

Hidradenitis Suppurativa Revision Surgery With Split-Thickness Skin Graft After Contracture Development Following Primary Closure: A Case Report

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Introduction

Hidradenitis suppurativa (HS) is a chronic and debilitating inflammatory skin condition necessitating a multidisciplinary approach, including medical management, surgical intervention, and wound care. The disease is associated with lifestyle factors like smoking and obesity and has known genetic predispositions; however, its pathophysiology remains incompletely understood (4). HS frequently involves areas such as the axilla, inner thighs, and genitalia, causing significant physical discomfort and profound psychosocial impacts due to visible, painful lesions (3). Patients often pursue extensive treatments to mitigate the disabling effects of HS. While surgical excision is a cornerstone of therapy, complications such as infection, dehiscence, and scar contractures are common (2).

Case Presentation

We present the case of a 35-year-old male with Hurley stage III HS involving the bilateral axillae, upper arms, and chest wall. The patient reports HS flares since age 7. Previous surgical management includes left axilla surgical excision in 2015. He failed medical management with ruxolitinib, infliximab, adalimumab, colchicine, tofacitinib, minocycline, and antibiotics. He currently uses secukinumab and prednisone for flares.

Methods

- At the index operation, the bilateral axillary and chest lesions were excised, yielding defects measuring 18 × 12 × 4 cm (right) and 17 × 13 × 4 cm (left). The right defect was closed primarily, while the left required an adjacent tissue transfer rotation flap and a 3-layer skin substitute for a residual 7 × 7 cm defect.
- Despite expected wound dehiscence managed with debridement and dressing changes, the patient developed bilateral axillary scar contractures two months postoperatively with the right axilla experiencing restricted range of motion.
- 9 weeks later, bilateral axillary contracture was released, and recurrent HS was excised. Z-plasty, and split-thickness grafting were employed for complex closure.

Results

Initial Wound



Figure A: Right upper extremity with contracture prior to revision

Immediately Post Operative



Figure C: Right upper extremity after contracture release, which was closed with Z-plasty flap reconstruction and split-thickness skin graft

Dressed Post Operative

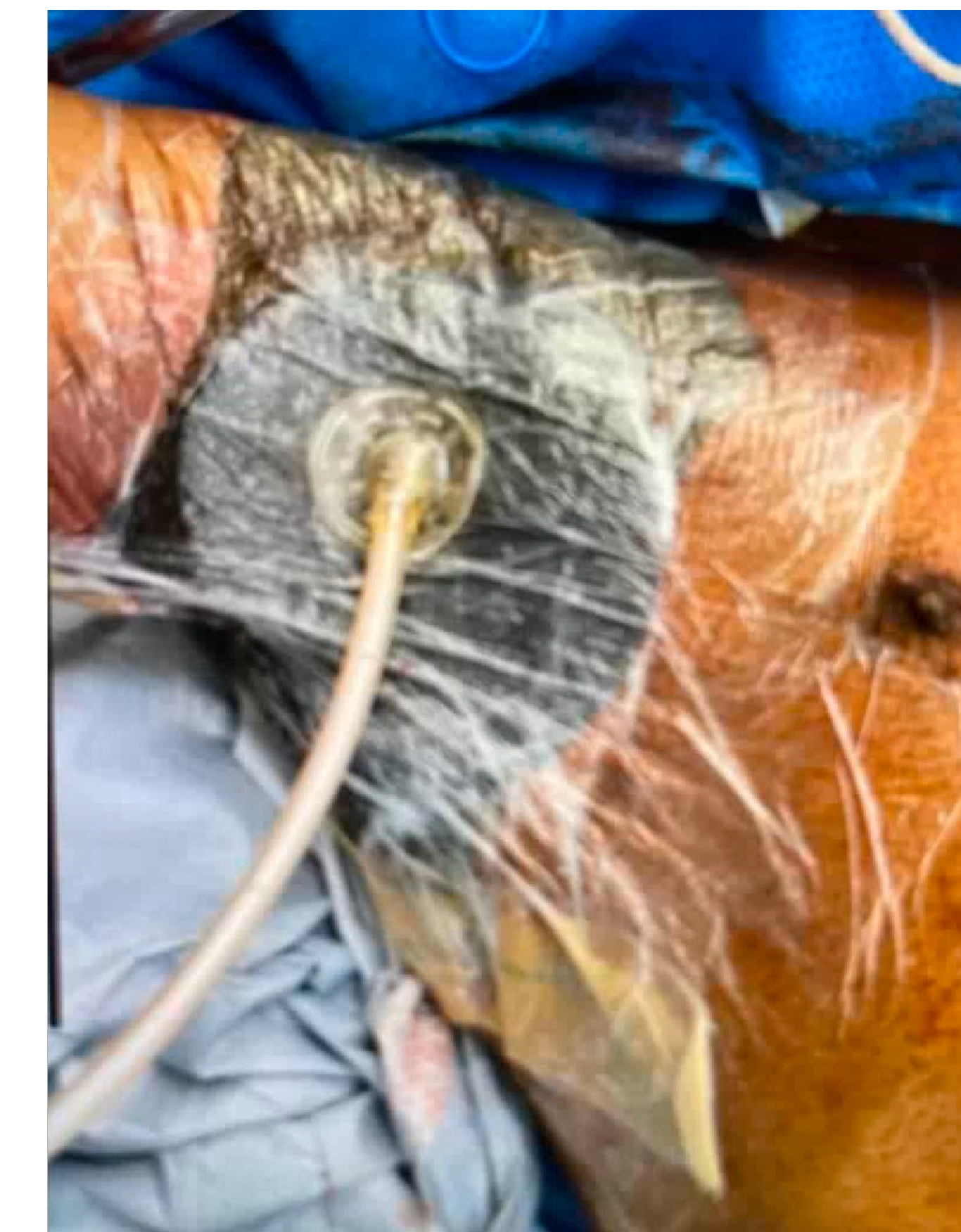


Figure E: Right graft secured with fibrin sealant and dressed with silver silicone non-adherent dressing, hydrocolloid dressing, and negative pressure wound therapy



Figure B: Left upper extremity with contracture prior to revision



Figure D: Left upper extremity after contracture release, which was closed with split-thickness skin graft



Figure F: Left graft secured with fibrin sealant and dressed with silver silicone non-adherent dressing, hydrocolloid dressing, and negative pressure wound therapy

Discussion

There is much discussion surrounding the surgical management of advanced HS. After removal of lesions, the current surgical techniques for closure are primary closure, secondary intention, flaps, or split-thickness skin grafts (2). Primary closures are appropriate for small lesions, or in the case of excess skin elasticity (2). However, HS directly decreases the natural elasticity of skin, often making primary closure difficult or risky in terms of contracture development (1). Secondary intention healing can be preferred over split-thickness grafting or flaps because they are less painful with no donor site and can often have better cosmetic results in terms of maintaining similar skin tone in the area. However, split-thickness grafting and flaps typically have faster healing time than secondary intention (2). Flap versus split-thickness graft use in HS is debated in the literature. Flaps have been argued to be usually too definitive, thus a non-optimal solution to such a progressive disease (2). Although there has been argument that when the disease is adequately controlled, flaps provide patients with the least morbidity, shorter healing time, and leaving no functional disability (4).

Key Pearls

- Hidradenitis surgery has a higher wound healing complication rate due to inflammatory disease, chronic wound colonization, and shear forces.
- Surgeons should consider different wound closure techniques based on patient body habitus and tissue laxity to minimize risks of secondary scar contracture.
- When contracture release is needed, split-thickness skin grafting can help resurface these wounds.

Results

- At 4-week follow-up, the patient reported improved pain, minimal drainage, and full shoulder range of motion. There were no signs of infection, and pain was controlled with acetaminophen.
- At 4-month follow-up, he has maintained excellent range of motion without evidence of recurrent scar contracture nor recurrent hidradenitis. There was full take of the split-thickness skin graft

Conclusion

Scar contractures are a common complication of HS excision due to reduced skin elasticity (1). This patient was young with a lower BMI (25) and minimal skin laxity. This case highlights the importance of individualized closure techniques and a balance between more invasive procedures such as flaps and grafts and the potential functional complications of primary closure like contracture (2). When successful, primary closure helps afford the patient fewer stages of surgery. Further research is needed to optimize surgical strategies for HS closure, particularly in patients with challenging anatomical considerations.

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