Ecthyma gangrenosum (EG) is an uncommon manifestation, occurring secondary to cutaneous infection from either hematogenous seeding of a pathogen or direct inoculation through the skin. EG usually occurs in immunocompromised patients. We report a case of EG of the eyelid treated with escharotomy and skin grafting, highlighting the importance of surgical management.

Case Report

A 2-year-old Asian Indian female presented to us with mild fever and swelling of the right upper lid of 10 days duration. There was no history of diarrhea prior to the onset of the symptoms. There was no history of preceding viral illness or significant medical history necessitating treatment with antibiotics. She was previously treated with oral antibiotics and drainage of the vesicle fluid. Subsequently, edema and blackish discoloration of the right upper eyelid developed.

Ecthyma, lid necrosis, skin graft

Key words: Ecthyma, lid necrosis, skin graft

Ecthyma gangrenosum (EG) is a cutaneous infection which usually occurs in immunocompromised patients. We report a case of EG of the eyelid treated with escharotomy and skin grafting, highlighting the importance of surgical management. A 2-year-old Asian Indian female presented to us with right upper lid edema with a large necrotic area. The child received intravenous cefotaxime for a week with resolution of fever. Blood cultures were negative. The child was started on antibiotics. There was no history of diarrhea prior to the onset of the symptoms. There was no history of preceding viral illness or significant medical history necessitating treatment with antibiotics. She was previously treated with oral antibiotics and drainage of the vesicle fluid. Subsequently, edema and blackish discoloration of the right upper eye lid developed. Cutaneous anthrax was unlikely as there was no history of unexplained cattle death in her environment. On examination, the child had low-grade fever and there were no other skin lesions. Ophthalmological examination revealed right upper lid edema with a large black necrotic area of the lid which was adherent to the underlying tissues. There was surrounding erythema and edema with no discharge [Fig. 1]. The anterior segment examination was within normal limits. Left eye examination was unremarkable. The child was examined by a pediatrician to rule out any other focus of infection. Dermatological consultation yielded a diagnosis of EG clinically. Microscopic examination of the skin biopsy revealed staphylococci and hence cutaneous anthrax was ruled out. Blood cultures were negative. The child was started on intravenous cefotaxime for a week with resolution of fever.
and the necrotic area turned to a well-defined eschar with no edema and induration. After 2 weeks, the child underwent escharotomy with wound debridement and full thickness skin graft from the groin [Fig. 2]. Under general anesthesia, the groin area was cleaned and draped. The skin was harvested from the groin under strict sterile aseptic precautions. The eschar on the lid was found to be partial thickness, was excised in toto, and the wound margins were debrided. The harvested skin was placed over the lid defect and sutured with 6-0 prolene. The graft took well and suture removal was done after 1 week [Fig. 3].

**Discussion**

Bacterial invasion of the arteries in the dermis and subcutaneous tissues produces a necrotizing vasculitis. The characteristic clinical appearance of EG is a red macule that progresses to a nodular or ulcerative lesion with central area of necrosis surrounded by erythema. EG can be observed to progress through several clinical stages. The initial stage of erythema and edema is followed by painful vesicle formation. Bullae develop subsequently and become filled with mucopurulent or serosanguinous fluid. In the end stage, the lesions become hemorrhagic and slough off, leading to a necrotic eschar. Progression through these stages is rapid, typically occurring within 12–24 h. There are few reports of this condition developing in healthy individuals without any predisposing factors.

Usually, EG is associated with bacteremia, but can also occur in the absence of it. Classic EG rarely involves the periorcular tissues and to our knowledge, only a few such cases have been described in the literature. Maccheron et al. presented a case of EG that led to orbital cellulitis and panophthalmitis. Watson and Sloan described a case of EG secondary to *Pseudomonas* dacryocystitis. Inamadar et al. described a diabetic individual who developed severe periorbital EG after suffering a laceration to the forehead. Ghosheh and Kathuria reported a case of bilateral periorbital EG in a diabetic male with renal failure. The mortality rate in nonsepticemic cases varies between 0% and 15% compared with 20–96% for those associated with septicemia.

Our patient had unilateral EG secondary to staphylococcal infection. She had no bacteremia. The closest differential diagnosis in our case was necrotizing fasciitis, but on the basis of clinical features and negative blood cultures, a diagnosis of EG was entertained in this case. The diagnosis of necrotizing fasciitis depends on clinical features, blood cultures, and Gram stain to identify causative organisms and these patients usually have septicemia with positive blood cultures. The eschar formed following antibiotic administration was a full thickness eschar adherent to surrounding tissues and the lesion caused ectropion and mechanical ptosis, which blocked the pupil. Considering the possible complications of scarring including entropion or ectropion, trichiasis, corneal exposure, and amblyopia in the child, surgical intervention was indicated. To the best of our knowledge, there are no reports of skin grafting being done as a treatment modality for EG.

Our patient was atypical in that EG was due to methicillin-resistant staphylococcal infection in contrast to all the four reports where there was *Pseudomonas* infection. Our child had better survival with good postoperative outcomes because there was no bacteremia. The case also highlights the need of early surgical intervention in such circumstances so as the probable sequelae of scarring of upper eye lid, resulting in mechanical ptosis which can result in stimulus deprivation amblyopia can be prevented.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other
clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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