MALODOROUS WOUNDS: ASSESSMENT AND MANAGEMENT

Managing wounds with a noticeable odour can be problematic for both patients and nurses. Malodour may occur as part of the normal process of healing, through the use of certain dressings, or it can be a sign of infection. Correctly identifying the cause increases the chance of the management being successful, and simple actions such as maintaining good hygiene must not be overlooked.

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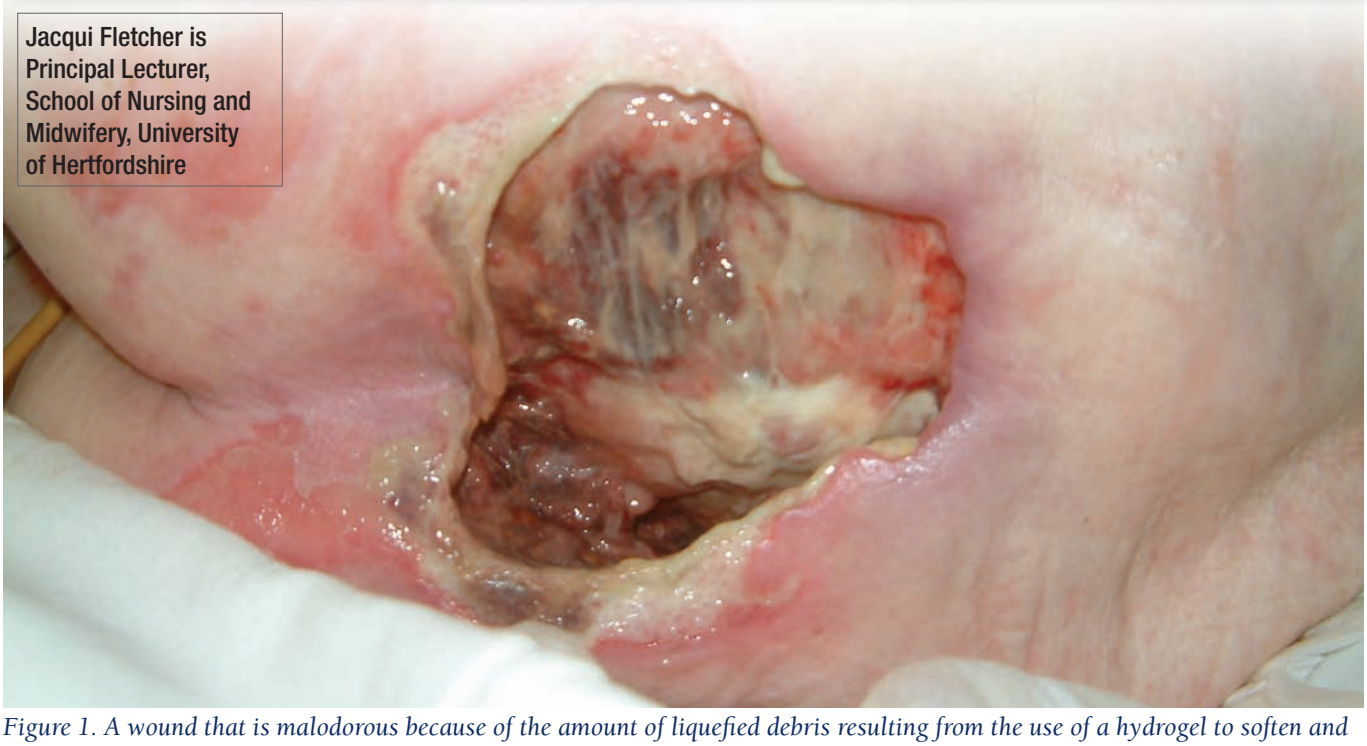

Figure 1. A wound that is malodorous because of the amount of liquefied debris resulting from the use of a hydrogel to soften and debride necrotic tissue.

It is widely accepted that many wounds have a distinctive smell or odour, which is often unpleasant and is clinically described as malodour.

It should be remembered, however, that although unpleasant, this malodour is not always unexpected, nor is it necessarily an indication of a problem in terms of wound healing. This does not mean that the presence of malodour is not a problem for the patient or their family. Similarly, Wilkes et al (2003) suggest that caring for malodorous wounds is stressful for nurses, particularly in the community setting.

Malodour can cause psychological distress and embarrassment to patients.

Malodour may occur as part of the normal process of wound healing when, for example, a hard necrotic eschar is softened or liquefied with the use of a hydrogel. Equally, some dressings such as hydrocolloids and alginates have distinctive odours, which might be described as unpleasant but are perfectly normal.

In some instances, however, malodour may reflect a problem within the wound, such as the presence of infection — this would indicate to the clinician that the wound management plan may need to be changed.

Regardless of the reason, malodour can cause psychological distress and embarrassment to patients

(Bowler et al, 1999), resulting in altered body image, depression and social isolation (Lazelle-Ali, 2007). Malodour may also have a physical impact as smell has a strong association with taste — thus continuous malodour can result in nausea and reduced appetite at a time when the patient needs increased food intake to facilitate healing (Hack, 2003).

Causes of malodour

It is thought that malodour may be caused by the bacterial production of short-chain fatty acid molecules in the wound. However, it must be remembered that many wounds have a distinctive smell anyway, which to some people could be classified as malodour. Indeed, many experienced nurses can recognise the smell of a 'typical' pressure or leg ulcer on entering a ward. Accepting that this is the case, the causes of odour and what it means for patients' treatment should be considered.

Debridement/desloughing

When a wound is debrided using dressing products, a previously dry, black, necrotic wound can turn soft and stringy and produce a strong odour (*Figures 1 and 2*). Although this smell may be offensive and quite strong, it is perfectly normal and should be expected. Once the soft stringy material is removed, the malodour should reduce considerably.

Bacterial involvement

The presence of bacteria in a wound is widely accepted as being a cause of malodour. Bowler et al (1999) identified that in both infected and non-infected leg ulcers the smell is strongly influenced by the presence of anaerobic bacteria, particularly Gram negative organisms such as *Bacteroides* and *Clostridium*. These produce odour-generating compounds such as cadaverine and putrescine, which result in strong acrid smells (Hack, 2003). Some common aerobes such as *Staphylococcus aureus* and *Pseudomonas aeruginosa* can also have a distinctive odour. Where the action of the bacteria includes putrefaction of tissues (e.g. anaerobic *streptococci*) this will also increase the odour.

Figure 2. Dry necrotic wound with no noticeable odour before debridement.

It is important to remember that malodour can occur when the wound is not infected (i.e. some abdominal wounds may be malodorous if there is a fistula connecting with the bowel), although it is generally accepted that a change or sudden increase in odour is a common indicator of infection. However, a broader view must be taken before initiating antimicrobial therapy.

Dressings

Some dressings such as hydrocolloids and alginates have a distinctive odour. With experience, these smells are easily recognisable (although they may vary slightly between brands). It is, however, important to remember that the patient is unlikely to have experienced other dressings/wounds and therefore reassurance should be provided, stressing that malodour is 'normal'. Dressings that permit strike-through (the leakage of exudate to the wound surface) will also release more odour compared with those that trap the wound exudate.

Assessment

Odour is notoriously difficult to assess, as everybody's perception of smell and its strength is different. A variety of laboratory tests for malodour have been described (Thomas et al, 1998; Lee et al 2007), however, these are not practical for use in clinical situations. Similarly, the majority of wound assessment forms use a very subjective description of odour such as use of plus signs (odour +, odour ++, etc) or simply ask nurses to choose yes or no when considering the presence of odour. While these methods at least acknowledge the presence of odour, they are very subjective and are likely to be misinterpreted.

The Teler® descriptors and variants of the Baker and Haig scale (*Tables 1 and 2*) are two slightly more objective descriptors for odour although they are not widely used. The Teler system also captures the patient's view of the odour and what effect it is having on them (Browne et al, 2004) (*Table 3*). This scale can be adapted to the

Table 1

The TELER® Odour Scale *(Browne et al, 2004)*

Code 5	No odour
Code 4	Odour is detected on removal of the dressing
Code 3	Odour evident on exposure of the dressing
Code 2	Odour evident at arms length from the patient
Code 1	Odour evident on entering room
Code 0	Odour evident on entering house/ward/clinic

patient's specific circumstances, for example, replacing some of the components with alternatives such as 'I get embarrassed and it affects my work environment' (*Table 4*).

Although the Teler indicators appear to be much more time-consuming, they offer a truer picture of what it is like for both the practitioner and the patient to deal with malodour.

Management

The clinician should initially determine the cause of the odour — this will allow appropriate objectives to be set. For example, if the cause of the odour is the presence of large amounts of liquefying tissue (see *Figure 1*), it is unlikely that the use of an antimicrobial will reduce or control the smell. However, if the cause is a high bacterial load, then use of a topical antimicrobial is very appropriate and should considerably reduce the odour.

Table 2

The Baker and Haig Scale *(Poteete, 1993)*

STRONG	Odour is evident upon entering the room (6–10 feet from the patient) with the dressing intact
MODERATE	Odour is evident upon entering the room (6–10 feet from the patient) with the dressing removed
SLIGHT	Odour is evident at close proximity to the patient when the dressing is removed
NO ODOUR	No odour is evident, even at the patient's bedside with the dressing removed

In many situations it is not possible to be absolutely certain of the cause of malodour as there could be several contributory factors. In these cases a variety of strategies may have to be used. Simple actions such as maintaining good hygiene, cleansing the skin around the wound when changing the dressing, removing excess exudate and surface debris, and changing the dressing before it leaks, all play a part in reducing the odour.

Lee at al (2004) suggest three main activities for the management of malodour:

- Cleansing and debridement
- The use of antimicrobials
- The use of specialist odour-absorbing dressings.

Charcoal-based dressing products are available for the management of malodour, however, a straightforward comparison of these in a clinical setting is difficult as they perform differently because of the varied backing materials they use. Thus, while some may be suitable for wet wounds, others are not; equally, some require secondary dressings and others do not. Thomas et al (1998) and Lee et al (2007) suggest that the other characteristics of these dressings, such as absorbency and the ability to achieve a good seal, are as important as the performance of the charcoal.

Table 3

TELER® Impact of Odour scale *(Browne et al, 2004)*

This is a component indicator. The score depends on the number of components that apply so the patient should 'tick' all the relevant criteria

Components
a) Aware of the odour
b) Concerned that other people will notice it
c) Reluctant to socialise
d) Affects appetite
e) Nauseated by the odour

Code 5	Not experiencing any of the components
Code 4	Experiencing 1 component
Code 3	Experiencing 2 components
Code 2	Experiencing 3 components
Code 1	Experiencing 4 components
Code 0	Experiencing 5 components

Several authors suggest that both systemic and topical metronidazole play a role in managing malodour (Clark, 2002; Bale et al, 2004; Paul and Pieper, 2008). However, metronidazole is not routinely used as a first choice treatment and is most effective when the predominant causative organism is anaerobic.

Mercier and Knevitt (2005) suggest that aromatherapy may be beneficial in some situations. However, the oils should never be applied directly to the wound and in reality this approach only serves to mask rather than deal with the smell. Also,

Table 4

Alternative components for use in the impact of odour scale *(Browne et al, 2004)*

a) Are you aware of the odour?
b) Are you concerned that other people will notice it?
c) Are you upset by the reaction of others?
d) Do you get embarrassed?
e) Does it affect your work environment?

in some cases the mixture of aromatherapy oil and wound odours may be perceived as worse than the malodour alone.

The psychological care of patients with malodorous wounds should also be addressed (Morris, 2008), and the team caring for patients with malodorous wounds should also be well-supported as the task can at times be overwhelming. Some clinicians have been known to express guilt when dealing with malodorous wounds, because they feel that they have let patients down (Wilkes et al, 2003).

Conclusion

Managing wounds with a noticeable odour is problematic for both patients and nurses. However, it is important to distinguish between what is a normal (although unpleasant) odour and an odour that indicates a problem such as infection.

Correctly identifying the cause increases the chance of the management being successful and simple actions such as maintaining good hygiene must not be overlooked. Appropriate physical and psychological care are equally important. **WE**

Key Points

- Many wounds have a distinctive smell.
- Assessment of odour is often subjective and it is important to consider what impact it has on the patient as much as how strong it is.
- Although the smell may be both strong and unpleasant it does not necessarily indicate that there is anything wrong with the wound.
- Regardless of the cause, the odour can be a source of embarrassment for the patient and lead to social isolation.
- Managing malodour requires consideration of the cause and may necessitate a change in management.

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