Reconstruction after Excision of Hidradenitis Suppurativa: Are Skin Grafts Better than Flaps?

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Summary: After surgical excision of hidradenitis suppurativa, reconstruction with a skin graft or a flap is performed when primary closure is not possible. However, the recurrence rate is reportedly high even after wide surgical excision. It is still unclear which reconstruction method provides the lowest recurrence rate. In this report, we present a case of intractable hidradenitis suppurativa in the bilateral perineal region. After wide excision and repair with bilateral groin flaps, a unilateral groin flap was replaced with a split-thickness skin graft because of flap necrosis. Although the skin graft repair region has been recurrence-free for 4 years postoperatively, other regions with flap repair showed recurrence 1 year postoperatively, leading to reexcision and repair with a split-thickness skin graft. The current case provides an opportunity to reconsider the optimal surgical strategy for hidradenitis suppurativa. Taking into consideration the fact that hair follicles and sweat glands are involved in the etiology of hidradenitis suppurativa, split-thickness skin grafting, which lack cutaneous appendages, may be superior to flap repair or primary closure in terms of recurrence. (Plast Reconstr Surg Glob Open 2016;4:e1128; doi: 10.1097/GOX.0000000000001128; Published online 10 November 2016.)

Hidradenitis suppurativa is an apocrine adenitis characterized by infection of hair follicles, which causes painful induration, sloughing, and pus drainage. Fistula formation caused by reeruptions leads to refractory and chronic disease. Although surgical treatment is considered the best option for advanced hidradenitis suppurativa, a high rate of recurrence has been reported even with wide excision and various reconstruction methods. Currently, there is still no consensus regarding the optimal surgical strategy. In fact, a recent systematic review and meta-analysis reported that there is insufficient evidence to show the advantages of flaps over skin grafts although they are superior to primary closure. In this report, we present a case of hidradenitis suppurativa in the bilateral perineal region in which reconstruction with a skin graft clearly had a better postoperative outcome than that with a skin flap. This experience provides an opportunity to reconsider the optimal reconstruction method after excision of intractable hidradenitis suppurativa in terms of recurrence.

CASE REPORT

A 38-year-old man suffering from hidradenitis suppurativa in the bilateral perineal region presented to our department after antibiotic therapy. Clinical examination of the patient revealed various lesions (abscesses, fistula, and scars) in the bilateral inguinal regions and pus discharge from the fistula. His medical history included diabetes mellitus and obesity (body mass index, 27.6 kg/m²).

We performed wide excision of the disease foci including the superficial fascia, followed by reconstruction with bilateral island groin flaps (Fig. 1). Because the flap on the right side became congested on postoperative day 1, emergent surgery was performed (Fig. 2). After the congested flap was resected, a partial-thickness (15/1,000 inch) graft was obtained from the resected flap, and mesh skin grafting was performed. The postoperative course was uneventful after the second surgery, and the wounds healed satisfactorily.

One year postoperatively, recurrence in the left perineal region (flap repair side) occurred. After conservative treatment, the patient was reexamined at our department 3 years postoperatively. Although the right perineal region (skin graft repair side) was recurrence-free for 4 years postoperatively, other regions with flap repair showed recurrence 1 year postoperatively, leading to reexcision and repair with a split-thickness skin graft. The current case provides an opportunity to reconsider the optimal surgical strategy for hidradenitis suppurativa. Taking into consideration the fact that hair follicles and sweat glands are involved in the etiology of hidradenitis suppurativa, split-thickness skin grafting, which lack cutaneous appendages, may be superior to flap repair or primary closure in terms of recurrence.

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free, recurrence occurred in the center and lateral margins of the flap in the left side (Fig. 3). We performed additional surgical treatment in the left perineal region. After wide excision of the recurrence site, reconstruction by mesh skin grafting was performed with a partial-thickness (10/1,000 inch) graft obtained from the thigh. The patient has been recurrence free for 1 year postoperatively (Fig. 4).

**DISCUSSION**

According to a recent systematic review and meta-analysis by Mehdizadeh et al., postoperative recurrence rates for hidradenitis suppurativa were 15% for primary closure, 8% for skin flaps, and 6.0% for skin grafting. In the present case, recurrence occurred at the site of flap reconstruction, but no recurrence was observed in regions where reconstruction with partial-thickness skin grafting was performed.

Various etiologies and pathologies have been suggested for hidradenitis suppurativa, but it is assumed that hair follicles and sweat glands are involved. When performing primary closure or flap repair, full-thickness skin containing hair follicles and sweat glands, which creates favorable conditions for disease development, is also transplanted onto the affected sites. Moreover, unhygienic conditions because of persistent sweating are considered to increase the risk of recurrence.

In contrast to primary closure or flap repair, it is possible to transplant skin without hair follicles and sweat glands with split-thickness skin grafting. The repaired region is then resistant to disease development, which could contribute to decreased recurrence. From this perspective, split-thickness skin grafting might be preferable to full-thickness skin grafting as the former allows complete...
removal of hair follicles and sweat glands from grafts. In addition, Boer and Jemec4 and Boer et al5 reported that mechanical irritation, such as pressure and rubbing, may trigger hidradenitis suppurativa, and obese patients are more susceptible to the effects of mechanical irritation. Mechanical irritation could worsen when tissue volume increases after flap repair (e.g., in the inguinal or axillary region). This also supports our hypothesis that skin grafting is superior to flap repair in the surgical treatment of hidradenitis suppurativa.

CONCLUSIONS

The present case provides an opportunity to reconsider the optimal surgical strategy for hidradenitis suppurativa. Considering that hair follicles and sweat glands are involved in the etiology of the condition, split-thickness skin grafting, which does not contain cutaneous appendages, may be superior to flap repair or primary closure in terms of recurrence.

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