

Second degree burn treated with Curefini™ ointment and PVC film: an accessible wound care strategy in developing countries



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Finding accessible and affordable natural products that are medically tested treatment options for domestic burns must be a priority for developing countries. This should be accompanied by educational first aid strategies. This paper discusses the benefits of Curefini™ (Pure Source) ointment for burns. Curefini contains polyunsaturated fatty acids and beeswax with anti-inflammatory and tissue repair properties. The author reports a case of a woman with a second degree burn treated with a combined treatment of gauze impregnated with Curefini and PVC film. After 6 weeks of treatment, a complete recover in both elasticity and normal appeal of the skin was achieved. No contracture or scars were observed. This case highlights the restorative capacity of a product based on natural active ingredients, which managed to stimulate complete structural and functional recovery of the skin after a superficial second degree burn injury.

Domestic burns are common, and predominantly affect women and children, especially in developing countries. Education about burn prevention at home and first aid is of fundamental importance. Immediate treatment steps for burns can prevent serious scarring that can hinder normal function and cause disfigurement (WHO, 2018; Jeschke et al, 2020).

The use of readily available, natural healing products as topical ointments, combined with PVC clingfilm to cover wounds, could be useful for the treatment of open burns. These products can also reduce the need to use topical antibiotics, antiseptics and anti-inflammatory drugs.

Curefini™ ointment

Curefini™ ointment (Pure Source) is a dermal ointment enriched with polyunsaturated fatty acids and beeswax, ingredients with anti-inflammatory and tissue repair properties [Figure 1]. It also contains sunflower oil and sweet almond oil.

Polyunsaturated fatty acids (PUFAs), such as the omega-3 found in cod liver, act by

decreasing skin swelling through inhibiting the production of pro-inflammatory eicosanoids and competitively inhibiting the formation of arachidonic acids. The PUFAs derived from cod liver have also antibacterial properties and help to reduce wound infection (Holmen Terkelsen et al, 2000; Burt, 2004). Cod liver oil was extensively used in the mid 1950s to speed up healing of post-surgical wounds and showed great capacity to reduce the rate of dehiscence, hypertrophic scar and persistent redness (Lenson, 1956; Bond et al, 2008; Huang et al, 2018).

Beeswax is known for its antibacterial and wound healing properties (Frattini et al, 2016; Cornara et al, 2017).

Sunflower oil contains large amounts of linoleic acid; this has been shown to restore the capacity of the cutaneous barrier, to have anti-inflammatory properties and to work as an antibacterial barrier (Darmstadt et al, 2004; Marques et al, 2004; Guo et al, 2017).

Sweet almond oil has barrier repair and antipruritic properties (Hajhashemi et al, 2018).

The combination of medicinal beeswax and cod liver oil in ointments has been used with success in wound treatment in veterinary

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Figure 2. The healing process of the scald burn in the case study.



Figure 1. Curefini ointment.

medicine, maintaining the required humidity which allows the keratinocytes to roll from the wound margins and hair follicle regions and also preventing bacterial colonisation (Ahmed et al, 2017; Addisu, 2018).

Curefini was previously tested on a porcine model for second-degree burns and showed the ability to control the inflammatory process and promote the development of a more resistant skin layer in the affected area (Davis et al, 2014).

Curefini is currently used in paediatric patients with recessive dystrophic epidermolysis bullosa (Manzur et al, 2018).

Case study

A 51-year-old woman presented with a scald burn on her hand from boiling oil, sustained 4 days earlier. She had no clinical records of health problems. On presentation, she was still having extreme levels of pain. The skin colour was initially red, followed by blistering, with a serum-filled blister measuring 7 × 4 cm. The base of the wound was red, with purple tissue surrounding it [Figure 2a].

Initially, the patient had placed her hand under cool running water to relieve pain and covered her hand with a gauze dressing. The blister broke spontaneously [Figure 2b]. She was then treated in the emergency department, where the blister was debrided and the wound was treated with silver sulfadiazine and lidocaine, with a sterile gauze dressing.

Her spontaneous and incidental pain did not improve, so she decided to seek a consultation with the dermatology department on day 4.

On physical examination, there were no signs

of infection, the wound bed was bright red and there were no tissue fragments or cellular debris. The mobility of her fingers was limited by pain [Figure 2c].

The treatment protocol was changed to Curefini ointment, using a thick layer on a sterile dressing on the wound, and a secondary dressing of PVC clingfilm. Curefini was chosen because of its natural compounds, as well as having an unctuous vehicle capable of remaining on the wound. Occlusive wound covering provided by the impermeability of PVC clingfilm has been demonstrated to reduce exposure to the environment (Toriyabe et al, 1999; Zhai and Maibach, 2007).

A daily dressing change was prescribed, which the patient performed at home. Twenty-four hours after onset of treatment, patient experienced significant pain relief, which allowed her to sleep, and she was able to start moving her hand. Over the following days, the intense red colour turned pink [Figure 2d–2f].

At 3 weeks, 80% of the wound had re-epithelialised [Figure 2g]. Wound treatment continued for 4 weeks, because she still had pain when the wound was uncovered or touched. At the end of 6 weeks, the skin showed normal thickness reporting no scarring, contracture or hypersensitivity. She had recovered her range of motion and could flex and extend her finger and close her hand into a fist [Figure 2h]. No infection developed at any stage.

Discussion

This single case of a hand burn was successfully treated with Curefini ointment. The patient's

pain was controlled, moist wound healing was present, the wound bed re-epithelised fully and she regained hand function.

Curefina contains natural products, including beeswax and cod liver oil, which are anti-inflammatory and antibacterial, offering an alternative to antibiotics or corticosteroids.

Occlusive wound healing has advantages, including autolytic debridement, visibility of the periwound through the PVC dressing, reduced pain because the wound is covered and easy and atraumatic dressing change (Horikoshi et al, 1985; Ngo et al, 2007; Tansil Tan et al, 2019).

Conclusion

In this case, Curefina ointment maintained a moist wound healing environment and aided healing of this burn wound. The use of Curefina ointment in other inflammatory and desquamated skin states should be considered and investigated.

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References

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