

Case report: DermaClose used in primary closure of large anterolateral thigh donor site defect.

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Case Report #41

Prior to application of DermaClose: The patient was a 55-year-old diabetic male who developed necrotizing fasciitis of the left foot and leg. After the infection was eradicated, a large soft tissue deficit was present on his foot and leg. This deficit was reconstructed with an ALT flap with a length of 40 cm and a width of 12 cm. The circumference of the thigh at the midpoint of the flap was 35 cm. We planned to apply DermaClose to the ALT donor site after its harvest. We left the DermaClose on while we closed the outer limits of the wound, then moved them to the center of the wound and closed this portion, leaving the devices in place.

We had two teams working at the same time. One team did the microvascular anastomoses and flap inset, while the second team did the closure of the ALT donor site.

DermaClose application: Prior to the application of the devices, the wound edges were extensively undermined. After application of the devices, mechanical creep could be appreciated within minutes. After 5-10 minutes of applying the DermaClose to the proximal and distal aspects of the wound, the skin in these areas relaxed, which allowed for primary closure of the donor site. The superficial fascia was closed with 2-0 absorbable sutures in simple interrupted fashion; 3-0 absorbable sutures were similarly utilized in the deep dermal layer while the devices were left in place. At this point, the tension controllers were removed and replaced in

the middle of the wound, which allowed for staple closure of the epidermis in the area where the tension controllers had been. A similar suture and staple closure were repeated in the middle of the wound while the tension controllers remained in place. A drain was left in place given the extensive undermining.

The middle of the ALT donor site was closed under tension, so the tension controllers were left in place at the conclusion of the procedure.

DermaClose removal: The DermaClose devices were left on for one week post operatively to reduce tension on the closure and to provide further expansion. During this time, the patient experienced a sensation of tightness in the thigh but had no other complaints regarding the donor site. Tightness was rated as a 2-3/10 discomfort from the nursing notes. Wound VAC was not utilized.

The appearance of the wound did not change from the final operative photograph until the system was removed one week later.

Conclusion: Examination at week 5 revealed a stable, closed wound that is healing well. If surgeons were working independently, I would recommend applying the device to the donor site, and leaving it in place while suturing in the flap. Then close the donor site and depending on the amount of tension, either leave the device in place or remove it at the conclusion of the case.



40 cm x 12 cm ALT donor flap wound, showing DermaClose skin anchors starting to be applied.



Sequential application of two DermaClose devices, beginning at the end of the wounds and progressing centrally.



Completely closed wound as it appeared immediately after application of DermaClose and sutures.



Follow-up at 5 weeks shows a wound that is healing well.

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