

# When staged surgical treatment can solve bilateral axillary and inguinal severe hidradenitis suppurativa

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**Abstract.** Hidradenitis suppurativa (HS) is a chronic and debilitating disease that primarily affects the axillary, inguinal and anogenital areas. The treatment requires wide surgical excision of the affected tissue with adequate free margins in order to avoid recurrence. However, axillary and inguinal regions reconstruction after HS excision still represents a big challenge; the large defect can be closed using flaps, which allows more rapid rehabilitation and minimizes the risk of later scar contracture. In this report is discussed our experience with reconstruction of severe bilateral hidradenitis lesions of the axillary and inguinal areas in a young woman. Bilateral thoracodorsal artery perforator flaps were used for the axillary reconstruction while profunda artery perforator flap and direct suture were used respectively for left and right inguinal region. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** Hidradenitis suppurativa, flaps, axillary region reconstruction, inguinal region reconstruction

## Introduction

Hidradenitis suppurativa (HS) is a chronic and recurrent inflammatory disease of the apocrine glands, characterized by recurrent abscesses, draining sinus tracts and scarring that are located most commonly in the axillary, inguinal and anogenital regions (1). The chronic and relapsing nature of HS leads to physical and psychological damages because it frequently causes disabling pain, diminished range of motion and social isolation, with a devastating impact of the disease on patient’s quality of life (2). HS is commonly mismanaged owing to a failure of early diagnosis and once established, chronicity and progression ensue. It is a fairly common disease, affecting approximately 1% of the population and the onset is after puberty, usually during the second and third decades (3). The exact etiology remains unknown, but smoking and obesity are the two main factors associated with HS, such as genetic component, diabetes

mellitus, poor hygiene, deodorants and chemical depilation (4). Conservative treatments include prolonged courses of antibiotics, retinoids, immunosuppressants and biologics, but all these procedures are associated with high recurrence rates (5,6). Only radical debridement offers recovery, indeed a wide surgical excision of affected skin tissue with adequate free margins is the gold standard treatment to prevent recurrence (7). Axillary and inguinal regions reconstruction after HS excision still represents a big challenge for plastic surgeons, because of the necessity of flaps of wide dimensions as well as the healing problems in post-operative period. We report the case of a patient affected by severe HS localized in axillary and inguinal regions bilaterally, successfully treated with radical excision and reconstruction with bilateral thoracodorsal artery perforator (TDAP) flaps for left and right axilla, profunda artery perforator (PAP) flap for left inguinal region and direct closure for right inguinal region.

## Case report

A 31-year-old woman presented at our Unit with a long history of severe HS both in the axillae and in inguinal regions bilaterally, complicated by decreased of range of motion in abduction especially in the right upper limb. She was treated firstly with medical therapies and surgical drainages, but her quality of life was severely affected due to high recurrence rates, creating fistulous tracts and scars in these areas. We decided to perform a staged treatment.

We started to treat the right axilla: preoperative evaluation included color doppler US using a 13 Mhz probe with specific settings for perforators of thoracodorsal artery. Patient was positioned in left lateral decubitus with 90° of right shoulder abduction and 90° of right elbow flexion. After perforator mapping, the most suitable perforator was set as the pivot point of the flap, and the planned size and orientation of the skin paddle of TDAP flap was marked (Figure. 1). Under general anesthesia, accurate debridement with wide surgical excision of affected skin tissue with adequate free margins was performed and reconstruction with fasciocutaneous right TDAP flap was done. Once the TDAP flap was harvested, the paddle was positioned to cover the defect; adsorbable sutures for subcutaneous layer, after

pen-rose drainage insertion, and non adsorbable sutures for skin layers were executed. In post-operative period a brace was placed for a month and physiotherapy cycles were performed. The procedure allowed for resolution of HS and wound healing with no recurrence; full recovery of right arm abduction occurred too.

After six months left axilla and right inguinal region were treated (Figure. 2). Fasciocutaneous TDAP flap was performed to reconstruct left arm-pit after a wide debridement, as reported above for right axilla, while direct closure was performed for right inguinal region after surgical excision of HS. There was no recurrence of HS, obtaining a complete healing.

Three months later also left inguinal region was treated: after accurate and wide surgical excision of HS, a reconstruction with PAP flap was performed (Figure. 3). No flap failure was observed but surgical revision occurred to correct wound dehiscence.

Before each operation a swab of hidradenitis lesion was performed for cultural examination and antibiogram, in order to set up a targeted antibiotic therapy in the postoperative period. No further complications, infections or relapses were observed during follow up, ranged between 6 months and 12 months (Figure. 4).



**Figure 1.** Preoperative picture of severe HS of right axilla. Preoperative TDAP flap markings.



**Figure 2.** Preoperative picture of HS of left axilla. Preoperative TDAP flap markings.



**Figure 3.** Final result after wide debridement and reconstruction with PAP flap.

## Discussion

The treatment of HS can be divided into medical and surgical approaches (8). The Hurley classification of disease severity is the oldest and most commonly used of the several systems (9). Evidence proving efficacy for medical treatment is very limited and current practice aims to control only early or milder forms of the HS (Hurley's stage I). When the disease is chronic and extensive, surgical excision of the affected skin tissue and adjacent apocrine glandular zone is considered the gold standard treatment for prevention of recurrence (10). Historically, extensive and severe HS was treated with excision of the affected tissue and the surgical defect was either left to heal by secondary intention or grafted with a split-thickness skin graft, often causing long term hospitalization, high morbidity and functional problems related to secondary retraction. Instead, recently the use of local, regional and free flaps gained increasing importance to reconstruct defect after excision of HS (11). Flap is a good option because it provides reliable soft tissue coverage allowing no restriction to joint movements, and thus reaching a good quality of life, a low functional disability and a shorter healing time (12). The TDAP flap is considered the gold standard for axillary reconstruction after excision of severe hidradenitis suppurativa, since it allows



**Figure 4.** Follow up of right and left axillae. There was no recurrence of disease.

effective reconstruction using like with like skin, without the need for microsurgery, leading to an excellent functional outcome (13).

In our case, the results of reconstruction with bilateral TDAP flap are similar to the experience of previous authors (14,15). Thoracodorsal artery perforator is confirmed to be a safe and versatile reconstructive option, improving patient's quality of life after surgical treatment.

In literature we find that flap choices for inguinal region reconstruction after severe HS currently include the anterolateral thigh flap, the vertical rectus abdominis myocutaneous flap, the gracilis flap and the gluteal fasciocutaneous flap (16). Also PAP flap is an important choice in reconstruction of inguinal region; along with its consistent and robust vascular anatomy and minimal donor-site morbidity, the flap's volume and pliability make it a reliable option for soft-tissue reconstruction (17).

According to our experience, wide surgical excision is mandatory to assess complete healing of HS and it is advisable to perform cultural examination and antibiogram test to be able to set up a targeted antibiotic therapy. Reconstruction should be performed with flaps, especially perforator flaps, that ensure reduced the donor-site morbidity, good outcomes and acceptable aesthetic result. Staged surgical treatment should be considered in patients with multiple locations of HS because it allows better control of healing process and recurrences of each areas, improving quality of life.

**Conflict of Interest:** Each author declares that he has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

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