

BRIEF REPORT

Face-masks for facial atopic eczema: Consider a hydrocolloid dressing

Marius Rademaker

Department of Dermatology, Waikato Hospital, Hamilton, New Zealand

ABSTRACT

Facial involvement of atopic eczema in young children can be difficult to manage. Chronic scratching and rubbing, combined with parental reluctance to use topical corticosteroids on the face, often results in recalcitrant facial eczema. While wet wraps are a useful management option for moderate/severe atopic eczema involving the trunk and limbs they are difficult to use on the face. We describe the use of a face-mask using a widely available adhesive hydrocolloid dressing (DuoDerm extra thin) in three children with recalcitrant facial atopic eczema. Symptomatic control of itch or soreness was obtained within hours and the facial atopic eczema was markedly improved by 7 days. The face-masks were easy to apply, each lasting 1–4 days. One patient had a single adjuvant application of a potent topical corticosteroid under the hydrocolloid dressing. All three patients had long remissions (greater than 3 months) of their facial eczema, although all continued to have significant eczema involving their trunk and limbs. Face-masks made from hydrocolloid dressings, with or without topical corticosteroids, are worth considering in children with recalcitrant facial eczema.

Key words: children, compliance, dermatitis, topical corticosteroid, treatment, wet wrap.

INTRODUCTION

Wet wraps and other bandaging techniques are well-established treatments for moderate to severe atopic eczema in children, particular when pruritus and uncontrollable

scratching are a significant component of the disease.^{1–5} Wet wraps are commonly used with emollients, topical corticosteroids and/or tar/ichthamol preparations. Unfortunately, they are difficult to use on the face. Mummy-style face-masks have been used with success in the hospital environment, but are rarely appropriate at home.^{3,4} They require a significant level of nursing skill and are often not cosmetically acceptable to the child, and there is a risk of suffocation. Wrestling-style masks (e.g. as used in facial burns), require bespoke manufacture and are expensive. DuoDerm extra thin (ConvaTec, Skillman, NJ, USA) is a widely available adhesive hydrocolloid dressing that is easily fashioned into the required shape. We describe the use of this dressing to fashion face-masks for the management of children with recalcitrant facial eczema.

CASE SERIES

Three children (two girls), aged 3, 4 and 4½ with significant facial involvement of atopic eczema were treated with face-masks made with DuoDerm extra thin dressings. All three had had atopic eczema from 6–9 months of age and had been treated with various emollients, potent to super potent topical corticosteroids (betamethasone valerate to clobetasol propionate) on the trunk and limbs and mild to moderate potent topical corticosteroids on the face (1% hydrocortisone cream to 0.1% hydrocortisone butyrate). All three had had between one and four episodes of secondary infection of the face with *Staphylococcus aureus* and one child had had an episode of facial eczema herpeticum. These had been treated with 7–14 days of the appropriate antibiotic or antiviral; one child had, in addition, received a 3-month course of flucloxacillin. All three children had significant lichenified facial eczema.

Compliance with emollients and mild potency topical corticosteroids had been sporadic, as all preparation appeared to sting or hurt the child's faces (including cetomacragol cream, Vaseline [Unilever, Sydney, NSW, Australia] 50% white soft paraffin: 50% liquid paraffin, etc.). All three children continuously rubbed their faces during the dermatology consultation; none had clinically evident secondary infection.

Three pieces of DuoDerm extra thin dressing were fashioned to be able to cover the forehead (from below the scalp margin to above the eyebrows) and both cheeks (to within

Correspondence: Professor Marius Rademaker, Department of Dermatology, Waikato Hospital, Waikato District Health Board, Private Bag 3200, Hamilton, 3204, New Zealand. Email: rademaker@xtra.co.nz

Marius Rademaker, DM.

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Figure 1 Hydrocolloid face mask in place (Photograph courtesy of Dr Sarah Hill).

3 mm of the lower eyelid, and upper lip and abutting onto the side of the nose) (Fig. 1). The nose and chin were left uncovered, but a fourth dressing could be applied to the chin (from the angle of the jaw to below the lower margin of the lip). All three children were initially reluctant to have any treatment to their face, but after the forehead dressing was applied, and found not to sting or irritate, they allowed the remaining dressings to be applied to the cheeks. The itch ceased almost immediately. A 5x10 cm piece of Duoderm extra thin currently costs NZ\$1.43.

The edges of the dressings became detached during the first night because of nocturnal rubbing, but were replaced by the mother the next morning. These dressings each lasted between 2–4 days before needing to be replaced. One patient had a single application of betamethasone valerate cream applied to the face 30 min prior to the first face-mask (to allow time for the steroid to be absorbed without affecting the adherence of the hydrocolloid dressing).

The face-masks were continued for 5, 7 and 14 days, with major clearing of the facial eczema. They were well tolerated by the children, including the 4½-year old who was attending kindergarten. He was reluctant to stop the dressings after day 14. The children's facial eczema remained largely in remission, despite continuing to have active atopic eczema elsewhere.

One child appeared to have a rapid relapse 3 days after stopping the face-mask, but it was evident that she had once again developed eczema herpeticum (her mother had an active labial herpes simplex infection at the time). This settled with oral acyclovir and a further 4 days of treatment with the face-mask, once the child's herpes simplex infection had been treated.

DISCUSSION

Recalcitrant facial atopic eczema in young children can be a therapeutic challenge. They often become non-compliant with topical preparations, including simple emollients, as the skin barrier function has become so disturbed that all topical applications either sting or hurt. In addition, the children's caregivers are often reluctant to use topical corticosteroids. This reluctance may not be entirely inappropriate, as the prolonged use of emollients and topical corticosteroids can further disrupt the barrier function.^{5–7}

Systemic corticosteroids and ciclosporin are usually very effective in this scenario but they need to be continued for a number of weeks to allow for improvement in the barrier function. When dermatology departments had ready access to inpatient facilities these children were often admitted for daily bandaging, including full mummy-style face-masks.⁵

Hydrocolloid dressings are biodegradable, often non-breathable and adhere to the skin. The active surface of the dressing is coated with a cross-linked adhesive mass containing a dispersion of gelatin, pectin and carboxymethylcellulose together with other polymers and adhesives forming a flexible wafer. In contact with wound exudate, the polysaccharides and other polymers absorb water and swell, forming a gel that is held within the structure of the adhesive matrix. The moist conditions produced under the dressing are intended to promote fibrinolysis, angiogenesis and wound healing, without causing the softening and breaking down of tissue. Most hydrocolloid dressings are waterproof, allowing normal washing and bathing.

There is a small body of literature on using these types of dressings to enhance the delivery of topical corticosteroids for a variety of inflammatory dermatosis in adults^{8–10} but they do not appear to have been reported in the management of facial atopic eczema in children. So far, in this small series of three children, it has been very successful. The hydrocolloid dressings were simple to shape by cutting with scissors and were sufficiently adherent to last for several days but were not so sticky as to cause trauma on their removal. It was relatively easy to instruct the caregivers to apply the dressings themselves at home. The dressing can be used in conjunction with topical corticosteroids, although these should be applied 30 min–1 h before the face-mask, so as not to interfere with adherence.

The mechanism of action of the face-mask is unclear. It clearly breaks the itch, scratch, itch cycle, but whether it has a direct anti-inflammatory effect or just improves the skin barrier function is unknown. The length of remission was surprising, as all three children continued to have moderate flexural eczema requiring ongoing treatment. Potential complications include secondary infection, irritant and allergic contact dermatitis.¹¹ Care should be taken to pre-treat any secondary infection. Prolonged use of these dressings should also be discouraged, as they paradoxically may reduce the barrier function long-term.^{7,12} We have so far used this in only three children with chronic lichenified facial atopic eczema. Whether it is appropriate for very inflammatory, non-lichenified facial atopic eczema, is yet to be determined. Further studies are indicated.

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