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ODONTOGENIC MAXILLOFACIAL CELLULITIS IN CHILDREN: EPIDEMIOLOGICAL ASPECTS AND PREDICTORS

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ABSTRACT

Introduction: Odontogenic maxillofacial cellulitis is a serious acute infection of the cellulo-adipose tissues of the face and neck of dental origin that is life-threatening. The aim of this work is to determine the epidemiological aspects and predictive factors of odontogenic maxillofacial cellulitis.

Materials and methods: This is a bi-centric, retrospective, cross-sectional, descriptive study, from March 2016 to July 2022, carried out in the stomatology and maxillofacial surgery department and the ENT department. All patients under 18 years of age hospitalised for management of odontogenic maxillofacial cellulitis were included. Patients over 18 years of age and those with non-odontogenic cellulitis were not included. The parameters studied were frequency, age, sex, place of residence, school attendance, tooth brushing, dental check-ups, consumption of cariogenic foods, use of NSAIDs and self-medication.

Results: This study collected 72 files over a period of 6 years. The frequency was 5.05% compared to hospitalisations in general and 28.33% compared to hospitalisations for cellulitis only. There were 42 boys with a sex ratio of 1.4. The mean age was 9.03±5.71 years. 93% lived in urban areas. 84.7% had self-medicated for toothache. 52.8% had used non-steroidal anti-inflammatory drugs.

Conclusion: Quite common condition in children. It is promoted by the consumption of cariogenic foods and self-medication with non-steroidal anti-inflammatory drugs.

KEYWORDS

Cellulitis, maxillofacial, epidemiology, clinical, therapy

INTRODUCTION

Odontogenic maxillofacial cellulitis is an acute infection of the cellulo-adipose tissues of the face and neck of dental origin. It is a serious, rapidly spreading and potentially life-threatening condition [1].

A study carried out in Madagascar shows that 54% of odontogenic cellulitis was found in children [2], in Senegal 56.52% would be children [3]. They are of interest to all age groups [4].

Regular consumption of cariogenic foods plays an important role in dental infections. The use of non-

steroidal anti-inflammatory drugs (NSAIDs) during dental infection is considered to be a major factor in the development of cellulitis [5].

Cellulitis may be complicated by sepsis (fever, asthenia) and/or mediastinitis, requiring urgent treatment in a specialised hospital [3,6,7].
The latter can be prevented by regular tooth brushing and six-monthly or annual dental check-ups.
The aim of our work is to determine the epidemiological aspects and predictive factors of these maxillofacial cellulitis.

MATERIALS AND METHODS

This is a bi-centric, retrospective, descriptive, analytical, cross-sectional study. It covered a period of 6 years from March 2016 to July 2022. It was conducted at the Department of Dentistry and Maxillofacial Surgery of the University Hospital of Owendo (CHUO) and at the ENT Department of the Oumar Bongo Ondimba Army Instruction Hospital (HIAOB). The target population was patients/records of patients under 18 years of age hospitalised for maxillofacial cellulitis. All patients under 18 years of age hospitalised for treatment of odontogenic maxillofacial cellulitis were included and patients over 18 years of age and those with non-odontogenic cellulitis were excluded. The following parameters were studied: frequency, age, sex, place of residence, education, tooth brushing, dental follow-up, consumption of cariogenic foods and use of NSAIDs. Analyses were performed with R and Epi-info 7 software. Simple variables were expressed as means and percentages. Analysis was performed by chi-squared test of independence; Fisher's exact test

RESULTS

Epidemiological aspects
Frequency

This study collected 72 files over a period of 6 years. The frequency was 5.05% compared to hospitalisations in general and 28.33% compared to hospitalisations for cellulitis only.
The annual distribution of frequency showed that 2022 recorded the most cases with a rate of 27.8% (Figure1).

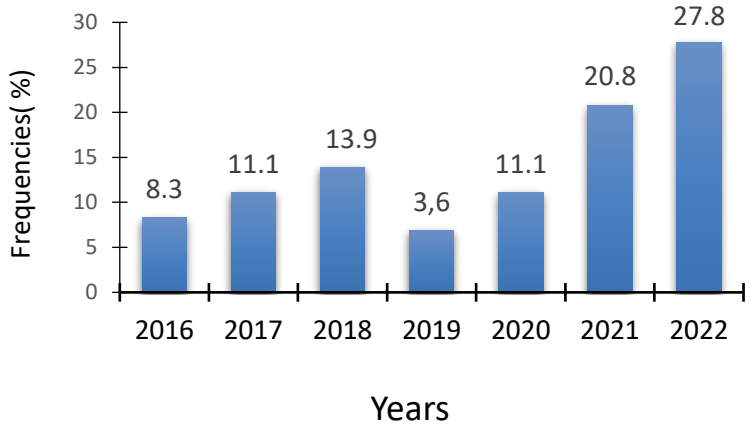

Figure 1: *Annual frequency of children with odontogenic maxillofacial cellulitis*

Sex: The study found 42 males and 30 females, giving a sex ratio of 1.4.

Age

The mean age was 9.03±5.71 years with extremes ranging from 0 to 18 years. The 6-10 year age group was the most representative with 33.3% (Table 1).

Age (years)	Staff	Percentage
0 – 5	18	25
6 - 10	24	33,3
11 - 15	17	23,6
16 – 18	13	18,1
Total	**72**	**100**

Table 1: *Distribution of maxillofacial cellulite by age*

Residence

93% lived in urban areas compared to 05 patients, i.e. 7% who lived in rural areas.

Schooling

51 patients, or 71% of patients, were enrolled in school and 21 patients, or 26% were out of school (Table 2).

School	Staff	Percentage
Yes	51	71
No	19	26
Not specified	2	3
Total	**72**	**100**

Table 2: *Distribution of maxillofacial cellulite according to schooling*

Predictive factors

Consumption of cariogenic foods

Consumption of cariogenic foods was found in 57 patients (79.2%) and 15 patients (20.8%) did not consume cariogenic foods.

Brushing your teeth

7 patients or 9.7% of cases brushed their teeth twice per day, 34 patients or 47.2% brushed their teeth once per day and 31 patients or 44.1% of cases did not brush their teeth.

Dental follow-up

8 patients (11.1%) had regular or irregular dental follow-up with a dentist, 50 patients (69.4%) had no dental follow-up and 14 patients (19.5%) did not specify.

Self-medication

61 patients (84.7%) had self-medicated for dental pain and 11 patients (15.3%) had a medical prescription. 18 patients or 29.5% of cases had taken NSAIDs and 15 patients or 24.6% of cases had taken NSAIDs as monotherapy for self-medication (Table 3).

Type of medication	Staff	Percentage
NSAIDs	18	29,5
NSAIDs + Analgesics	16	26,2
Painkillers	15	24,6
Antibiotic therapy + NSAIDs + Analgesics	4	6,6
Antibiotic therapy + Analgesics	3	4,9
Antibiotic therapy	2	3,3
Not specified	3	4,9
Total	**61**	**100**

Table 3: *Distribution of patients by type of self-medication*

DISCUSSION

Epidemiological aspects

Frequency and incidence

Our study found an annual frequency of 5.05% of odontogenic maxillofacial cellulitis in children compared to hospitalisations in general and 28.33% compared to hospitalisations for cellulitis only. This result is lower than that found by Diallo OR et al [8] in Conakry in 2011, who found an incidence of 8.26%.

The observation of the annual incidence shows that the year 2022 records the most cases with a rate of 27.8%, which shows that children in recent years have more and more eating behaviours that tend to favour the occurrence of dental caries.

Sex

Males are in the majority with a sex ratio of 1.4. This preponderance of male children can be found in the literature [9, 10].

Age

The mean age is 9.03±5.71 years, with extremes ranging from 0 to 18 years. The age group 6 to 10 years is the most representative with 33.3%. The average age in the literature is lower than in our study [11,12,13]. Young boys are often the most careless about personal hygiene.

Residence

93% of patients live in urban areas. Almost all patients live in urban areas, which is consistent with the literature [6]. The explanation lies in the fact that the study was conducted in urban areas and rural populations do not have easier access to dental care facilities.

Schooling

Our study shows a school enrolment rate of 71% of patients compared to 26% who are not in school, the rest is not specified. This high rate of enrolment is related to the fact that the study was conducted in metropolitan France. As a result, there are more children in school than out of school.

Predictive factors

Consumption of cariogenic foods

More than half of patients, including 79.2%, consume cariogenic foods. The consumption of these foods plays an important role in the development of dental caries and, consequently, cellulite [14]. This observation shows the ignorance of parents about the harmful effects of eating these foods on teeth.

Brushing your teeth

In our study, 56.9% of patients reported brushing their teeth regularly. Tooth brushing remains average in the general population and is not sufficient to prevent tooth decay [15].

Dental follow-up

It was found that only 7% had a follow-up visit to a dentist. Dental hygiene and its follow-up are not well established in the habits of our population. Parents only take their children to the dentist when there is an obvious dental infection. This lack of follow-up is often a factor in the development of dental caries [15].

Self-medication

The use of NSAIDs for dental pain is common. In fact, in our study, a rate of 52.8% of patients who took NSAIDs for toothache went on to develop cellulitis of dental origin. We can therefore assume that the use of NSAIDs plays an important role in the occurrence of odontogenic cellulitis. This is in agreement with some authors who believe that this is a favorable factor [5]. However, while some authors acknowledge the

involvement of NSAIDs in the occurrence of cellulite, its severity is not related to the use of NSAIDs [16].

CONCLUSION

Odontogenic maxillofacial cellulitis is common in children. It is the prerogative of young boys with poor tooth brushing habits and without regular dental care. It is favored by the consumption of cariogenic foods, but especially by the use of NSAIDs for toothache.

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