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Case Report

Periorbital and Orbital Cellulitis: Epidemioclinical Aspects in a Secondary Level Hospital Structure

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Abstract

Aim: to determine the epidemioclinical aspects of periorbital and orbital cellulitis in Lubumbashi. **Method:** descriptive cross-sectional study with retrospective data collection carried out at the Sainte Yvonne ophthalmological center. We compiled 41,853 medical records of patients consulted at the said clinic from January 2012 to December 2014, i.e. 3 years. The variables of interest were age, sex, complaints, probable entry point, location, treatment received and course. **Results:** Orbital cellulitis was diagnosed in 109 patients or 0.26% with a male predominance or 62%, the sex ratio being 1.65 in favor of men. The mean age was 9.4 ± 7.8 years. The youngest patient was five days old and the oldest was 49 years old, the most represented age group was between 2 and 5 years old with a frequency of 37.61%; followed by that going from 6 to 10 years with 26.6%. Eyelid swelling was the most representative of clinical signs with 38.6%. The probable portal of entry for orbital cellulitis was not found in 71.60% of cases and in 14.70%, the portal of entry was a sore on the face (eyelids). The involvement was unilateral in 86.20% of cases. Systemic antibiotic therapy was started in all patients and among them 98.20% of patients with preseptal cellulitis had their treatment on an outpatient basis. The orbital cellulitis incision-drainage was performed according to the progress of each patient. The outcome was favourable in 92.60% of cases; orbital abscess was noted in 2.25% of patients and one patient died or 0.9%. **Conclusion:** Orbital cellulitis is a relatively frequent orbital pathology in our environment, which requires early diagnosis, adequate and urgent management in order to avoid the occurrence of serious complications that could lead to the death of the patient.

Keywords: Orbital cellulitis; Epidemiology; Clinic; Lubumbashi

Introduction

Periorbital cellulite (forme preseptale) is the infection of the paupière and the skin avoisinante in advance of the septum, it is more frequent and the evolution is more favorable. The cellulite orbitaire (forme rétroseptale) is defined by the presence of an orbital tuméfaction aigue inflammatoire d'origine infectieuse es une infection des tissus orbitaires en arrière du septum orbitaire, elle est plus rare mais serious car pouvant mettre en jeu le

prognostic visuel et vital du patient. Toutes deux représentent la pathologie orbitaire primitive la más frequente [1-3]. The sinusitis is the etiology the most frequent avec comme porte d'entrée le sinus ethmoïdal chez le nourrisson et le sinus frontal ou maxillaire chez le jeune enfant. Cependant elle peut aussi avoir a traumatic palpebrale etiology, an animal bite or insect bite, a conjunctivity, a chalazion, an oral or dental infection, a dermatological infection on the visage, a recent eye or facial surgery, an infection of the lacrymal canal that constitutes a porte d'entrée de l'infection [1,2]. Les germes en cause varient in function of the age of the patient and of the probable etiology; il s'agit de : streptococcus pneumoniae, du staphylococcus aureus, du staphylococcus pyogène, de l'Haemophilus influenzae de type b [1-4]. Le diagnostic est essentiellement clinique, on note dans les deux cas l'existence de la fièvre, des douleurs, un gonflement, la chaleur et une anomalie de la coloration de la paupière. More in the case of a cellulite orbitaire, when observing a proptosis, a diminution of the ocular motility, des douleurs lors des oculaires movements, an exophtalmie, a chémosis, a diminution of the visual acuity. More in case of doute, he resorted to the tomodensitométrie et à l'imaging par résonnance magnetice est indicated pour bien seoir le diagnose [1,2,3]. The diagnostic accuracy and the search for a bacterial etiology are urgent and need a strong collaboration between all the disciplines concerned: ophthalmologists, pediatricians, otorhinolaryngologists, radiologists, infectiologists. The prize in charge doit être précoce par une antibiothérapie adapted associated with a chirurgical traitement in cas d'abcédation pour allow une évolution favorable sans sequelles [2,3,4]. The cellulite orbitaire can be found all over the life and dont l'issue can be more favorable but it can be complicated by sepsis, the part of the vision due to an ischemic retinopathie and an optic neuropathie caused by an augmentation of the Intraorbital pressure, an ophtalmoplegia, the endocrine extension of the infection entraining a thrombosis of the sinus caverneux, a meningitis, an empyème and a cerebral thrombophlebite [2-5]. There is no publication on a global epidemiology of this condition [3] but studies have been carried out in certain countries such as Morocco, where a retrospective study over 7 years (2001-2007) involving 24 cases, including Age most is from 26 years with the extremes ranging from 4 to 75 years and a net male predominance (87%). A history of trauma is found in 25% of cases and exophthalmos in 45% of cases. A sinus origin with 45% of cases, orbital cellulitis secondary to acute dacryocystitis with 16% of cases [6]. One other retrospective study carried out still in Morocco on 9 cases of orbital cellulitis recorded between 2008 and 2009 in an ophthalmology department in Casablanca Showing an average age of patients of 10 years with extremes of 3 to 27 years including five males and four female, i.e. a sex ratio of 0.8 [2]. In 2015, Sarah found out about a prospective study carried out about 75 cases of cellulite treatment in the orbital region, twenty-three (65.7%) had retroseptal cellulitis and twelve (32.23%) had preseptal cellulitis [7]. The main objective of this study is to determine the epidemioclinical aspects of periorbital and orbital cellulitis in our setting.

Methodology

This cross-sectional descriptive study with retrospective data collection carried out at the Sainte Yvonne ophthalmological centre, which is a secondary level hospital structure. We compiled 41,853 medical records from patients consulted at the clinic from January 2012 to December 2014 over 3 years. The clinical diagnosis was based on the history, inspection, palpation, biomicroscopy and ophthalmoscopy examination, measurement of intraocular pressure. The variables of interest were age, sex, complaints, probable portal of entry, location, treatment received and evolution.

Results

Frequency of orbital cellulitis and gender of patients

In our series, orbital cellulitis was present in 109 patients or 0.26% out of a total of 41,853 patients consulted. More this was preseptal in 98.2% and true orbital in 1.8% of patients, It emerges from this figure that the male children were at 68 or 62% and those of the female sex were at 41 or 38%, the sex ratio being 1.6 in favor of the male sex.

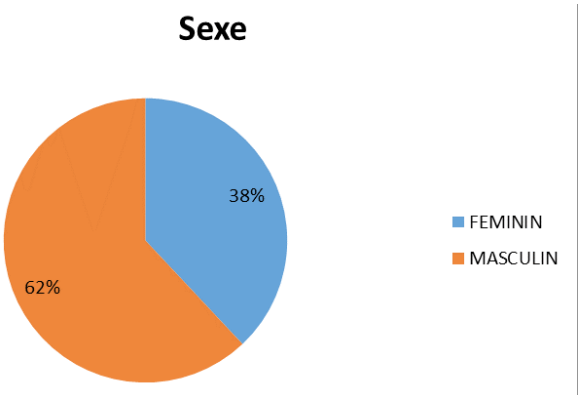

Figure 1: Distribution of patients by gender.

Age of patients

Age (year)	Effective (%)
0-2	22 (20,18)
>2 -5	41 (37,61)
>5 -10	29 (26,60)
>10-15	5 (4,60)
>15-20	2 (1,80)
>20-25	1 (0,90)
>25-30	4 (3,70)
>30-35	1 (0,90)
>35-40	1 (0,90)
>40-45	1 (0,90)
>45-50	2 (1,80)
Total	109 (100)

Table 1: Distribution of cellulite according to age group.

It is revealed from the table that the cellulite orbitaire avait a frequency of 37.61% that children do not age is purchased between 2 and 5 years is 26.60% that ceux do not age is purchased between 5 and 10 years. The age of the patients was 9.4±7.8 years old, the last was 5 days and 49 years old.

Clinical signs and complaints

Subjective signs	Effective	Percentage
Exophtalmie	3	0,83
tearing	22	6,11
Fever	54	15,00
Headaches	24	6,66
eye pain	37	10,27
Eye redness	18	5,00
Swelling of the white of the eye	4	1,11
Decline in visual acuity	8	2,22
Ptosis	2	0,55
Palpebral swelling	109	100
Purulent secretions	39	10,83
Sand Feeling	10	2,77%

Table 2: Distribution of patients according to complaints and clinical signs.

The eyelid swelling is the main reason for consultation found in all patients (100%). The associated signs are: fever, purulent secretions, eye pain, headaches with respectively 15.55%, 15%, 10.83%, 10.27%, 6.66%. Note that the same patient could present one or more of these signs.

Front door

Likely gateway	Effective	Percentage
Dental disease	9	8,30%
Sinus disease	6	5,50%
Palpebral wound	16	14,70%
Any	78	71,60%
Total	109	100,00%

Table 3: Distribution of patients according to probable entry points for cellulitis.

This table shows us that 78 patients or 71.60% had no entry point for the disease, 16 patients or 14.70% had a palpebral wound as their entry point, 9 patients or 8.30% had a dental condition (tooth decay) against 6 patients or 5.50% with sinus disease.

Laterality and management of orbital cellulitis

This study reveals that 58 patients or 53.20% had an attack of the right eye, 36 patients or 33% had an attack of the left eye and 15 patients or 13.80% had a bilateral attack. The involvement was unilateral in 86.20% of cases.

In our series, antibiotic therapy was initiated in all patients and among them 98.20% of patients had undergone their treatment on an outpatient basis because it was preseptal cellulitis. In children, the less serious forms were treated with a beta-lactam administered orally, for contra, the short parenteral route of the association of a third or fourth generation cephalosporin with an aminoglycoside concerned the serious forms of the cellulitis. In adults, we have associated a cephalosporin with an imidazole administered parenterally. An antipyretic and/or an antalgic agent is administered in cases of fever and eye pain. The incision-drainage of pus from the orbital cellulitis was performed by 3.70% of patients. The evolution was favorable in 92.60% of cases. The complications found were abscess with presumptive meningitis in three patients, i.e. 2.75%, blindness and death in respectively 0.9% of cases.

Discussion

This study aimed to describe the epidemioclinical aspects of preseptal and orbital cellulitis in patients seen in an intermediate-level ophthalmological clinic, which is also a community care structure. Orbital cellulitis was present with 109 patients or 0.26% out of a total of 41,853 patients consulted. It is present for 98.2% and true orbital for 1.8% of patients. The sex ratio was of 1.65 in favour of men. Other authors have also found the predominant frequency for the male sex such as: Wane A. in Senegal in their study on a Senegalese experience of orbital cellulitis, found that the sex-ratio of 2.78 [8], Liu in China in his study Orbital complications of acute sinusits in children found a sex-ratio

of 1.85 [9], Ailal in Morocco in its study Orbital cellulitis in children: about a retrospective study of 33 cases found a sex ratio of 1.53 [10], Fanella in Morocco in her study Presentation and management of pediatric orbital cellulitis found a sex ratio of 2.2 [11]. In contrast to a slight female predominance (M/F sex ratio of 0.72) there is found in Abdelatif's series in Morocco in his study on orbital and periorbital cellulitis in children [2]. The M/F sex ratio is 1 in that of Ambati in his study Periorbital and Orbital Cellulitis before and after the Advent of Haemophilus Influenzae Type B Vaccination [12]. Barascu reports in his series that both sexes were affected equally [13]. In our study, the most represented age group was that ranging from 2 to 5 years with 37.61%, followed by that ranging from 6 to 10 years with 26.6%, the average age of patients with orbital cellulitis Age from 9.4 ± 7.8 years with the end of the age from 5 days to 49 years. In studying orbital and periorbital cellulitis in children in Morocco, Abdelatif found a middle age of 3 years [2]. In the majority of published series, such as that of Sarah [7], the average age of patients is 24 years, ranging from 2 to 70 years. Another in Morocco published by Dounia about 56 cases of orbital cellulitis showing an average patient age of 5 years with extremes of 6 months to 14 years [14]. For Mouriaux, orbital cellulitis is observed mostly between 6 and 15 years and between 60 and 70 years [3]. All age groups can be affected by orbital cellulitis. However, cellulitis and orbital abscess of sinus origin mainly affect children and adolescents. In children, the papery me is sometimes dehiscent, explaining the frequency of orbital complications in relation to an acute ethmoid [1,3]. In our study, the most represented age group was that ranging from 2 to 5 years with 37.61%, followed by that ranging from 6 to 10 years with 26.6%, the average age of patients with orbital cellulitis Age from 9.4 ± 7.8 years with the end of the age from 5 days to 49 years. In studying orbital and periorbital cellulitis in children in Morocco, Abdelatif found a middle age of 3 years [2]. In the majority of published series, such as that of Sarah [7], the average age of patients is 24 years, ranging from 2 to 70 years. Another in Morocco published by Dounia about 56 cases of orbital cellulitis showing an average patient age of 5 years with extremes of 6 months to 14 years [14]. For Mouriaux, orbital cellulitis is observed mostly between 6 and 15 years and between 60 and 70 years [3]. All age groups can be affected by orbital cellulitis. However, cellulitis and orbital abscess of sinus origin mainly affect children and adolescents. In children, the papery me is sometimes dehiscent, explaining the frequency of orbital complications in relation to an acute ethmoid [1,3].

Our study showed that the most common complaint was inflammatory swelling of the eyelids, followed by fever with respectively 38.6% and 15%, pain was found in 10.27% of patients, headaches in 6.66% in children aged verbal. Several complaints could be found in the same patient at the same time. Abdelatif, who found swelling of the eyelids in 100% of cases [2], Wane reports that on initial examination, fever was often absent from the infectious syndrome, all patients present with retrobulbar frontal pain, inflammatory swelling in the eyelid in 14 . 9% and proptosis in 77.7% of cases [8]. In our study, the portal of entry of orbital cellulitis was not found in 71.60% of cases while in 14.70% the portal of entry was a wound, followed by dental affections (dental caries) with 8.30% and finally ENT affections (sinusitis) in 5.50%. Mouriaux [3] found that the sinus origin is involved in many thirds of orbital cellulitis in adults and in 90% of cellulitis in children. Wane found 57.1% of patients had sinusitis [8]. The involvement was unilateral in all patients: 9 cases on the right (42.86%), 12 cases on the left (57.14%). Vroh [15] reported on a series of 21 eyes that sinusitis at the origin of cellulitis are as follows: pansinusitis (10 cases), ethmoido-frontal sinusitis (5 cases), ethmoido-maxillary sinusitis (4 cases), isolated maxillary sinusitis (2 boxes). The cellulitis was preseptal in 76.19% of cases (n=16) and retroseptal (Figure 1) in 23.81% (n=5). The unilateral status of 86.20% of cases in our series. Antibiotic therapy was initiated in all patients and among them 98.20% of patients with preseptal cellulitis had undergone their treatment on an outpatient basis. In children, the less serious forms were treated with a betalactamine administered orally, by resorting to the intravenous route of the association of a third or fourth generation cephalosporin with an aminoglycoside had concerned the serious forms of the orbital cellulitis. All adults are hospitalized systemically, and they are associated with a cephalosporin and an imidazole administered intravenously. But in both cases, an antipyretic and/or an analgesic was administered in case of fever and eye pain. The incision-drainage of the orbital cellulitis was performed by 3.7% of patients, based on their evolution. Wane [8] found that, from hospitalization, all patients were treated parenterally with an antibiotic therapy composed of a beta-lactam, an aminoside, an imidazole, associated with dexamethasone and a complementary surgical trait to This performed in 51.5% of patients. Suna and her research team recommend hospitalization in case of orbital cellulitis, if the child under 3 months, a severe alteration of the general state, associated local complications, bad ground (chronic disease, elderly subject), of risk of non-compliance or failure of outpatient treatment. Treat the other patients in an ambulatory [4]. Our study reports 92.60% of cure in terms of disease progression. True orbital cellulitis being an emergency, it must be recognized early and adequately treated. The complications found were: orbital abscess with presumptive meningitis in three patients, i.e. 2.75%, blindness and death in respectively 0.9% of cases. In a series of 23 patients, Hodges [16] reported 52% mortality and 4% mortality due to thrombosis of the cavernous sinus. On another more important series of 68 patients, Wane [8] Report that the evolution is favorable in 55.9% of cases, 26% of blindness, an ophthalmoplegia in 67.2% of cases without disorder of consciousness and there also, 4% of death.

Conclusion

In this context, the cellulite orbitaire is a relatively frequent affectant that affects young people more seriously due to its complications. This medical urgency needs an early diagnosis and an efficient charge for antibiotics in order to avoid the surge that will lead to the treatment and treatment of the patient.

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