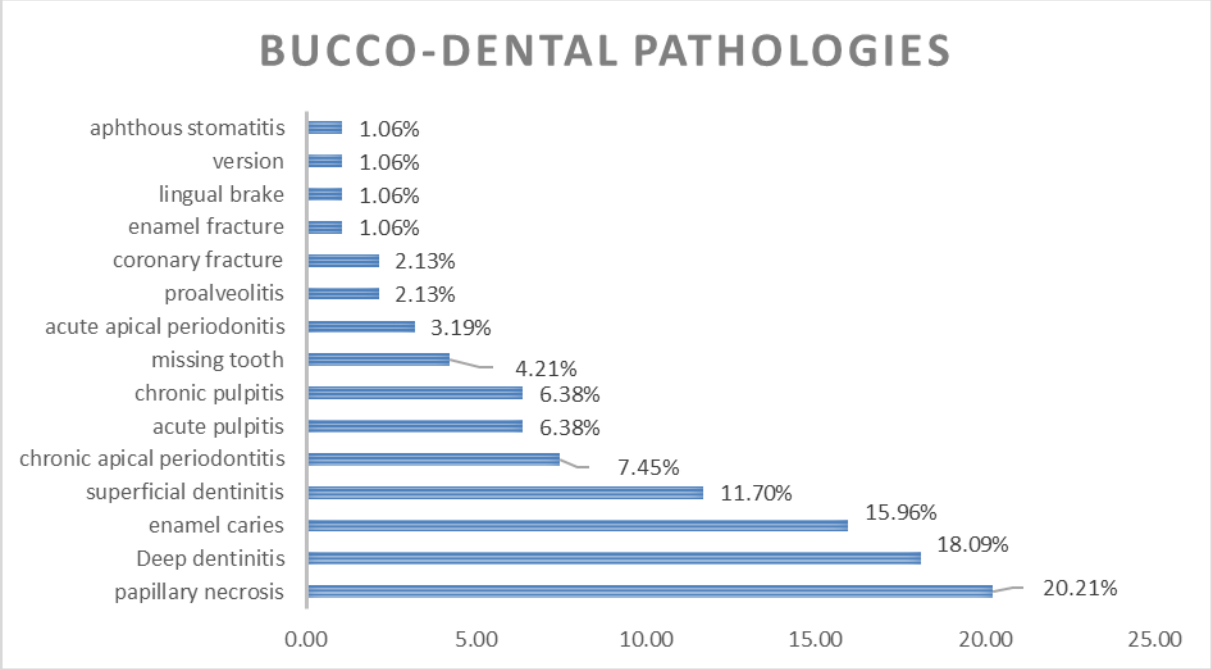

Figure 1: Repartition of oral pathologies in our study population.

Variables (N=52)	Modalities	Effectif (n)	Fréquency(%)
Age Range (years)	[0 -5]	9	17.31
	[5 -15]	**20**	**38.46**
	[15 -25]	16	30.77
	[25 -45]	7	13.46
Gender	Male	52	100
Marital Status	Single		94.23
	Married		5.77
Educational Level	No education	5	9.62
	Primary	**23**	**44.23**
	Secondary	17	32.69
	University	7	13.46

Table 1: Socio-demographic distribution of haemophiliac patients.

Variables (N=52)	Modalities	Effectif (n)	Fréquency (%)
How Hemophilia is Discovered of Haemophilia	**Circumcision**	**21**	**40.38**
	Consultation	2	3.85
	Joint deformities	8	15.38
	Joint pain	3	5.77
	Repeated haematomas	1	1.92
	Excessive bleeding	17	32.69

Type	**A**	**44**	**84.62**
	B	8	15.38
Severity	Mild	1	1.92
	Moderate	17	32.69
	Severe	**34**	**65.38**
Types of Bleeding Seen	Epistaxis	10	19.23
	Gingivorrhagia	**23**	**44.23**
	Hemarthrosis	**37**	**71.15**
	Haematoma	**48**	**92.31**
	Ecchymosis	6	11.54
	Melena	1	1.92
Personal History of Hemophilia	Surgical procedure	2	3.85
Family History of Hemophilia	**Blood transfusion**	**48**	**92.31**
	Yes	**33**	**63.46**
	No	19	36.54
Social Habits	Alcohol consumption	12	23.08
	Tobacco use	2	3.85

Table 2: Distribution of haemophiliacs according to haemorrhagic manifestations.

Variables (N=52)	Modalities	Effectif (n)	Fréquency (%)
Brushing	**Yes**	52	100
Means	**Tooth brushes**	**49**	**94.23**
	Rods	3	5.77
Type of Brush Used	**Hard**	0	0
	Semi-hard	13	25.00
	Soft	**36**	**69.23**
Use of Toothpaste	**Yes**	44	84.62
	No	8	15.38
Frequency of Brushing	**Once**	**34**	**65.39**
	Twice	17	32.69
	Three times	1	1.92
Brushing Technique	**Vertical**	8	15.38
	Horizontal	**24**	**46.15**
	Circular	3	5.77
	Association	17	32.69
Time of Brushing	**Before the meal**	**49**	**94.23**
	After the meal	3	5.77
Bleeding During Brushing	**Some of the time**	**32**	**61.54**
	Always	14	26.92
	Never	6	11.54

Table 3: Distribution of participants according to oral hygiene modalities.

Modalités	Effectif (n)	Fréquence (%)
0: Good Hygiene	4	7.69
1: Poor Hygiene	**28**	**53.85**
2 : Average Hygiene	15	28.85

3: Poor Hygiene	5	9.62
Total	52	100

Table 4: Distribution of the Silness and Loë index in our study population.

Modalities	Effectif (n)	Fréquency (%)
Gingival Inflammation		
Yes	9	17.30
No	**43**	**82.7**
Gingival Hyperplasia		
Yes	1	1.92
No	**51**	**98.08**
Geographic Tongue		
Yes	2	3.85
No	**50**	**96.15**
Short Lingual Brake		
Yes	2	3.85
No	**50**	**96.15**
Ulcerations		
Yes	1	1.92
No	**51**	**98.08**
Abscesses		
Yes	1	1.92
No	**51**	**98.08**
Petechiae		
Yes	2	3.85
No	**50**	**96.15**
Halitosis		
Yes	**23**	**44.23**
No	29	55.77

Table 5: Distribution of mucosal disorders in the population.

Community Periodontal index (CPI)	Treatment Needs (TN)	Effectif (n)	Fréquency (%)
Healthy periodontium	No treatment	10	19.23
Presence of bleeding after probing	Improved oral hygiene (1)	**30**	**57.69**
Presence of calculus, black probe band visible	(1) + scaling (2)	11	21.15
4-5 mm pocket, gingival margin at black probe band	(1) + (2) + root planing	1	1.92

Table 6: Distribution of the CPITN index in our study population.

Discussion

We included 52 male patients with a mean age of 14.93 years. The extremes were 15 months and 42 years with a predominance of children and adolescents. These results are similar to those found in a study conducted in Cameroon [11]. This could be explained by the fact that we included patients who came for consultation. The male gender of our cohort could be explained by the fact that only men are likely to have the disease [12]. Indeed, unlike men, in women the hemophilia gene is carried on one of their X chromosomes and is compensated for by the other, which is healthy. They will therefore only be carriers [12]. With regard to the types of hemophilia, we obtained 84.62% for hemophilia A and 15.38% for hemophilia B. These results are similar to those found in the literature [13]. Indeed, hemophilia A is more common than hemophilia B, representing 80-85% of the total hemophilia population, similarly distributed throughout the world, regardless of race or ethnicity [14]. Regarding the presence

of inhibitors, 9.62% of our population had inhibitors present. These results are similar to those found in the literature [15]. In our sample, more than half (59.62%) brushed their teeth only once a day. This could be explained by the fact that the patients in our population did not systematically consult the oral physician and therefore were not aware of good preventive methods or due to their young age for the most part, were unable to put them into practice. Regarding bleeding during brushing, we found that 88.46% of our population bled during brushing. These results are different from those obtained in the literature [16]. This difference could be explained by poor brushing technique for most of our population, contributing to microtrauma.

In terms of oral mucosal damage, halitosis was the most representative (44.23%) followed by gingival inflammation in 17.3% of cases. This could be explained by the fact that patients use little or no prophylaxis. Indeed, we observed that most of our population brushed only once a day, used the wrong brushing technique and did not visit the dentist.

The CAO index of our sample was 1.71 showing a low level of caries involvement in our sample. This result is similar to other studies [17]. However, most of the decayed teeth were at an advanced stage of development. This could be explained by the fact that patients are afraid of treatment and possible bleeding complications. Also, they go to the dentist late because they wait for the free care campaigns to get treatment.

Conclusion

Four-fifths of the participants had hemophilia type A, with the most represented age group being 5 to 15 years old. Two-thirds of hemophiliacs were in the severe stage, with various bleeding manifestations. Almost all patients were not regularly monitored by an oral specialist and were unaware that poor oral hygiene increased the frequency of gingivorrhagia. The most common carious disease was dentinitis, followed by pulpal necrosis, the most common periodontal disease was gingivitis and almost half the patients suffered from halitosis. Hemophilia patients are at very high risk of bleeding, so it's important that they have a healthy periodontium, denture and oral mucosa. In view of these findings, it would make sense to include regular oral care in the follow-up and management of hemophiliacs, in order to improve their quality of life.

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Conflict of Interest

The authors have no conflict of interest to declare.

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