Case Report

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Axillary Hidradenitis Suppurativa Reconstruction with Thoracodorsal Artery Perforator Flap: A Case Report

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Abstract

Background: Hidradenitis suppurativa (HS) is a chronic condition affecting the pilosebaceous unit, characterized by nodules, abscesses, sinus tracts, and scarring, most commonly in axillary, inguinal, and inframammary regions. Medical treatments are first-line management; however, surgical interventions are necessary for resistant cases.

Case: A 52-year-old male presented with bilateral axillary swelling and discharge for four years. Classified as Hurley Stage II, his condition included nodules, sinus tracts, and purulent discharge. Conservative treatments failed to resolve symptoms. Surgical excision of right axillary lesions and reconstruction using a thoracodorsal artery perforator flap was performed. Postoperatively, the flap remained viable with rapid capillary refill and normalized without complications. The patient experienced complete symptom resolution, with no contractures or movement restrictions.

Discussion: HS presents significant diagnostic and therapeutic challenges, particularly in advanced cases. Surgical excision and flap reconstruction provide excellent functional and aesthetic outcomes in localized disease. The thoracodorsal artery perforator flap minimizes contracture risks, ensuring durable reconstruction. This case emphasizes the importance of early diagnosis and surgical intervention in resistant HS cases to prevent complications and improve outcomes. Further research is necessary to assess long-term effectiveness of flap-based methods.

Keywords: Hidradenitis Suppurativa, Thoracodorsal artery perforator flap, axillar reconstruction

Introduction

The term Hidradenitis suppurativa (HS) is derived from three components that aptly describe the disease: “Hydro” refers to sweat, “Aden” denotes gland, and “Suppurativa” means purulent. However, HS is not primarily a disorder of the sweat glands but rather a follicular unit abnormalityng[1,2]. HS affects the follicular portion of the pilosebaceous unit, presenting as a chronic disease that significantly reduces quality of life. It manifests with painful, suppurative lesions, including deep-seated nodules, abscesses, draining sinus tracts, and fibrotic scars. These lesions predominantly occur in regions with higher densities of androgen and sex hormone receptors, such as the axillary and inframammary regions or areas where two skin surfaces frequently rub against each other[3].

Although the exact pathogenesis of HS remains unclear, it is thought that follicular occlusion caused by infundibular keratosis and epithelial hyperplasia is the initiating event in the disease mechanism. Research has identified several factors that contribute to the development and exacerbation of HS. Among these, genetic predisposition is a key factor, with studies indicating that one-third of patients with HS have family members exhibiting similar symptoms. Another significant factor, particularly in women, is hormonal fluctuations. Many women report HS flares during premenstrual periods and remission during pregnancy. Before menopause, HS exacerbations are associated with decreases in progesterone and estrogen levels and increases in androgen levels. The premenstrual period is characterized by a sudden drop in estradiol and progesterone levels, suggesting that hor-

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monal changes during the menstrual cycle can influence the onset and severity of HS symptoms[3].

In addition to genetic and hormonal factors, lifestyle elements may also play a role in HS flares. Wearing tight clothing is believed to increase friction, while using tampons instead of sanitary pads may reduce skin friction. Moreover, the use of abrasive objects, such as loofahs, or shaving the affected areas can irritate the skin and trigger disease recurrence. While poor hygiene is not a causative factor for HS, excessive use of soaps, cleansers, or frequent shaving may activate the immune system and exacerbate the condition[4].

This comprehensive understanding of HS highlights the multifactorial nature of its pathogenesis and the importance of considering both biological and lifestyle factors in its management[5]painful, and malodorous abscesses and nodules predominantly in skin folds. HS is associated with substantial morbidity and poor quality of life. There are no curative therapies, and the only approved biologic drug has variable efficacy and requires high doses, making adjunct treatments crucial. An important risk factor for disease severity is obesity. Our primary objective was to conduct a systematic review examining weight loss and dietary interventions, in HS. Our secondary objective was to examine nutritional supplements in HS.A systematic literature search was conducted using Medline, EMBASE, and the Cochrane Database. We included all study types in adults (>18 years.

The prevalence of hidradenitis suppurativa (HS) in the general population is estimated to be around 1%; however, the actual percentage may be higher. Recent studies indicate that the incidence of HS has more than doubled from 1986 (4.0 patients per 100,000) and 2008 (10.0 patients per 100,000) to 2021, where the global prevalence is estimated to range between 0.00033% and 4.1% [6].

Hidradenitis suppurativa most commonly affects the axillary and breast regions, followed by the inguinal and inframammary folds, and least frequently the gluteal area. The typical clinical findings include recurrent and chronic nodules, abscesses, sinus tracts, and scars[7].

The clinical staging of hidradenitis suppurativa is performed using the "Hurley Staging System."

Hurley Staging System[8]:

- **Stage I:** Formation of single or multiple abscesses or scars without sinus tracts.
- **Stage II:** Recurrent abscesses, single or multiple lesions, tunnel formation, and/or scarring.
- **Stage III:** Diffuse involvement or interconnected sinus tracts and abscesses throughout the entire affected area.

Case

A 52-year-old male patient presented with complaints of bilateral axillary swelling and discharge that had persisted for the past four years. The patient reported that his symptoms initially started in the right axilla and later affected the left axilla as well. He also mentioned having recurrent pimples in the sternal region occasionally. The patient's family history was unremarkable. He was a farmer, a smoker, and had a medical history of hypertension and prediabetes, for which he was taking only 5 mg of amlodipine.

Physical examination revealed widespread scarring in the right axilla, along with nodular lesions on a reddened background, some of which were pustular and purulent. The lesions were painful upon palpation. Based on his clinical presentation, the patient was classified as Hurley Stage 2.

Laboratory findings showed hemoglobin of 14.3, CRP of 18, and sedimentation rate of 68. Superficial ultrasonography revealed dermal abscess foci with sinus tracts in some areas. Enlarged lymph nodes with a preserved fatty hilum and well-defined margins were noted in the axilla. A biopsy demonstrated follicular hyperkeratotic areas, subcutaneous fibrosis, and findings consistent with folliculitis. These results confirmed the diagnosis of hidradenitis suppurativa.

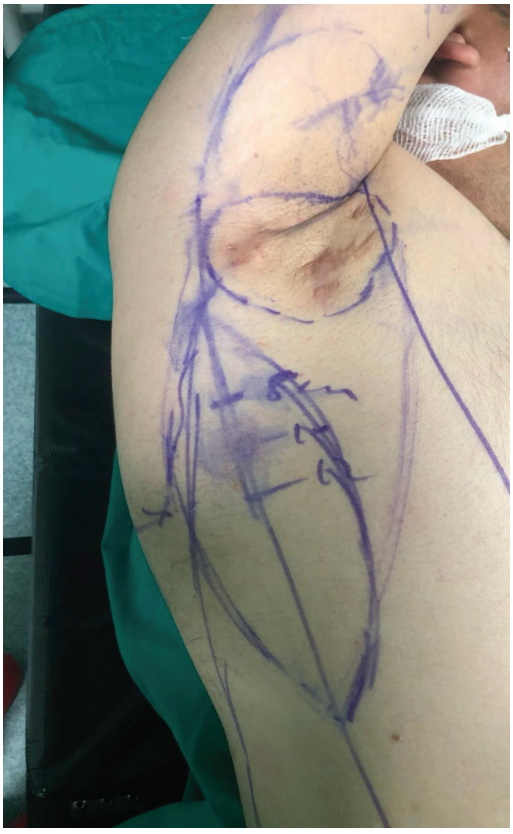

Figure 1. Surgical incision and flap planning

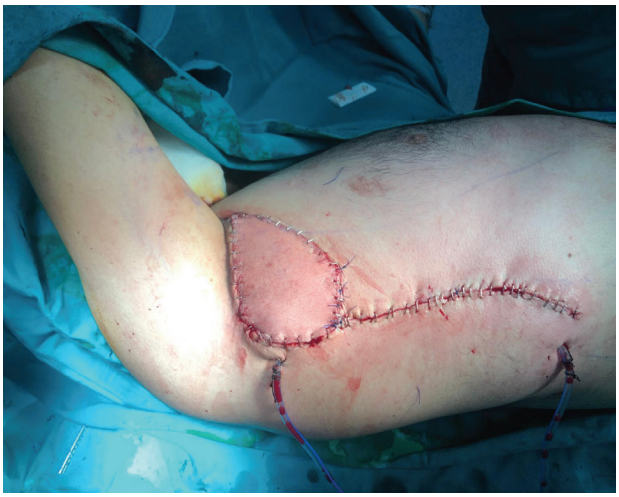

Figure 2. Postoperative flap viability

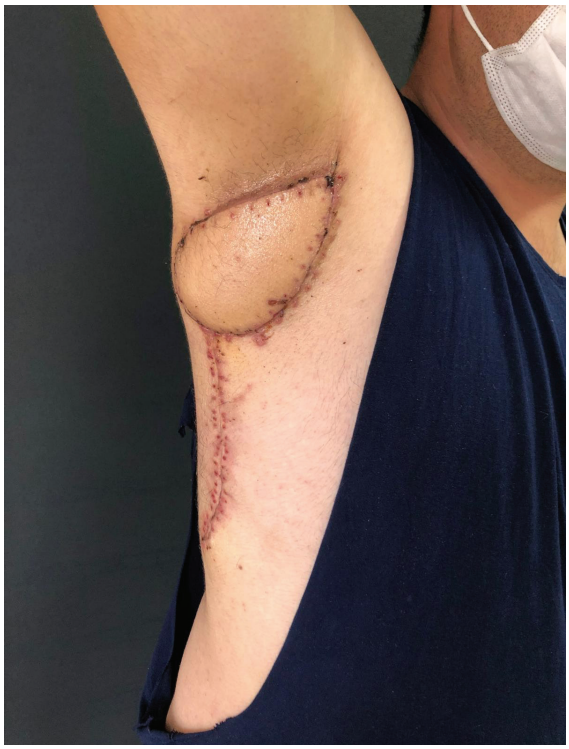

Figure 3. Healed axillary appearance

Informed consent was obtained from the patient, including permission to use her anonymized clinical data for scientific purposes in accordance with ethical principles.

Given the presence of predominantly painful and draining lesions in the right axilla, surgical intervention was recommended. The patient was scheduled for wide surgical excision and reconstruction using a thoracodorsal artery perforator flap (Figure 1).

On the first postoperative day, the thoracodorsal artery perforator flap exhibited rapid capillary refill but remained viable. In the subsequent days, the capillary refill rate normalized without any signs of venous insufficiency (Figure 2).

The postoperative course was uneventful, with no complications observed in the axillary region. There was no dehiscence along the suture line, and the patient experienced no restrictions in arm movements or contractures (Figure 3).

Discussion

Hidradenitis suppurativa (HS) is a disease where early and accurate diagnosis, followed by the rapid implementation of appropriate treatment, plays a crucial role in prognosis. Timely intervention can often prevent serious complications. Conversely, delayed diagnosis may lead to irreversible skin lesions, which can significantly impact the patient's physical and psychological well-being.

The typical clinical presentation of HS includes deep-seated nodules, abscess-like lesions with a tendency to soften, scars, fistulas, and secondary open comedones. According to Hurley's classification, the disease progresses through three clinical stages:

Stage I: Single or multiple lesions (inflammatory and/or non-inflammatory) without sinus tracts or scarring.

Stage II: Recurrent abscesses, single or multiple lesions with fistula and scar formation.

Stage III: Widespread scarring and interconnected sinus tracts or abscesses[8].

Bacteriological cultures of lesion contents may be sterile or may reveal mixed Gram-positive and Gram-negative bacterial flora (commonly Staphylococcus, Streptococcus, Escherichia coli, Proteus sp., and other anaerobic bacteria). However, it is essential to remember that bacterial infection plays a secondary role in the development of HS symptoms[9].

Several treatment modalities are available for HS. The most significant among these are topical and systemic antibiotics, intralesional steroid injections, monoclonal antibody therapies, laser and radiotherapy applications, and surgical interventions[10]with the prevalence of 0.05% to 4.10%, yet many patients receive inadequate treatment. OBJECTIVE: To review the diagnosis, epidemiology, and treatment of HS with an emphasis on advances in the last 5 years. EVIDENCE REVIEW: A literature search was conducted using PubMed, MEDLINE (Medical Subject Headings [MeSH]. In our case, topical and systemic therapies were attempted but proved ineffective. Consequently, surgical excision followed by reconstruction with a flap was performed to address the defect.

Although surgical approaches are often considered a last resort, they are highly effective for localized HS cases

with well-defined boundaries and in non-advanced stages. While graft applications are more frequently performed after excision, the risk of contracture formation makes flap techniques a more aesthetic and functional option.

Further studies evaluating the efficacy of different surgical techniques are warranted, particularly to assess the long-term outcomes of flap methods.

Conclusion

Hidradenitis suppurativa (HS) is a challenging dermatological condition where early diagnosis and timely intervention are critical to preventing serious complications and improving patient outcomes. While medical therapies remain the first line of treatment, surgical interventions are indispensable for localized cases resistant to other modalities. This study highlights the effectiveness of surgical excision and reconstruction with flap techniques, particularly for achieving both functional and aesthetic benefits in well-defined HS cases.

Although surgical approaches are often considered a last resort, our findings underscore their value in enhancing the quality of life for patients when applied appropriately. Flap techniques, in comparison to graft applications, provide superior outcomes by minimizing contracture risks and optimizing reconstructive results. Further research is essential to evaluate the long-term effectiveness and refinement of these surgical methods to develop comprehensive treatment protocols for HS.

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