

The Management of Vacuum-assisted Closure Following Vulvectomy with Skin Grafting

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Summary: Vulvectomies often require removal of large areas of vulvar skin, which may result in problems with wound healing, including infections and scarring. At times, skin grafting is needed following a vulvectomy, and for large excisions, a Foley catheter and rectal tube are often required. Vacuum-assisted closure (VAC) for vulvectomy, with or without skin grafting, has been used for a variety of vulvar conditions. The difficult portion of performing these procedures, with the use of the wound VAC, is obtaining an adequate seal around the Foley catheter and rectal tube. The authors present some useful tips to optimize obtaining and maintaining an adequate seal with the use of Hollister wafers and transparent film dressing during these procedures. This technique has been performed on over 25 patients since 2006. All extensive vulvar wounds requiring split-thickness skin grafts were dressed with a VAC device. With the use of these tips, surgery time and postoperative wound VAC leak alarms have decreased. (*Plast Reconstr Surg Glob Open* 2018;6:e1726; doi: 10.1097/GOX.0000000000001726; Published online 26 April 2018.)

INTRODUCTION

Vulvectomies (partial, total, or radical) are performed for a variety of conditions. At times, many different areas of the vulva may require removal, including the mons pubis, labia majora, labia minora, perineum, perianal area, and buttocks, for conditions such as hidradenitis suppurativa, Paget's disease, and vulvar cancers, among others. When large areas are excised, skin grafting may be required. Although cotton balls sutured over skin grafts have been utilized to optimize graft adherence in the past, the wound VAC has become a popular way to expedite healing. Since it was first developed in 1997,¹ the wound VAC has been used successfully in many different anatomic locations.¹⁻⁴ However, it can be difficult in patients with vulvar or perianal wounds to obtain an airtight seal, especially around the Foley catheter and rectal tube. To date, there are only a few publications on the use of the wound VAC following

vulvar surgeries.^{5,6} In this article, we describe tips for optimizing the use of the wound VAC during surgeries of the vulva and buttocks.

PATIENTS AND METHODS

We identified a specific group of patients who had large lesions of hidradenitis suppurativa (Hurley stage III) or Paget's disease on the vulva. Due to the extensive size of the lesions, the wounds could not be closed primarily. From 2006 to 2017, over 25 of these patients underwent vulvectomy with skin grafting.

Procedure

These extensive procedures may be performed in 1 stage (eg, Paget's disease, vulvar cancer) or multiple stages (eg, hidradenitis suppurativa). At times, wound VACs are used for several days before skin grafting in tissue that has been infected (hidradenitis suppurativa, necrotizing subcutaneous tissue/fascia infections). In these situations, the patient undergoes wound VAC changes every 72 hours until the tissue is ready for skin grafting. Often the tissue is ready for grafting 7 days after the initial procedure. Before surgery, if the lesions are close to the anus, patients undergo a bowel preparation. When areas of the vulva near the perianal tissue require excision, a rectal tube is care-

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fully placed to prevent stool leakage onto the wound. Similarly, when the area of excision is near the urethra, a Foley catheter is placed. After the excision of vulvar lesions, the excised area is irrigated with a Stryker irrigator covered with an x-ray bag to minimize the risk of infection. Once the wound is determined to be optimal for skin grafting, a split-thickness skin graft is obtained with a dermatome from the lateral thigh(s) and meshed. The skin grafts are then placed onto the wound and stapled and/or sutured in place, taking care not to subject them to tension. Once a skin graft is secured, nonadhering dressing is placed over the entire skin graft surface to ease the removal of the wound VAC. A black polyurethane foam dressing is placed over the nonadhering dressing, and a slit is cut in the VAC drape to allow exit of the Foley catheter and rectal tube. Large sheets of transparent film dressing with slits cut in the midline are placed around the tubes, without kinking the drains. Hollister wafers are placed around the Foley (Fig. 1) and rectal tube to prevent further leaks. The Foley is then additionally sealed with 2 overlapping intravenous (IV) transparent film dressings (Fig. 2). Two pieces of transparent film dressing are folded at 90-degree angles and placed adjacent to each other covering the Foley to provide a secure seal (Fig. 3). The wound VAC sealing around the rectal tubes is optimized with the use of Hollister wafers in the same way as the Foley catheter. Transparent film dressings are folded at 90-degree angles and placed around the rectal tube to provide an adequate seal (Fig. 4). The VAC is applied to a continuous suction at 125–150 mm Hg. One hundred twenty hours (5 days) after skin grafting, the wound VAC is removed⁷ (see **video, Supplemental Digital Content 1**, which demonstrates the wound VAC procedure. This video is available in the “Related Videos” section on PRSGlobalOpen.com or at <http://links.lww.com/PRSGO/A721>).

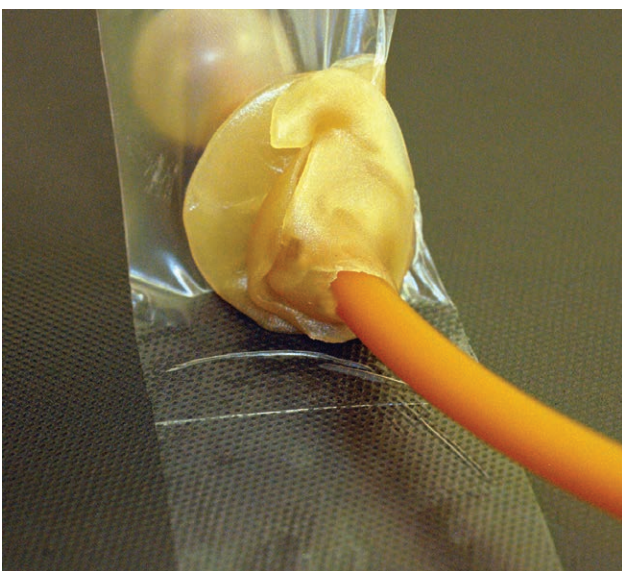


Fig. 1. Hollister wafer (code number 7806) twisted around the Foley right above the slit of the transparent film dressing to prevent further leaks.

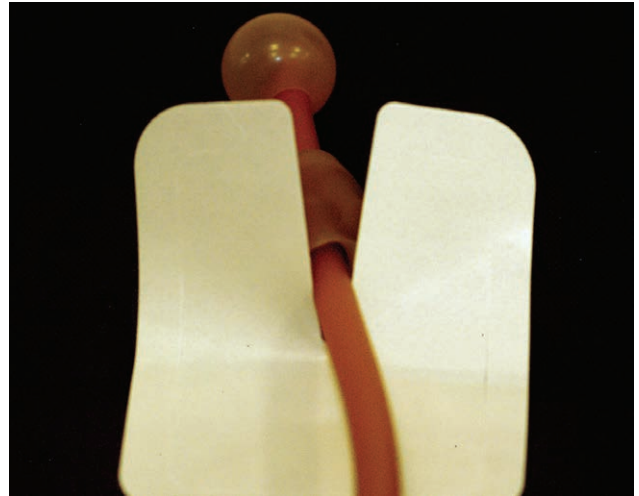


Fig. 2. An intravenous transparent film is placed underneath the Foley catheter. The white paper frame is removed. An additional film layer is placed above the Foley catheter to form a complete seal.

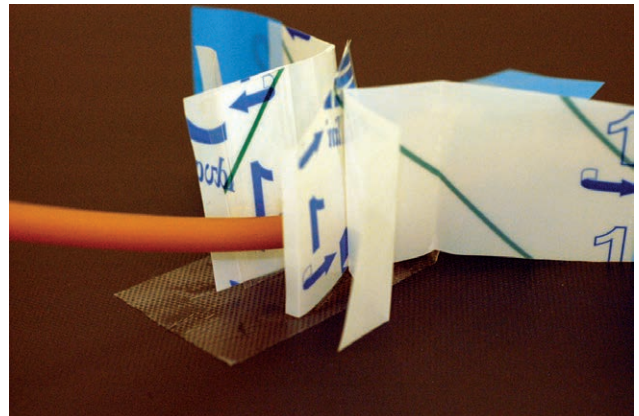
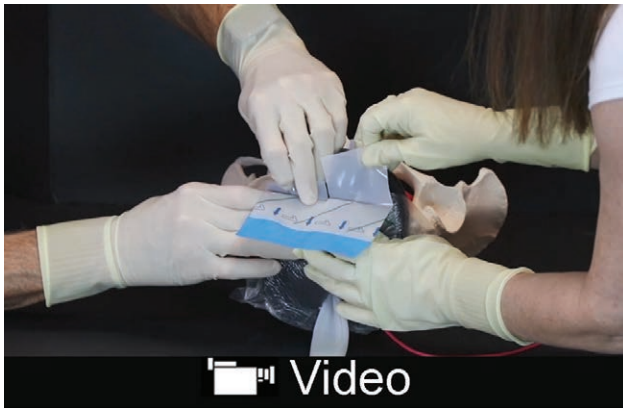


Fig. 3. Two 10×4 cm pieces of transparent film dressing were folded into 90 degrees and the vertical parts were stuck on to each other with the Foley right in the middle.



Fig. 4. Postoperative appearance of vulva with wound VAC in place, obtaining an adequate seal around the Foley catheter and rectal tube.



Video Graphic 1. See video, Supplemental Digital Content 1, which demonstrates the wound VAC procedure. This video is available in the “Related Videos” section on PRSGlobalOpen.com or at <http://links.lww.com/PRSGO/A721>.

DISCUSSION

The wound VAC is a novel technique that uses controlled negative pressure to provide evacuation of excessive fluid, stimulation of granulation tissue, and neovascularization. The wound VAC converts a complex open wound into a controlled closed wound, and a good seal generally ensures a good prognosis. The key point of using a wound VAC in association with a vulvectomy is to obtain an airtight seal around the Foley and rectal tube; however, this is sometimes quite difficult, even for experienced surgeons. We have performed this technique in over 25 patients since 2006, using a VAC device to dress all the vulvar wounds with skin grafts. These tips for adequate sealing around the Foley and rectal tube have decreased both the surgery time and the postoperative wound VAC leak alarms. The wound VAC for the vulva has been performed successfully for our cases and is well tolerated by the patients—expediting the healing of complex wounds

and minimizing the time to complete healing. We recommend using the wound VAC, along with the sealing techniques we developed, for surgeries involving areas near the urethra and/or the anus.

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PATIENT CONSENT

The patient is not identified in the text or images. She provided written consent for the use of the images.

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