# Genital reconstruction for the management of a complex wound in a patient with hidradenitis suppurativa

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Hidradenitis suppurativa (HS) is a chronic, relapsing suppurative cutaneous disease affecting skin-bearing apocrine glands and is manifested by abscesses, fistulating sinus tracts, and chronic infection leading to scarring. HS must be noticed early and referred for specialist care as this condition often needs multidisciplinary management. There is usually a delay in the diagnosis of this condition, and in most cases, the severe form of the disease occurs in patients who present late. This is a condition that often requires the care of a wound practitioner, and being aware of this disease may assist in an earlier diagnosis.

In this case report we describe a patient who presented with a severe form of HS, affecting his axilla and perineum. The condition was complicated by the fact that he had a buried penis and extensively diseased scrotal skin, which was compounded by perianal disease. This case also describes the management of the disease as well as that of the buried penis and scrotal reconstruction.

**Keywords:** genital reconstructions, hidradenitis suppurativa, management, complex wound



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## Introduction

Hidradenitis suppurativa (HS) is a disease involving the apocrine glands and generally presents after puberty, around the ages of 23–55 years. It is more frequently seen in females (3 : 1).[1] Patients with HS may have other associated comorbid conditions that add to the complexity of their treatment. These include obesity, metabolic syndrome, hyperthyroidism, inflammatory bowel disease, and malignancies.[1,2] About 30% of individuals have a familial history of HS. Aside from the clinical presentation, patients with severe HS are at risk of depression with tobacco dependency, which in turn affects wound healing.[1,2] In addition, HS results in social isolation and can negatively impact sexuality.[1]

The Dessau criteria are used for the diagnosis of HS.[2] The criteria include recurrent, painful or suppurating nodules (axilla, perineum, gluteal area, genitofemoral area) present on two or more occasions within six months. Early recognition of HS is imperative, as early treatment can help with the management of the disease. There is often a delay due to the underdiagnosis of HS, as it can be mistaken for boils or abscesses. A published global study illustrated an average delay of seven years in HS diagnosis.[4] The Hurley classification system is a simple tool that can aid practitioners in staging the disease and assist with the appropriate referral pathway:[1,5]

1. Stage I: Abscess without sinus tracts or scarring.
2. Stage II: Multiple abscesses plus sinus tracts and scarring.
3. Stage III: Diffuse involvement of the entire area with abscesses, sinus tracts, and scarring.

Patients with stage I and II disease should be referred to dermatology. Patients with stage III disease should be referred to a plastic and reconstructive surgeon to plan for surgical resection of the disease and reconstruction of the defect.[1]

## Case

A 39-year-old male presented with hidradenitis and severe scarring involving his penis, scrotum, perineum, and anal region. Other than a history of childhood eczema, he was otherwise well. He initially presented with a pilonidal abscess, which was excised at the base hospital in 2016. He had always had blistering lesions in his axilla, which were also excised at the base hospital. During the course of 2016, similar lesions started forming on his perineum, back, and buttocks and he underwent a diverting colostomy in March 2017 due to their severity to allow healing to take place.

In October 2018, the patient was referred to urology for a penile lengthening procedure to address the buried penis. Postoperatively, he developed wound breakdown that was treated conservatively and subsequently healed. Due to COVID-19 and strict lockdowns, the patient only presented to dermatology again in September 2021, and at this point, was assessed as having HS with a Hurley classification II to III.

He was treated with analgesia (non-steroidal anti-inflammatory drugs) and antibiotics (clindamycin, rifampicin, and/or doxycycline). Once the disease was quiescent, the patient was referred for excision with repeat penile lengthening and reconstruction. He had extensive fibrosis of the penis, scrotum, perineum, and anus (Figure 1).

**Figure 1:** Hidradenitis preoperative lesion with deformity

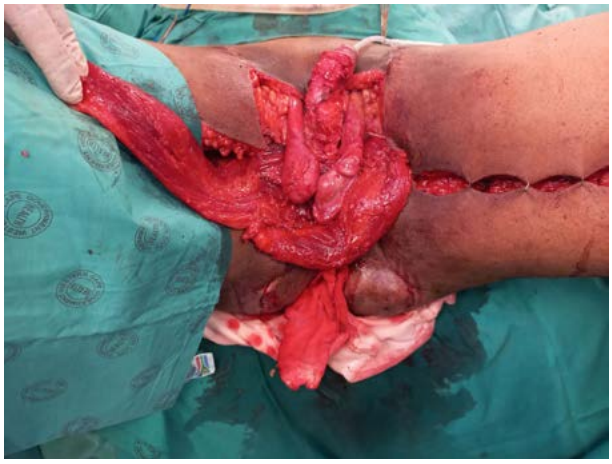


**Figure 2:** Following excision, buried penis repair (penile lengthening) and raising of bilateral gracilis flaps to fashion a neo-scrotum

After a radical excision of the diseased tissue, a redo penile lengthening procedure was undertaken by releasing the suspensory ligaments of the penis and anchoring the pubic soft tissues to the pubic ramus.

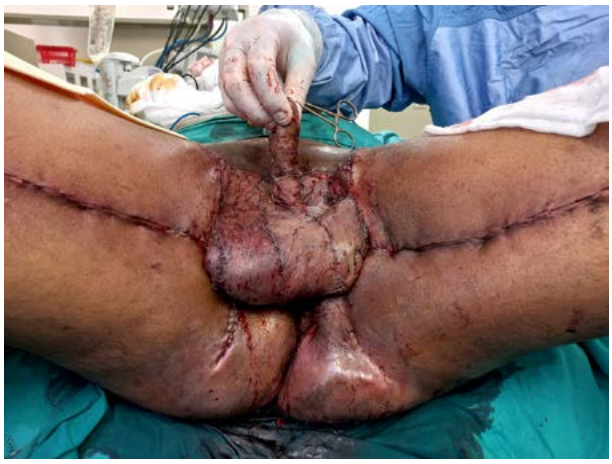


**Figure 3:** (Left) immediately post-reconstruction; (right) one month post-op

Following this, bilateral gracilis flaps were raised to facilitate a scrotal reconstruction (Figure 2).

Once the muscles were sutured to create a neo-scrotum, multiple split-thickness skin grafts were applied, and full-thickness skin grafts were used to resurface the shaft of the penis. These were then covered with a chlorhexidine-based impregnated tulle (Bactigras®, Smith & Nephew, UK). To maximise graft take on the shaft, a tube of sponge dipped in an Acriflavine emulsion (Acriflavine®, Medical Purpo, SA) was used as a splint. In addition, benzodiazepines were used to prevent erections during the period of graft take. The patient's postoperative course was uneventful, with only minor graft loss, which was treated conservatively (Figure 3).

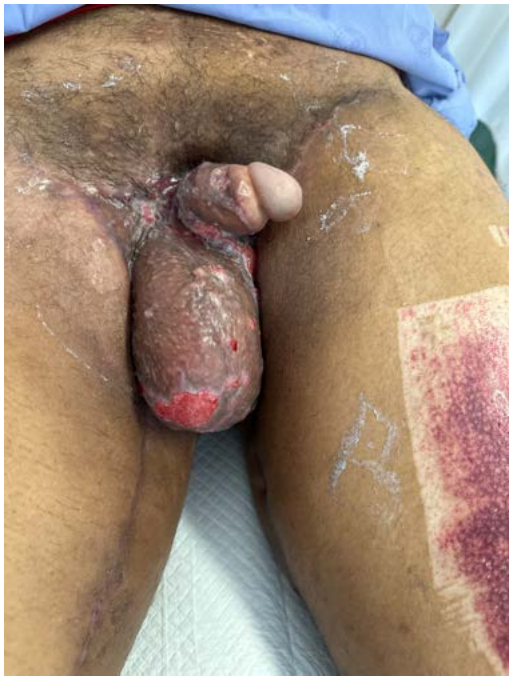
## Discussion

The diagnosis of HS is made based on history and clinical findings. Early symptoms can include pain, itching, erythema, burning, and hyperhidrosis.[1] Once manifested, typical lesions include:[1]

1. Comedones in the apocrine gland-bearing skin.
2. Painful erythematous papules and nodules that lead to foul-smelling discharge.
3. Dermal contractures and extensive scarring.

The characteristic distribution of these lesions, along with the associated recurrent presentations, must alert practitioners to the possible diagnosis of HS. The management is multidisciplinary and once the diagnosis is suspected or made, one must keep the referral pathway in mind as well as the timing of the involvement of the relevant personnel. A holistic approach to the complex management of HS is described by the current guidelines of the European Academy of Dermatology and Venereology and the European Dermatology Forum (Figure 4).[6]

In the course of this disease, there is an inflammatory and fibrotic process. The inflammatory component is treated medically with about



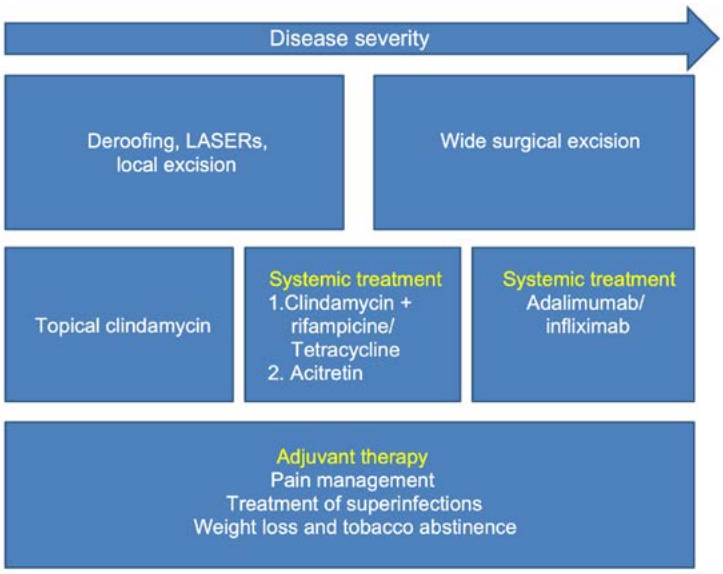



**Figure 4:** European S1 guideline for the treatment of HS/acne inversa (reprinted in agreement with Wiley Online Library policy, © 2015 European Academy of Dermatology and Venereology, reprinted by permission of John Wiley & Sons, Inc.)[6]

a third of patients going into remission.[3,6] The other patients usually experience a progression of the disease over years leading to fibrosis.[1-3] There is new evidence showing that metformin, used as monotherapy, can decrease the inflammatory response in HS.[7]

An important part of the management of HS is the application of appropriate dressings to these wounds, which may vary depending on the process at hand. There may be excessive discharge requiring multiple absorbent dressings that have to be changed frequently, or the wounds may be quiescent, requiring little or no dressings.[7] Excessive purulence and discharging wounds are best dressed with cheaper, conventional absorbent dressings to limit costs. Dressings prescribed for acute inflammatory nodules include non-adherent dressings with a cooling effect (hydrogel or hydrocolloid dressings). HS lesions with pain and heavy exudate will need superabsorbent dressings as well as a foam layer for extra support.[8]

Patients who experience significant disease and fibrosis should be offered surgical treatment, to attempt to decrease the volume of diseased tissue and increase the functionality of affected areas. One can confirm the diagnosis by sending formal histology before surgical resection. Ideally, all diseased tissue should be excised, and the defect is either closed primarily or reconstructed with a skin graft or flap.[3,9,10] The chance of recurrence is inversely proportional to the excision margin. Hence the bigger the surface area excised, the better the probability of remission. However, even with excision, there is still a chance of recurrence.[1]

Chronic wounds can differentiate and are at an increased risk of developing squamous cell carcinoma (SCC) with an incidence of 4–6%.[11] Patients with HS are at a significantly higher risk of developing metastatic disease when associated with SCC. This increases the morbidity and mortality in patients with HS, particularly in patients with HS involving the groin and buttock region.[12]

Of note, there may be other confounding factors in conjunction with or as a result of the disease. In this case, this patient not only had a buried penis requiring urological input, but he was also found to have extensive scarring around the anus. Advice was sought from the colorectal surgeons intraoperatively, and they suspected an anorectal fistula, which was later confirmed with a magnetic resonance scan and will require referral to their clinic for further workup. This highlights the importance of a multidisciplinary approach when dealing with HS patients. Although HS was diagnosed clinically, the excised tissue was sent for histology after resection not only to confirm the diagnosis but also to exclude malignancy. The histology report included extensive scarring and nonspecific chronic inflammation. In this case, as with others, long-term surveillance will be required for possible malignant changes.

## Conclusion

This case report emphasises the importance of a multidisciplinary approach in the management of HS. This may include lifestyle modifications as well as medical, surgical, and psychological input. Referral to a specialist may be expedited if wound care practitioners are more aware of this condition, resulting in earlier diagnosis and treatment. Early detection and referral are imperative to limit the disease progression and ultimately improve the outcome and well-being of these patients.

**Conflict of interest**
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**Ethical approval**
Informed consent was obtained from the patient.

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