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Clinical case

Bilateral orbital cellulitis complicating a dental infection

Cellulite orbitaire bilatérale compliquant une infection dentaire

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Résumé

Les cellulites orbitaires sont des infections graves pouvant engager le pronostic visuel voire vital en cas de complications. Elles sont de deux types qui sont à différencier selon leur localisation anatomique. La cellulite préseptale (Cellulite periorbitaire) et la cellulite orbitaire (la vraie). Elles peuvent être provoquées par une extension d'un foyer infectieux à partir des structures périorbitaires (sinus, face et paupière, sac lacrymal, dents), des causes exogènes (traumatismes, chirurgie), des causes endogènes (bactériémie avec embolisation septique) et des causes intra orbitaires (endophtalmie, dacryoadenite). Les cellulites orbitaires et périorbitaires partagent des signes communs dans leurs manifestations cliniques. Les bactéries sont des agents pathogènes généralement responsables. Le traitement est habituellement médical, il peut aussi être chirurgical en cas de compression orbitaire.Nous rapportons) un cas de cellulite orbitaire bilatérale dont le foyer primaire a été une infection dentaire qui s'est étendue aux gencives avoisinantes entrainant par la suite une ostéite et une infection du contenu orbitaire par contigüité. L'évolution sous traitement antibiotique a été marquée par amenuisement progressif des manifestations cliniques avec à terme une guérison complète.

Mots-clés : Cellulite-Orbitaire-Bilatérale-Dentaire, Mali.

Abstract

Orbital cellulitis is a serious infection that can be visually life-threatening in the event of complications. There are two types, differentiated according to their anatomical location. Preseptal cellulitis (periorbital cellulitis) and orbital cellulitis (true cellulitis). Orbital cellulitis and periorbital cellulitis can be caused by the extension of an infectious focus from periorbital structures (sinuses, face and eyelid, lacrimal sac, teeth), exogenous causes (trauma, surgery), endogenous causes (bacteremia with septic embolization) and intraorbital causes (endophthalmitis, dacryoadenitis). Orbital and periorbital cellulitis share common signs in their clinical manifestations. Bacteria are the pathogens generally responsible. We report a case of bilateral orbital cellulitis, the primary focus of which was a dental infection that spread to the surrounding gums, leading to osteitis and infection of the orbital

contents by contiguity. Progression under antibiotic treatment was marked by a progressive reduction in clinical manifestations, with eventual complete recovery.

Keywords: Cellulitis-Orbital-Bilateral-Dental, Mali.

Introduction

Orbital infections or orbital cellulitis represent the most common primary orbital pathology, characterized by acute inflammation of the orbital cellulofatty tissue of infectious origin [1]. They are relatively rare in the daily practice of ophthalmologists. Their annual incidence is one case per year in the United States [2], and between 8 and 12% in sub-Saharan Africa [3, 4].
Two types of cellulitis are to be differentiated: orbital cellulitis and periorbital (preseptal) cellulitis, which are distinct diseases but usually share some of the same clinical signs and symptomatology [5].
The disease is more common in children and adolescents, and more severe in elderly patients [6].
Although periorbital infections are typically classified as pre-septal cellulitis (involvement anterior to the orbital septum) or orbital cellulitis (involvement posterior to the septum), they often present as a continuum with common root causes requiring similar treatments.
The most common cause of cellulitis is bacterial infection. Infectious invasion of the orbit is either hematogenous or contiguous [7].
Orbital cellulitis is most often unilateral, with bilateral forms less common. It is a serious pathology, with local, locoregional and general complications that can be life-threatening [8].
Treatment is primarily medical, and surgery is only necessary in cases of abscess [6,9].
In this work, we report on a case of bilateral orbital cellulitis secondary to a dental infection, highlighting the importance of rapid diagnosis and management of this potentially blinding and lethal condition.

Clinical case

A 19-year-old woman was referred to the hospital's ophthalmology department by her maxillo-facial surgeon for eye pain associated with bilateral exophthalmos.
Her history included poor oral hygiene and an infectious oral syndrome combining polycaria, temefaction, a left lagenic fistula and osteitis, for which she was treated in the odontostomatology department.
On initial ophthalmological examination, visual acuity assessment was inconclusive due to the patient's pain, poor cooperation and agitation.
External examination revealed facial asymmetry, diffuse swelling of the face, bilateral palpebral oedema with bilateral axial exophthalmos with limited eye movement, and cilia agglutinated by intense ocular secretions.
In addition to the above-mentioned findings, after local treatment with saline eyewash following instillation of anaesthetic eye drops, there was ocular redness and more pronounced chemosis in the right eye.
Slit lamp examination showed:

In the right eye, conjunctival hyperemia, chemosis and paracentral exposure keratitis were detected by fluorescein test, associated with the beginnings of a corneal abscess.
In the left eye, conjunctival hyperemia, chemosis and superficial punctate keratitis were detected by the fluorescein test.
Ocular pressure was not assessed, and the fundus was not examined in both eyes.

The patient's general condition was poor, and palpation of the tyroid gland was unremarkable,
Diagnostic hypotheses included: dysthyroid exophthalmos, exophthalmos as part of a carotidocavernous aneurysm, retrobulbar tumors, orbital cellulitis due to contiguity with a dental infection.
A thyroid blood test came back negative with normal

thyroid hormone levels, and an infectious and inflammatory blood test was ordered with a blood sample taken the same day.

A CT scan confirmed the diagnosis of orbital cellulitis, with infiltration of orbital fat and no radiological signs of orbital tumours or carotidocavernous aneurysm, and revealed a right bifocal, parietal and fronto orbital empyema that was managed by neurosurgery (evacuation of the retro orbital position).

The diagnosis of bilateral orbital cellulitis was based on the contiguity of a dental infection.

Ophthalmological treatment was based on ciprofloxacin 0.3% eye drops and dexpanthenol 5% ophthalmic gel.

Initial general treatment during the first week consisted of deceftriaxone 1g injection every 8 hours, metronidazole injection every 12 hours and paracetamol injection. This treatment was adjusted as the disease progressed, and oral products, in particular the combination of amoxicillin and clavulanic acid, took over from the injectable drugs.

At the first follow-up examination, carried out four days after the initial examination, there was a minimal reduction in clinical signs in the right eye and their almost complete disappearance in the left. Visual acuity was assessed at 1/10 in the right eye and 6/10 in the left. Eye pressure and fundus were still not assessed.

The unsatisfactory response of the right eye to well-conducted medical treatment necessitated neurosurgical intervention to evacuate the purulent retro orbital collection.

Thereafter, we witnessed a gradual fading of symptoms and clinical signs, and a full recovery with eventual visual acuity without optical correction assessed at 10/10 P2 in each eye, and ocular pressure at 13 mmHg in the right eye and 11 mmHg in the left.



Figure 1 : The patient on admission to the ophthalmology department



Figure 2 : The patient was admitted to the ophthalmology department following saline cleansing after instillation of anaesthetic eye drops with bilateral exophthalmos, ODG chemosis and a right corneal abscess.



Figure 3 : The patient at the first follow-up examination with persistent clinical signs in the right eye and significant reductions in the left eye.



Figure 4 : The patient after full recovery

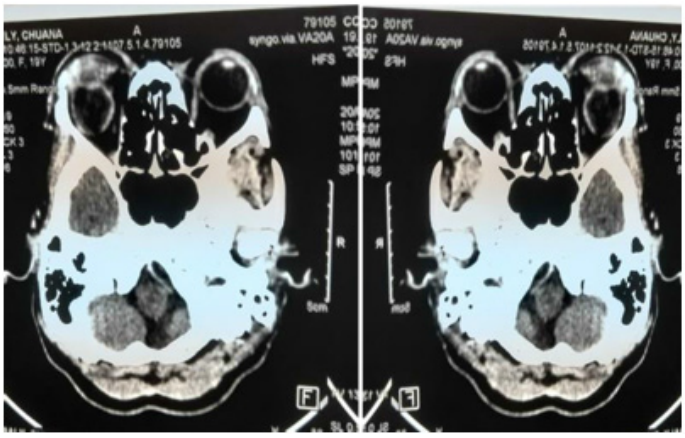


Figure 5 : CT scan showing persistent right exophthalmos associated with fronto-orbital empyema.

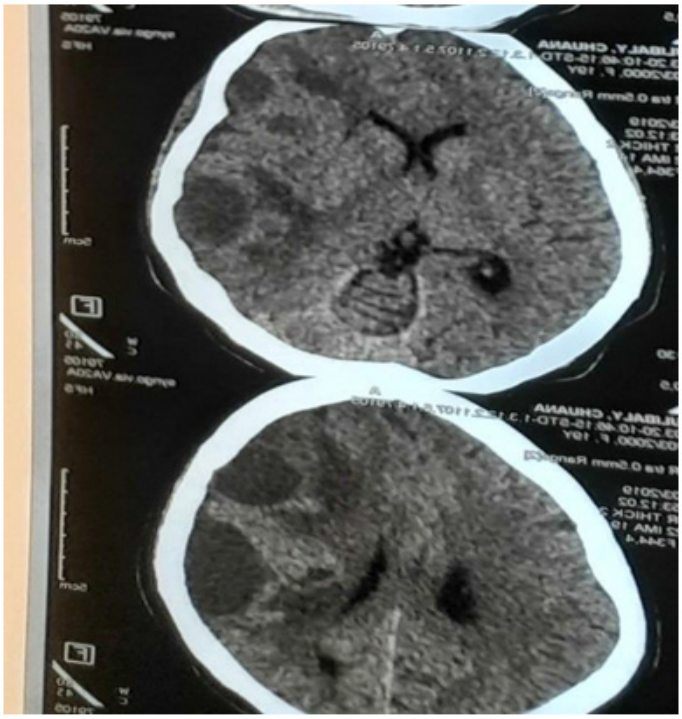


Figure 6 : CT scan showing parietal empyema

Discussion

The clinical picture of orbital cellulitis usually includes fever, altered general condition, hyperleukocytosis (75% of cases), exophthalmos, chemosis, ptosis, limited ocular motility and pain on eye movement [10, 5,7].

The most frequently found causes are: extension of an infectious focus from periorbital structures (sinuses, face and eyelid, lacrimal sac, teeth), exogenous causes (trauma, surgery), endogenous causes (bacteremia with septic embolization) and intraorbital causes (endophthalmitis, dacryoadenitis) [7, 5].

The pathogens responsible for these infections vary according to etiology and age [11,12].

The diagnosis of orbital cellulitis is made primarily on the basis of clinical findings, supplemented to a greater or lesser extent by computed tomography or magnetic resonance imaging.

The differential diagnosis should be considered in the presence of trauma, insect bites without cellulitis, intraorbital foreign bodies, allergic reactions, tumors and inflammatory pseudotumors [5].

The most feared complications are loss of vision secondary to mechanical neuropathy caused by increased intraocular pressure, and retinal and/or choroidal vascular occlusions, which can lead to reduced visual acuity.Lastly, reduced visual acuity may result from exposure keratitis due to exophthalmos or, more exceptionally, from retinal haemorrhages and/or exudates [13, 14,15]. Panophthalmos, thrombophlebitis of the cavernous sinus, meningitis or osteomyelitis are rare complications [6, 14].

Treatment is based on antibiotic therapy and surgical decompression if necessary [5, 2, 7].

The case studied involved a young woman whose primary focus was a dental infection leading to a fistula in the left cheek and osteitis. The infection then spread to the brain and both orbits via contiguity. Under medical and surgical treatment, there was a remarkable regression of symptoms and signs, culminating in the patient's complete recovery.

Conclusion

The treatment of orbital cellulitis can be multidisciplinary, and it is important to emphasize the need for early diagnosis of these conditions, which are an ophthalmological emergency requiring early recognition. These pathologies remain a possible cause of blindness and even mortality in the event of complications and must therefore be vigorously managed.

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References

[1] Santos JC,PintoS,Ferreira S, Maria C, Alves S, da Silva V. Pediatric preseptal and orbital cellulitis : A 10-year experience.Int j Pediatr Otorhinolaryngol.2019 May ;120 :82-88. [PubMed] [Google scholar]

[2] Nageswaran S, Woods CR,JRDK,GivnerLB,Shetty AK. Orbital cellulitis in children.Pediatric infect dis J.2006 ; 25 :695-9.

[3] Promelle V, Bennai D, Drimbea A, Milazzo S, Bremond GD.Cellulites orbitaires atypiques d'origine non sinusienne de l'enfant : A propos de quatre cas.J Fr Ophtalmol.2014 ; 37 :149-154.

[4] WaneAM,BaEA,Ndoye-RothPA,KameniA,Demeideiros ME, Dieng M, and al.Uneexceperiencesenegalaise des cellulites orbitaires.J Fr Ophtalmol 2005 ; 28 :1089-1094.

[5] Richard C.Allen, Examen médical oct 2022, Le manuel MSD

[6] F.Mouriaux, V.Cattoir, B.Rysanek, E.Babin :Les infections orbitaires, Infections oculaires tome 1, 79-89 Rapport annuel 2010

[7] Elmaleh.C, Ducasse.A, Fau.JL, Fayet.B, Orbite, paupières et système lacrymal, Chapitre 4 ; 37-59, Elsevier Masson

Janvier Janvier 2014.

[8] Belghmaidi.S et al. Les cellulites orbitaires : étude prospective à propos de 75 cas,PanAfr Med J.2015 ; 22 :340.

[9] Kevin D, Pereira KD, Mitchell RB, Younis RT, Lazar R. Management of medical subperiossteal abscess of the orbit in children : a 5 year experience.Int j PediatrOtorhinolaryngol.1997 ;38 :247--54. [PubMed] [Google scholar]

[10] Spalton DJ, Hitchings RA, Hunter PA.Atlasd'ophtalmologieclinique 2eédition P 530. 1996

[11] Hamedani M, Ameline-audelan V, Morax S.Affections inflammatoires de l'orbite.Encycl Med Chir(Edition scientifique et médicale Elsevier) Opthalmologie 21-620-A-10,2000,11p.

[12] A.Belmahi. Cellulites orbitaires: profil épidémiologique, Clinique, thérapeutique et évolutif. Anesth, Réanimation,P.180,2018,doi :10.1016/J Fr Ophtalmol.2016.05.008.

[13] Smelt GJ, Migdal CS. Acute blinding sinusitis. Br Med J(Clin Res Ed) 1983 ; 287 :1051-2.

[14] Tuil E, De Nicola R, Mann F, Milea D, Barale PO. Ophtalmologie en urgence 2e edition P 273-276 ; 2009 Elsevier.

[15] Kanski.JJ.Précis d'ophtalmologie clinique 2e édition P 96-98 ; 2012 Elsevier Masson.

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