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Erosive pustular dermatosis: New description of a possible cause of the non-healing burn wound

Sammy Al-Benna [a,*], Kirsty Johnson [a], William Perkins [b], Ciaran O'Boyle [a]

[a] Department of Plastic, Reconstructive and Burns Surgery, City Campus, Nottingham University Hospitals NHS Trust, Nottingham, United Kingdom

[b] Department of Dermatology, Queen's Campus, Nottingham University Hospitals NHS Trust, Nottingham, United Kingdom

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ABSTRACT

Introduction: Erosive pustular dermatosis (EPD) is a cutaneous condition, characterised by sterile pustular lesions, erosions and crusting. Extensive or infected disease may result in scarring. EPD has never been reported following burn. The aim of this study was to describe the presentation and management of EPD complicating burns wounds.

Methods: A consecutive series of EPD cases secondary to burn.

Results: Six cases were identified. In each case, erosive lesions and crusts were located at the site of burn or at the site of split skin grafting after tangential burn excision. All cases presented as failure to heal or repeated wound breakdown, despite standard burn wound management. Pain was a significant feature in all cases. Microbiological cultures demonstrated either benign colonising bacteria or no pathogens. Time to EPD diagnosis by the interdisciplinary team was 126 ± 27 days (mean ± SEM). Topical therapy with short course, potent corticosteroids resulted in clinical remission in 15 ± 2 days (mean ± SEM) without clinical relapses after 15 ± 4 months (mean ± SEM).

Conclusion: EPD may occur following burns. EPD should be considered in the differential diagnosis of a non-healing burn wound and resolves readily with topical potent corticosteroid therapy.

1. Introduction

Erosive pustular dermatosis (EPD) is a cutaneous inflammatory disease of unknown aetiology characterised by sterile pustules, chronic crusted erosions with progressive scarring and skin atrophy [1]. Since its original description in 1977 [2], approximately 150 cases have been published, most of which have involved the scalp [3]. Diagnosis of EPD has been described as difficult, due to the lack of specific histological features [4]. The differential diagnosis of EPD includes bacterial or fungal infection, pemphigus, squamous cell carcinoma, and dermatitis artefacta [1,5,6]. EPD onset following prior trauma has been described, but has never been reported following burns [7–9]. The authors present the first evidence of cases of EPD complicating burns, including its presentation and management in a regional burns unit in the United Kingdom.

* *Corresponding author at*: Department of Plastic, Reconstructive and Burns Surgery, Nottingham University Hospitals NHS Trust, Hucknall Road, Nottingham NG5 1PB, United Kingdom. Tel.: +44 0115 969 1169; fax: +44 0115 962 7839.

E-mail addresses: sammyalbenna@doctors.org.uk, sammyalbenna@googlemail.com, sammyalbenna@yahoo.co.uk (S. Al-Benna).

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Table 1 – Patient demographics.

Patient number	Age [y]	Sex	Burn total body surface area [%]	Burn mechanism	EPD characteristics	Time to EPD diagnosis [d]	Time to healing post-steroid treatment [d]	Microbiology
1	34	Male	24%	Flame	Failure to heal. Pustules and crusted erosions.	61	21	Mixed colonising bacteria
2	65	Male	2%	Scald	Repeated wound breakdown. Pustules, erosions, scarring, skin atrophy.	187	13	Mixed colonising bacteria
3	6	Male	2%	Scald	Repeated wound breakdown. Pustules and crusted erosions.	102	21	No pathogens isolated
4	31	Male	21%	Flame	Repeated wound breakdown. Pustules and crusted erosions.	161	12	Mixed colonising bacteria
5	40	Female	3%	Scald	Failure to heal. Pustules and crusted erosions.	37	10	Mixed colonising bacteria
6	2	Female	9%	Scald	Repeated wound breakdown. Pustules and crusted erosions.	198	14	No pathogens isolated

2. Objective

The aim of this study was to describe the presentation and management of EPD complicating burn wounds at a UK regional burns unit.

3. Methods

This study design was a consecutive series of patients who sustained burns and were subsequently diagnosed with EPD complicating their burn wounds. All patients were treated at Nottingham University Hospitals NHS Trust Burns Unit, Nottingham, United Kingdom. Data collected included: significant clinical features; clinical photographs; microbiology reports; medical treatments and dressings used. Clinical notes and photographs were reviewed and were recorded. Following hospital discharge, the process of burn wound healing was assessed and managed on an outpatient basis at the Unit's Specialist Burns Dressings Clinic. Burn wounds were evaluated, documented and photographed at each clinic visit. Swabs were taken from non-healing areas at each evaluation and sent for microbiological analysis. Burn care followed a regionally agreed protocol, including cleansing and non-adherent primary dressings (Mepitel™, Molnlycke Health Care, Gothenburg, Sweden).

EPD was an interdisciplinary diagnosis, involving attending physicians (consultants) from both burns surgery and dermatology. This diagnosis was made in cases of burn wounds and skin grafted areas that had initially healed, but had broken down, or exhibited repeated episodes of subtotal healing, followed by breakdown. In each case, infection was excluded, or courses of antibiotics appropriate to the wound flora had failed. Diagnosis was clinical in each case. Wound biopsy was not performed. Data are presented as mean ± SEM.

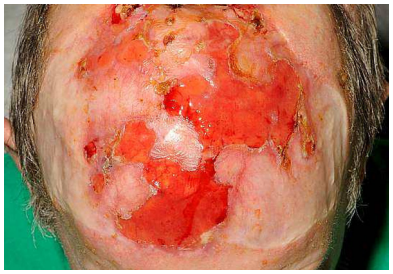

Fig. 1 – Erosive pustular dermatosis. Atrophic, pustular, erosive and crusted lesions of the scalp of patient 2.

4. Results

Six patients with burns subsequently developed EPD (Table 1). The mean age was 30 ± 9 years. Four were male (67%) and two were female (33%). Four (67%) were scald burns and two (33%) were flame burns. The mean total body surface burned was 10 ± 4%. Affected body areas were: upper limbs (60%), lower limbs (20%) and scalp (20%). Every case was characterised by a failure to heal or repeated wound breakdown. All four adult patients described their wounds as being painful or very painful. The two affected children displayed behaviours that strongly suggested that their wounds were painful, despite

Fig. 2 – Erosive pustular dermatosis. Pustular, erosive and crusted lesions of the right arm of patient 3.