

## **Case Report :**

# **Pre septal cellulitis treatment : A case Report**

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### **Abstract**

Preseptal cellulitis is an inflammation and infection of the eyelid (also of the periorbital soft tissues), anterior to orbital septum, not involving the orbit or other ocular structures, characterized by acute eyelid erythema and edema. This is a common infection and tends to be less severe a disease than orbital cellulitis (known as postseptal cellulitis). Herewith we presented case of a 6 year old male patient visited at Dr. Hedgewar Ruganalay, Aurangabad with complaint of swelling upper lid Right and pain with his parents on 7 Jul 2018.

Keywords : Preseptal cellulitis

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### **Background**

Preseptal cellulitis is an inflammation and infection of the eyelid (also of the periorbital soft tissues), anterior to orbital septum, not involving the orbit or other ocular structures, characterized by acute eyelid erythema and edema<sup>1</sup>. This is a common infection and tends to be less severe a disease than orbital cellulitis (known as postseptal cellulitis). It may result from the spread of the upper respiratory tract infections, external eye infections, or eyelid traumas.<sup>2</sup> In preseptal cellulitis, the soft tissues anterior to the orbital septum are affected and the orbital structures posterior to the septum are not infected but may be infected secondarily causing subperiosteal and orbital abscesses. Preseptal cellulitis is usually managed medically, whereas orbital cellulitis requires an aggressive treatment and may require surgical intervention.<sup>3,4,5</sup> The correct treatment of the preseptal cellulitis during the antibiotic era makes these complications rare but the correct diagnosis and early treatment are important to prevent the life threatening complications.

### **Case Report**

A 6 year old male patient visited at Dr. Hedgewar Ruganalay, Aurangabad with complaint of swelling upper lid Right and pain with his parents on 7 Jul 2018.

Medical history of patient had taken as follows,

- H/o Swelling to Right eye lid from 8 days
- H/o difficulties in walking
- H/o chicken pox to mother while ANC at 7 months
- H/o taking anticonvulsant syrup valproic, stopped from 6 months as per pediatricians

Physical examination done; as follows

PR: 120/MIN WT: 12 KG

Blood and Urine investigation had performed on 12 Jun 2018:

Urine=normal

Blood: Hb=9.7, PLT=501, WBC-9.4P: Neutropenia with mild microcytic hypochromic anaemia.

As per report and sign diagnosis was upper lid abscess (i.e. **Pre Septal Cellulitis**)

Reviewed all reports and patient consider for anaesthesia and operation

Name of operation was I & D of abscess RE under GA

Operationelles: I & D of abscess RE upper lid done pus and sent for culture and sensitive in laboratory.

Antibiotic treatment of inj. Clavam 300mg and inj. Amikasin 200 mg was given.

General condition of patient was stable and discharged from hospital on 10 Jul 2018. Follow up after 2 days.

#### Observations:



**Figure: Week 0**

**Figure: Week 1**

**Figure: Week 2**

#### Discussion:

Direct inoculation and spread from adjacent tissues can cause preseptal cellulitis. Upperrespiratory tract infections, especially paranasal sinusitis, commonly precede orbital cellulitis and some cases of preseptal cellulitis. In 2 large case series, nearly two thirds of cases of cellulitis were associated with upper respiratory tract infection. One half of these cases were from sinusitis. The most common organisms are *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Streptococcus* species, and anaerobes, reflecting the organisms that commonly cause upper respiratory tract infections and external eyelid infections. Blood and skin culture results tend to be negative.

One study prior to the introduction of the vaccine noted that blood culture results were more likely to be positive (42%) if the patient had an upper respiratory infection and that subcutaneous aspirates were more likely to be positive (44%) if the patient had eyelid trauma or external ocular infection. Since the vaccine came into widespread use, the rate of *Haemophilus* -positive blood cultures has dropped; studies have reported that the rate of any positive blood culture is now less than 4%. The reason that the rates for bacteremia for all organisms have dropped is unclear.

A study specifically looking at periorbital and orbital cellulitis since the advent of the vaccine likewise found that the rates of Hib-related cellulitis dropped, from 11.7% to 3.5%. Total cases per year from all pathogens also declined, suggesting that *H influenzae* may have played a facilitative role in the pathogenesis of cellulitis. In an era

of concern about biologic warfare, it is also important to note that periorbital cellulitis has also been reported with smallpox and anthrax.<sup>6,7,8</sup>

Antecedent events in preseptal cellulitis may include the following recent eyelid lesions:

- Hordeola
- Chalazia
- Bug bites<sup>9</sup>
- Trauma-related lesions<sup>10</sup>
- Lesions caused by a recent surgical procedure near the eyelids<sup>[9]</sup>
- Lesions caused by oral procedures
- Dacryocystitis

Patients with preseptal cellulitis clinically complain of eye pain, redness, periorbital lid swelling, and fever. This is a typical clinical presentation. Eyelid edema, a violaceous erythema, and inflammation may be severe. Chemosis may be present in severe cases of preseptal or orbital cellulitis caused by *H. influenzae*. Focal sinus region tenderness and purulent nasal discharge may be present due to sinus infections. Black eschar within the nasal mucosa indicates a potential fungal infection. Patients diagnosed with preseptal cellulitis have intact extraocular movements and do not have proptoses that differentiate from orbital cellulitis.

Earlier diagnosis, expeditious treatment, and improved antibiotics have led to a reduction in serious ocular and central nervous system complications in patients with preseptal cellulitis. Treatment involves management of predisposing conditions, antibiotic therapy, and close observation.<sup>11</sup> Starting the antibiotic therapy at all ages should provide coverage for pathogens associated with acute sinusitis (*S. pneumoniae*, *H. influenzae*, *M. catarrhalis*, *S. pyogenes*) as well as anaerobes and *S. aureus*.<sup>12,13</sup> Preseptal cellulitis treatment is based on oral antibiotics (outpatient treatment) and antiseptic treatment locally provided that a close follow-up can be ensured. Hospitalization is recommended if there is no improvement within 48 hours (or even 24 hours), and parenterally antibiotics (broad-spectrum intravenous antibiotics) are necessary once appropriate cultures have been obtained, undergoing a CT scan to evaluate for orbital cellulitis and its complications.

Initial antibiotic selection is based on the history, clinical findings and laboratory studies, and is almost always empiric and based upon knowledge of the common infecting organisms. *Staphylococcus aureus* is the most common pathogen in patients with preseptal cellulitis resulting from trauma. The infection usually responds quickly to penicillinase-resistant penicillin. Third-generation cephalosporins or ampicillin have both a broad spectrum coverage including activity against *Haemophilus influenzae*, and should be initiated immediately after obtaining the cultures. In order to avoid contamination of the orbital soft tissue, the orbital septum should not be opened.

One of the following regimens is suggested for empiric oral treatment of preseptal cellulitis:<sup>14</sup>

- Clindamycin (in children: 30 to 40 mg/kg per day in three to four equally divided doses, not to exceed 1.8 grams per day; in adults: 300 mg every eight hours) as monotherapy
- Trimethoprim-sulfamethoxazole (TMP-SMX; in children: 8 to 12 mg/kg per day of the trimethoprim component divided every 12 hours; in adults: 8 mg/kg per day of the trimethoprim component divided every 8 or 12 hours)

- Cefdinir (in children: 7 mg/kg twice daily, maximum daily dose 600 mg; in adults: 300 mg twice daily)

The use of clindamycin alone has shown good efficacy for skin and soft tissue infections caused by staphylococci and streptococci. One of the combination regimens should be used if the patient has not been immunized against Haemophilus influenzae. Topical antibiotics have no role in the treatment of this infection.

Generally, the treatment is recommended for 7 to 10 days, but if signs of cellulitis persist, treatment should be continued until the eyelid erythema and swelling have resolved or nearly resolved.<sup>15,16</sup>

Depending on the patient condition, sinus surgery and sinus endoscopy are recommended, and for patients with orbital cellulitis, intracranial abscess drainage, orbital surgery or ethmoidectomy.

#### **Conclusion:**

Preseptal cellulitis is an inflammation and infection of the eyelid (also of the periorbital soft tissues), anterior to orbital septum, not involving the orbit or other ocular structures, characterized by acute eyelid erythema and edema. This is a common infection and tends to be less severe a disease than orbital cellulitis (known as postseptal cellulitis).

In this case study, we handled this patient carefully and given antibiotics respectively. Patient condition improved after surgery and antibiotics. It concluded that preseptal cellulitis can be managed using proper treatment.

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