

Flap Reconstruction of Pilonidal Sinus Using Extracellular Matrix Graft: A Pilot Case Series

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INTRODUCTION

Recurrent pilonidal sinus (PS) disease is characterized by extensive soft tissue inflammation and infection, with sinus cavities extending throughout the affected tissue [1]. As a last resort severe PS requires surgical intervention via excision of the diseased tissue but complications and recurrence rates are high [2]. In this pilot case series, an advanced biologic graft was used to augment PS reconstruction with an aim to reduce complications by 1. counteracting the chronically inflamed tissue, 2. filling the surgical dead space, and 3. rapidly regenerating the soft-tissue defect.

METHODS

Six patients with recurrent PS underwent wide surgical excision of the affected tissues down to sacral fascia (Figure 1). An ovine forestomach matrix (OFM) graft[†] was quilted to the base of the defect. A gluteal fasciocutaneous advancement flap raised, sparing the inferior gluteal perforating blood vessels and advanced over the graft. Wick-assisted closure was used in two cases, and incisional NPWT placed in all cases.

RESULTS

Incisions healed by <3 week. Two patients had minor dehiscence (<2 cm). All patients went on to heal well with no additional complications or recurrence at 7+ weeks (Table 1).

CONCLUSIONS

Placement of an OFM graft as part of the surgical reconstruction of PS may provide a means to reduce the inherently high complication rates associated with these challenging reconstructions.

REFERENCES AND DISCLOSURES

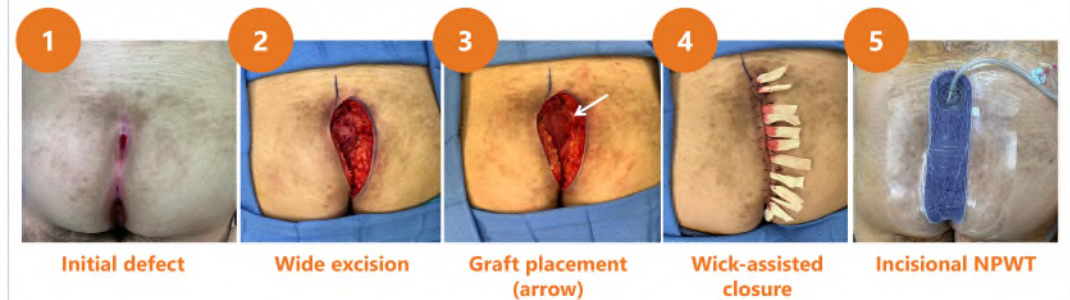
AEC has received an educational grant from Aroa Biosurgery Limited. [†]Myriad[™] Soft Tissue Matrix (Aroa Biosurgery Limited, Auckland, New Zealand).

[1] Kober, M. M., et al. (2018). "Treatment options for pilonidal sinus." *Cutis* 102(4): E23-E29. [2] Hardy, E. J. O., et al. (2019). "Surgical interventions for the treatment of sacrococcygeal pilonidal sinus disease in children: A systematic review and meta-analysis." *Journal of Pediatric Surgery* 54(11): 2222-2233.

TABLE 1. PATIENT DEMOGRAPHICS AND STUDY OUTCOMES

Sex/Age	Comorbidities	Patient History	Area	Outcomes
F, 21	<ul style="list-style-type: none"> Smoker Resumed smoking at <3 weeks post-op 	<ul style="list-style-type: none"> 5-Year history Prior I/D 	~7 x 11 cm	<ul style="list-style-type: none"> Minor dehiscence at 3 weeks – debrided and closed Debrided and reclosed No recurrence or complications at 40 weeks
M, 20	None	<ul style="list-style-type: none"> 2-Year history Prior I/D Prior (12 month) excision and primary closure -> dehisced 	~12 x 4 cm	<ul style="list-style-type: none"> Healed at 3 weeks No recurrence or complications at 40 weeks
M, 19	None	<ul style="list-style-type: none"> 4-Year history Prior I/D Prior (12 month) excision and primary closure -> dehisced 	~12 x 3 cm	<ul style="list-style-type: none"> Healed at 3 weeks No complication or recurrence at 35 weeks
F, 52	<ul style="list-style-type: none"> Obesity Hidradenitis suppurativa 	<ul style="list-style-type: none"> 5-Year history Prior I/D Prior (10 year) excision and primary closure -> dehisced 	~10 x 4 cm	<ul style="list-style-type: none"> Minor dehiscence at 10 days – healed with no intervention Fully healed at 3 weeks No complication or recurrence at 11 weeks
M, 19	<ul style="list-style-type: none"> Severe asthma Splenomegaly Gout 	<ul style="list-style-type: none"> 7-Year history Prior I/D Prior (6 months) excision and primary closure -> dehisced 	~11 x 4 cm	<ul style="list-style-type: none"> Healed at 3 weeks No major complication or recurrence at 9 weeks
M, 15	None	<ul style="list-style-type: none"> 8-Month history Prior I/D (2 months) -> NPWT resulting in severe pain at dressing change 	~12 x 5 cm	<ul style="list-style-type: none"> Healed at 3 weeks No complication or recurrence at 8 weeks

REPRESENTATIVE SURGICAL ALGORITHM



REPRESENTATIVE CASE

20-Year old male with 2-year history prior I/D and primary midline closure (~1 year prior), resulting in wound dehiscence. Chronic draining purulent sinuses since prior surgery. Area of diseased tissue ~12 x 4 cm. Excised the gluteal cleft and the tissue that extended to the right of midline. Defect was 12 x 6 cm, 5 cm deep. OFM graft[†] (10 x 10 cm) placed as an implant and bolstered to the deep sacral fascia and medial gluteus fascial with sutures. Fasciocutaneous flap (12 x 10 cm) from the right buttock, sparing the superior gluteal artery perforators. Flap inset with progressive tension sutures and dead space drain before closure. A silver dressing was placed over the incision followed by incisional NPWT. At 3 weeks, wounds were fully healed. At 40 weeks, remained healed with no recurrence.

