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Wound Care in Autoimmune Bullous Diseases

25

Josephine C. Duipmans and Maria C. Bolling

Introduction and Aims

Patients with an AIBD suffer from pain, itch and discomfort due to blisters and erosions that may involve large body areas, including the mucosae. The pain they experience brings them stress and influences sleep, altogether hampering recovery. Due to the rarity of the disease, there is often a delay in diagnosis and treatment, leaving patients with multiple, non-healing mucosal and skin erosions. In addition, these wounds can be a porte d'entrée for infections. Despite the differences in the extent and aspect of the skin and mucosal fragility between the different AIBDs, wound and skin care follows the same principles that will be discussed in this chapter.

The aim of this chapter is to learn about factors contributing to wound healing and about the best clinical practices in wound care in AIBDs, in order to optimize comfort and quality of life and facilitate recovery of the patient.

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Learning Objectives

After reading you will be able to list factors that interfere with wound healing in AIBD. You will be able to identify risk factors for hampered wound healing. You will be able to describe goals in skin, wound and blister care in AIBDs. You will be able to set up a plan for proper wound care, create the right conditions for adequate wound care and choose appropriate dressings in order to reduce pain and discomfort and to stimulate optimal wound healing, both in a hospital and a home setting.

Case Study: Part 1

A previously healthy 41-year-old male attended his general practitioner following a 3-month history of progressive blister formation and erosions on the skin (mainly upper trunk and extremities) and oral mucosa, a sore throat, difficulties in swallowing, and burning eyes. Weight loss was 25 kg in 3 months. The patient was admitted to the dermatology department of a regional hospital. Based on the clinical picture and immunodiagnostic results (perilesional skin biopsy for direct immunofluorescence and serology) a diag-

nosis of pemphigus vulgaris (PV) was made. Systemic treatment with prednisolone 1 mg/kg/d was initiated and rituximab 1000 mg iv was given. The nursing staff was inexperienced in wound care for blistering skin diseases. The wounds were covered with dry gauze compresses and were changed every day (Fig. 25.1a). By removing the gauzes that were stuck in the wound bed, the wounds started to bleed, and the patient suffered from excruciating pain. Wound healing was hampered by repeatedly damaging the re-epithelializing skin. He suffered from severe pain, anxiety and depressed feelings due to his skin condition.

Didactical Questions

Which factors interfere with wound healing in AIBDs? What are the risks of inadequate wound care? What is the first choice of dressings? Which factors should be optimized before starting a dressing change? How often should wound dressings be changed?

Goals and Challenges in Wound Care in AIBDs

Adequate wound care is essential for recovery of patients with an AIBD as it will stimulate wound healing, reduce pain, itch and stress, prevent

infection and unnecessary damage to healing or yet unaffected skin, and it may prevent an unnecessary increase in immunosuppressive treatment (the goals). However, many aspects of an AIBD make proper wound care in these patients challenging. Often large areas of the body are affected, including difficult to dress body sites like groins, axilla and neck. In addition, the extensiveness of wounds and multiple blisters increase the risk of infection and can cause a substantial amount of pain, both during dressing changes and daily activities. Furthermore, these patients have fragile skin with a tendency to develop new blisters. In such circumstances, adhesive dressings and regular tapes are contraindicated and dressings should be held in place with bandages, tubular cotton bandages or soft silicone tape [1]. Finally, the frequently (and sometimes solely) involved mucosae often show poor healing, and it is difficult to protect painful erosions on oral, nasopharyngeal, ocular, and genital sites.

Factors Influencing Wound Healing in AIBDs

Many factors can influence the wound healing process, like medication, ageing, infection, smoking, comorbidities, anemia, malnutrition, immobilization, living alone, stress and lack of sleep. Regarding medication, it is important to consider that the use of the necessary immunosuppressive agents for AIBDs, although neces-



Fig. 25.1 Dry gauzes sticking to the patient's skin erosions and blisters at admission (a). Bleeding and de-epithelialized wounds on the back of the patient after careful removal of the dry gauzes (b and c)

sary, will affect wound healing, increase the risk of infection and may cause anemia. In addition, most AIBD patients are older than 75 years and therefore have slow wound healing. Because of pain, itch and discomfort, sleep may be disturbed, nutrition can be comprised and often mobility is limited. This all influences wound healing in a negative way.

It is important to be aware of these impairing influences on wound healing and manage them if possible.

The 'Mise En Place' for Proper Wound and Skin Care

Severity of the Disease

When more than 30% of the body surface area (BSA) is involved, it is recommended that patients are admitted to a burn care unit, where proper temperature and humidity can be provided. Patients with extensive skin lesions covering less than 30% of the BSA must be hospitalized and isolated, preferably in a low flow room, to prevent infection.

Pain Management

Optimal pain management is vital for patients with AIBDs and includes pharmacological and non-pharmacological interventions. Analgesia, such as paracetamol, NSAID's, and long-acting opioids, may be sufficient to manage pain during the day, while additional opioids and anxiolytics may be necessary for severe pain and anticipatory anxiety before and during dressing changes. Room temperature must be kept on a comfortable temperature. It is important to choose dressings that are pain free on removal. Isotonic salt baths (900 g salt in 100 l water), may reduce pain during bathing.

Infection Prevention

Practicing good hand hygiene and using protective equipment properly is very important to reduce the risk of infection. Hands should be re-washed between removal of used dressings and applying new ones. It is important to be well prepared in advance and make sure all equipment is present and ready to use. Prepare a clean

field and spread out all needed materials and ointments for the dressing change. After removal, dirty dressings should be disposed immediately into a disposal bag. The wounds should be cared for using an aseptic or clean technique (an aseptic technique can be challenging when a large area of the body is affected with multiple wounds).

Skin and Mucosal Wound Care in AIBDs

Removal of Dressing and Cleansing of the Wounds

The present dressings should be carefully removed leaving re-epithelializing skin intact and preventing blistering of surrounding skin. If gauzes are stuck into the wound bed, they may be soaked off with water or paraffin/petroleum jelly ointment or a silicon medical adhesive remover (SMAR) can be used. Showering or bathing may help in removing adhesive dressings. If taking off dressings causes too much skin damage, the stuck gauzes should be left in place till they come off like a crust.

All erosions and wounds should be cleansed carefully, for example during showering or bathing if the patient can tolerate this. If not, water or topical products like wound irrigation solution or gel with polyhexamethylene biguanide (PHMB) can be poured onto the wounds. Surrounding wound skin must be cleansed as well.

Blister Management

Blisters in AIBD should be left intact in order to prevent secondary infection. The blister roof provides moist wound healing and is the best natural wound dressing. However, large blisters and blisters that are subject to trauma or on joints, should be lanced using a sterile needle, creating a large hole, preventing the blister from refilling. The roof should be left in place, because deroofing can lead to additional pain. Subsequently, the blister can be covered with a non-adherent dressing.

Wound Care and Dressings

Erosions, blisters and surrounding skin are vulnerable to further damage. Therefore, wounds must be covered with non-adhesive dressings that promote moist wound healing, are comfortable, and are available in large sizes. Silicon or lipido colloid based foam dressings (Mepilex transfer/lite; Urgotul) or hydrofibers (Aquacel) satisfy these demands. As a first wound contact layer soft silicon mesh (Mepitel one) can be applied. This dressing can stay in place up to 5–7 days while topical treatment can be applied on top of the mesh daily. Secondary dressings, on top of the silicon mesh, can be changed every (other) day. If these dressings are not available, a double layer of grease impregnated gauzes can be applied. Great care must be taken to ensure dressings do not slip, which can cause tearing of skin and cause adherence of wounds to clothing or bedding. The use of dry gauzes as a primary wound layer must be avoided.

In case of local infection, topical antibiotics or antiseptics can be used. When application of topicals directly to the skin is too painful, the dressing can be impregnated with the topical product instead and applied. Dry skin and crusts must be kept moist by daily application of emollients.

Frequency of Dressing Changes

Frequent dressing changes can strip the wound of fragile re-epithelialization. It is advised to limit dressing frequency to 3 times a week, unless treatment with daily topical potent corticosteroids is needed, like in bullous pemphigoid, or in case of a wound infection with large amounts of exudate.

Case Study: Part 2

Because the wound care was so traumatic for the patient, and proper non-adhesive wound dressings were not present, the patient was transferred to the Dutch Center for Blistering Diseases. Prednisolone 1 mg/

kg/d was continued, omeprazole and calcium were added. Because of the traumatic experiences, the patient was very anxious about the dressing change. Proper pain medication was given 1 h prior to dressing change. All materials and a clean field were prepared beforehand, and room temperature was set to 24 gr Celsius.

Dry gauzes were removed with great care and bandages stuck in the wound bed were left in place to avoid further skin damage. Skin was cleansed with tap water and eroded areas were carefully treated with a disinfect wound gel (Prontosan wound gel with polyhexanide). All open areas were covered with non-adherent silicon foam dressing (Mepilex transfer) and fixated with tape, that didn't touch the skin (Fig. 25.2a). A shirt, cut out of cotton cloth, was put on top of the dressings and secured with cohesive bandages in a way that shoulders and axillae were covered. For dressing fixation on arms and legs tubular bandages were used. Dressing changes were only needed 3 times a week. Attention was paid to adequate mouth care, and lidocaine 2% gel was started before eating. The patient experienced less pain, no trauma and anxiety, slept well and gained some weight. The combination of the medication with adequate wound care led to fast re-epithelialization of the skin (Fig. 25.2b).

Mucosae

Oral blisters, erosions and ulcerations are very painful, and often heal slowly. Application of local anesthetics (lidocaine 2% gel) may relieve pain and promotes food intake. A soft, calory-rich diet and avoidance of spicy and acidic foods are recommended. Adequate oral hygiene, including using diluted antiseptic mouthwashes, and proper periodontal treatment must be supported. Candida and herpes simplex virus infections are common on the mucosae of AIBD patients with oral lesions and/or treated with



Fig. 25.2 Non-adhesive silicon-based dressings applied to the wounds on the back (a) and front (b), fixated on the bandages itself. Isolated erosions were covered by silicon based bordered dressings on the buttocks (a, pink). Few

days later partly re-epithelized skin appeared on the back, and bleeding was absent after removal of the silicon-based bandages (c)

immunosuppressants and should be treated timely and appropriately. In case of candida, treat the prosthetics as well if present. Lips can be kept soft with petroleum jelly bidaily or more frequently. Other sites that can be affected include the conjunctival, nasal, pharyngeal, laryngeal, esophageal, genital, and anal mucosa. All affected mucosae should be cleansed daily with water or sterile sodium chloride and, if necessary, an antimicrobial ointment can be applied. Use cotton swabs for eyes and nostrils. Small painful erosions on difficult to dress locations, like labia and nostrils, can be covered with a thin layer of a zinc oxide product.

Wound Care Plan

To ensure well-executed wound care, it is important to make a simple and clear wound care plan and explain and provide it to the patients and immediate caregivers (spouse/children/nurses). The wound care plan is dynamic and should be adjusted, when necessary, based on changes in the skin condition.

Conclusion

Optimal wound care in patients with an AIBD can be challenging. Even though the general principles of wound care also apply to patients with an AIBD, factors like skin fragility,

extensive wounds, higher age, use of immunosuppressant medication, wounds on difficult to dress locations, all impact wound care. Therefore, it is important to pay attention to, and individualize skin and mucosal care to the unique needs of AIBD patients from the first visit. Basic principles are pain management, infection prevention, non-adhesive dressings, and paying attention to the general condition of the patient.

Review Questions

1. What is the effect of the immunosuppressive therapy on wound healing in AIBD?
 - a. Slowing down wound healing
 - b. Increasing the risk of infection
 - c. Increasing itch
 - d. Reducing wound bleeding
2. What is the general principle for treating blisters in AIBD?
 - a. Always pop the blister in order to reduce the risk of infection
 - b. Pop the blister only when it is subject to trauma or on joints
 - c. Pop blisters when the diameter is >4 cm
 - d. Only open blisters on mucosal surfaces
3. What is the first choice of dressings in AIBD?
 - a. Impregnated gauzes and hydrocolloid dressings
 - b. Hydrofibers, hydrocolloid dressings and silicon- and lipidocolloid based dressings

- c. Hydrofibers and silicon- and lipidocolloid-based dressings
- d. A good dressing has yet to be invented

Answers

- 1. a. and b.
- 2. b.
- 3. c.

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