

CASE REPORTS

Fournier's gangrene: skin grafting and negative pressure dressing

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Case report

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A 42-year-old man presented with an acute Fournier's gangrene involving the scrotum, the perineal area and extending to the perianal region bilaterally ([Fig. 1](#)). The wound was aggressively debrided 2 days later under spinal anaesthetic; hyperbaric oxygen [[1](#)] was then used to prepare the wound for 2 weeks. At this stage the defect measured 27 × 17 cm; the area was then reconstructed under general anaesthetic. Split skin grafts were harvested using an air dermatome from his right thigh and meshed 1.5 : 1, to minimize the potential fluid collection beneath the graft. The skin was secured to the recipient site with staples. The dressing was constructed in theatre under aseptic conditions. A layer of paraffin gauze was applied directly onto the grafted wound, then two layers of foam were cut appropriately to fit the contour of the tissue defect. A fenestrated drainage tube was placed between the layers of foam and secured with a silk suture. Both layers of foam were secured to the edges of the wound to promote wound contracture and to firmly secure the dressing. Everything was then sealed with a transparent polyurethane dressing (Steridrape, 3M Inc, UK), with particular attention to sealing the exit point of the draining tube. This tube was then connected to a suction line and a vacuum applied [[2](#)] ([Fig. 2](#)). The first dressing was removed on 5 days later; at that stage the wound appeared clean with a skin graft take of 85%. The negative-pressure dressing was then re-applied for the next 4 days. The skin graft donor site was completely re-epithelialized by 12 days. The patient was hospitalized for the duration of his treatment and discharged home 5 weeks after his admission (3 weeks after skin grafting resurfacing). The wound healed completely in another 2 weeks ([Fig. 3](#)).



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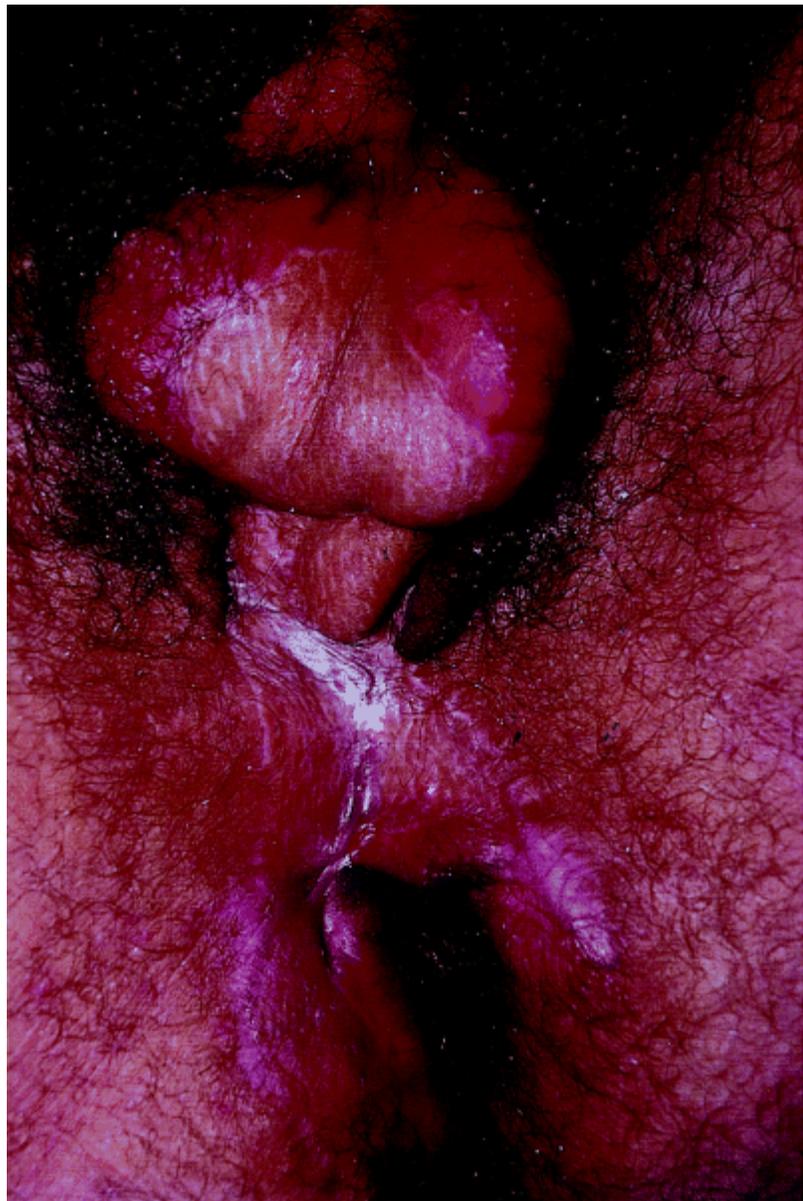
Fig. 1. Fournier's gangrene of the perineal and scrotal region.



Fig. 2. After negative pressure is applied the dressing shrinks and conforms to the body surface.



Fig. 3. The wound healed 6 months after skin grafting.



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Fournier's gangrene includes all subcutaneous necrotizing genital and perineal infections. Optimum management combines broad-spectrum antibiotics with wide surgical debridement of all devitalized tissue. Various methods of resurfacing the consequent open wound have been described. The effectiveness of simple skin grafting of scrotal defects in Fournier's gangrene was first reported in 1956 by Watson [3]; more recently, Schaller *et al.*[4] reported the use of meshed split-skin grafts for scrotal reconstruction and perineal wound cover. This is an easy and quick option with only minor functional sequelae compared with flap procedures. The problem has always been dressing the skin in such a way as to obtain the best graft take, even in early resurfacing. Infection, heavy fluid

exudate and difficult graft stabilization are all causes of graft failure.

The use of negative-pressure dressings has been promoted recently by Argenta and Morykwas [5]; they developed the vacuum-assisted closure system, in which a pressure below atmospheric is applied to an open-cell foam placed into the wound. This method of treatment can be used in a wide variety of acute, chronic, surgical and nonsurgical wounds [2,5]. Negative-pressure dressing has been described for securing skin grafts in difficult anatomical sites and unfavourable conditions, especially when fluid drainage is required [5–7].

Negative pressure dressing is a valid method for dressing perineal and scrotal defects after skin grafting in Fournier's gangrene, because it conforms to the irregular anatomy of the perineum and the scrotum, and immobilises the defect/graft interface; it also removes tissue exudate, enhances neovascularization and is easy to apply. The use of this technique in the present patient with Fournier's gangrene produced a good result and shortened his hospital stay.

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