

FAECAL INCONTINENCE AND ITS IMPACT ON WOUND CARE

Faecal incontinence presents a major challenge for healthcare workers dealing with wounds in the peri-anal area, especially pressure ulcers. Older people are more prone to delayed wound healing due to malnutrition and wound infection. Minimising contact between faeces and the skin protects skin integrity and prevents possible problems such as moisture lesions and infections, which may further complicate care.

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When a patient has a wound in the groin, perineum or sacrum, wound management may be complicated by urinary or faecal incontinence. While urinary incontinence can be managed by catheterisation or the appropriate use of continence products, faecal incontinence can be more problematic.

Faecal incontinence can be described as the involuntary or inappropriate passing of liquid or solid stool (Royal College of Physicians, 1995), and it is thought that approximately 1% of the healthy adult population is affected (Department of Health [DoH], 2000).

The loss of bowel control is devastating for most adults. Great emphasis is placed on children becoming continent, so for an individual to become incontinent in later life can result in feelings of shame and embarrassment. It is not uncommon for an individual with faecal incontinence to isolate



Figure 1: The Flexi-Seal® device in place.

themselves from their family and society at large (Johanson and Lafferty, 1996; Powell and Rigby, 2000).

'Faecal incontinence can be described as the involuntary or inappropriate passing of liquid or solid stool.'

Since faecal incontinence is most closely associated with older people there is likely to be a rise in incidence as the elderly population increases. It is estimated that in 2007 a greater proportion of the population will be aged over 65 than under 18 (DoH, 2006), consequently faecal incontinence is likely to become more common. Since older people are more prone to delayed wound healing due to malnutrition and wound infection, it is likely that this increase in faecal

incontinence will impact on those with pressure ulcers in the sacral or ischial area and those with lower abdominal or perineal surgical wounds (Pinchkovsky-Devin, 1984; Kligman and Lavker, 1988).

A National Institute for Health and Clinical Excellence (NICE) consultation document regarding faecal incontinence was issued in 2006 and a NICE guideline is due to be published in June 2007. The development of such guidance is invaluable for the healthcare practitioner caring for those with this distressing problem.

CAUSES OF FAECAL INCONTINENCE

The causes of faecal incontinence are numerous and multifactorial but it is largely a result of neurological disease, nutritional problems and bowel dysfunction

(Table 1). It is also important to recognise when loose stool is not caused by infection. In older people, it is wise to eliminate faecal impaction with overflow as a cause. Bowel dysfunction can equally be caused by constipation, faecal loading, diarrhoea or a defecation disorder (Irwin, 2003). In addition, the increasing prevalence of *Clostridium difficile* infection within secondary care is a cause for great concern, especially as those affected often represent the most vulnerable hospital patients, i.e. older people and those in a critical care setting (Wiesen et al, 2006).

EFFECTS OF DIARRHOEA ON SKIN INTEGRITY

If the stool is formed it presents less of a problem in wound management. The greatest challenge lies in managing wounds when the patient has loose stools or diarrhoea. The two most prevalent causes of diarrhoea are *C. difficile* (Tonna and Welsby, 2005) and complications secondary to enteral feeding (Wiesen et al, 2006).

Diarrhoea can lead to skin integrity impairment that has a similar appearance and sensation as a superficial burn. This is often termed irritant or perineal dermatitis and is defined as a form of dermatitis experienced by those with incontinence (Scardillo and Aronovitch, 1999). The perineal area is defined as the area between the vulva/scrotum and anus, buttocks, perineum, and upper, inner thigh.

Irritant or perineal dermatitis is not exclusively a problem found in the

Table 1

Causes of faecal incontinence

1. Anal sphincter damage/weakness	<ul style="list-style-type: none"> ▶▶ Obstetric trauma to one or both anal sphincter muscles ▶▶ Surgery, e.g. lateral sphincterotomy, haemorrhoidectomy, anal stretch ▶▶ Direct trauma
2. Neurological disease	<ul style="list-style-type: none"> ▶▶ Spinal chord injury ▶▶ Multiple sclerosis ▶▶ Parkinson's disease ▶▶ Spina bifida ▶▶ Stroke
3. Impaction with overflow	<ul style="list-style-type: none"> ▶▶ Frail or immobile patient ▶▶ Cognitive impairment, e.g. dementia ▶▶ Immobility/physical disability
4. Ano-rectal pathology	<ul style="list-style-type: none"> ▶▶ Rectal prolapse ▶▶ Congenital abnormalities ▶▶ Anal/recto-vaginal fistula
5. Diarrhoea/intestinal hurry	<ul style="list-style-type: none"> ▶▶ Crohn's disease ▶▶ Ulcerative colitis ▶▶ Drugs, e.g. antibiotics

older population. Younger people can also experience skin wetness caused by urine and faeces, which can be complicated by bacterial infection due to acute illness (Faria et al, 1995). However, older people may be more susceptible due to the physiological changes of ageing skin.

Two different theories exist as to how irritant or perineal dermatitis injures the skin:

- ▶▶ Urine and faeces convert urea to ammonia, which destroys the skin's acid mantle. Simultaneously, the high pH of urine activates protease and lipase, which break down the epidermis (Leyden, 1986)
- ▶▶ The skin becomes waterlogged, sweat glands become blocked and urine over-hydrates the skin layers breaking down the epidermis (Berg, 1988).

However, neither of these theories is accepted as definitive and it is possible that the cause is a combination of both factors (Le Lievre, 2000). Whatever the cause, the result is a widespread area of excoriation causing great discomfort and pain to the patient.

Urinary and faecal incontinence are well-recognised as being significant causative factors in pressure ulceration (Calianno, 2000). Consequently, good skin protection and management of diarrhoea is essential.

WOUND AREAS LIKELY TO BE AFFECTED BY FAECAL INCONTINENCE

Any wound which is in close proximity to the rectum is in danger of being contaminated with faeces in the patient with diarrhoea. The most common areas being the

lower abdomen, perineum and groin and sacrum.

The management of sacral pressure ulcers is especially problematic and requires prompt intervention by the healthcare professional to prevent extensive damage to the surrounding skin, in addition to the prevention of faecal contamination of the pressure ulcer. If the peri-ulcer skin is damaged due to enzyme activity from faeces this can prohibit the application of bordered adhesive dressings.

SKIN PROTECTION AGAINST FAECAL INCONTINENCE

It is common practice to wash patients following an episode of faecal incontinence and the choice of cleansing product is vital in preventing exacerbation of the dermal injury.

Soap and water

Soap and water should not be used as soaps are alkaline. As such, they may cause further damage to the skin of the faecally incontinent patient by raising the pH of the skin and extending the damage caused to the delicate acid mantle.

The acid mantle is vital to skin integrity as it aids the natural co-existence of skin flora, which have a protective function by acting against pathogenic bacteria (Rippke et al, 2002). In addition, the surfactants found in soaps are irritants and are therefore likely to increase the dermal injury (Bryant and Rolstad, 2001).

Skin cleansers

There are several proprietary skin cleansers available specifically

for perineal cleansing, including emulsions, foams or liquid sprays. Whichever is used, it should not further deplete the skin of moisture, but actively replace the natural moisture lost due to contact with urine and faeces. Humectants such as glycerine, esters, lanolin, cetyl or stearyl alcohol, as well as mineral oils, are useful because they prevent the loss of natural moisture from the skin (Nix, 2006).

Moisture barrier creams

The active ingredients in moisture barrier creams include petrolatum, dimethicone, lanolin or zinc oxide. Creams are water-based preparations; ointments are oil-based and have a longer-lasting effect because they are more occlusive, thus offering greater protection to the skin (Nix, 2006).

Liquid barrier films

Liquid barrier films consist of polymers combined with a solvent. When applied to the skin the solvent evaporates and the polymer dries to form a barrier. For such products to be useful, application must commence as soon as the patient reports a problem – if the skin is already compromised such films may irritate the dermis, exacerbating the problem and causing pain (Donovan et al, 2002). It is important that whichever barrier cream, ointment or film is applied does not clog continence pads, thereby preventing absorption (Hampton, 2005).

Protection of the skin against the effects of faecal incontinence is vital to prevent discomfort for the patient, and it is widely accepted that poorly managed incontinence may lead to moisture lesions

or even predispose the skin to pressure ulceration (Cooper, 2002).

Faecal collection systems

If patients do suffer from loose stools or diarrhoea, they may pass loose or fluid stools every few minutes. If this is the case they are in danger of dehydration in addition to severe irritant dermatitis and widespread skin breakdown.

In this instance it may be advisable to use a faecal collection system. Such devices have been available for many years and Duso (1992) reported a study featuring a faecal containment device (Bard, Crawley), which consisted of a soft, flexible latex collection bag, similar to a stoma bag in appearance. Duso found that the device was a good anatomical shape, adhered to the patient well via a silicone-based adhesive and was efficient in isolating faeces from local pressure ulcers, thus preventing contamination. However, acceptability to the patient was not reported nor was the device's ability to cope with large volumes of loose stools assessed.

Palmieri et al (2005) reported on the use of an anal bag (Concordia, Modena, Italy), which insulates the anus and peri-anal area using an adhesive. The study featured 120 patients in three different groups: nursing home residents, acutely ill patients with diarrhoea, and post-surgical patients. The study found that the majority of patients found the anal bag acceptable. In addition, 80% of nurses questioned stated that they felt the anal bag was very effective in preventing pressure ulcers and that the skin surface in the peri-sacral area was well preserved by the adhesive

layer of the polyurethane with no contamination or friction observed (Palmieri et al, 2005).

Flexi-Seal® (ConvaTec, Ickenham, Middlesex), is a temporary faecal containment device consisting of a soft, flexible, silicone catheter, which is inserted digitally into the rectum and held in place through a low-pressure balloon cuff that is inflated with water or saline. The catheter is attached to a closed-end collection bag that enables accurate fluid balance to be maintained, vital in the critical care area. The device may be left in situ for 29 days and is a cost-effective way of managing acute diarrhoea (ConvaTec, 2003; Johnstone, 2005). A phase-two clinical trial was conducted by ConvaTec, involving 42 patients, all of whom were in an acute care setting and incontinent of either liquid or semi-liquid stools. Nurses assessed the function and efficacy of the Flexi-Seal® on a daily basis and a total of 200 daily assessments were performed. In 83% of the daily assessments, nurses agreed that the Flexi-Seal® device improved the management of faecal incontinence (*Figure 1*).

It is vital to emphasise that unless faecal incontinence is successfully managed before healthcare professionals commence wound management, then the choice of dressings will be limited and protection of the skin will remain fraught with difficulty.

Dressing types

Application of a barrier film dressing may have a dual purpose, both protecting the skin and also enabling an adhesive bordered dressing to be safely applied

(Schuren et al, 2005). This is preferable to the use of barrier creams as these may prevent the adhesion of a dressing.

If there is necrotic tissue present in the wound then autolytic debridement using a hydrogel dressing with a secondary hydrocolloid dressing is appropriate. The hydrocolloid dressing needs to be sufficiently large to encompass the whole wound with a 2–3cm overlap to ensure good contact with the surrounding skin.

Because of the occlusive nature of hydrocolloid dressings, they provide a barrier between the wound and any faecal contamination (Schmidt et al, 1996). The moist environment provided by the hydrocolloid aids the process of autolysis, by rehydrating and lifting off necrotic/sloughy tissue in the wound bed (Pudner, 2001). In addition, hydrocolloid dressings are highly conformable, provided they are applied correctly. Pre-warming the dressing will increase the adhesion on application (Hess, 1999).

A further risk to peri-wound skin integrity can be caused by high-levels of wound exudate, which if inappropriately managed can cause maceration of the skin or even excoriation – an inflammation of the epidermis caused by chemical disruption of the stratum corneum (Cutting and White, 2002). Wound dressings have both a prophylactic and a therapeutic role to play in the care of peri-wound skin (Thomas, 1997) and the choice of product will depend not only on the volume of exudate but also on its viscosity (Hampton and Stephen-Haynes, 2005).

Highly absorbent dressings such as hydrofibres, alginates or foam dressings should be used for moderate to highly-exuding wounds, in order to both absorb the exudate and increase the period of time between dressing changes, both of which are of benefit to the patient. Bordered adhesive foam dressings have the advantage of providing an absorptive, occlusion barrier for the wound against possible contamination by faeces. It is advisable to monitor the performance of the wound dressing carefully as this may change according to the mobility of the patient. Careful monitoring allows the healthcare professional to predict the wear-time of the dressing.

If exudate strikethrough occurs on the outer backing of the dressing sooner than anticipated, then dressing changes should be increased in frequency. Extending the wear time of a dressing for the convenience of either the patient or the healthcare professional can lead to problems with maceration (Hampton and Stephen-Haynes, 2005).

While pressure ulcers may be the most common peri-anal wound, other wounds such as peri-anal sinus, which may be associated with repeated abscess formation, and fungating wounds, will also present wound management problems and are often best managed by a multidisciplinary approach involving surgeon, stoma nurse and wound/tissue viability nurse.

CONCLUSION

Faecal incontinence presents a

major challenge when dealing with wounds in the peri-anal area, especially in the older person. Minimising contact between faeces and the skin protects skin integrity and prevents possible problems such as moisture lesions and infections, which may further complicate care. **CE**

REFERENCES

- Berg RW (1988) Aetiology and pathophysiology of diaper dermatitis. *Adv Derma* **3**: 75–98
- Bryant RA, Rolstad BS (2001) Examining threats to skin integrity. *Ost Wound Man* **47(6)**: 18–22
- Calianno C (2000) Assessing and preventing pressure ulcers. *Adv Skin Wound Care* **13(5)**: 244–46
- ConvaTec (2003) *FMS Cost-effectiveness Survey*. Data on File. ConvaTec, Ickenham, UK
- Cooper P (2002) Incontinence-induced pressure ulcers. *Nurs Res Care* **4(5)**: 216–218, 220–221
- Cutting KF, White RJ (2002) Maceration of the skin: 1: The nature and causes of skin maceration. *J Wound Care* **11(7)**: 275–8
- DoH (2000) *Good Practice in Continence Services*. HMSO, London
- DoH (2006) *National Service Framework for Older People*. DoH, London
- Donovan A, Ratcliff C, Gray M (2002) Perineal skin care for the incontinent patient. *Adv Skin Wound Care* **15(4)**: 170–75
- Duso S (1992) A new faecal containment device. *Ost Wound Manag* **38(5)**: 38–41
- Faria DT, Skwayder T, Krull EA (1995) Perineal skin injury: extrinsic environmental risk factors. *Ost Wound Manag* **42(7)**: 28–37
- Hampton S (2005) Importance of the appropriate use and selection of continence pads. *Br J Nurs* **14(5)**: 265–69
- Hampton S, Stephen-Haynes J (2005) Skin maceration: assessment, prevention and treatment. In: White R (ed). *Skin Care in Wound Management: Assessment, Prevention and Treatment*. Wounds-UK, Aberdeen: 92
- Hess C (1999) When to use hydrocolloids. *Nursing* **29(11)**: 20
- Irwin K (2003) Back to Basics 1: Assessment of bowel dysfunction. *J Comm Nurs* **17(11)**: 26–32
- Johanson JF, Lafferty J (1996) Epidemiology of faecal incontinence: the silent affliction. *Am J Gastroenterol* **91(1)**: 33–6
- Johnstone A (2005) Evaluating Flexi-Seal® FMS: a faecal management system. *Wounds-UK* **1(3)**: 110–14
- Le Lievre S (2000) care of the incontinent clients skin. *J Comm Nurs* **14**: 2
- Kligman AM, Lavker RM (1988) Cutaneous ageing: the differences between intrinsic ageing. *J Cutaneous Age Cosmet Derma* **1(5)**: 12
- Leyden JJ (1986) Diaper dermatitis. *Dermatol Clin* **4(1)**: 23–8
- NICE (2006) *Faecal Incontinence: Consultation*. Available at: www.nice.org.uk/page.aspx?o=389303 (accessed 29/04/07)
- Nix D (2006) Skin matters: Prevention and treatment of perineal skin breakdown due to incontinence. *Ost Wound Man* **52(4)**: 26–8
- Palmieri B, Benuzzi G, Bellini N (2005) The anal bag: a modern approach to fecal incontinence management. *Ost Wound Man* **51(12)**: 44–52
- Pinchkosfsky-Devin G (1984) Nutrition and wound healing. *J Wound Care* **3(5)**: 231–4
- Powell M, Rigby D (2000) Bowel dysfunction. *Nurs Stand* **14(47)**: 47–54
- Pudner R (2001) Hydrocolloid dressings in wound management. *J Comm Nurs* **15**: 4
- Rippke F, Schreiner V, Schwanitz HJ (2002) The acid milieu of the horny layer: new findings on the physiology and pathophysiology of the skin pH. *Am J Clin Dermatol* **3(4)**: 261–72
- Royal College of Physicians (1995) *Incontinence: Causes, Management and Provision of Services*. Royal College of Physicians, London
- Scardillo J, Aronovitch SA (1999) Successfully managing incontinence-related irritant dermatitis across the lifespan. *Ost Wound Man* **45(4)**: 36–44
- Schimdt M, Verness P, Canarelli J et al (1996) Evaluation of a hydrocolloid dressing. *J Wound Care* **5(9)**: 396–9
- Schuren J, Becker A, Sibbald G (2005) A liquid film-forming acrylate for peri-wound protection: a systematic review and meta-analysis (3M™ Cavilon™, No-sting Barrier Film). *Int Wound J* **2(3)**: 230–38
- Thomas S (1997) Assessment and management of wound exudate. *J Wound Care* **6(7)**: 327–30
- Tonna I, Welsby PD (2005) Pathogenesis and treatment of Clostridium difficile infection. *Postgrad Med J* **81**: 367–9
- Wiesen, P, Van Gossum A, Preiser JC (2006) Diarrhoea in the critically ill. *Curr Opin Crit Care* **12**: 149–54

Key Points

- ▶ **Successful wound management is due to thorough and continuing assessment of the individual.**
- ▶ **Managing faecal incontinence is vital for the dignity of the patient.**
- ▶ **Wound dressings that provide occlusion are invaluable in protecting the wound from faecal contamination.**
- ▶ **Minimising contact between faeces and the skin protects skin integrity.**