We report a novel use of the Integra™ dermal regeneration template to facilitate a functional recovery in a young male with Fournier’s gangrene. After multiple debridements he had a large soft tissue defect and local flaps were not possible for reconstruction. Integra™ facilitated reconstruction of a neo-scrotum to allow a good cosmetic outcome.

A 37-year-old male had a 13 × 30 cm soft tissue defect involving the entire left hemiscrotum, 70% of the right hemiscrotum, left thigh and flank (Fig. 1) after multiple debridements for Fournier’s gangrene. The Integra™ dermal regeneration template was placed 22 days after initial debridement (Fig. 2). After placement of the Integra™ mesh, the wound was covered with a negative pressure dressing. After 4 weeks the dartos fascia had regenerated, the Integra™ was removed, and a split thickness skin graft was then placed for skin coverage. Fig. 3 shows the cosmetic outcome at 1 month.

Local flaps are commonly used for scrotal reconstruction. In our case the donor site for such a flap was in the area of injury preventing its use. Integra™ is a bilaminar composite with an outer silicone layer. The inner layer contains cross-linked bovine cartilage and glycosaminoglycans. This promotes the infiltration of fibroblasts, macrophages, lymphocytes, and capillaries. The outer layer controls fluid loss similar to normal epidermis. Our patient had a good functional and cosmetic outcome and was able to return to active duty in the US Coast Guard. Integra™ should be considered a viable option for complex soft tissue reconstruction following Fournier’s gangrene.

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Figure 1. Soft tissue defect after all debridements. The defect measured 13 × 30 cm and involved the entire left hemiscrotum and 70% of the right hemiscrotum. Both testicles were exposed. The site of a left anterolateral thigh flap is involved in the area of injury.
References

Figure 2. IntegraTM Dermal Regeneration Template applied to the defect. Note the bilaminar nature of IntegraTM. The inner layer is composed of cross-linked bovine cartilage and glycosaminoglycans. Outer silicone layer functions similar to epidermis.

Figure 3. Final cosmetic outcome. Inferior view 1 month after placement of STSG. The scrotum has a fairly symmetric appearance.