

## Case Report

# A CASE OF ORBITAL AND FACIAL CELLULITIS

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## ABSTRACT

We report a case of orbital and facial cellulitis in a 25 year old patient, complaining for swelling of the right face, headache and fever after he sustained injury 4 weeks before admission. On admission, the patient was treated unsuccessfully with intravenous ceftriaxon, flagyl and ibuprofen. After culture and sensitivity of ocular secretions, the treatment was then shifted to ampicillin and chloramphenicol, and the result was a rapid reduction of the orbital swelling with slight improvement of visual acuity. At the end of the first week, the swelling was markedly reduced; unfortunately the patient had hand motion as visual acuity on the right eye.

**Keywords:** Orbital cellulitis - facial cellulitis - cavernous sinus thrombosis

## RESUME

Nous rapportons un cas de cellulite orbitaire et faciale chez un patient de 25 ans, qui s'est présenté avec un orbitaire gonflement du visage droit, céphalées et fièvre après qu'il ait subi un traumatisme facial droit, 4 semaines avant l'admission. A l'admission, le patient était mis respectivement sous ceftriaxon et flagyl intraveineux, et comprimés ibuprofène. Après culture et antibiogram des sécrétions oculaires, le traitement a été changé à l'ampicilline et au chloramphenicol intraveineux. Le résultat était une réduction rapide du gonflement, avec une légère amélioration de l'acuité visuelle. A la fin de la première semaine, le gonflement était nettement réduit; malheureusement le patient avait une acuité visuelle de mouvement des mains à l'oeil droit.

**Mots-clés:** Cellulite orbitaire - cellulite faciale - thrombose du sinus caverneux

## INTRODUCTION

Orbital cellulitis is a clinical condition arising usually from a complication of paranasal sinus infection and affecting soft tissues of the orbit, posterior to the orbital septum [1,2]. It is a relatively common disease of developing countries, with a frequency ranging between 21 and 90% [3]. Orbital cellulitis has various causes and may be associated with serious complications, cavernous sinus thrombosis being the most dangerous, resulting in visual loss and death [4,5,6]. Prompt diagnosis and treatment are essential for treatment of this condition [7,8]. In this report, we report a case of orbital and facial cellulitis.

### Case report

A 25 year old male was referred for acute headache, loss of vision, fever and swelling of the face after he sustained injury 4 weeks before admission. On admission, the general doctor noticed an obvious swelling and small wound on the right face, mild proptosis, ophthalmoplegia and chemosis of right eye (Figure 1).

Visual Acuity on the right eye was no perception of light with relative afferent pupillary defect; visual acuity on the left eye was 6/6. The impression done by the general doctor was a facial abscess. The patient was treated with intravenous

ceftriaxon, flagyl and brufen for 7 days. White blood cell count performed showed hyperleucocytosis with neutrophilia. On the following day, the ophthalmologist reviewed the patient and made a diagnosis of orbital and facial cellulitis with associated phlegmon and anterior uveitis, with total blindness (no perception of light) on the right eye. Radiography of the base of skull and lung were normal and treatment on admission was maintained; with additional incision and drainage of facial abscess. Up to the third day, the swelling was not reducing; culture and sensitivity of ocular secretions done yielded *Staphylococcus aureus*, resistant to penicillin G, but sensitive to fucidic acid, chloramphenicol and ampicillin. The treatment was changed to ampicillin and chloramphenicol, and the result was a rapid reduction of the orbital swelling on the fifth day, with a visual acuity surprisingly hand motion (right eye). At the end of the first week, the swelling was markedly reduced; unfortunately the patient had hand motion as visual acuity on the right eye (Figure 2).

## DISCUSSION

Orbital cellulitis is a life threatening condition, caused by microbes spreading from paranasal sinuses via an open wound on the skin or any local infection [1,2,4]. The orbit is especially exposed to infections because of its proximity to the paranasal sinuses and nasolacrimal system, and infection may extend to the brain due to the valveless communication of facial and ophthalmic veins to the cavernous sinus [3,7].

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Delay in diagnosis and treatment of orbital infection can lead to cavernous sinus thrombosis which can be fatal. Orbital walls near to paranasal sinuses are thin and porous. The ethmoid sinus of the lamina papyracea bone is the most commonly infected sinus associated with orbital cellulitis [3,4]. Prompt treatment is mandatory to avoid visual loss or intracranial complications [7,8]. Initially, intravenous large spectrum antibiotherapy may be administered, but if no improvement appears within 48 hours, change of antibiotherapy, culture sensitivity and surgical drainage of the orbit on the affected sinuses must be considered [2,3]. Anteriorly, the orbit is limited by the orbital septum which arises from the orbital rim and inserts at the tarsal plate inferiorly and levator palpebrae superioris aponeurosis superiorly. This septum plays a role in limiting the spread of infection to the orbital contents, and provides the basis of distinction between orbital and preseptal cellulitis [1].



**Figure 1:** Patient on admission showing obvious orbital and facial cellulitis involving the whole hemiface including the periorbital area



**Figure 2:** At the end of the first week, patient showing on the right eye: markedly reduced swelling, white fixed pupillary reflex due to post-uveitic cataract

In this reported case, it is obvious that facial injury was the reason of this cellulitis. This patient coming from a remote area was seen by a specialized personal four weeks after onset of symptoms. Having already a blind right eye on admission, nothing much was to be done in term of visual acuity recovery; however urgent directed antibiotherapy was imperative for protecting him from intracranial complications. Loss of vision in this patient could be due to post-uveitic cataract. The ultimate investigation to roll out any associated retinal lesion: ocular B-Scan ultrasound was not performed at King Faycal Hospital because of financial issues. Cataract surgery planned at 2 months after discharge was not done because of loss of follow up. The isolated *Staphylococcus aureus* was surprisingly resistant to ceftriaxone and the traditional penicillin G, whereas it was sensitive to ampicillin. In our daily clinical work, it is so frequent to use large spectrum antibiotherapy before considering basic and simple antibiotic; this case illustrates how antibiotics should be used efficiently.

### CONCLUSION

Orbital cellulitis is a life and sight threatening condition, which needs urgent diagnosis and treatment. This reported case shows how patient could be miss- diagnosed and managed on the ground; because of lack of well trained personal or even equipments. This highlights the importance of training medical personal at the different health levels on ophthalmological emergency cases, as well as the efficient use of antibiotics.

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