Periorbital necrotizing fasciitis due to *Klebsiella pneumoniae* in an immunocompetent patient

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Key words: Klebsiella pneumonie, periorbital necrotizing fasciitis, pre-septal cellulitis of the eyelid

A 52-year-old female presented with complaints of bilateral painful lid swelling since 2 days. On examination, there was bilateral lid edema with periocular skin necrosis and eschar formation [Fig. 1a]. The necrotic skin had a wooden consistency (like a thick tree bark) and was insensitive to tactile and painful stimuli. A clinical diagnosis of periorbital necrotizing fasciitis (PNF) was made and immediate surgical debridement was performed. During surgery, debridement was done till plane of vital tissue (identified as petechial hemorrhages and till nociceptive stimuli elicited a positive response) was reached [Fig.1b]. Evaluation of the debrided tissue and the purulent discharge showed the presence

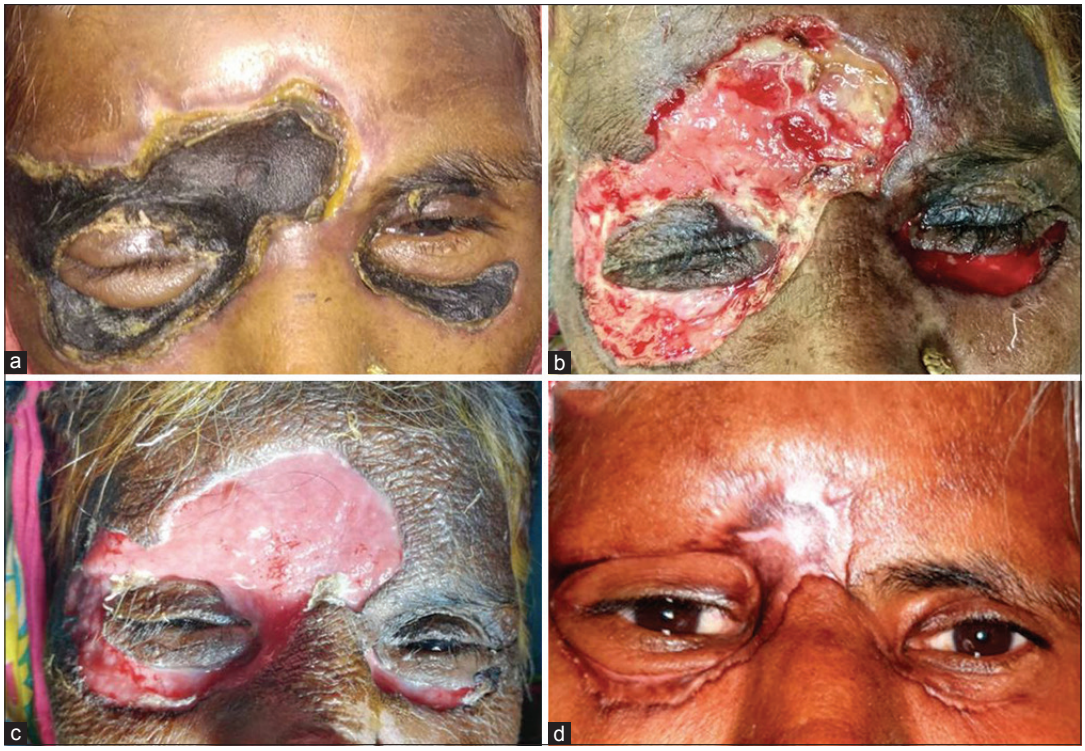

Figure 1: (a) Periorbital necrotizing fasciitis at presentation (b) Immediate post debridement with vital tissue in the wound bed (c) Healthy pink granulation tissue can be seen at the bed of the healing ulcer (d) Complete resolution of skin defect and scar formation

Access this article online	
Quick Response Code:	Website: www.ijo.in
	DOI: 10.4103/ijo.IJO_360_19

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Manuscript received: 22.02.19; Revision accepted: 26.04.19

Cite this article as: Sud R, Sharma P, Garg G, Takkar B, Khanduja S. Periorbital necrotizing fasciitis due to *Klebsiella pneumoniae* in an immunocompetent patient. Indian J Ophthalmol 2019;67:1721-2.

of Gram-negative bacilli, and parenteral amikacin was administered. Subsequently, microbial cultures grew *Kleibsella pnuemoniae* sensitive to amikacin. Complete blood counts were normal and serology was negative for HIV. Daily wound care with slough removal from wound base, excision of new necrotic skin at the margins, and wound dressing with gauze soaked in povidone iodine and amikacin was done. Parenteral amikacin was continued for two weeks till no pus could be exuded from the ulcer margin following tactile pressure, and till the ulcer base stopped sloughing. Subsequently, healthy granulation tissue was observed at 1 month [Fig. 1c], and spontaneous scar formation with resolution of the cutaneous defect by 2 months aided by conservative local therapy [Fig. 1d].

PNF usually occurs after trauma (75% have a positive history), especially in immunocompromised patients. It carries a high risk of mortality.[1,2] *Streptococcus* is the most common single organism responsible, followed by *Pseudomonas*. To our knowledge, this is the first report of PNF due to *Kleibsella pnuemoniae.* PNF has few peculiar features and different behavior from necrotizing fasciitis elsewhere in the body. The blood rich orbicularis acts as a barrier to the spread of infection to the orbit. Since the dermis is attached to the nasojugal fold medially and malar fold laterally there is some resistance to the spread of infection to the cervicofacial region. However, if these barriers are breached, the infection spreads rapidly to the thoracic skin leading to further complications such as septicemia, toxic shock, and multiorgan failure. Tissue healing in PNF is accompanied by cicatrisation which may lead to ectropion and exposure keratopathy, and require lid surgeries for rehabilitation.[2]

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.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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