

Fish skin is a superior acellular dermal matrix for the treatment of pilonidal cyst

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INTRODUCTION

Pilonidal cysts (PCs), cysts that develop in the sacrococcygeal region, are common and frequently impact healthy young males. PCs are associated with increased morbidity, decreased quality of life, embarrassment, and, if untreated, an increased risk of squamous cell carcinoma¹. The etiology and risk factors have previously been reported, with location, gender, ethnicity, and the presence of anaerobic bacteria in hair follicles being consistent. Conservative treatment options range from phenol injections, simple excision and drainage, excision and unroofing with healing from secondary intention, and excision and drainage with primary closure¹. In more advanced cases, reconstructive skin flaps are utilized¹. Comparatively, conservative methodologies are economically responsible if successful and require less invasive techniques. Advanced adjunctive biologics bridge flap revisions and expedite tissue regeneration during primary or secondary wound healing following excision and drainage. Fish skin graft (FSG) is a relatively new and promising matrix with the versatility to manage varying clinical treatment goals. FSG is minimally processed, has the utility to augment cell migration and neovascularization, and is rich in Omega3 fatty acids shown to be bacteriostatic^{2,3,4}.

METHODS

In this clinical case, an eighteen-year-old female presented with a typical PC. The treatment consisted of simple excision and drainage with primary closure. Fenestrated FSG was placed on top of the exposed fascia as an onlay and bolstered before closure per the manufacturer's recommendations.

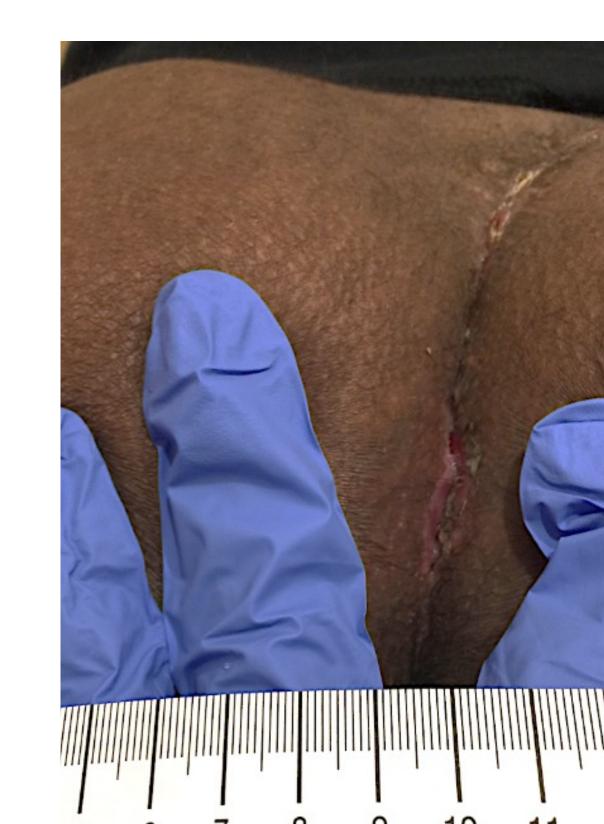




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CASE 18-YEAR-OLD FEMALE PILONIDAL CYST





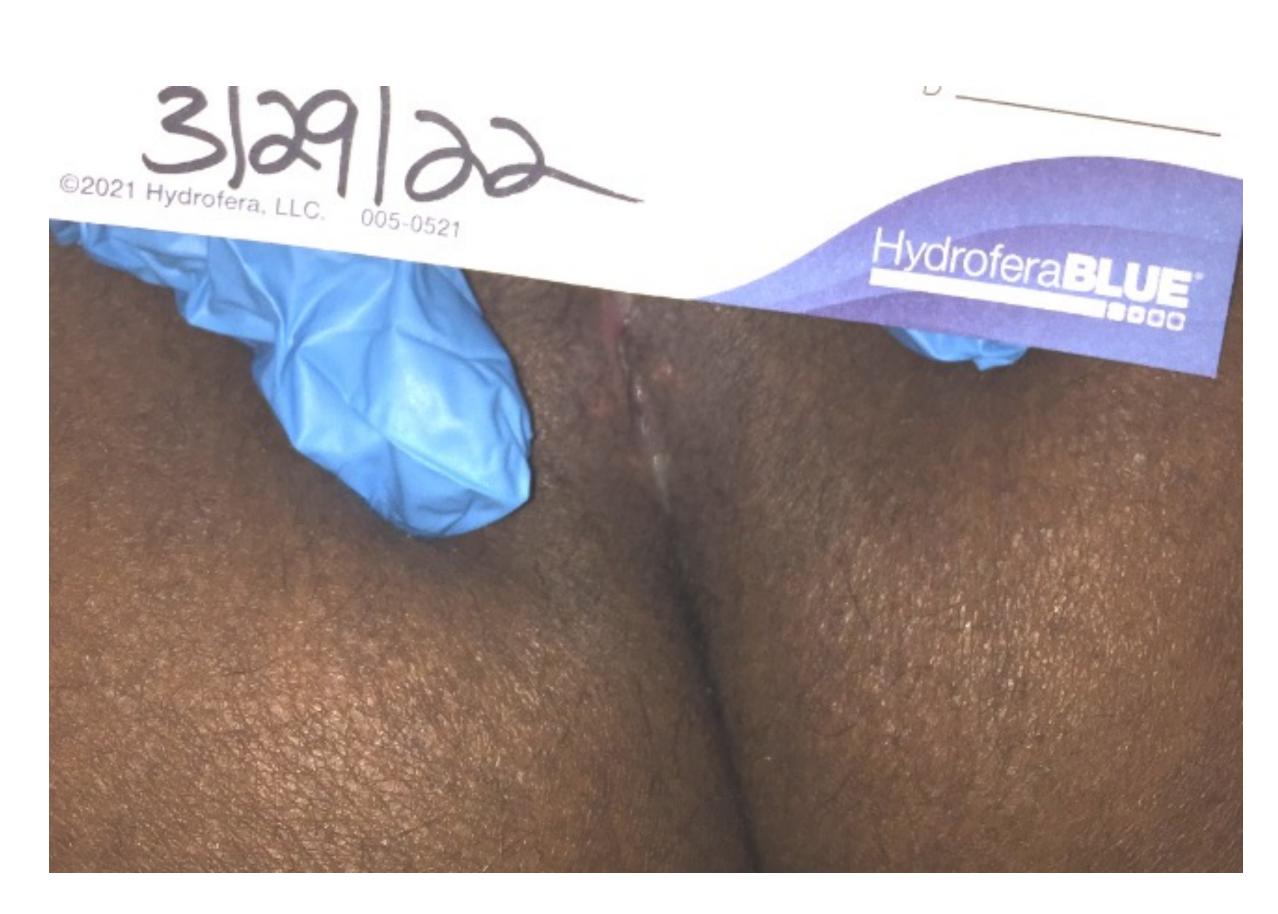
15 days post op



29 days post op



Application of fish skin graft



42 days post op Wound bed had closed but pt fell down and Reopened





92 days post op Wound bed CLOSED

RESULTS

Fifteen days postop, the incision showed no signs of erythema, and the suture line was intact and without complication. By day twenty-nine, the definitive closure resolved, and on day seventy-seven, the tissue had regenerated remarkably with minimal scar formation.

CONCLUSION

The FSG was a cost-effective and clinically relevant adjunctive treatment option for this patient that expediated primary closure after excision. Other noted clinical observations included decreased inflammation and scarring. Proposed mechanisms of action include rapid cell ingrowth and neovascularization, low immunogenicity, and bacteriostatic properties of the FSG, all of which have previously been reported^{2,3,4}. Causality cannot be determined from one patient; however, FSG is a promising option for treating PCs.

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- 4. Baldursson BT, Kjartansson H, Konrádsdóttir F, Gudnason P, Sigurjonsson GF, Lund SH. Healing rate and autoimmune safety of full-thickness wounds treated with fish skin acellular dermal matrix versus porcine small-intestine submucosa: a noninferiority study. Int J Low Extrem Wounds. 2015 Mar; 14(1):37-43. doi: 10.1177/1534734615573661. Epub 2015 Mar 9. PMID: 25759413