

Split-Thickness Skin Graft for Repeated Extensive Hidradenitis Suppurativa of Axilla: Case Report and Literature Review

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Hidradenitis suppurativa (HS) is a chronic relapsing disease that frequently causes disabling pain, diminished range of motion, and social isolation. In advanced cases of HS, aggressive excision of the involved apocrine tissue with subsequent reconstruction is the definitive treatment. Here, we present our recent experience of using split-thickness skin graft (STSG) for managing an extensive defect following wide surgical excision of axillary HS lesions. Adequate wide excision of the infected tissue ensures complete skin-graft take while allowing full shoulder mobility, thereby minimizing undesirable outcomes. No limitation of shoulder joint or disease recurrence was observed during one year of follow-up. This method has satisfactory aesthetic and functional results as well as low donor site morbidity for treatment of repeated extensive HS of axilla.

Key words: axillary skin defect, split-thickness skin graft, hidradenitis suppurativa

INTRODUCTION

HS, a chronic, suppurative and cicatricial disease of apocrine gland-bearing skin areas, was first described as a clinical entity in 1839 by Velpeau.¹ The disease most frequently presents as a deep recurrent abscess in the axilla. Affected patients often progress to a chronic state with persistent pain, sinus tract or fistula formation, purulent discharge, dermal scarring, and even sepsis. Although various local fasciocutaneous flaps have been described in recent years, flap coverage is associated with both an unacceptable donor-site scar and a higher recurrence rate than wide excision and skin grafting.²⁻¹³ Further, the large skin defect following wide excision usually restricts flap coverage because of the limited amount of tissue that can be moved from areas adjacent to the defect. To reconstruct the extensive axillary area after wide excision and obtain a good range of shoulder movement, we successfully used STSG coverage with early rehabilitation of the shoulder joint to achieve a good functional and cosmetic result.

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Fig. 1 A 31-year-old male patient with severe hidradenitis suppurativa of the axilla (A). The abduction angle of shoulder joint is about 100 degrees (B).

CASE REPORTS

A 31-year-old man had persistent right axillary HS for several years. He had undergone multiple drainage procedures for acute infections at a local clinic, and received local fasciocutaneous flap coverage at another hospital. After that, he presented to our plastic surgery service desirous of definitive therapy due to recurrence and scar contracture (Fig. 1A, B). After admission, broad-spectrum antibiotics were prescribed and antibiotics specific to the causative organism administered after MRSA (*Methicillin-resistant Staphylococcus aureus*) were identified from wound cultures. Local wound care was performed, and the affected skin, subcutaneous adipose tissue and the axillary fascia was widely excised, including the entire hair-bearing area (Figure 2A). The surgical defect was reconstructed with an STSG. STSG harvested from the lateral aspect of the ipsilateral thigh using an air-

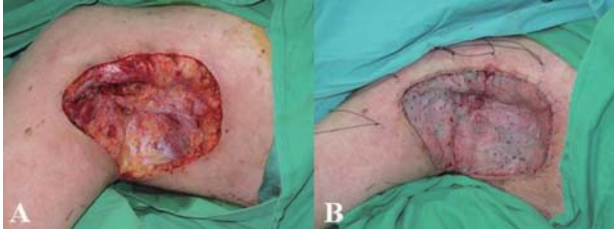


Fig. 2 The axillary defect after wide excision (A) is covered with a split-thickness skin graft, which is fixed to the wound edges with staples (B).

driven dermatome. After application to the recipient site, the graft was fixed to the wound margins with staples (Fig. 2B). The skin graft survived well after surgery and showed satisfied functional and aesthetic outcome at the 12-month follow-up (Fig. 3).

DISCUSSION

HS is a chronic, recurrent suppurative inflammation of the apocrine sweat glands. The presumed etiology is a follicular occlusion disease caused by keratinous plugging with superimposed bacterial infection of the adjacent eccrine glands.¹⁴ The disease is three times more common in females and is generally found in adults between 20 to 40 years old.⁸ Contributing factors include poor hygiene, obesity, various hormonal events, genetic factors, mechanical and chemical irritation.¹⁴ The late complication of squamous cell carcinoma has been reported in chronic inflammatory hidradenitis.⁹

Although the early, acute lesion often responds to antibiotics, this treatment is unlikely to alter the clinical course of the disease. Incision and drainage with wet dressing only give temporary effects and frequently lead to sepsis and recurrence.²⁻⁹ Although the method of hair-bearing skin excision under careful visualization of the apocrine glands can provide an adequate result, recurrence mainly results from inadequate excision due to subcutaneous sinus tract formation or unusual distribution of apocrine glands.²⁻⁹ The purpose of any surgical treatment in HS is to excise all diseased tissue. The large axillary skin defects due to extensive debridement present a challenging reconstructive problem because of the wide range of shoulder movement.

Various techniques have been used to facilitate wound coverage, including primary closure, skin grafting, thin STSG with artificial dermis, local flaps, and free tissue transfer.²⁻¹³ Any attempts to obtain primary skin cover may lead to inadvertent compromise of the excision mar-



Fig. 3 The site of the axillary wound approximately 12 months after grafting, with the shoulder in full abduction.

gin. Random skin flaps have limited reliability in reconstructing large skin defect. The skin island flap is suitable for large defects, but requires the identification of perforators.¹⁰ Latissimus dorsi or pectoralis major myocutaneous flap have been used for postburn scar contracture, but the excessive bulk of the muscle limits adduction of the arm.¹¹⁻¹² The defect can also be resurfaced by free flaps but the operation is technically more difficult and requires complicated postoperative care.

Although a number of different reconstructive techniques have been described for the treatment of axillary skin defects, STSG continues to be the most common surgical modality.¹⁵ Poor graft take, even less than 50% take, was reported in the literature after inadequate debridement, and this usually results in subsequent healing by secondary intention and scar contracture.²⁻¹³ Because the axillary apocrine glands are located not only within the hair-bearing area but also in the surrounding 2 cm of skin, we suggest wide excision of the infected skin and the subcutaneous tissue to create a healthy wound bed. Skin grafting only requires a short period of immobilization, causing little shoulder rehabilitation problems.

The thickness of the STSG is divided into thin (0.15-0.3 mm), intermediate (0.3-0.45 mm), and thick (0.45-0.6 mm) grafts.¹⁶ The thinner graft takes more easily, but is often dischromic and easier to have scar contracture. For the thicker graft, although the scar contracture is less, the healing process is longer and prone to infection and poor wound healing. Therefore, we use the intermediate thickness skin graft without meshing and the size of the skin graft is similar to the wound size to ensure skin graft take

and less scar contracture.

In summary, axillary hidradenitis suppurativa is a chronic recurrent disorder characterized by abscess inflammation, fistulous sinus tracts, and scarring. This is not only a medical disease, but also a complicated problem necessitating surgical intervention. Adequate wide debridement can provide a healthier wound bed that not only ensures a remarkably high percentage graft take in the axillary defect, but also allows early shoulder movement throughout, thus ensuring shoulder mobility is not compromised. The application of the STSG is an easy, reliable, conventional technique, which can provide satisfactory functional and esthetic outcomes in reconstructing extensive axillary defects.

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FINANCIAL DISCLOSURE

None of the contributing authors have any conflicts of interest, including specific financial interests and relationships and affiliations relevant to the subject matter or materials discussed in the manuscript.

CONFLICT OF INTEREST

None.

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