

## PROGNOSTIC FACTORS FOR CERVICO-FACIAL CELLULITIS OF OROPHARYNGEAL ORIGIN

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## Abstract

Cervicofacial cellulitis of oropharyngeal origin is a polymicrobial infection relatively common in otorhinolaryngology consultation and maxillofacial surgery. In most cases, the classical evolution of this disease is favorable under rapidly established treatment. In addition, different determinants interact on the prognosis of this condition. **Patients and method:** We conducted a two-way descriptive retrospective study over a 4-year period. Included, all patients hospitalized and treated for cervicofacial cellulitis of oropharyngeal origin in both hospitals. Patients treated as outpatients as well as cervical-facial cellulitis of non-oropharyngeal origin are excluded in our research. Our objective was to report the prognostic factors of cervicofacial cellulitis in order to adjust the vigilance of health care workers. **Results:** We collected 150 patients with an average age of 16.67 years. The most represented age range is between 20 and 29 years. A slight predominance of the male gender was observed. The low socio-economic level, the use of non-steroidal anti-inflammatory drugs, poor oral hygiene are common factors. A cellulitis of dental origin represents 62% of cases and tonsillar in 28% of cases. The severity of cervicofacial cellulitis of oropharyngeal origin is the occurrence of a mediastinitis whose factors of poor prognosis are diabetes, pregnancy, the passage in medium of resuscitation, the presence of a trismus, dyspnea, dysphonia and impairment of the general state. **Conclusion:** Cervicofacial cellulitis of severe oropharyngeal origin is rare but fearsome. This disease posing a real problem of therapeutic management. Analysis of favouring factors and prognostic factors may limit adverse developments

**Keywords:** Cellulitis, cervicofacial, prognosis.

## INTRODUCTION

Cervicofacial cellulitis is defined as an infection of the celluloadipose space of the face and neck from a loco-regional septic inoculation (1). It is a medico-surgical emergency due to its extensive potentialities that can be serious and life-threatening (2). Mortality can be reduced by knowing the factors that can interact on the evolution of this condition, as well as early diagnosis and appropriate treatment (3). The objective of our research was to report the prognostic factors of cervico-facial cellulitis to adjust the vigilance of caregivers in order to avoid the high risk of mortality.

## PATIENTS AND METHOD

We carried out a descriptive and bicentric retrospective study (CHU d'Andohatapenaka Antananarivo Madagascar and CHU JDR Antananarivo Madagascar) over a period of 4 years, from January 2017 to December 2020. Were included in this research, all patients hospitalized and treated for cervico-facial cellulitis of oropharyngeal origin. Not retained, patients who have benefited from outpatient treatments. The parameters studied were: epidemiological data, clinical profile, complementary exam and therapeutic assessment.

## RESULTS

We collected 150 patients whose most represented age group is between 20 and 29 years old for an average of 16, 67 years old. A slight predominance of the male gender was observed with a sex ratio of 1, 14.

The socio-economic level of our patients was low in the majority of cases with a proportion of 62% of cases. We noted some factors predisposing to the occurrence of cervico-facial cellulitis; such as tooth decay, alcoholism and taking anti-inflammatories (Table 1, 2). The entry point for cervico-facial cellulitis was essentially dental (69%) then tonsillar (25%) and posttraumatic wound (6%). In 56% of cases, patients came for consultation after one week of symptom development. Clinical findings included inflammatory swelling, dysphagia, odynophagia and sometimes dyspnea (Table 3). The general condition of our patients was preserved in 56.66% of cases and altered in 43.33% of cases. During cervico-facial cellulitis, the oropharyngeal examination found poor oral conditions (78.66%) and trismus (72%). Among the patients who had undergone imaging, we identified 8.66% of cases of mediastinitis. In all cases, cervico-facial cellulitis required the timely administration of probabilistic antibiotics: a metronidazole-penicillin combination (52%) or metronidazole-3rd generation cephalosporin (27%) are the molecules of choice. A drainage incision under local anesthesia was preferred in 28% of our patients and an act under general anesthesia performed in 2% of cases (Table 4). During our study, a favorable evolution was marked in 81.33% of the cases, 4% of the cases of death and 6.66% recidivism.

Table 1.

History	Number of cases (n)	Percentage (%)
Tooth decay	33	22,00
Tobacco	31	20,67
Alcohol	28	18,67
High blood pressure	14	9,33
Recurrent angina	9	6,00
Cervico-facial cellulitis	9	6,00
Diabetes	9	6,00

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**Table 2.**

Previous treatments	Number of cases (n)	Percentage (%)
Any	22	14,67
Nonsteroidal anti-inflammatory drugs	31	20,67
Nonsteroidal anti-inflammatory drugs + antibiotics	59	39,33
Antibiotic	29	19,33
Corticosteroid	9	6,00

**Table 3.**

Clinical data	Number of cases (n)	Percentage (%)
Dental rabies	78	52,00
Dysphagia	75	50,00
Odynophagia	38	25,33
Intraoral suppuration	31	20,67
Dyspnea	14	9,33
Dysphonia	10	6,67
Exobuccal suppuration	8	5,33
Reflex ear pain	6	4,00
Torticollis	1	0,67

**Table 4.**

Gesture on arrival	Number of case (n)	Percentage (%)
Drainage incision under local anesthesia	42	28,00
Drainage incision under general anesthesia	4	2,66
Drainage incision with tooth extraction	6	4,00
Expedited tracheotomy	1	0,66

## DISCUSSION

During our research, we found that cervico-facial cellulitis preferentially affects young subjects. The same finding was reported by most authors in the literature (2, 4). We concluded that youth is a risk factor for cervico-facial cellulitis of oropharyngeal origin due to the frequent occurrence of wisdom tooth growth accidents (4). In our series, a predominance of the male gender was marked. A comparable version was mentioned by Rakotoarison and Benzarti (3, 5). This unequal distribution by gender may be related to the very active immunity for women, also the often incorrect oral condition for the male gender because of tobacco (5, 6). The subject in the low-income socio-economic level was often the most affected by cervico-facial cellulitis of oropharyngeal origin. Similar findings were reported by most authors (7). The ease of access to unsuitable self-medication and the neglect of care for this type of population can be incriminated in this situation. In the history, the patients presented cervico-facial cellulitis also has decayed teeth. According to some authors, dental caries is one of the determining factors of cervico-facial cellulitis (7, 8). It should be noted that these types of dental lesion constitute a real gateway for microbials. In this present study, diabetic subjects easily developed cervico-facial cellulitis. Most authors specified the same finding (9,10). Diabetes weakens the immune defense, hence the easy onset and possibility of worsening infections (9,11,12). In our work, we noted some cases of cervico-facial cellulitis in pregnant women whose evolution was weakly satisfactory. Our results agree with a study by Doumbia in Mali (13). Physiologically, the homeostasis of women are all modified during pregnancy, including a drop in natural immunity; Another also concerns about the choice of antibiotics to use vis-à-vis the risk of fetotoxicity (14). Complications of cervico-facial cellulitis were notable in alcoholic and smoking patients. Comparable results were mentioned in the literature (15). According to various research, alcohol and tobacco smoking reduced the

humoral and cellular immune response, hence the possibility of aggravation of infections (15). The taking of anti-inflammatories was remarkable in the course of cervico-facial cellulitis and we found that these molecules were incriminated in the unfavorable evolution of this disease. Some authors claimed that anti-inflammatories are determining factors of cervico-facial cellulitis and its complications (16). The average time of evolution of cervico-facial cellulitis before the consultation was 9 days in our series. This result was similar to that of Htiti with an average delay of around 8.8 days (17). Like any medico-surgical pathology; any delays in treatment are part of a worrying prognosis. Among the clinical signs of cervico-facial cellulitis, we have noticed that the presence of dyspnea is a catastrophic situation. According to the literature, any breathing difficulty during cervico-facial cellulitis is a warning sign of poor prognosis. This clinical sign already testifies to the infectious invasion of endothoracic structures (17-19). The existence of trismus during cervico-facial cellulitis was also a sign with a poor prognosis. A similar result was scored by the Htiti team (17). The limitation of the mouth opening disrupts the correct feeding and makes it difficult to extract the causal teeth.

In addition, we found that the alteration of the general condition during cervico-facial cellulitis is a worrying situation. This observation agrees with the versions of different authors (19, 20). A deterioration in general condition indicates a delay in treatment or a very advanced stage of the disease. In our series, bi-antibiotic therapy associating penicillin with metronidazole was favored on a probabilistic basis during cervico-facial cellulitis. The same therapeutic protocol was adopted in the literature (3). We concluded that any clinical and functional improvement after administration of probabilistic treatments is part of a favorable prognosis. Surgical means are essential in the management of cervico-facial cellulitis of oropharyngeal origin. The vast majority of our patients benefited from a drainage incision under local anesthesia. A comparable result was noted in the literature (19). Cervicofacial cellulitis sufficiently accessible to the drainage incision under local anesthesia is a favorable situation. In this present study, the evolution of the cervico-facial cellulitis was favorable, in addition we noted some cases of death. The authors reveal comparable figures (17). According to the literature, pejorative elements are found, namely immune failure on diabetes and the delay in treatment (17). And we found that these factors are added: the failure of probabilistic treatments, the inaccessibility of cellulite under local anesthesia, the presence of dyspnea, pregnancy and taking anti-inflammatories

## Conclusion

Cervicofacial cellulitis of oropharyngeal origin are relatively common conditions, which can be serious and compromise the vital prognosis. Knowledge of prognostic factors is necessary in order to first prevent and then avoid the high risk of mortality. In addition, the discovery of prognostic factors allows us to adjust the vigilance of caregivers about the care.

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