

## Wound detectives: Can you solve the case?

Welcome to the next installment of "Wound detectives". Joy Tickle shares a real-world case presentation and asks whether you can solve the case. What do you think is the cause of the wound, what tests would you order to confirm your diagnosis and what treatment would you provide?

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*Tissue viability nurse consultant*

The tissue viability service received a referral from a nursing home team. A 76-year-old lady had been admitted to their care from home due to deteriorating health and she now required 24-hour care. The patient had a medical history of type 2 diabetes, dementia, coronary heart disease and eczema.

On admission, the registered general nurse identified significant skin damage to the patient's sacral area (*Figure 1*). Despite various wound dressings and antibiotic medication prescribed by the GP, the skin damage was not improving.

The care home staff reported the wound as a category 2 pressure ulcer. They implemented a 24-hour pressure ulcer management plan, including repositioning and pressure-relieving equipment. But the skin did not improve.

Following a clinical examination by the TVN, it was identified that the patient had a partial-thickness wound to each buttock. The wounds were almost identical in appearance with granulation tissue to the wound bed and a moderate volume of serous exudate (*Figure 1*).

The patient was extremely agitated due to the pain from the wounds and also from the anxiety and embarrassment of the nurses examining her sacral area. The



Figure 1. Image of the sacral area on presentation

### Question 1

**What may be the cause(s) of the patient's skin damage?**

### Question 2

**What are the four categories of moisture associated skin damage?**

### Question 3

**What do you think are the risk factors that have led to the patient developing incontinence-associated dermatitis?**

### Question 4

**How would you cleanse the skin of an individual with incontinence-associated dermatitis?**

### Question 5

**How would you protect and manage the patient's skin?**

### Question 6

**Who could you refer to or access advice from in order to support the patient and the prevention and management of incontinence-associated dermatitis?**

### Question 7

**How can you differentiate between moisture-associated skin damage and a pressure ulcer?**

patient reported the pain as a 'burning'. Her nutrition and fluid intake was poor due to her reluctance to eat and drink.

The holistic assessment, also noted that the GP had recently prescribed oral antibiotic therapy and altered her medication to treat

the coronary heart disease. It was noted that she was incontinent of urine and faeces.

**Now answer questions 1-7 before reading TVN-TV\_CM webseries HALE.pdf the answers and rationale.**

Turn the page 107 for answers

**Question 1. What may be the cause(s) of the patient's skin damage?**

**Answer:** The skin damage could be caused by (Beeckman et al, 2020; Fisher et al, 2020):

- » Pressure damage
- » Shear/friction
- » Cutaneous infection
- » Incontinence-associated dermatitis (IAD)
- » Moisture-associated skin damage (MASD) from bodily fluids (i.e. perspiration/genital discharge)
- » Medical adhesive related skin injury
- » Skin reaction due to topical treatment(s)
- » Skin reaction due to changes in medication
- » Dermatological conditions such as eczema, pruritis
- » Trauma from possible behaviour issues (e.g. scratching)
- » Poor skin hygiene.

For the patient in the case study, the cause of her skin damage was identified as IAD and not a category 2 pressure ulcer. IAD is a form of MASD (Beeckman, 2015). IAD and other categories of MASD are often misdiagnosed in clinical practice and are frequently incorrectly reported as pressure ulcers (Sarker, 2018; Ousey et al, 2017).

Individuals with continence problems are at a higher risk of MASD. Urinary incontinence IAD is primarily due to wet or macerated skin surface, which becomes permeable to the normal skin flora microbes. Secondly the presence of urine changes the skin pH from an acidic to alkaline mantle, further impairing the skin barrier function (Rees and Pagnamenta, 2009). With this changed environment, microbes can thrive and there is an increased risk of widespread IAD. With faecal incontinence, lipolytic and proteolytic enzymes (from the stool) are corrosive on the skin's surface (Beeckman, 2015).

When urinary and faecal incontinence are combined, the enzymes from the faeces also break down the urea in the urine to ammonia further increasing the pH and again increases the corrosive enzymes (Beeckman, 2015).

The affected skin in patients with IAD may present with erythema, as well as maceration. If it is not correctly managed, the skin area may progress to painful partial-thickness erosions with weepy serous exudate. In addition, pressure and friction may increase stress on the affected area, leading to skin breakdown, (Dowsett et al 2013), as was the case for this patient.

**Question 2. What are the four categories of MASD?**

**Answer:** MASD is an umbrella term used to describe a range of skin problems that occur due to prolonged exposure to faecal and/or urinary incontinence, perspiration and wound exudate (Dowsett et al, 2013):

- » IAD
- » Peristomal dermatitis (skin damage around a stoma site)
- » Intertriginous dermatitis (skin damage between skin folds)
- » Periwound maceration (skin damage surrounding a wound) (Fletcher et al, 2020).

As previously highlighted, as well as establishing the cause(s) of IAD it was also important that the TVN and the nursing team establish and address the other indirect factors that may have contributed to the development of the IAD.

**Question 3. What do you think are the risk factors that have led to the patient developing IAD?**

**Answer:** The indirect risk factors for the patient are:

- » Long exposure time of urine and faecal contamination (patient had no support/care at home)
- » Inadequate personal hygiene due to lack care/support
- » No incontinence products in use
- » Ageing skin
- » Compromised mobility due to her deteriorating health
- » Possible reaction to medication changes.

The GP had prescribed antibiotic therapy that may have caused the stools to become loose. Also changes to her medication for her heart disease may have side effects that affected her bowel and bladder

- » Malnutrition or infrequent/inadequate intake of food or fluids
- » Diabetes and its impact on the skin and healing process
- » Low oxygen saturation due to coronary heart disease
- » Psychosocial factors and diminished cognitive awareness due to her dementia and inability to understand
- » Incorrect skin cleansing methods and skin management products as the care staff were unaware the skin damage was caused by IAD (Beeckman et al, 2015; Beeckman et al, 2017; Fletcher et al, 2020).

As identified, there were many risk factors that lead to the patient developing IAD. Wherever possible indirect risk factors should be mitigated. This may involve addressing any underlying comorbidities or optimising any psychosocial impairments (Beeckman et al, 2017).

For this patient within her new care setting many of the indirect factors could be successfully managed. A nutritional assessment was undertaken and an individualised meal plan implemented in order to address her reduced dietary intake. A referral to the nurse specialist for dementia care was also made in order to support the patient and the staff in managing her dementia.

Following an incontinence assessment an evidence-based IAD prevention and management plan was implemented. The overall treatment plan objectives were:

- » Implementation of a structured skin care regimen: including skin cleansing/use of skin moisturisers/skin protector (Young, 2017)
- » Management of incontinence, ensuring correct use of devices or incontinence products that wick moisture away from affected or at-risk skin and prevent cross

infection risk

- » Implementation of a wound management plan in order to promote wound healing prevent, periwound damage, promote patient comfort and improve quality of life
- » Education for all care providers on preferred method of skin care/products/devices
- » Inclusion of the patient in decisions about her care using appropriate methods to meet her level of understanding.

As part of the treatment objectives all of the care staff involved in the patient's care were informed about the structured skin care regimen. They were also shown how to assess the patient's skin and recognise any early signs of skin damage.

#### Question 4. How would you cleanse the skin of an individual with IAD?

**Answer:** There are specific considerations to make when deciding how to cleanse a patient's skin when IAD or MASD is present:

- » Luke warm water/soft clothes
- » Mild low-irritating surfactants and low pH cleansers and soap substitutes
- » No-rinse skin cleanser  
(Litcherfeld and Kottner et al, 2020).

It is imperative that traditional soaps are avoided as they contain alkalis and fatty acids that raise the pH of the skin and damage the acid mantle, which is essential to skin integrity (Voegeli, 2012). They also act as an astringent and can be very drying and decrease the skin's natural sebum production. This reduces the skin's natural antibacterial properties, further increasing the risk of opportunistic infection. For patients with faecal incontinence, the bacteria and harmful enzymes it contains cannot be cleansed with water alone and; therefore, a suitable cleanser will also be required (Beeckman et al, 2020).

The patient's skin was cleansed with an appropriate skin cleanser twice per day and always after every episode of incontinence. Her skin was patted dry, not rubbed, with a soft cloth/towel as this avoided additional friction

on the surface of her skin, which not only can lead to further skin damage, but also can cause discomfort to the patient.

Following appropriate skin cleansing, it was necessary to protect the patient's skin from further breakdown and promote healing.

#### Question 5. How would you protect and manage the patient's skin?

**Answer:**

- » Skin moisturisers
- » Skin barrier preparations
- » Wound dressings.

It is important that all clinicians involved in managing patients with IAD and other forms of MASD understand the difference between skin moisturisers and moisture barriers and how and when to implement them (Fletcher et al, 2020).

**Skin moisturisers** are used to rehydrate the outer layer of the skin when it becomes dry (stratum corneum) Most moisturisers (also known as emollients) act by depositing a layer of grease (lipid) on to the surface of the skin, which can act as a temporary seal. This will prevent trans-epidermal water loss (McNichol et al, 2018). However, their properties will wear-off, hence reapplication is required.

**Skin barrier preparations** repel moisture and irritants. Following application, they form a transparent, waterproof protective coating on the skin enabling it to repair and restore its natural barrier function are also protect the skin from mechanical injury or chemical irritation (Gray et al, 2011; Beeckman 2017). They are available as cream, film and ointment preparations. The decision of which to use is based upon individual patient need and upon the extent and severity of skin damage. Frequency of application and amount to apply must be based upon the manufacturer's instructions. For the patient within this case study the nurse implemented a combination of moisture barrier creams to rehydrate and protect the skin.

**Wound dressings** are necessary to prevent infection and to support wound healing. Evidence also suggests that some

patients with IAD may benefit from dressings such as foam or barrier film dressings to protect the skin from further shear and friction (Fletcher et al, 2020). For the patient in the case study a sacral foam dressing was applied to the wounds in order to promote wound healing, prevent cross contamination from the urine/faeces, reduce shear and friction and promote patient comfort.

In addition to the individualised skin cleansing and management plan, a key objective for the staff was effective incontinence management. It has already been discussed that this involved undertaking a continence assessment and the use of incontinence products. However, the cause of the patient's incontinence was also assessed and identified. It is important to recognise that there may be a range of reasons for the incontinence. For example, mobility issues, cognitive/behavioural problems, health conditions, issues with the patients bladder and kidney function (Beeckman et al, 2020).

Evidence also suggests that behavioural interventions may be beneficial for supporting continence, for example mobility enhancement and use of various toileting techniques (Beeckman et al, 2020).

It was agreed a structured toileting regimen would be beneficial for this patient to assist in promoting continence.

#### Question 6. Who could you refer to or access advice from in order to support the patient and the prevention and management of IAD?

**Answer:**

- » Continence team
- » Infection control team
- » Dementia team
- » Physiotherapy/occupational therapist
- » Diabetic nurse specialist
- » Dietitian.

It is vital that the patient with IAD and any other form of MASD has a holistic integrated treatment plan. This may involve referral to other multidisciplinary team members who can offer advice/treatment

that can address the cause or other risk factors leading to the skin damage.

The patient was referred to the TVN and the lead nurse within the home who specialised in caring for patients with dementia. Their specialist knowledge helped enormously in implemented a patient-centric care plan. This was successful in reducing the patient's anxiety and challenging behaviour and most importantly improved her quality of life.

It is recognised that patients with IAD may be at a higher risk of developing pressure damage (Wishin et al, 2008; Beeckman et al, 2015). Therefore a pressure ulcer risk assessment was undertaken for the patient and a 24-hour pressure ulcer prevention plan was implemented.

Three weeks following the implementation of the IAD treatment regimen, the patient's condition was resolved and her skin healthy and intact (Figure 2). The staff also reported that she appeared comfortable and less anxious, and her quality of life was improving. She was eating and drinking well and the episodes of incontinence had decreased following the successful implementation of the structured toileting regimen.

**Question 6. The incorrect reporting of the patient's IAD as a category 2 pressure ulcer led to discussion between the tissue viability team and the nursing home staff. Some of the clinicians reported they had difficulty in distinguishing between MASD and pressure damage. How can you differentiate between moisture associated skin damage and a pressure ulcer?**

**Answer:** Various studies have recognised that there is confusion between IAD and pressure ulcers (Beeckman et al, 2015; Fisher et al, 2020). It is essential that all health professionals have the knowledge and skills to recognise the different characteristics of pressure ulcer and IAD. If not, as highlighted in this case study, can it can lead to incorrect



**Figure 2. Three weeks after implementation of the IAD treatment regimen**

treatment implantation due to misdiagnosis, increased risk for the patient, increased demands upon clinicians/carers workload and inaccurate and increased organisational reporting of pressure ulcers.

There are tools that have been produced that can assist health professionals and carers in differentiating between pressure ulcers and IAD (Fletcher et al, 2020). There are also IAD classification tools to support clinicians to assess and manage patients with IAD, e.g. the Ghent Global IAD Classification Tool (GLOBIAD; Beeckman et al, 2015; Fletcher et al, 2020).

The key areas of distinction between IAD and pressures ulcers are:

#### Location

- » IAD affects the perineum; peri-genital; peristomal area; buttocks; gluteal fold; medial and posterior aspects of upper thighs; lower back and may extend over bony prominence.
- » Pressure ulcers are usually over a bony prominence or associated with the location of a medical device.

#### Wound edge and shape

- » IAD may present with diffuse superficial spots with irregular shape and edges. Where there is more than one wound, the wounds may be very similar in appearance (kissing ulcer/copy lesion)
- » Pressure ulcers have defined edges and distinct shapes (circular/oval) and are generally limited to one area.

#### Colour

- » IAD skin damage is red and/or pink, or white due to maceration.
- » The colour of a pressure ulcer can vary from red, yellow, green, purple/black.

#### Presentation and depth

- » IAD may present superficial to partial-thickness loss (only the epidermis and/or dermis are affected)
- » Pressure ulcers may present as intact skin with erythema to superficial or full-thickness tissue loss extending down to bone muscle and tendons.

#### Tissue type

The wound bed of a pressure ulcer may present with devitalised necrotic/sloughy tissue. IAD does not present with necrotic or sloughy tissue; however, please note that if IAD is incorrectly managed or becomes infected, the skin loss can become deeper and sloughy (Defloor, 2005; Fletcher et al, 2020).

#### CONCLUSION

IAD is one of the four categories of MASD. Like all categories of MASD it has significant detrimental effect upon a patient's quality of life causing considerable discomfort, pain and mental distress (Woo et al, 2017; Beeckman et al, 2020).

Clinicians must be vigilant, both in maintaining optimal skin conditions and in diagnosing and treating early stages of MASD to prevent progression and skin breakdown (Gray et al, 2011).

Adopting a holistic, integrated approach, focused on prevention strategies and the importance of skin integrity, can have overall beneficial results and help to remove the barriers to effective care in practice (Beeckman et al, 2020).

It is hoped this case study has assisted you in accurately recognising IAD and its associated risk factors, as well as guided you with regards to the appropriate management strategies for this condition.



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