

## Case Report

# A rare case of necrotizing fasciitis of eyelid in a young immunocompetent lady- case report and review of literature

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## ABSTRACT

Necrotising fasciitis of the periorbital region is a rare condition where there is destruction of the periorbital soft tissue with potential of rapid spread causing significant morbidity and mortality. It is generally seen in immuno suppressed individuals following trivial trauma. Here we present a case of periorbital necrotising fasciitis in a young immunocompetent lady with emphasis on early identification and aggressive treatment to prevent loss of vision and mortality.

**Keywords:** Necrotizing fasciitis, Periorbital, Immunocompetent

## INTRODUCTION

Periorbital necrotizing fasciitis is a rare condition of the eyelid characterized by destructive soft tissue infection along with vascular thrombosis and tissue necrosis. It is usually incited by trauma which is mostly trivial but may also occur spontaneously.<sup>1</sup> It can progress to spread rapidly causing severe morbidity including loss of vision and can lead to life-threatening septicaemia and shock. Early recognition and adequate treatment will help to save the eye and prevent mortality.<sup>2</sup> This condition usually occurs in immunocompromised individuals with multiple co-morbidities and is rare in healthy individuals. Here we present a case of necrotizing fasciitis of the eyelids in a young lady with no co-morbidities.

## CASE REPORT

A 27-year-old lady presented to the emergency department with a history of mild swelling and pain in the lateral part of the right eyelid, which rapidly progressed to involve both lids of the right eye associated with redness and pain. The vision in the right eye could not be

assessed as the swelling was tense and painful. The other examinations of right eye could also not be done at that time for the same reason. Her best corrected visual acuity in the left eye was 6/6 and N6, extraocular movements, anterior segment and fundus was normal. The swelling progressed to the frontal and temporal region, the right cheek, and then to the left periorbital region. Investigations showed raised erythrocyte sedimentation rate (ESR) and leukocytosis. The other routine investigations were normal, including sugars. Computed tomography scan (CT) of orbit and paranasal sinuses with contrast showed extensive soft tissue swelling and preseptal cellulitis of the right eyelid with no extension into the orbital cone. She was admitted and administered broad-spectrum intravenous (IV) antibiotics (ceftriaxone and amikacin). A multidisciplinary team comprising of ophthalmologists, ear nose and throat (ENT) surgeon, dermatologist, and general physician were involved in the management of the patient. The right eye swelling remained constant, but she developed gradual blackish discoloration of periorbital skin (Figure 1). The oedema around the left eye initially increased and then reduced over some time. On day 3 of treatment, she was able to

open her eye minimally, and examination showed a subconjunctival haemorrhage and bedside vision of counting fingers at more than 3 metres. During her course in the hospital, her blood counts were monitored regularly and an ultrasound scan of orbit was performed on day 3 of the antibiotic to look for abscess formation. Leukocyte counts gradually reduced and ultrasound did not show orbital abscess.



**Figure 1: Necrotising fasciitis right eye.**

In view of persisting cellulitis of right eyelid, she underwent incision and drainage on day 4 of the antibiotic following which she achieved partial eye-opening. However, the discoloration of eyelid skin persisted and she underwent surgical debridement of right eyelids under general anaesthesia on day 8. Cultures showed no growth and her blood counts were back to normal. She underwent regular meticulous dressings with oral antibiotic cover. On one of the follow up examination, her best corrected visual acuity in the right eye was 6/6, N6 and fundus examination was normal. She was also found to have an alternating exotropia which was present since childhood. The eyelid skin healed by secondary intention gradually and after a month she had good eye-opening, no visual deterioration, good eye movements, and adequate eye closure (Figure 2). There was some scarring of the lids which will be managed at a later stage.



**Figure 2: Healed periorbital skin in post-operative period.**

## DISCUSSION

Periorbital necrotising fasciitis is a rare but fatal condition requiring prompt diagnosis and immediate treatment.<sup>4</sup> It is usually seen in patients with underlying pathology.<sup>3</sup> Necrotising fasciitis involves infection and necrosis of the subcutaneous tissue and skin.<sup>5</sup> There is no age or gender predilection and there may be a history of trauma, usually trivial.<sup>4</sup> The diagnosis is usually difficult due to masked signs and therefore requires a high index of suspicion.<sup>6</sup>

The usual organisms in the etiology of necrotising fasciitis are streptococcus and staphylococcus species.<sup>7</sup> It usually occurs in patients with an immunosuppressed state like diabetes, chemotherapy, chronic illness, steroid therapy to name a few.<sup>5</sup> However, this is not a rule. In our case, the patient was young, healthy, and had no comorbidities. She did not give a history of trauma too. Spontaneous development of necrotising fasciitis in a healthy individual is rare but has been reported.<sup>8</sup> The initial presentation is usually a tense and swollen eyelid skin with pain and high-grade fever. The disease can progress rapidly in the subcutaneous tissue planes. It may take a fulminant course causing shock and multi-organ dysfunction.<sup>9</sup> The other dreaded complication is loss of vision. Therefore prompt diagnosis and treatment are important to reduce morbidity and mortality.

The investigations include blood parameters for infection, imaging of the orbit to look for the extent of the lesion, and culture studies. It has been seen that gram-positive beta haemolytic streptococcus is the most common organism, but in a few cases, the organisms may not be identified.<sup>8</sup> In our case too, the cultures did not show any growth.

A multidisciplinary approach is recommended because of the aggressive nature of the disease.<sup>9</sup> The treatment protocols include meticulous surgical debridement with intravenous antibiotics. Hyperbaric oxygen therapy has been proposed and used in the treatment of necrotising fasciitis as an adjunct to medical and surgical treatment.<sup>10</sup>

## CONCLUSION

Necrotising fasciitis of the eyelid is a rare but aggressive disease causing significant morbidity and mortality. Prompt diagnosis and aggressive treatment are the key to save the eye. A multidisciplinary approach is recommended for better outcomes.

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