Clinical Evaluation of an Extracellular Matrix Graft for the Surgical Management of Hurley Grade III Hidradenitis Suppurativa

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INTRODUCTION

Hidradenitis suppurativa (HS) is a chronic inflammatory disease resulting in non-healing and infected tissue. Hurley Grade III HS benefits from surgical intervention involving wide excision of the diseased tissue then reconstruction. In this case series an ovine forestomach matrix (OFM) graft[#] was used as part of the surgical reconstruction. OFM has been shown to modulate inflammation, stimulate blood vessel formation, promote scaffold infill and undergo complete remodeling [1,2]. The aim of utilizing the OFM graft was to reduce post-op complications and recurrence by addressing the underling chronicity and to quickly build healthy well-vascularized tissue.

METHODS

A total of 5 patients with Hurley Grade III HS underwent 6 surgical treatments using the OFM graft. The graft was used either as a dermal substitute (n=3), or as an implant under a fasciocutaneous flap (n=3).

RESULTS

OFM grafts used as dermal substitutes became infiltrated from surrounding tissue and appeared granulated after 1 week with complete granulation at 2-4 weeks and re-epithelialization at 8-12 weeks. OFM graft implanted prior to flap reconstruction resulted in healing of the surgical sites by 12 weeks. No recurrence of HS was observed in all cases.

REFERENCES AND DISCLOSURES

Product was provided by Aroa Biosurgery Limited (New Zealand); #Myriad (Aroa Biosurgery Limited, New Zealand); [&] Endoform Natural (Aroa Biosurgery Limited, New Zealand);

1. Lun, S., et al., A functional extracellular matrix biomaterial derived from ovine forestomach. Biomaterials, 2010. 31(16): p. 4517-29.
2. Irvine, S. M., et al., Quantification of in vitro and in vivo angiogenesis stimulated by ovine forestomach matrix biomaterial. Biomaterials, 2011. 32(27): p. 6351-61.

CASE 1: Dermal Substitute

29-Year old male with 2 years of HS grade III of right axilla, and DVT. Previous management with Remicade®; Triamcinolone acetonide; Ertapenem; Clindamycin; topical benzoyl peroxide.

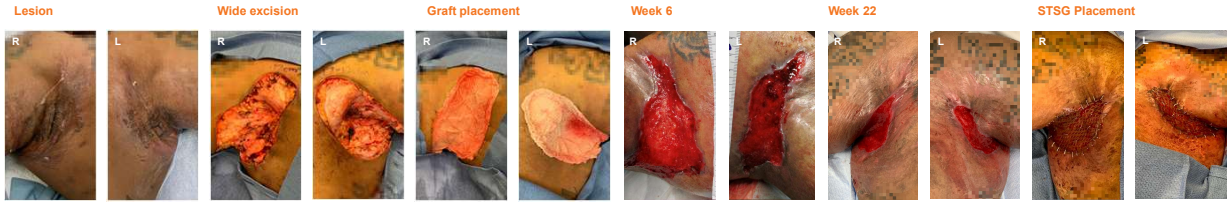
Full thickness wide excision (12 x 7 cm). OFM graft (thick) applied as a dermal substitute. Surgical site was dressed with a non-adherent dressing and patient received NPWT (125 mmHg, continuous).

Granulation tissue at 4 days, fully granulated at day 10, 80% epithelialized and patient returned to work at 8 weeks. No recurrence at 7.5 months and the patient had good range of motion and acceptable cosmesis.

CASE 2: Dermal Substitute - Bilateral

39-Year old male with bilateral axillary HS grade III. Uncontrolled diabetes and a heavy smoker. Previous management of HS with abscess incision and drainage.

Excision of right (12 x 7 cm) and left (20 x 12 cm) axillary tissue. OFM graft (thin) was trimmed to size and then applied and sutured to the periphery of the excision site. Mattress sutures were placed in the centre of the graft to hold in place. Surgical site was dressed with a non-adherent dressing and patient received NPWT (125 mmHg, continuous). 100% granulation tissue was observed at 3 weeks post op. Epithelialization was evident at 6 weeks and the area was treated with OFM[&]. At week 22 STSG was placed and wound site treated with NPWT. Treatment ongoing.

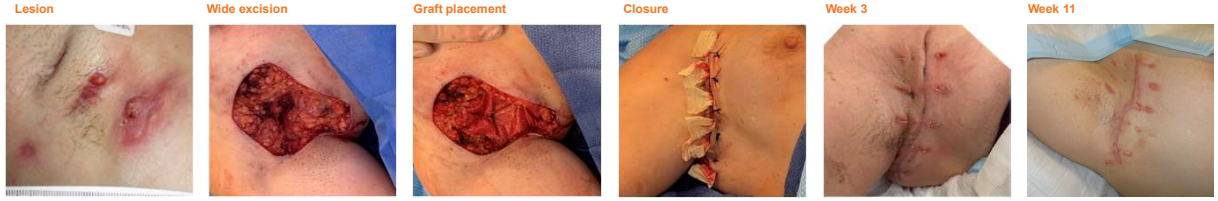


CASE 3: Flap Reconstruction

31-Year old female with 5 years of HS grade III. Previous management included silver alginate dressings and debridement.

Full thickness excision of right axilla tissue leaving a 15 x 15 cm defect. OFM graft (thin) was implanted with absorbable sutures prior to fasciocutaneous flap. Iodoform packing between closing sutures and GV/MB cover dressing.

Sutures were removed at week 3 and the surgical wound had completely healed at week 11. No wound dehiscence, complications or reoccurrences were noted after 7 months.



CASE 4: Flap Reconstruction

26-Year old female with 5 years of HS grade III with multiple draining and interconnected sinuses. Patient had well-controlled HIV. Previous management of HS included topical antibiotics and laser treatments.

Full thickness excision of axillary tissue (10 x 20 cm). OFM graft (thick) was implanted with absorbable sutures prior to fasciocutaneous flap. Iodoform packed between pledgeted retention sutures. At week 3 the patient did not change dressing as directed resulting in partial dehiscence of the closure. Area was gently debrided and treated with OFM[&]

Tissue fully healed at week 12. No reoccurrences have occurred in 7 months.