Journal of Plastic, Reconstructive & Aesthetic Surgery (2012) 65, 106–109

JPRAS
An International Journal of Surgical Reconstruction
www.JPRASurg.com

CASE REPORT

Periorbital necrotising fasciitis following cutaneous herpes zoster

Victoria Fung*, Yosanta Rajapakse, Paolo Longhi

Department of Plastic Surgery, University Hospital of North Durham, North Road, Durham DH1 5TW, UK

Received 14 June 2011; accepted 21 June 2011

KEYWORDS
Necrotising fasciitis;
Herpes Zoster;
Shingles;
Periorbital

Summary Necrotising fasciitis is a rare severe infection of the soft tissues and deep fascia, which is associated with a significant level of mortality. Involvement of the head and neck is uncommon, and necrotising fasciitis of the periorbital area even rarer. We present a case of bilateral periorbital necrotising fasciitis following shingles in an otherwise healthy immunocompetent patient.

Case report

Sixty-three-year-old Mrs A initially presented to her general practitioner, having developed swelling, pain, erythema and superficial blistering overnight in the distribution of the ophthalmic branch of the right trigeminal nerve (CNV_1). A diagnosis of shingles was made and she was subsequently prescribed oral acyclovir.

Her only relevant medical history was discoid lupus(never needing immunosuppressive treatment), ischaemic heart disease requiring cardiac stenting and a right total knee replacement.

In the subsequent 48 h, the swelling, pain and erythema spread to the contralateral side, and she was admitted to the medical assessment unit with presumed bilateral periorbital cellulitis. She was apyrexial but hypotensive, requiring fluid resuscitation, and was commenced on intravenous clindamycin (600 mg TDS). (She reports an urticarial rash following penicillin).

Blood tests showed a neutrophilia of $24.9 \times 10^9\ l^{-1}$, an elevated prothrombin time of 16.7 s and a C-reactive protein of 319 mg l^{-1}. Serum urea and creatinine were moderately elevated, but she was not acidotic. Computed tomography of her head showed no evidence of sinus involvement, with oedema in the soft tissues consistent with a diagnosis of cellulitis.

Eighteen hours after admission, she began to develop blistering and necrosis of the upper eyelids bilaterally and right forehead (Figure 1). She was referred to the plastic surgery department, and was taken for prompt debridement for suspected necrotising fasciitis. At the time of surgery, the forehead blistering was found to be superficial, with no apparent involvement of the subcutaneous fat,

* Corresponding author. Tel.: +44 7717 281 733.
E-mail address: vf@doctors.org.uk (V. Fung).

1748-6815/$ - see front matter © 2011 British Association of Plastic, Reconstructive and Aesthetic Surgeons. Published by Elsevier Ltd. All rights reserved.
doi:10.1016/j.bjps.2011.06.034

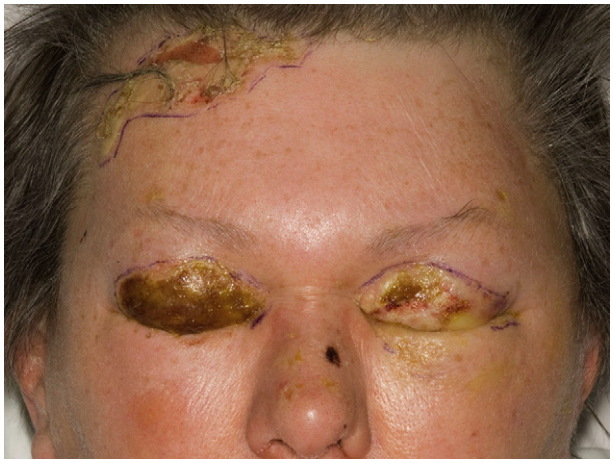

Figure 1 Extent of necrosis at 18 hours after admission.

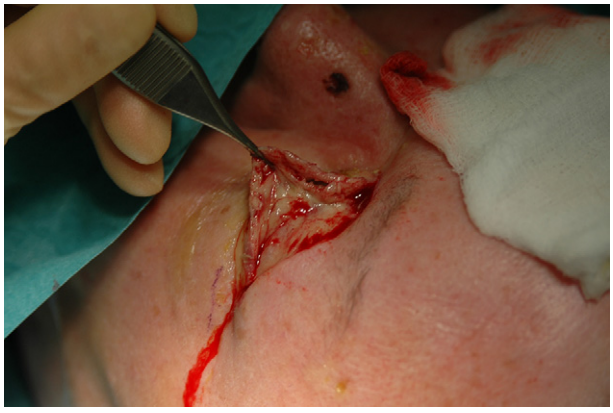

Figure 2 Necrosis of the anterior lamella at time of surgical debridement.

fascia or muscle. However, debridement of the upper eyelids and right lower eyelid showed substantial necrosis of the skin, pretarsal orbicularis muscle, orbital septa, fat pads and parts of levator aponeurosis in the upper lids (Figure 2). The tarsal plates, conjunctivae, lid margins and canthal tendons were viable. There was no apparent involvement of the nose, cheeks, brows or forehead. All tissue biopsies were reviewed by a consultant pathologist. Specimens taken from the forehead showed non-specific epidermolysis only, but samples from the eyelids showed group A haemolytic *Streptococcus pyogenes* infection with histolopathological features suggestive of necrotising fasciitis, in keeping with the clinical picture.

She spent 24 h in the intensive care unit for cardiovascular monitoring, and was subsequently transferred to the plastic surgery ward, where she continued to receive intravenous clindamycin (1.2 g QDS) and ciprofloxacin (400 mg BD). She underwent further debridement at 5 days, and subsequent full-thickness skin grafting to the upper lids at 12 days. Throughout her admission, she received regular ophthalmology review; visual acuity and ocular movements remained normal at all times.

The skin grafts healed without complication; when last reviewed 3 months after discharge, there was no evidence of ectropion, levator dysfunction or ocular injury. Her postoperative photographs display fully healed grafts with complete eye closure (Figures 3a,b and 4).

Discussion

Necrotising fasciitis is a potentially life-threatening infection of the subcutaneous tissues rapidly extending along fascial planes. It is associated with a significant mortality rate, reported between 20% and 50%,[1] and is therefore regarded as a surgical emergency. It is a rare condition, seldom occurs in the head and neck[1] and is even rarer in the periorbital region. Fewer than 50 isolated cases have been reported in the literature worldwide,[2] and have commonly implicated immunosuppression, alcohol excess, trauma, polymyositis and surgical exposure as triggering factors.[3] Diagnosis is challenging, as it may be difficult to differentiate from preseptal or orbital cellulitis, and delayed treatment may result in blindness, meningitis and death.[3] In this case, the development of necrosis within an area of blistered cellulitis led to prompt diagnosis and treatment.

The areas of necrosis are limited in the periorbital region because of anatomical barriers and variations in blood supply. The eyelid skin is very thin, with little subcutaneous fat, so necrosis following infection becomes quickly visible. The orbicularis muscle acts as a barrier for deep full-thickness spread. Thicker dermis at the eyebrows and malar

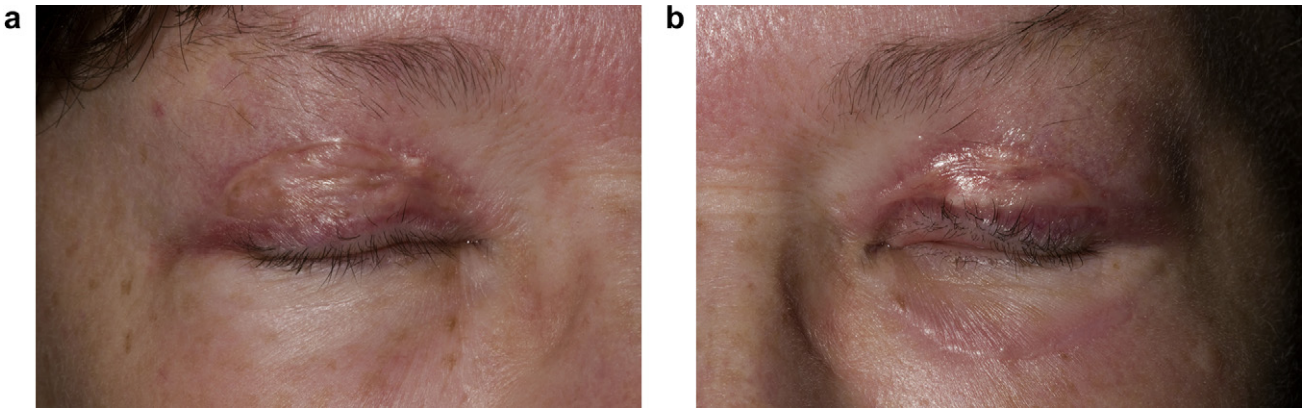

Figure 3 Fully healed skin grafts with complete eyelid closure after 3 months.