

Managing cavity wounds

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It has been seen in recent years, that an increasing number of patients are being discharged early into the community, to be managed by the district or practice nurse. This has been especially the case with surgical patients, a consequence of this being that the nurse has to manage their wound post-operatively. For a patient with a cavity wound this presents further difficulties as many of the dressing products which would be advantageous in this instance are not available on the Drug Tariff. Perhaps this is the reason why many nurses still use the traditional dressing of ribbon gauze soaked in a variety of lotions to pack the wound? This article will explore the different types of cavity wounds, how they should be assessed, and the choice of an appropriate dressing.

Surgically created cavity wounds

These are created at the time of surgery, where the surgeon has decided that healing should be by secondary intention. It is undertaken when there is extensive tissue loss which would prevent primary closure of the wound or because the wound is heavily contaminated or infected at the time of surgery e.g. pilonidal sinus, breast abscess. The surgeon aims to achieve haemostasis and avoid the development of an haematoma, as well as creating an evenly shaped cavity with gently sloping sides, which allows free drainage and for the cavity to heal from the depth of the wound (Figure 1) (Berry & Jones, 1993).

Dehiscence wounds: This is where a surgically closed wound has partially or completely separated, causing a cavity wound, and may be due to the suturing technique adopted in wound closure or as a result of a wound infection. Total dehiscence will require surgical intervention to explore the wound, allow excision of any devitalised tissue and closure of the wound. In partial dehiscence, the cavity wound can be lightly filled with an appropriate dressing, and allowed to heal by secondary intention (Figure 2, an abdominal wound which has broken down, but also contains a mucus fistula).

Traumatic wounds: The nature of the injury can indicate that it may not be feasible to bring the skin edges together, due to either extensive tissue loss, the presence of devitalised tissue, the potential risk of infection, or damage to underlying structures following an avulsion

injury. The principle of treatment for managing a cavity wound caused by a traumatic injury is to surgically debride any devitalised tissue within the wound and lay the wound open if infection is suspected.

Chronic wounds: Pressure sores can be superficial, but extensive tissue damage caused by shearing forces or pressure can lead to the formation of a cavity wound. These patients need to be nursed on an appropriate support surface to ensure further tissue damage will not occur, as well as managing any predisposing factors such as incontinence or a poor nutritional state. The cavity wound can be managed conservatively with an appropriate dressing, or may require reconstructive surgery whereby the defect is filled by a rotational skin flap. Fungating malignant wounds often become cavity wounds, due to extensive tissue destruction. These patients also have the added problem of copious amounts of exudate and malodour. The main aim of management is palliative, i.e. to reduce odour and control exudate.

Assessment of the cavity wound

As with any patient it is important to undertake a holistic assessment of the patient, taking into account all factors which may delay wound healing (Pudner, 1997a), as well as assessing the wound itself. Assessment of the wound should include the following: size, shape, depth, presence of any undermining or sinuses, the type of tissue within the wound bed, type and amount of exudate, and indication of infection, as well as the environment in which the patient is to be managed.

Size: The size of the wound will obviously influence the length of time the cavity will take to heal, i.e. the larger the cavity the longer it will take to heal. The wound should be measured by taking a tracing at the first assessment and at regular intervals, in order to evaluate healing.

Shape: The shape of the cavity is important for healing to occur. The nurse should monitor the wound for the presence of any sinuses or undermining of the cavity under the skin edge (Figure 7).

Depth: The depth of the wound is often difficult to establish accurately. An estimation of wound depth may be achieved by gently probing the wound. If a foam stent is used e.g. Cavi-Care, the shape of the stent will give an indication of the depth of the wound.

Type of tissue within the wound bed: The appearance of the wound bed

should be closely monitored. Healthy granulation tissue is usually red or pale pink in colour, and should not bleed on contact. The presence of necrotic or sloughy tissue indicates devitalised tissue within the wound and will need to be removed, as necrotic tissue inhibits autolysis and slough predisposes the wound to infection.

Exudate: The type of exudate should be examined for colour and consistency. If the exudate becomes thick and changes colour, it may indicate clinical infection. The amount should be monitored, in order to ensure the correct type of dressing is used and changed when required. Excessive amounts of exudate can cause maceration of the surrounding skin edges.

Wound infection: The patient may show the normal signs of infection, but the wound may also show signs of friable granulation tissue, which is bright red in colour and bleeds very easily, or superficial bridging and pain.

Environment: The environment in which the patient is cared for should be considered, as it will influence how the cavity wound is to be managed. Where the patient lives may mean that he/she cannot attend the clinic and so needs to be visited by the district nurse. Some patients wish to be able to return to their normal activities as quickly as possible and may prefer to manage the wound themselves. The cleanliness of the home is also an important issue, as it may increase the risk of the wound becoming infected. All of these are important factors to consider, as they will influence how the cavity wound is to be managed.

Choice of appropriate dressing

It is important that the wound is kept moist, and that the dressing is able to be removed without causing trauma to the underlying granulation tissue or pain for the patient. As previously stated the choice of dressing will depend upon the shape of the cavity wound, the amount of exudate and who is going to undertake the dressing procedure. The dressing placed in the cavity wound should initially assist in haemostasis, be able to absorb exudate and facilitate the development of granulation tissue from the base of the wound. The dressing material should be laid lightly in the wound bed, as tightly packing the wound can lead to excessive local pressure on the capillary loops, which will result in ischaemia and tissue death, as well as causing pain and discomfort for the patient.

Traditional dressings: A pack of ribbon gauze soaked in an antiseptic solution is a very traditional way of managing cavity wounds. However, this dressing will dry out, causing adherence of the dressing to the wound bed, which when removed causes the wound to bleed and results in much discomfort and pain for the patient. There are many other products which can be used which will not adhere to the wound bed or cause the patient pain on removal, and these should be used in preference to the traditional ribbon gauze (Pudner, 1997b).

Alginate dressings: These dressings can be gently laid in the wound bed, where they will absorb exudate and produce a hydrophilic gel, so creating a moist, warm environment. A secondary dressing is often required, which may be a vapour-permeable film, so as to maintain a moist environment. The alginate dressings come in various forms including flat sheets (Sorbsan, Kaltostat, Kaltogel, Tegagen, omfeel SeaSorb), rope (Sorbsan, Kaltostat) and ribbon (Sorbsan). However, many nurses either lay the flat sheet within the cavity or cut a spiral shape in the dressing (Tegagen), so that it will fill the cavity wound. The dressing should be changed once it is fully saturated and then every 35 days as the amount of exudate diminishes. The dressing can be removed painlessly from the wound by gentle irrigation with Normal Saline 0.9%. It causes the dressing to gel and so allows ease of removal with no trauma to the wound bed. Gupta et al. (1991) found that Sorbsan was superior to the traditional gauze based dressing in terms of comfort and bacterial clearance, while Williams et al. (1995) found there was no significant difference in the level of pain experienced by patients on removal of dressing when comparing Sorbsan and Kaltostat. Chaloner (1991) reported the successful use of Sorbsan ribbon in a lady whose mastectomy wound had broken down, which enabled her to make a full recovery both physically, psychologically and socially.

Foam dressings: There are two dressings which are designed for cavity wounds, i.e. Cavi-Care and Allewyn Cavity. Cavi-Care has replaced Silastic Foam and is a dressing which has to be mixed, in order for the foam stent to be produced. The component parts of each of the two sachets are mixed together and poured into the wound, which after threefour minutes hardens to form a foam stent the shape of the cavity wound. As Cavi-Care fits the wound exactly, the wound must contain healthy granulation tissue, have no crevices or sinuses, and be able to be removed easily (Figure 8). The foam stent is held in place by a secondary dressing. The foam stent should be removed every 2448 hours, rinsed under the tap and then soaked in a solution of 5% chlorhexidine aqueous solution and clean water in a ratio of 1:10 for 10 minutes. The stent is then replaced in the wound (Williams, 1995). As

the shape of the wound alters, so a new stent will need to be made. Allevyn Cavity is a contoured honeycomb polymer membrane filled with hydrocellular foam chips which can absorb approximately 14 times its own weight in fluid. The surface of the dressing is contoured so as to reduce possible adherence to the wound bed (Cutting & Harding, 1990). It is of value in cavity wounds containing undulations and undermining of the skin edges as it can be gently placed in the wound and held there by a light dressing (Figure 7). It can be left in place until the dressing is saturated, and is easily removed without causing pain or discomfort to the patient (Butterworth et al., 1992). Berry and Bale (1996) compared the use of Allevyn Cavity and Kaltostat in 20 patients who had undergone excision of pilonidal sinus, and found no difference in healing times and that both were easy to use, effective and acceptable to the patients and clinicians.

Hydrocolloid paste: This dressing product absorbs wound exudate to produce a gel, which provides a moist environment and reduces pain at removal of dressing. It can be inserted into a cavity wound, with a wafer of hydrocolloid placed over the wound as a secondary dressing.

Hydrofibre dressing: Acquacel is a cellulose-based fibre dressing which controls exudate by absorbing and retaining fluid within the dressing. It is soft, absorbent and comfortable for the patient and like many other dressings requires a secondary dressing. Foster and Moore (1997a) used it successfully in a patient who had undergone radical excision of a pilonidal sinus, which was left to heal by secondary intention. In a later study, Foster and Moore (1997b) also found that this hydrofibre dressing had significant advantages over the traditional ribbon gauze and proflavine dressing, especially in relation to reduced pain and ease of removal at dressing change.

Hydrogels: A variety of hydrogels are now on the market i.e. Intrasite, Sterigel, GranuGel, Nu-Gel and Purilon Gel. They are of value in a shallow cavity wound with light to moderate exudate, as they provide a moist environment. However, maceration at the skin edges can occur if too much fluid is present.

Vacuum-assisted closure

Vacuum-assisted closure (VAC) is a non-invasive technique whereby negative pressure is delivered in a uniform manner to a wound. This encourages the arterioles to dilate, so improving blood flow, promoting a moist environment and assisting in the proliferation of granulation tissue. A foam dressing is cut to the shape of the wound and then applied over the wound. Suction tubing is inserted into the foam

dressings and the foam and suction tubing covered with an occlusive film dressing, prior to connecting the tubing to the suction pump. The negative pressure can be either continuous or intermittent, and can be administered at between 50 mmHg to 200 mmHg depending on patient comfort (Baxandall, 1996). The use of the VAC system has resulted in progressive wound closure in cavity wounds, and is now often used on patients in the community as well as in the hospital setting.

Conclusion

The limited number of dressings available to district nurses for the management of cavity wounds may be problematic. However, it is important that whichever dressing is used in the management of a cavity wound, the dressing product should allow removal without causing trauma to the wound bed or pain for the patient.