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Moisture lesions often cause pain and distress. A number of strategies can be adopted to prevent and treat dermatitis associated with urinary or faecal incontinence

Causes and strategies for moisture lesions

In this article...

- How to prevent and treat moisture lesions
- The causes of incontinence
- How to contain urine and faeces

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Abstract Bianchi J (2012) Causes and strategies for moisture lesions. *Nursing Times;* 108: 5, 20-22.
Moisture lesions or incontinence-associated dermatitis are painful and distressing consequences of prolonged exposure to urine and faeces. They may adversely affect patients' physical and psychological wellbeing, so minimising damage is a vital part of the nurse's role.

This article outlines their causes and strategies to prevent and treat them, as well as the causes of urinary and faecal incontinence and containment options.

Moisture lesions, also known as incontinence-associated dermatitis (IAD), are characterised by irritation and inflammation. They occur when the perineal or perigenital skin comes into contact with urine, faeces or both, and can be extremely painful. As prolonged contact can result in tissue breakdown, increase the risk of infection and adversely affect patients' physical and psychological wellbeing, minimising damage is imperative.

While incontinence can occur at any stage of life, prevalence increases with age, with 31% of older women, 23% of older men and 30-85% of nursing home residents recognised as being incontinent (Bale et al, 2004). The National Institute for Health and Clinical Excellence (2007) recognised that 1-10% of adults suffer from chronic faecal incontinence.

Causes

Little research has focused on IAD, resulting in gaps in our understanding of its epidemiology and pathophysiology (Gray et al, 2007). While the exact mechanism of IAD is unknown, factors such as change in pH, activation of proteases, transepidermal water loss (TEWL) and ageing skin are thought to be responsible for the resulting tissue damage.

The skin produces sebum that enables it to maintain a naturally acidic pH, usually between 4.0 and 5.5 (Cooper, 2011). This is often described as the acid mantle, which provides an environment that allows the normal skin flora to exist while helping to prevent colonisation by non-resident bacteria and pathogens (Rippke et al, 2002). Urine and faeces convert urea to ammonia, which destroys the acid mantle. The raised pH activates protease and lipase in faeces, which cause dermatitis (Nazarko, 2007).

FIG 1. **MOISTURE LESIONS MAY LEAD TO ERYTHEMA**

Prolonged exposure to these irritants and the resulting inflammation can increase TEWL. Perineal skin typically has a high rate of TEWL and, when this increases, it can lead to already-compromised skin becoming even more susceptible to breakdown (Gray, 2007).

Older people are thought to be more susceptible due to reduced collagen and elastin, which leads to the epidermis thinning. In addition, less sebum is produced as skin ages (Beldon, 2008).

Prevention and treatment

It is essential that, when patients with incontinence present, clinicians take a full history and carry out a thorough assessment to ensure an effective treatment plan can be implemented (Bardsley, 2008).

Other conditions that may appear similar to IAD include:

- Intertrigo (inflamed skin folds caused by exposure to perspiration, friction and bacterial or fungal bioburden);
- Periwound maceration (skin breakdown as a result of exposure to wound exudate);
- Pressure ulcers.

Cooper (2011) suggested the essential elements below to prevent IAD.

Routine skin inspection

IAD is characterised by inflammation of the surface of the skin with erythema, oedema and, in some cases, bullae (vesicles) containing clear exudate. In severe cases, erosion of the epidermis can also be seen. Kennedy and Lutz (1996) noted that the erythema may be patchy or consolidated (Fig 1).

Observing distribution will help clinicians to differentiate IAD from other types of tissue damage. Gray et al (2002) observed that IAD associated with urinary incontinence tends to occur in skin folds and on the labia majora or the scrotum, whereas IAD associated with faecal incontinence tends to originate in the perianal area. In

5 key points

1 **Incontinence-associated dermatitis is a painful condition characterised by irritation and inflammation**

2 **While incontinence can occur at any time, prevalence increases with age**

3 **IAD's epidemiology and pathophysiology are not fully understood**

4 **Routine skin inspection, a cleansing routine and skin protection are essential to prevent IAD**

5 **The goal is to control bladder/bowel function or, if this is not possible, to use an appropriate containment system**

Catheters may be used for a short time

severe cases, erythema may extend to the lower abdomen and sacrum (Beldon, 2008). Candidiasis is a common complication of IAD and exhibits as a maculopapular rash with satellite lesions.

When reviewing the language clinicians use to describe the degree of IAD, Bianchi and Johnstone (2011) found there was no consistency in approach. To help with grading the degree of skin damage and suggest management strategies, the National Association of Tissue Viability Nurses Scotland (2008) developed an excoriation grading tool, which includes clinical images, grades the level of excoriation and offers management advice (Fig 2). This tool may help to encourage a consistent approach in the care of patients with IAD.

Cleansing routine

In some cases, timely and appropriate skin cleansing and protection can prevent and heal IAD.

Soap and water should be avoided. Soap is made up of a mixture of alkalis and fatty acids; the alkalis in it are thought to have the potential to raise the skin's pH, damaging the acid mantle (Beldon, 2008).

Perineal skin cleansers are the best choice for people with IAD. They come in different formats including emulsions, foams and sprays, and combine detergents and surfactant ingredients to loosen and remove dirt and irritants. Many are pH balanced and contain moisturising agents to restore or preserve optimal barrier function.

Skin protection

The aim of skin protection products is to isolate exposed skin from harmful or irritant substances; in the case of IAD, these products isolate the skin from excessive moisture, urine or faeces. Liquid barrier films and moisture barrier creams or ointments are often used.

Bliss et al (2005) compared four skincare regimens to prevent IAD. These included: acrylate polymer-based liquid film; 43% petroleum ointment; 12% zinc oxide in 1% dimethicone; and 98% petroleum ointment. The researchers found the incidence of IAD was low with all regimens and there was no significant difference in the development of IAD in any of them. Their results suggest that using a defined skincare regimen with high-quality products will prevent IAD.

If the condition does not improve using these measures, it may be appropriate to follow the recommendations for treating napkin dermatitis in babies and children.

Published literature suggests that when napkin dermatitis does not improve using barrier products, a weak topical steroid such as 1% hydrocortisone cream or ointment can be applied twice a day for 3-5 days. If candidiasis is present, 1% clotrimazole cream is recommended or a combined hydrocortisone-clotrimazole cream when both dermatitis and candidiasis are present (Bianchi et al, 2011; Hunter et al, 2002).

Treating and managing incontinence

The ultimate goal for any health professional caring for patients with urinary or faecal incontinence is to control bladder/bowel function (Cooper, 2011).

Causes of incontinence are numerous and multifactorial (Box 1). A multidisciplinary approach may be needed, with a continence adviser included in the team involved in planning care.

Containing urine or faeces

In patients where bladder and/or bowel control is not possible, a range of containment products are available, outlined below.

Body-worn pads: These disposable pads come in various sizes, depending on the volume of fluid expected. They are made of super-absorbent material that turns to a gel when it comes into contact with fluid, which helps lock the fluid away from the skin. It is essential to change soiled products regularly.

Urinary sheaths (male incontinence): urinary sheaths are soft flexible sleeves that fit over the penis and attach to urinary collection systems that can be body worn, free standing or attached to the patient's bed. They can be used intermittently or continuously. Alternatives to urinary sheaths for men include pubic

BOX 1. CAUSES OF INCONTINENCE

Faecal incontinence

Anal sphincter damage or weakness
- Obstetric trauma to anal sphincter muscles
- Surgery such as lateral sphincterotomy, haemorrhoidectomy or anal stretch

Neurological conditions
- Spinal cord injury
- Multiple sclerosis
- Parkinson's disease
- Spina bifida
- Stroke

Impaction with overflow
- Frailty or immobility
- Cognitive impairment such as dementia
- Physical disability

Anorectal pathology
- Rectal prolapse
- Congenital abnormalities
- Anal/recto-vaginal fistula

Diarrhoea/intestinal hurry
- Crohn's disease
- Ulcerative colitis
- Drugs such as antibiotics

Urinary incontinence

Stress incontinence
- Pelvic floor muscles damaged or weakened
- Urethral sphincter damage

Urge incontinence
- Urinary tract infection
- Neurological conditions, as above
- Bladder cancer
- Increasing age
- Bladder outlet obstruction/stones
- Benign prostatic hyperplasia
- Overactive bladder syndrome
- Unknown cause

Overflow incontinence
- Enlarged prostate gland
- Bladder stones
- Constipation
- Surgery to the bowel or spinal cord
- Weak bladder muscles
- Nerve damage

Medications associated with urinary incontinence

These include:
- Alpha-adrenergic agonists
- Alpha-adrenergic blockers
- Angiotensin-converting enzyme inhibitors
- Diuretics
- Cholinesterase inhibitors
- Some medications with anticholinergic effect
- Hormone replacement therapy
- Opioids
- Sedatives and hypnotics

FIG 2. SKIN EXCORIATION TOOL FOR INCONTINENT PATIENTS

0 = Healthy skin
Healthy, intact skin
No erythema (redness)

Clean skin with skin cleanser

1 = Mild excoriation
Erythema (redness) of skin only
No broken areas present

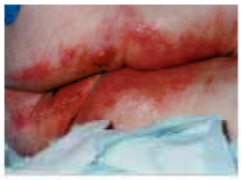
Use durable barrier cream

2 = Moderate excoriation
Erythema (redness) with less than 50% broken skin
Oozing and/or bleeding may be present

Use barrier film spray

3 = Severe excoriation
Erythema (redness), with more than 50% broken skin
Oozing and/or bleeding may be present

Seek advice from Tissue Viability Nurse where available for local guidelines/guidance



Source: NATVNS (Scotland)

flanges and pubic pressure urinals; these devices are more specialised and require careful measuring and fitting to be effective (Pomfret, 2008).

Urinary catheters: Urinary catheterisation is not without risk and should not be carried out unless there is a sound rationale. However, patients with uncontrolled urinary incontinence with skin damage, a risk assessment should be carried out to determine whether short-term catheterisation with an indwelling catheter is the best treatment for each individual patient.

Anal bags: These disposable containment bags are applied to the perianal area. The skin-friendly adhesive holds the product in situ. While they are useful, they may not be appropriate if there is a high output of faecal fluid or where the skin is already damaged by IAD.

Faecal management systems: In cases of severe or high-volume diarrhoea, IAD and widespread skin breakdown can occur rapidly. In this instance, it may be appropriate to consider the use of a faecal management system.

These temporary faecal containment devices consist of a soft flexible silicone catheter that is inserted digitally into the rectum and held in place by a low-pressure balloon cuff inflated with saline or water. The catheter is then attached to a closed-ended collection bag, which enables an accurate fluid balance to be maintained; this is vital if patients are at risk of dehydration. The device can be left in situ for 29 days and is a cost-effective way of managing acute diarrhoea (Johnstone, 2005).

Although there is a lack of evidence on infection control and faecal management systems, where there is a risk of cross–infection, such as with *C difficile*, faecal management systems may reduce risk to other patients because they contain faecal matter.

Educating patients and carers

Education should be based on the use of a structured skincare programme including the use of skin cleansers, skin protectors and continence management. It is also important for health professionals to be aware of the possible causes of faecal and urinary incontinence to help identify patients who may at risk and start treatment to prevent skin damage.

Conclusion

IAD often causes pain and distress to patients, and if they are in hospital it may delay discharge.

While there is limited clinical evidence on the efficacy of any given skincare treatment, there is good evidence to suggest that a defined skincare regimen using high-quality products minimises the damage caused by IAD.

A systematic approach to the condition should include: history taking; skin inspection; and a skincare regimen. Where possible, control treatment to regain control of bladder and/or bowel function should be included or, if this is not possible, appropriate use of a containment product. **NT**

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