

FLAMINAL® IN THE MANAGEMENT OF A DEEP CHEMICAL BURN WOUND

Dr. Osama Ahmed Badawy Meawad - MRCS_ENG 2010. Consultant of General Surgery @ MOH In Egypt. Currently Consultant of General Surgery In Ksa Makkah-
Alsaedy General Polyclinics. Osamabadawymeawad@ymail.com

Introduction

This case study describes the management of Mr T a 38-year-old male, who presented with severe unrelenting pain from a chemical burn to his right hand and forearm, following exposure at work three days earlier to sodium hydroxide, a powerful chemical with many aliases: NaOH, lye and caustic soda¹. Suboptimal first aid was administered in the workplace in the form of irrigation with water for several minutes, application of cream and advice to leave the area exposed and to take pain killers. Mr T was unable to tolerate the pain and thus presented to the clinic three days post injury.



Day 3 after burn injury



Day 10



3 weeks (switched to Flaminal Hydro)



5 weeks

Method

Mr T had a history of venous thrombosis, treated with Warfarin 5mg and Low Molecular Weight Heparin. On examination Mr T's right hand and distal forearm were oedematous and inflamed with an irregular sloughy and exuding wound covering the dorsum of his hand; the surrounding skin was charred and erythematous. Mr T admitted that he had been unable to sleep for the past three nights due to the severe and unrelenting pain. Clearly the delay in receiving early appropriate treatment had caused further tissue trauma and uncontrolled pain for Mr T as well as potentially compromising ultimate healing. Mr T had an alkali chemical burn of approximately 1% TBSA (Total Body Surface Area).

The aims of treatment were to control Mr T's pain, autolytically debride the sloughy tissue and manage the exudate whilst protecting the surrounding skin from excoriation. An important consideration in burn management is the risk of increased microbial virulence and/or numbers leading to infection.

For a period of 3 weeks Flaminal® Forte was applied to deslough, manage the exudate, control pain and reduce the bioburden; with Mr T's dressing being changed three times a week for the first 3 weeks. Vaseline gauze was applied as a secondary dressing, secured with an elastic bandage to help reduce the oedema.

Results

Mr T tolerated the dressing regimen well and there was a marked improvement evident within one week with a reduction in devitalised and sloughy tissue within 3 weeks when the treatment plan was revised as the exudate had also reduced. Treatment continued with Flaminal® Hydro, applied every 4-5 days for a further 2 weeks until the wound was clear of slough and granulation tissue evident.

Discussion

Burns are one of the most common occupational injuries as a result of heat, electricity or chemical exposure, with the wrist and hand the most common sites for severe burns². A notable issue with chemical burns is that as long as the chemical remains in contact with the skin, the burning process will continue³. A characteristic feature of chemical burns is the prolonged period during which the burning effect continues after the initial injury with the extent of damage correlating with time of exposure. Sodium hydroxide (which is alkali), is often the active agent in cleaning solutions but is also used in the manufacturing of products like textiles, cellophane and paper. It can cause severe burns to the skin and serious tissue damage to the eyes or if inhaled to the lungs.⁴

Pain control, continuous debridement, exudate management and prevention of infection were important considerations when devising any treatment plan for Mr T. Flaminal® (Flen Health) products are enzyme alginate gels containing an antimicrobial enzyme system and thus capable of absorbing excess exudate (whilst remaining in a gelled state), promoting continuous debridement and controlling bioburden as well as providing pain relief⁵. Flaminal® comprises hydrated alginate polymers in a polyethylene-glycol (PEG) matrix embedded with the enzymes glucose oxidase and lactoperoxidase to control bioburden.⁶

Conclusion

Exudate control, pain relief, autolytic debridement of slough and reduction in bioburden of the wound were facilitated by Flaminal® in the management of Mr T's chemical burn wound. Flaminal® was a product that could be utilised throughout the healing trajectory resulting in a good outcome for the patient.

References

1. Palao R, Monge L, Ruiz M, Barret JP (2010) Chemical burns: Pathophysiology and treatment Burns 36:295-304
2. Islam SS, Nambiar AM, Doyle EJ et al (2000) Epidemiology of work-related burn injuries: experience of a state-managed workers' compensation system. Journal of Trauma 49 (6): 1045-1051
3. Moore K (2015) Hot Topics: chemical burns in the emergency department. Journal of Emergency Nursing 41(4): 364-365
4. Robinson EP, Chhabra B (2015) Hand chemical burns Journal of Hand Surgery America 40 (3): 605-612
5. Durante CM (2012) An open label non-comparative case series on the efficacy of an enzyme alginate gel. Journal of Wound Care 21 (1):22-26
6. White R (2006) Flaminal: a novel approach to wound bioburden control. Wounds UK 2 (3): 64-9