

BARIATRIC CARE:

PRESSURE ULCER PREVENTION

Obese patients have an increased risk of pressure ulcer development and it is important that every effort is made to prevent this from happening — particularly as their wounds can take longer to heal. This article looks at the reasons why bariatric patients are more prone to pressure damage and suggests ways in which carers can help to protect these patients, while also avoiding the risk of injury to themselves.

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Figure 1. Skin monitoring and regular skin care is particularly important for bariatric patients as heavy skin folds can be difficult to wash and are susceptible to damage, as seen here.

The term bariatrics comes from the Greek word *barros*, meaning large or heavy and it is used to describe the area of medicine concerning people who are overweight or obese. The internationally accepted definition of obesity in adults is based on body mass index (BMI). A BMI >40 is now widely accepted as a definition of obesity. It relates to adults and can be applied to both sexes (World Health Organization [WHO], 2000). The bariatric population in the UK is increasing at an alarming rate. If

this trend continues, nearly one-third of all men are likely to be obese by 2010 (Department of Health [DoH], 2006). As bariatric patients will often require the use of specialised equipment — such as lifting devices — there is a growing organisational challenge to the NHS to deliver safe, dignified care, as well as safe systems of work for staff who are caring for this patient group.

Clinicians encountering bariatric patients should be aware of their special needs. Obese patients

have an increased risk of pressure ulcers and maintaining skin integrity is one of the challenges that nurses will encounter. Changes in skin physiology due to a greater skin-weight ratio, reduced vascularity and perfusion in adipose tissue can all result in poor wound healing. It is important to apply preventive measures for bariatric patients and to provide advanced wound care if pressure ulcers occur.

As well as having a high risk of acute wounds, most notably

non-healing surgical wounds due to dehiscence or infection, bariatric patients also have a higher risk of chronic wounds such as pressure ulcers, venous ulcers and diabetic foot wounds (Krasner et al, 2001).

Lack of training, poor staffing and unsafe handling techniques can also contribute to the increased risk of tissue damage within this patient group. Holistic care by appropriately trained staff should be provided.

Obesity and the increased risk of pressure damage

Obesity has many health implications (Table 1) and can increase the risk of premature death. It places extra strain on the heart and lungs to distribute oxygen and nutrients around the body. Krasner et al (2006) identified that the chronic impairment of systemic perfusion that occurs in patients who are obese frequently results in chronic skin and wound problems. Blood supply to fatty tissue may not be adequate to provide appropriate oxygen and nutrition. This could be further compounded if the

patient's dietary input does not include essential vitamins and nutrients.

People who carry more weight are also prone to profuse sweating. Increased adipose tissue prevents heat loss as well as there being an increased body mass area ratio. This increases the need to wash regularly. However, personal hygiene can be difficult for most bariatric individuals as many of them are unable to wash and bathe easily. Washing underneath the skin folds, the abdominal fold and groin area can be a difficult task since the weight of the fatty folds of skin can be too heavy for the individual to lift and wash beneath (Figure 1). These patients often suffer skin breakdown, rashes, intertrigo (inflammation that occurs on body folds) and eczematous lesions resulting from perspiration, friction and lack of cleanliness. Careful intervention is required to prevent bacterial or fungal growth.

Wound healing is slower in larger patients which is thought to be associated with decreased

wound collagen deposition. In a normal acute wound there is an orderly progress of wound healing: inflammation, proliferation epithelialisation and remodelling. It is thought that the reduction in the laying down of collagen deposits has an effect on the structural changes of the adipose tissue during the proliferation stage, although why this occurs is not fully known (Pokorny, 2008).

It is not uncommon for bariatric patients to have pressure ulcers under the panniculus (hanging flap of tissue in the abdominal area) (Figure 2). This can result in hospital admission and the patient may require an apronectomy (surgical removal of the fatty apron) if the pannus becomes necrotic due to a restricted blood supply.

Gallagher (2006) identified that pressure ulcers can develop because of bariatric patients' immobility. Bariatric patients may have a limited range of movement and most have breathing difficulties (which can be severe), inhibiting their ability to lie flat, supine or prone. These patients

Table 1.

Health consequences of obesity (Noble, 2001)

Physical symptoms	Metabolic problems	Endocrine problems	Anaesthetic and surgical problems	Psychological and social problems
Tiredness Breathlessness Varicose veins Back pain Arthritis Oedema Cellulitis Sweating Intertrigo Stress incontinence	Hypertension Hyperlipidaemia Hypercoagulation Type II diabetes Coronary heart disease Stroke Hepatic steatosis	Hirsutism Oligomenorrhea Infertility Menstruorrhagia Oestrogen-dependent cancers: breast, uterus, prostate Polycystic ovarian syndrome	Sleep apnoea Chest infections Wound dehiscence Hernia Venous thrombosis	Low self-esteem Distorted body image Depression Cognitive disturbance Isolation Agoraphobia Unemployment Discrimination



Figure 2. Bariatric patients can be at risk of unusual pressure ulcers within skin folds. The above picture shows the formation of a small pressure ulcer, which timely intervention and assessment would have prevented.

may have difficulty repositioning themselves and nurses may be reluctant to turn and reposition the patient due to their realistic fear of injury and lack of training in how to safely manage heavier patients. Without the movement incurred in repositioning, the patient can sustain friction and shear damage and atypical pressure ulcers in the skin folds. This can be further exacerbated by tubes or catheters that have burrowed into the soft tissue.

The weight of the skin folds and the skin to skin contact can create forces that enable pressure ulcers to develop in areas that are not considered to be high risk, such as the patient's hips, trunk or torso. Skin can also break down at the occiput (the back of the head) due to the bull-head configuration of the head and neck (*Figure 3*).

In some cases the provision of inappropriate equipment can be a contributory factor to

pressure damage, for example, inappropriate seating where the chair is too small, or damage from bed rails where the bed is too narrow.

Preventing pressure ulcers in bariatric patients

Preventive measures for bariatric patients can be difficult for nurses to implement due to inappropriate or inadequate resources. Solutions should be implemented that meet the needs of the individual through management strategies with multidisciplinary involvement.

Systems should be in place that minimise the risk of pressure damage among this patient group using effective equipment provision, education and resources. A named coordinator should implement these provisions when the patient presents within the acute or primary setting.

Holistic assessment

Nurses should undertake an holistic assessment that



Figure 3. Skin can also break down at the back of the head in bariatric patients due to the bull-head configuration of the head and neck.

encompasses and identifies all high-risk breakdown areas for careful monitoring, such as buttocks, heels, sacrum, occiput, skin fold areas including skin to skin areas and thigh folds. A manual handling plan should be included and given to carers to reduce the risk of injury.

The assessment should also include any comorbidities and their effects on the patient, such as pain levels which are known to interfere with a patient's mobility. A dietitian should be consulted as they can assist in food choices. Improved diet can reduce the risk of pressure damage (Mastrogiovanni et al, 2003).

Hygiene

When assisting with or undertaking personal hygiene, it is essential that the patient's skin folds are kept clean and dry to minimise the amount of moisture. This might need to be undertaken several times a day and a change of clothing might also be required

each time. The use of harsh soap, alcohol-based lotions and talcum powders should be avoided.

Drying the skin under the folds is critical as dampness encourages fungal and bacterial growth. In some circumstances, leaving a soft, dry cloth between the skin folds can reduce friction and absorb moisture.

Specialist equipment and safe manual handling

Weight shifting is essential to avoid pressure damage whether the patient is in bed, a chair, or wheelchair. Choosing and implementing the right bariatric equipment can help to facilitate independence. Much of the equipment needed is specialised and will require training in its use. The increase in body tissue means that bariatric patients require wider beds and dynamic mattresses, hoists that have a higher weight capacity, and slings that are wide enough with long legs to encompass the patient's heavy legs and avoid skin tears to the legs when hoisting.

Moving bariatric patients around the bed is a challenging task

and will often take up to three or more people. It is important to minimise friction and shear while positioning the patient correctly (Mastrogiovanni et al, 2003). There are several types of repositioning equipment available that will reduce friction and shear. *Figure 4* shows a repositioning sheet which uses a sheet and hoist combined to move the patient in bed.

Alternatively, bariatric patients can be repositioned using sliding sheets. It is important to find the correct size for each patient. Sliding sheets, if appropriately used by the right number of staff trained in their use, will also reduce friction and shear and help the patient to feel comfortable. They can be used for positioning slings for hoisting, and rolling a patient where the bed is not wide enough to turn a patient on their side.

Hoists and slings should be used for all transfers on and off the bed. It is preferable to use overhead gantries for hoisting, rather than a mobile hoist.

To minimise the risk of pressure damage the full functionalities of a hospital/community profiling bed

should be used. There are many types of bariatric bed available and functionalities will not always be the same, but all beds should include a high/low function, a raised back rest and a knee break. Moving the patient into a supported position should help to alleviate the external pressure of a heavy abdomen pressing on the legs, which can cause capillary occlusion and decreases oxygen flow to the distal tissue. By reducing the effects of gravity the knee break will lessen the pressure on the heels, but it will increase abdominal pressure which, in turn, could inhibit the patient's breathing.

Beds should support the weight of the patient and be wide enough to enable movement and repositioning within the bed. Any accessories such as bedrails, bedsticks, lifting poles should be compatible with the bed, and not have the potential to cause harm to the patient. To avoid shearing, the bed should be angled between 30–45 degrees. If the bed cannot be tilted, the same effect can be achieved by using pillows for support to reduce friction and shear.

The mattress and bed need to be used in conjunction with each other. If the back rest of the bed is placed too high this has the potential to restrict the dynamic air flow or squash the foam mattress under the patient's sacral area. Static foam or overlay mattresses aim to minimise the interface pressure by increasing the contact area. Foam mattresses allow individuals more independence, as they are able to assist when turning and getting in and out of bed.



Figure 4. Using equipment fit for purpose to reposition patient in bed reduces friction and shear when turning a bariatric patient. A repositioning sheet is being used here.

Dynamic systems produce an alternating action which subjects the tissues of the body to periods of high pressure followed by periods of low pressure, during which it is anticipated that the maximum surface area of the patient is in contact with the mattress thus minimising interface pressure. Dynamic mattresses can make individuals dependent, as getting in and out of, and moving around in bed is more difficult than with a foam mattress. The risk of increased dependence should be considered when allocating a mattress, especially within the community environment.

Seating

Many bariatric patients sleep in chairs because they cannot raise their legs to get into bed and, once there, they have difficulty lying flat. A dual motor chair should be provided instead of a single motor model. A dual motor chair will enable the patient to change their seated position and independently move the leg of the chair up and down, a single motor will lower the back and raise the legs at the same time. The chair also needs to have pressure-relieving properties.

Toileting

Bariatric patients find elimination difficult, due to their relative immobility and size. The size and safe working load of the toilet can inhibit normal elimination and a commode may not be wide enough. The patient may also have problems cleaning themselves after toileting which will increase the risk of tissue damage. Where possible, bariatric patients should be provided with toilets that

complete the washing and drying cycle after elimination, as this helps to maintain skin integrity as it washes and dries the patient before they get up from the toilet. Other toileting equipment that may be suitable for larger patients includes toilets with adjustable raised seats that make the task of elimination and cleaning easier for those who are less mobile.

Conclusion

Educating staff on the management of bariatric patients is the key to eliminating the fears of being injured while providing care. It should be part of an organisation's education programme to fully equip nurses to provide a high level of care that prevents tissue damage and reduces the inherent risks associated with handling bariatric patients.

Pressure ulcer prevention is part of the holistic care management pathway for bariatric patients. Effective management of skin integrity is a challenge for all nurses, but we should empower patients in this particularly vulnerable group to work in collaboration with the multidisciplinary team to help to prevent the formation of pressure ulcers. **WE**

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Key points

- ▶ Ensuring the well-being of bariatric patients is a challenge to all professionals within health and social care.
- ▶ Skin care is an integral part of the holistic management of bariatric care.
- ▶ Appropriate equipment provision is key to maintaining skin integrity, patient dignity and well-being.
- ▶ Education is key to good bariatric management.
- ▶ Organisations should have bariatric specialties, strategies and systems in place to ensure the seamless management of a bariatric patient through an episode of care.

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