ENHANCED AUTOLYTIC DEBRIDEMENT PROVIDED BY POLYMERIC MEMBRANE DRESSINGS; AN ATRAUMATIC METHOD OF REMOVING NECROTIC TISSUE

Geert Vanwalleghem CNS, Wound Care and Pressure Ulcer prevention
H. -Hartziekenhuis Roeselare-Menen vzw, Belgium

Introduction

There are several different ways to debride a wound, including sharp, chemical and autolytic. Autolytic debridement is the least invasive and the least painful method of debridement. This technique is useful for patients who cannot tolerate other forms of debridement due to pain, or risk of bleeding often associated with the other approaches. We often use it in our home-care setting and among our palliative patients.

Aim

To effectively and painlessly debride thick necrosis without causing bleeding or pain in order to facilitate faster healing.

Method

Both cases described had a thick necrotic area on the dorsum of their hands. In one patient, case 1, the necrosis was due to a deep skin tear measuring 4,5 x 4,5cm. In case 2, the necrosis was due to extravasation of blood after an i.v. treatment in combination with anticoagulant therapy; that necrosis measured 12x12cm.

We slightly moistened polymeric membrane* dressings (PMDs) to facilitate autolytic debridement; either sterile water or saline can be used. These dressings support enhanced autolytic debridement by releasing components from the dressing that can reduce bonding between the healthy tissue and the non-viable tissue. Additionally, the dressing's strong fluid drawing actions, caused by the complete set of components, aids liquefaction of the slough and its absorption into the dressing membrane. Dressing changes were performed every 1- 3 days, depending on the appearance of the outside of the dressing and how the eschar appeared at the last dressing change. Due to the cleansing properties of the components in the dressings, we did not need to manually cleanse the wounds during dressing changes. When loose debris that did not become absorbed into the dressing was apparent, the material was easily wiped off.

Results

The necrotic patches could be lifted off both wounds after a few days emphasizing the effectiveness of the the dressings at releasing the bonds between the viable and non-viable tissue. When the eschar lifted off of case 1's wound, the wound was 1,5 cm deep. Case 2's wound was 0,5 cm deep.

The deep undermined skin tear was closed within two weeks. The necrosis caused by extravasation that initially covered the entire dorsum had a clean granulating surface after two weeks and closed three weeks later.

Multifunctional PMDs, in addition to enhancing autolytic debridement, have been shown to reduce tissue swelling and bruising when applied to the wound and extending onto the surrounding undamaged skin. By reducing swelling, the dressings help improve the delivery of oxygen and nutrients to the wounded tissues and increase the removal of the non-viable tissues through the lymphatic drainage.

Discussion

The alternative to use of enhanced autolytic debridement with PMDs would have been to surgically debride the thick necrotic tissue and cover the wounds with a skin graft; that option would have been both more costly, painful and traumatizing for our patients. Additionally, this cosmetic outcome was much better.

We have successfully used PMDs enhanced autolytic debridement abilities for many years. Autolytic debridement is considered a very slow method of debridement. We have found that enhanced autolytic debridement provided by polymeric membrane dressings is surprisingly fast and provides a much improved cosmetic outcome while reducing patient suffering and reducing cost of healing.

We have relied on the enhanced autolytic debridement properties of polymeric membrane dressings for management of a variety of wound types that had significant eschar including the two cases shown here.

Case 1

In just 5 days, the deep dead tissue released around the edges and then was able to be removed in one large chunk, exposing a wound that not only was 1,2 cm deep, but also had significant undermining of 1-2 cm around the entire wound. In spite of the depth of the wound there was minimal bleeding resulting from the removal. PMD cavity dressings were used in the cavity, covered by a regular PMD. Twenty days later the wound cavity had filled with granulation tissue and the wound was almost fully epithelialised.

Case 2

The entire necrotic area was covered with a pre-moistened PMD and left in place for 3-4 days. In this case it took 20 days for the eschar to release and be possible to remove in one large piece.

Note the color of the underside of the used dressing; it is yellow and green due to the break down products in the non-viable tissues and fluid that has absorbed from the wound into the dressing.

A perfect indicator; when the top of the PMD is stained in the shape and size of the wound it is time to change the dressing.

Wound surface 2 days after the eschar was lifted off. We continued to use PMDs to remove the remaining slough.

Two weeks, later buds of epithelial tissue are visible on the granulating surface. The wound closed without the help of a skin graft a few weeks later.

*PolyMem® Wound dressing and PolyMem® WIC Cavity dressing. Manufactured by Ferris Mfg Corp, Fort Worth, TX 76106, USA. This case study was unsponsored.