The Healing Power of Nature

Fish Skin Grafts* (FSG) for the treatment of refractory and recalcitrant stage 3 Hidradenitis Suppurativa (HAS)

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INTRODUCTION

Hidradeniits suppurativa is a well-known skin condition marked by painful acne type appearing boils that develop both within the skin as well as some that can be located deep under the layers of the skin. Older terminology was used to describe this and was confusing calling it Acne Inversa or Verneuil's disease. HAS is considered a chronic condition, and many patients experience recurring symptoms over many years from a variety of causes including inadequate resection of the entire diseased tissue. Treating HAS in its earliest stages is important, if possible and recognized early as this condition may cause other complications that can affect quality of life, due to the large areas of resection that can be required with spread and complications. Unlike regular acne, which primarily affects the sebaceous glands, HAS develops in the sweat (apocrine) glands. While HAS is not the same as acne, many of the characteristics are similar and can overlap causing a diagnostic dilemma or delay at times .HAS develops when hairs become trapped within the hair follicles, leading to inflammation deep in the skin. Bacteria may also get trapped in the follicles, leading to recurrent infections. As the lesions grow, they can become painful and eventually rupture externally. HAS is diagnosed based on physical examination and is broken down into three (Hurley) stages: mild (1) , moderate (2), and severe (3). The earlier HAS is detected, the sooner medical or surgical treatments can be applied to help prevent complicated disease. Stage 3 hidradenitis suppurativa is the most severe form of HAS. It is defined based on its more broad and widespread development of local HAS lesions, including sinus tract formation. Pain and extensive scarring are also commonly seen with this stage. Due to this widespread and recurring nature, stage 3 can be very difficult to treat. Boils, tracts, and scars are generally removed with radical resectional surgery. Other alternatives include laser therapy and hair removal. Standard oral or topical antibiotics or steroids are not the mainstay of therapy, like in earlier stages 1 and 2 , but immunosuppressant medications like adalimumab (Humira) are sometimes required and used for severe cases. We present a case where a novel biologic, Fish skin graft (FSG) was used and was shown to be a highly effective & adjunctive therapy for treating HAS in combination with wide excision and debridement of the affected tissue.

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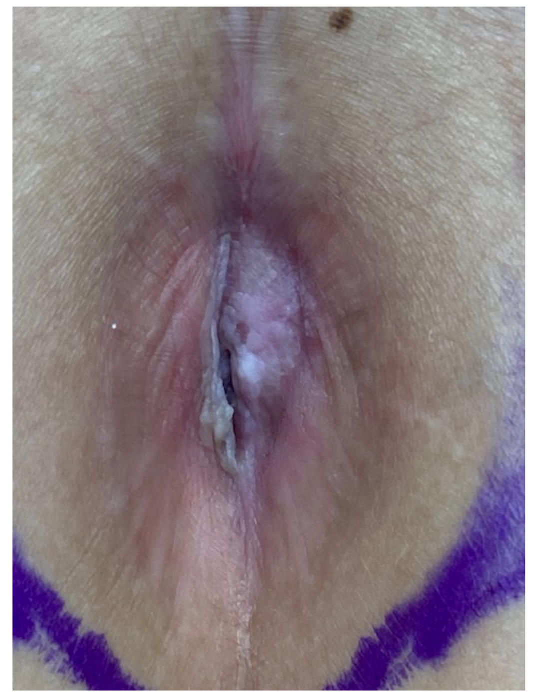
CASE : STAGE 3 HIDRADENITIS SUPPURATIVA

Patient History: 57-year-old female presented with a painful, draining HAS lesion and had undergone surgery at this site 13 times prior to receiving a WLE and FSG

Wound History: Patient presented with the lesion noted on the inferior aspect of her sacrum and had significant fibrosis and thick hypertrophic dermis with sinus tracts, erythema, edema, and necrotic tissue.

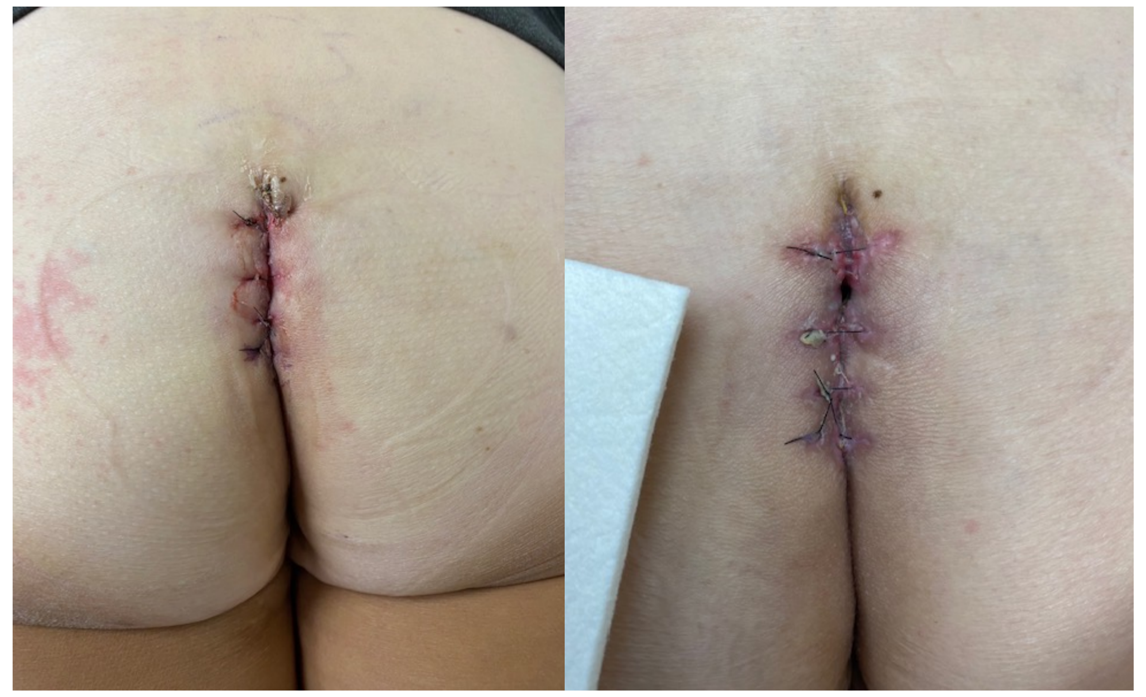
Kerecis Applications: Two applications of fragmented fish skin graft in the OR

Patient Outcomes: After two applications of fragmented (FSG), wound achieved complete closure at week 8. Debridement and application of FSG were the definitive treatments and further judgement guided post-operative treatment.



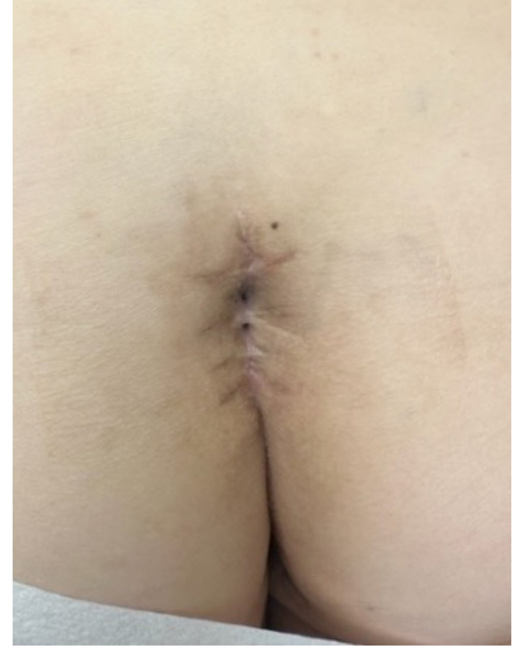
Initial presentation prior to fish skin graft application

Application of fragmented fish skin graft



Follow up

Week 6: Wound vac applied with 95% closure



Week 8: Final healing outcome
Wound achieved complete closure

METHODS

A fifty-seven-year-old female presented with a painful draining HAS lesion. Had lesions since age 13 for 45 years of various failed treatments required . The patient has had surgery at this site 13 times prior to receiving a WLE and FSG. The lesion was noted on the inferior aspect of her sacrum that had significant fibrosis and thick hypertrophic dermis with sinus tracts, erythema, edema, and necrotic tissue. This was densely adherent to bone as there had been multiple bouts of osteomyelitis as well at this site. After managing the underlying infection, the patient underwent wide local debridement and two applications with fragmented FSG in the operating room. Debridement and application were definitive treatment and clinical manifestations and judgment guided further post operative treatment.

RESULTS

There was a significant improvement to the periwound and wound bed immediately following surgery with only two applications of the intact FSG. A linear progression ensued until the patient healed with complete closure during the second month after surgery with a short course of np wound vac therapy to control the exudate and small wound separation noted in the second week post op (photos).

DISCUSSION

Particularized FSG is a new and innovative biologic that has preserved mechanical and biological properties, allowing for rapid cell migration, integration and guided regeneration, augmenting neovascularization.

Not yet fully elucidated, but evidence suggests that hemostatic properties of the fish skin combined with faster cell migration and neovascularization rapidly progress chronic wounds through the stages of healing 3,4. HAS is a clinically and economically debilitating disease that, as in this case, is often long-standing or lifelong. There is evidence to suggest that FSG expedites healing, improving clinical outcomes and the economic burden associated with treating HAS. More research with a prospective randomized and controlled study should evaluate the use of FSG in treating HAS

References

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