A Case of Pseudemonal Keratitis is a 63% TBSA Burn

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Background

- Bacterial keratitis is a rare but serious medical condition that carries a significant risk of corneal scarring and severe visual disability if aggressive and appropriate therapy is not promptly initiated
- A variety of bacteria have been isolated from patients with keratitis and it is postulated that these derive from local environmental sources
- Predisposing factors include extended use of contact lenses, ocular procedures, ocular disease and ocular injury

- Pseudemonas aeruginosa is a gram negative opportunistic pathogen
- The pathogenesis of *P. aeruginosa* is due to the production of several cell-associated and extracellular virulence factors
- Virulence factors most associated with ocular damage in *P. aeruginosa* include cytotoxins ExoU and ExoS, elastase B, alkaline protease, protease IV and *P. aeruginosa* small protease

- Proteases contribute to pathogenesis in keratitis through destruction of connective tissue and degradation of host immunological factors
- To our knowledge, there has been no reported instance of pseudemonal keratitis developing after burns to the face

Figure 1: Day 31 post burn – pseudemonal keratitis

Case report

- We report a case of a 26-year-old male who developed pseudemonal keratitis during an acute burn admission following a house fire in 2011
- The patient sustained full thickness facial burns as part of an injury totaling 63% total body surface area (TBSA)
- During the admission he developed pseudemonal septicaemia and was noted to have new onset bilateral corneal opacifications and purulent ocular discharge on day 8
- A diagnosis of severe fulminant bacterial keratitis was made and pseudemonas aeruginosa was grown from corneal scrapings
- Visual acuity slowly improved with antimicrobials however he later developed exposure keratopathy secondary to cicatrial retraction from the burn
- This was initially managed with splints however 18 months later he required bilateral ectropion release and eyelid grafting
- On review 6 years post burn his visual acuity had improved to 6/9 bilaterally and he complained of only mild ongoing discomfort

Conclusion

- Although rare, this case demonstrates the potentially severe and multifaceted nature of ocular sequelae resulting from facial burns