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Effectiveness of Punch Grafts Applied Using the Open Technique in Patients with Hidradenitis Suppurativa

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ABSTRACT

Hidradenitis Suppurativa (HS) is a chronic, recurrent skin disease that may result in skin lesions requiring surgical excision in advanced stages. Surgical reconstruction of wide tissue defects that cannot be primarily closed after such excisions is challenging due to the high risk of infection and the prolonged healing period required. Traditional pressure dressings may lead to complications, particularly in infected areas such as the perianal and inguinal regions where the skin flora poses a risk, whereas skin grafting techniques applied using the open technique offer an alternative approach. In this study, the effectiveness, healing process, and potential complications of punch and mesh grafts applied with the open technique were evaluated in three HS patients. The results demonstrated the reliability of this method, with a high graft take rate and a low risk of complications.

Keywords:

Hidradenitis Suppurativa (HS), Punch graft, Open technique, Skin graft, Infection, Reconstructive surgery

Introduction

Hidradenitis suppurativa (HS) is a chronic dermatological disease characterized by recurrent inflammation in areas rich in apocrine glands, often accompanied by nodules, fistulas, and scar formation. It most frequently affects the axillary, inguinal, and perianal regions, and can significantly impair patients' quality of life [1,2]. The pathogenesis of HS involves genetic predisposition, obesity, smoking, hormonal factors related to metabolic functions, and microbial colonization in the affected areas [3].

In advanced stages of the disease, particularly Hurley stage III, surgical excision of affected tissues is considered the most effective treatment [4]. However, the repair of wide tissue defects that cannot be primarily closed after surgical excision represents a major reconstructive challenge. Techniques such as skin grafts, flap surgery, or allowing secondary healing are often employed [5].

Split-thickness skin grafts are generally secured during treatment with tie-over dressings using sutures placed around the defect margins. However, in HS patients with high infection risk particularly in the perianal and inguinal regions, such dressings may increase bacterial colonization and consequently raise the rate of graft loss [6]. In this study, the effectiveness and complication rates of punch grafts applied with the open technique in three HS patients were evaluated, and the advantages of punch grafts followed openly, as an alternative to traditional pressure dressings, were discussed.

Materials and Methods

This study included three patients previously treated by dermatologists for HS without adequate response, who ultimately underwent surgical excision and developed wide tissue defects. The patients were treated in a private clinic in 2024. Written informed consent was obtained from each patient, and the study was conducted in accordance with the Declaration of Helsinki.

In each patient, the affected area was first completely debrided surgically, and healthy granulation tissue formation was awaited (Figure 1a,b,c).

Figure 1a: Preoperative image of a patient with an extensive lesion due to hidradenitis suppurativa in the gluteal region.

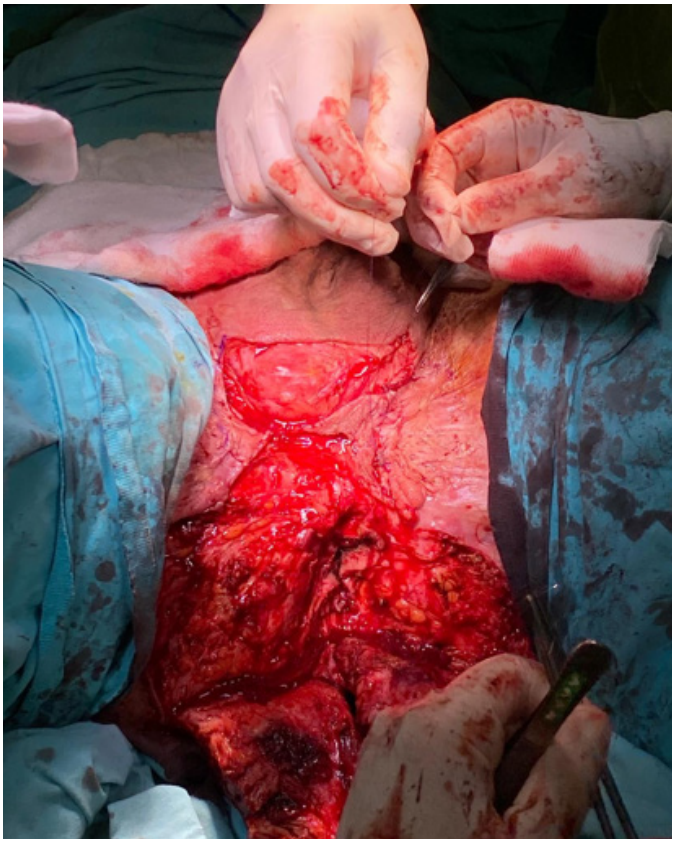

Figure 1b: Intraoperative view of the wide excision of the lesion in the same patient.

Figure 1c: Granulation tissue formed as a result of daily dressings after surgery.

Subsequently, in a second procedure, split-thickness skin grafts (0.25–0.40 mm) were harvested from the thigh using a dermatome device and applied as punch or mesh grafts to the defect areas, which had been left to heal by secondary intention. Each graft was securely sutured both at the edges and to the wound bed with 5/0 monofilament sutures. The grafts were left open without the traditional pressure dressings (Figures 2,3).

Figure 2: Defect closure with a split-thickness graft in the patient with hidradenitis suppurativa.

Figure 3: Follow-up image of the patient with a split-thickness graft using open dressings.

During the postoperative period, graft sites were irrigated three times daily with 0.9% isotonic sodium chloride solution containing rifampicin, and topical antibiotic ointment was applied. Patients were followed regularly for six weeks. Graft take rates, infection development at graft sites, and the healing process were recorded (Figure 4,5).

Figure 4: Long-term follow-up image of the patient after split-thickness grafting.

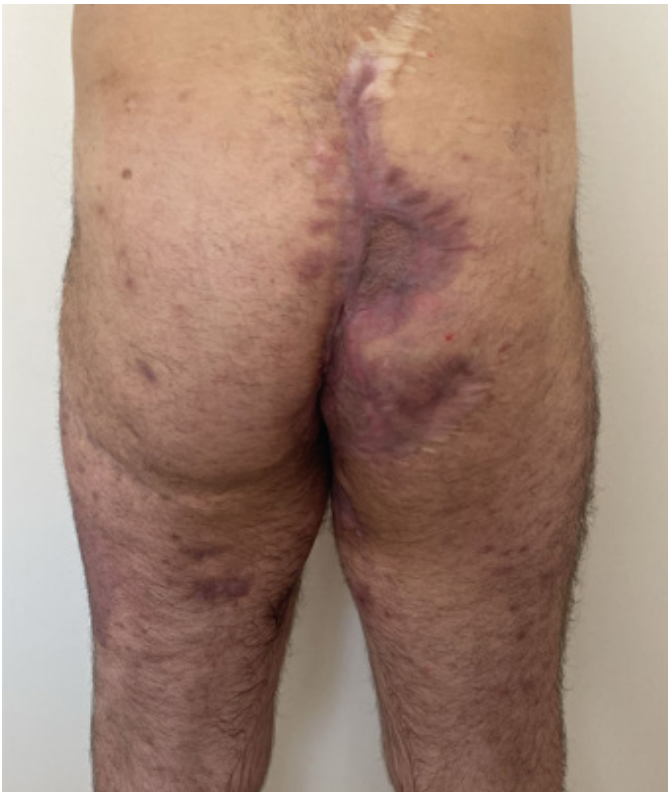

Figure 5: Image of the healed lesion in the patient with hidradenitis suppurativa.

In all patients, grafting was performed using the open technique in a similar manner. By the end of the first week, the majority of grafts (85–90%) were successfully integrated into the defect areas. Small areas with partial graft loss healed completely through secondary epithelialization. No major infections, seroma, hematoma, or graft loss were observed during the follow-up period.

Results

In all patients, grafting was performed using the open technique in a similar manner. By the end of the first week, the majority of grafts (85–90%) were successfully integrated into the defect areas. Small areas with partial graft loss healed completely through secondary epithelialization. No major infections, seroma, hematoma, or graft loss were observed during the follow-up period.

Discussion

Reconstruction of tissues after surgical excision in HS treatment poses challenges due to the risk of infection and impaired graft take [7]. Although traditional pressure dressings support stable graft adherence to the wound bed, they increase the risk of complications in infected or colonization-prone regions such as the perianal and inguinal areas [8]. In contrast, punch or mesh grafts applied using the open technique may reduce these complication rates.

Punch grafting is a minimally invasive reconstructive technique, particularly effective in areas requiring small-scale grafting. Previous studies have also demonstrated that punch grafts may yield better outcomes than traditional grafts in infected, colonization-prone, or poorly vascularized areas [9,10].

In the three patients in this study, high graft take rates and low complication rates were observed. Contributing factors to this success included the open grafting technique, regular irrigation, topical antibiotic use, and proper fixation of the grafts. Similar results have been reported in the literature [11,12].

Although flap surgery offers aesthetic and functional advantages, it is more complex, costly, and carries a higher risk of complications [13]. Allowing wounds to heal by secondary intention may prolong the healing process and increase the risk of scarring [14,15]. Therefore, the punch graft technique described here may be considered a reliable alternative to conventional closed graft dressings, particularly for large postoperative defects, with the added benefit of closer graft monitoring.

Conclusion

In the treatment of wide postoperative tissue defects in HS patients, punch grafts applied with the open technique provide an effective method with a high success rate and low risk of complications. This technique eliminates the adverse effects of traditional pressure dressings in infected and colonization-prone wound beds, offering patients a safer healing process. However, larger controlled studies with more patients are needed to establish this technique as a standard approach.

Conflict of Interest

None.

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