Intertrigo: Resolving a Three Year Itch. A Case Study Concerning the Management and Subsequent Prevention of Intertriginous Moisture-Associated Skin Damage, Following the Principles of Total Barrier Protection™ Using a Skin Barrier Film.

Introduction

This case study describes the use of **MEDI DERMA-S** Total Barrier Film, using Total Barrier Protection (TBP) in the management and subsequent prevention strategy of Moisture-Associated Skin Damage (MASD) caused by prolonged exposure to sweat in an intertriginous skin fold. An appropriate management plan was employed after assessing the individual and his wound. This led to a holistic approach that accurately assessed the individual, correctly selecting an appropriate barrier product and resolved the symptoms to promote healing. This case highlights the need for patient engagement, education and setting of realistic, achievable goals aligned with an individual's daily routine to achieve a positive and sustainable outcome. ***Key Words:*** *Intertrigo, moisture-associated skin damage, total barrier protection, barrier film.*

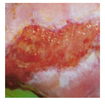
MASD and Intertrigo

MASD describes a variety of skin conditions from mild erythema to extensive skin breakdown, resulting from exposure to moisture and irritants[6,12]. Exposure causes overhydration, damages the natural barrier of skin and leads to tissue damage[7,14], making it more susceptible to trauma from pressure and friction[4]. Overhydration increases skin pH, creating an environment more conducive to bacterial or fungal proliferation and infection[1,12].

Different Types of MASD

Different irritants affect the skin in different ways *(Fig. 1)*.

Incontinence
Enzymes in faeces in liquid form can exacerbate the effect of urine on skin.



Wound Exudate
Proteolytic enzymes in wound exudate cause maceration and excoriation of healthy skin periwound[12].

Peristomal Effluent
Peristomal MASD appears when effluents from a stoma contact surrounding skin[12].

Perspiration
Intertriginous dermatitis subjects skin surfaces to friction[10].

Fig 1. *Examples of skin damage from prolonged exposure to irritants.*

Intertrigo Treatment and Management Plan Considerations

Intertrigo is a form of MASD caused by prolonged exposure to perspiration. The cause of skin damage must be identified before selecting an appropriate treatment[6]. Differentiating between MASD and pressure damage is necessary, as they may exist concurrently.

An Effective Prevention & Management Plan of MASD should:

- Identify the cause of skin damage
- Treat any secondary infection[1]
- Remove irritants and protect skin
- Control or divert moisture
- Adapt to individual patient needs & budgets[8]
- Avoid friction from skin rubbing when drying[2]

Advocate a Structured Skin Care Regime that:

- Cleanses the skin to remove irritants
- Protects skin to minimise exposure to irritants
- Restores skin integrity to maintain barrier function[2]
- Wicks moisture away from skin

Impact of MASD

MASD causes pain and discomfort, impacting quality of life and disrupting daily activities[3,11]. The UK market for barrier creams, films and protectant ointments used to treat MASD in community settings is £43.5m[9].

Selecting an optimal product subject to the severity of skin damage, moisture source or possible complications[5], is critical. With a wide range of products available with differing ingredients and properties, clinicians need to be aware of how these products interact with other accessories e.g. incontinence pads[4,8]. TBP simplifies this product selection process with a structured, integrated and defined strategy.

Case Study

Background & Medical History:
A 47-year old, male, construction worker presented with broken, painful, red excoriated skin to his natal cleft. He was unable to maintain regular contact with his GP due to working for long periods away from home. He was fit and well, fully mobile, a non-smoker and consumed 3-4 units of alcohol per week. He had no dietary or elimination problems, although took Lansoprazole for acidic reflux. No significant past medical history contributed to the skin damage. His GP had prescribed antimicrobials, antifungals and steroidal creams, these did not alleviate the problem.

On Examination:
A linear wound, 20mm x 4mm x 2mm of the natal cleft, above the anus. Macerated wound edges with hair in the wound bed. Blanching erythema over both buttocks, 55mm at its widest. Area was tender on palpation, itching and stinging, which increased with movement. No odour, no visible signs of infection.

Diagnosis:
Sweat was an issue due to intensive manual labour and multiple layers of safety workwear; perspiration then pooled into his natal cleft. This issue had persisted over three years. It was identified that the skin was not always dried properly after showering and drying was vigorous.

Treatment:
A structured approach with twice-a-day showering was discussed, avoiding vigorous drying of the natal cleft and patting the area dry. Due to intertriginous skin damage he was advised to reduce multiple layers of clothing and wear 100% cotton underwear to wick moisture away[10]. Hair was also clipped short to ensure that it did not lie on the wound bed or act as a source of irritation.

A skincare regimen following the TBP strategy was used to protect the area from further moisture, dust and dirt particles that could irritate the wound. An ointment was considered most appropriate, however the individual felt that it's application would cause embarrassment among his work colleagues. Therefore, a barrier film in spray form was recommended.

Observations (Images and record of the healing progress, *Fig. 2*)

Day 1:
Significant change in skin erythema. Discomfort reduced to a low itch.

Day 5:
Broken skin began to heal, wound reduced in width and depth.

Day 28:
Skin was intact, had a shiny appearance. Lapse in his hygiene regime, as he had begun to floss the affected area. The need to maintain a structured regimen was reiterated, discouraging this drying technique.

Day 42:
The wound healed. Considering his occupation, he continues to incorporate a barrier film as a preventative treatment.

Declaration of interest:
One of the authors is an employee of Medicareplus International.
The individual in the case study was provided with free barrier film throughout the period of study.

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What is Total Barrier Protection™?

TBP™ developed by Medicareplus International, is a fully integrated MASD treatment strategy[8]. The range consists of **MEDI DERMA-S** Total Barrier Cream, **MEDI DERMA-S** Total Barrier Film, **MEDI DERMA-*PRO*** Skin Protectant Ointment and Foam & Spray Cleanser and **LIFTEEZ** Adhesive Remover *(Fig. 2)*. The strategy prevents skin damage, protects damaged skin and repairs and restores skin integrity. It provides a clear rationale, ensuring that patients receive the appropriate product at a given time [4,8]. The TBP strategy can reduce product misuse, reduce costs, and improve and simplify treatment choices[4].

Fig. 2: *Total Barrier Protection Wheel and pictorial chronological record of wound healing progress demonstrating the product choice using TBP principles in relation to skin presentation*

Discussion:

Barrier film application reduced skin friction and discomfort within 24 hours. However, the authors could not conclude whether the reduction in friction was attributed to stopping moisture build-up or to the barrier film application. Further study is required to assess the potential of applying barrier films to intact pressure ulcers to alleviate friction and reduce the risk of future pressure ulcers. With respect to this specific case, there was no need to treat a secondary infection. In the authors' experience, working with established wound formularies and Tissue Viability teams, antimicrobial dressings are not routinely advocated for prophylactic use without evidence of infection. Appropriate use of barrier products might also contribute to a reduction in costs associated with patient care. e.g. analgesia cost reduction.

Conclusion:

MASD in all its manifestations causes pain, increases infection risk and impairs quality of life by impacting on daily activities. The principles of MASD management can be applied to all forms of MASD, including intertrigo, by reducing exposure to moisture and irritants, and protecting damaged skin. TBP can be implemented in response to an individual's skin condition, providing a range of products and guidance for clinicians to combat MASD, in all its presentations. It reduces costs as part of an individualised plan. Lastly, patient concerns must be incorporated into any plan for the successful treatment of MASD.

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