Case Report

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# Clinical Nursing Management of a Complex Vulvoperineal Wound in a Patient with Hidradenitis Suppurativa and Crohn's Disease: A Case Report

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## Abstract

**Introduction.** Hidradenitis suppurativa (HS) is a chronic inflammatory skin disease that may lead to recurrent abscesses, sinus tracts, scarring, and complex wounds in anatomically and functionally challenging areas. Vulvoperineal involvement may be particularly difficult to manage because of severe pain, high exudate, risk of contamination, and major impact on quality of life.

**Case presentation.** We report the case of a 38-year-old woman with hidradenitis suppurativa, Crohn's disease, insulin-dependent diabetes mellitus, and rheumatoid arthritis, who presented with a complex post-surgical vulvoperineal wound following drainage of purulent fistulas. At initial assessment, the wound was deeply cavitated, highly exudative, fibrinous, painful, and at high risk of local infection. Pain during wound care was severe Visual Analog Scale (VAS 8/10), and the patient showed marked psychological distress.

**Intervention and Management.** A personalized multidisciplinary management plan was established, including multimodal analgesic support, wound cleansing with saline solution and PHMB-based antiseptics, application of an oxygen-enriched oleic matrix dressing, atraumatic secondary dressings, urinary catheter placement to reduce local contamination, and shared hospital-home follow-up. Nursing management focused on pain control, atraumatic local care, infection prevention, patient education, and continuity of care.

**Results.** Progressive wound improvement was observed over time, with reduction in pain, exudate, fibrin burden, and wound size. After 3 weeks, the wound area was significantly

reduced, and complete healing was achieved within 3 months. Treatment tolerance progressively improved, allowing regular outpatient and home-based wound care.
**Conclusion.** This case highlights the clinical value of individualized nursing management within a multidisciplinary pathway for complex vulvoperineal wounds in patients with HS and multiple comorbidities. Pain control, atraumatic dressing strategies, and continuity of care were key elements in supporting wound healing and treatment adherence.

**Keywords**: Hidradenitis Suppurativa, Crohn's Disease, Vulvoperineal Wound, Wound Care Nursing, Advanced Dressing, Case Report

## Introduction

Hidradenitis suppurativa (HS) is a chronic, recurrent, inflammatory skin disease characterized by painful nodules, abscesses, and sinus tract formation, typically affecting intertriginous areas. The condition is associated with a significant physical and psychosocial burden and often requires long-term, multimodal management strategies.[1]

In patients with severe disease and multiple comorbidities, such as Crohn's disease and diabetes, HS may lead to complex and difficult-to-heal wounds, particularly in anatomically challenging regions such as the vulvoperineal area. These lesions are frequently associated with high exudate levels, risk of bacterial contamination, and significant procedure-related pain, all of which may negatively impact healing and quality of life.[2,3]

Despite the growing availability of medical and surgical treatment options for HS, the management of associated wounds remains insufficiently standardized. In particular, local wound care strategies, including the selection of appropriate dressings and the optimization of the wound microenvironment, play a crucial role but are still underrepresented in the literature.[2-4]

Recent evidence highlights the importance of advanced wound management approaches in HS, including the use of atraumatic dressings capable of reducing pain during dressing changes, controlling exudate, and supporting tissue repair.[2,4] In this context, the choice of dressing should be tailored to wound characteristics, anatomical location, and patient tolerance, particularly in fragile and highly sensitive areas.[3]

This case report aims to describe the clinical course, nursing management, and wound healing outcomes of a complex vulvoperineal wound in a patient with hidradenitis suppurativa and Crohn's disease, highlighting the role of individualized, atraumatic, and multidisciplinary care.

This case report was prepared in accordance with the CARE (CAse REport) guidelines.

### *Ethical considerations*

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

## Case presentation

A 38-year-old woman with hidradenitis suppurativa and multiple comorbidities, including insulin-dependent diabetes mellitus, Crohn's disease, and rheumatoid arthritis, was referred to the stoma care clinic after recently undergoing ileostomy creation because of Crohn's disease recurrence. She had also undergone surgical drainage of purulent vulvoperineal fistulas at another hospital. At the time of referral, no structured local wound care plan had been established, and no effective analgesic strategy had been prescribed for dressing-related pain.

At initial assessment, the patient reported severe perineal pain, particularly during wound cleansing and dressing procedures. Pain intensity was assessed by the wound care team using the Visual Analog Scale (VAS)[5] and was rated as 8/10, indicating marked impairment in tolerance of local care.

Clinical examination revealed an extensive vulvoperineal wound with irregular margins, a predominantly fibrinous and hyperemic wound bed, and heavy exudate. The overall wound surface area was estimated at approximately

75 $cm^2$, with a maximum depth of about 5 cm. A strongly adherent fibrinous area extended for approximately 25 $cm^2$ toward the proximal thigh. Some wound areas appeared particularly fragile and at risk of bleeding during local manipulation. Overall, the lesion showed clinical features associated with a high risk of local infection.

In addition to the local clinical burden, the patient presented with marked psychological distress. She expressed concern regarding the effect of the wound on her privacy and dignity and showed limited confidence in the instructions previously received from healthcare professionals. The intimate anatomical location of the lesion, persistent pain, and uncertainty regarding the healing process appeared to further compromise her emotional well-being and engagement with treatment.

**Management and Treatment Protocol**

*Therapeutic priorities and initial approach*

Initial management focused primarily on pain control, as adequate analgesia was considered essential to enable atraumatic wound assessment and local treatment. At baseline, pain intensity assessed using the VAS was 8/10, significantly impairing tolerance to wound care procedures. A multimodal analgesic strategy was therefore implemented to improve procedural tolerability and facilitate subsequent interventions.

*Clinical reassessment and diagnostic evaluation*

Following partial pain control, a comprehensive wound reassessment was performed. This included evaluation of wound depth, extension, presence of undermining, and residual fistulous tracts. Vital signs were recorded, showing low-grade fever (37.2°C) and sinus tachycardia (110 beats per minute), while blood pressure and peripheral oxygen saturation remained within normal limits. Microbiological cultures were obtained to guide targeted antimicrobial therapy.

*Local wound management*

Local treatment included gentle cleansing with sterile saline solution and antisepsis using polyhexamethylene biguanide (PHMB)-based solutions. An oxygen-enriched oleic matrix dressing was applied to the wound bed. This dressing was selected for its ability to conform to irregular and partially undermined wound surfaces, maintain a favorable moist microenvironment, support control of bacterial burden and odor, and minimize trauma during removal.

A secondary dressing was applied using hypoallergenic fixation systems with low-trauma silicone adhesives, combined with multiple layers of sterile gauze. This approach aimed to protect the wound from mechanical stress, reduce friction with clothing, and improve patient comfort during daily activities.

*Contamination control strategies*

Given the anatomical location of the lesion and the high risk of local contamination, temporary urinary catheterization was introduced. This intervention aimed to reduce urine exposure to the wound area and facilitate safer and more controlled dressing changes during the acute phase. The indication for catheterization was regularly reassessed, considering the potential risk of catheter-associated infection.

*Systemic management*

Systemic treatment included targeted antibiotic therapy guided by microbiological culture results, as well as analgesic and anti-inflammatory medications for pain control. A midline catheter (MC) was inserted to facilitate the administration of intravenous therapies. The potential initiation or optimization of immunosuppressive or biologic therapy was evaluated in collaboration with the multidisciplinary team, considering the patient's underlying inflammatory conditions.

*Multidisciplinary care and patient education*

The management plan was developed within a multidisciplinary framework involving surgeons, dermatologists, gastroenterologists, and nurses specialized in stoma care and wound management. In parallel, patient education was initiated, focusing on stoma care, basic wound management principles, and strategies to support adherence and self-care during the transition to home-based management.

*Nursing management perspective*

From a nursing perspective, the main priorities included pain reduction, atraumatic wound care, protection of fragile perilesional tissues, prevention of local contamination, and continuous reassessment of wound evolution and treatment tolerance. Particular attention was also given to patient and caregiver education and to ensuring continuity of care across hospital and home settings. These elements were considered essential to support adherence, reduce psychological distress, and promote progressive wound healing.

The main nursing interventions adopted in this case, focusing on pain control, atraumatic wound care, contamination prevention, and continuity of care, are summarized in Table 1.

Table 1. Key nursing interventions in the management of complex vulvoperineal wounds.

| Domain | Intervention |
|---|---|
| Pain management and procedural tolerance | 1. Systematic pain assessment using the VAS<br>2. Implementation of multimodal analgesic strategies prior to wound care procedures<br>3. Continuous monitoring of pain response to treatment and dressing changes |
| Atraumatic wound care | 4. Gentle cleansing with sterile saline solution<br>5. Selection of advanced dressings with low-trauma removal properties<br>6. Minimization of mechanical stress during dressing application and removal |
| Exudate and infection control | 7. Regular assessment of exudate quantity and characteristics<br>8. Use of PHMB-based antiseptics<br>9. Microbiological sampling to guide targeted antibiotic therapy<br>10. Use of dressings supporting bacterial burden control and odor management |
| Protection of the perilesional area | 11. Use of hypoallergenic fixation systems with low-trauma silicone adhesives<br>12. Application of secondary dressings to reduce friction and external contamination<br>13. Prevention of skin maceration and additional tissue damage |
| Contamination risk reduction | 14. Temporary urinary catheterization to limit urine exposure in vulvoperineal wounds<br>15. Careful hygiene management in an anatomically high-risk area<br>16. Ongoing reassessment of catheter indication to balance benefits and risks |
| Patient and caregiver education | 17. Training in basic wound care and dressing management<br>18. Education on stoma care and hygiene<br>19. Support for progressive involvement in self-care |
| Continuity of care | 20. Integration of hospital-based and home-based wound management<br>21. Structured follow-up and regular reassessment<br>22. Coordination within a multidisciplinary team |
| Psychological support and engagement | 23. Recognition of emotional distress related to wound location and chronicity<br>24. Supportive communication to improve trust and adherence<br>25. Promotion of patient involvement in the care process |

*Follow-up and clinical outcomes*

After the acute phase, the patient entered a structured outpatient follow-up pathway, progressively integrated with home-based care supported by the multidisciplinary team. Dressing changes were scheduled twice weekly, alternating between hospital and home management in order to reduce the burden of care while ensuring regular reassessment. Follow-up visits focused on wound size, depth, tissue quality, exudate amount, pain during dressing changes, signs of local contamination or infection, dressing tolerability, and the patient's ability to participate in care. Periodic reassessment of the stoma site and previously drained perineal fistulas was also performed.

## Results

Progressive clinical improvement of the vulvoperineal wound was observed throughout the follow-up period. The clinical course and response to treatment over time are summarized in Table 2

Table 1. Key nursing interventions in the management of complex vulvoperineal wounds.

| Time | Clinical findings and management |
|---|---|
| Day 0 | Extensive, highly exudative, painful vulvoperineal wound with fibrinous wound bed and signs of local infection risk. Initial pain score: VAS 8/10. Analgesic optimization and local wound care plan initiated (Figure 1) |
| Day 7 | Improved tolerance of dressing changes. Reduced pain and exudate. Early activation of wound edges. Urinary catheter and vascular access device in place to support management. VAS 4/10. (Figure 2) |
| Day 30 | Significant reduction in wound size. Cleaner wound bed with active margins and reduced exudate. Continued outpatient follow-up and shared home-based care. VAS 3/10. |
| Day 60 | Progressive granulation tissue formation and further wound contraction. Good tolerance of dressing changes. VAS 2/10 (Figure 3). |
| Day 90 | Near-complete/complete healing achieved. Urinary catheter removed. Return to usual daily activities reported. VAS 0/10 (Figure 4). |




Figure 1. Day 0. Baseline appearance of an extensive, highly exudative and painful vulvoperineal wound with a fibrinous wound bed and clinical signs of infection risk.




Figure 2. Day 7. Improved tolerance to dressing changes with reduced pain and exudate and early wound edge activation




Figure 3. Day 60. Granulation and wound contraction with good dressing tolerance.




Figure 4. Day 90. Near-complete/complete wound healing, urinary catheter removal, and restoration of usual daily activities.

After three weeks of treatment, a marked reduction in wound size was observed, with the surface area decreasing from approximately 75 $cm^2$ to 30 $cm^2$. This reduction was associated with a progressive decrease in exudate, fibrin burden, and local inflammation, along with the appearance of active wound margins and early granulation tissue. Continued improvement was documented at subsequent follow-up assessments, leading to near-complete and then complete wound healing within three months.

Pain reduction represented a key outcome of the treatment pathway. At baseline, pain assessed using the VAS was 8/10 and significantly limited tolerance to wound care procedures. Following the introduction of a structured multimodal analgesic strategy and atraumatic dressing techniques, a progressive reduction in pain was observed over time, with VAS scores decreasing to 3/10 within the first weeks and reaching 0/10 at the end of the follow-up period. Improved pain control allowed regular dressing changes to be performed without the marked distress observed at presentation.

Local management strategies also contributed to improved control of contamination and exudate. The use of temporary urinary catheterization reduced urine exposure to the wound area, facilitating safer and more controlled dressing changes in a highly sensitive anatomical site. In parallel, the selected dressing strategy supported bacterial burden control and local microenvironment stabilization.

From a functional perspective, the patient progressively improved her tolerance to wound care and daily activities. The combination of effective pain control, atraumatic dressing techniques, and continuity of care enabled the transition from predominantly hospital-based management to a shared hospital–home care pathway, with regular follow-up in stoma therapy and gastroenterology clinics.

Patient engagement in the care process also improved over time. Initially, the patient experienced significant distress and difficulty in adhering to daily wound care. However, through ongoing nursing support, therapeutic education, and psychological support, she progressively gained confidence in the care team and improved her ability to cope with her condition and participate in treatment.

No major dressing-related complications or adverse events were documented during the follow-up period.

## Discussion

The present case highlights the clinical complexity of managing vulvoperineal wounds in patients with hidradenitis suppurativa and concomitant systemic inflammatory diseases, such as Crohn's disease. In this setting, wound healing is influenced not only by the underlying inflammatory burden but also by several local and patient-related factors, including anatomical location, high exudate levels, risk of contamination, severe procedure-related pain, and significant psychosocial impact.[1,6]

Vulvoperineal involvement represents a particularly challenging scenario due to the intimate anatomical site and the high likelihood of exposure to urine and fecal contamination. In addition, the presence of multiple comorbidities, including diabetes and chronic inflammatory conditions, may further impair tissue repair and increase the risk of infection and delayed healing. These factors underline the need for a comprehensive and individualized approach to care.[1]

Although medical and surgical management of HS has been extensively discussed in the literature, evidence regarding local wound care remains limited. Recent publications emphasize the importance of individualized dressing selection based on exudate level, anatomical location, pain, and patient comfort. In particular, atraumatic dressings may improve adherence and reduce procedure-related pain, which is a major barrier to wound management in patients with severe HS.[2-4]

A key element in this case was the central role of nursing management. Pain control was not merely a supportive intervention but a prerequisite for effective wound care. At presentation, severe pain significantly limited the feasibility of local treatment. The introduction of a structured multimodal analgesic strategy, combined with atraumatic dressing techniques, allowed progressive improvement in treatment tolerance and enabled regular wound assessment and care. This finding supports the importance of integrating pain management into the core of wound care planning, particularly in anatomically sensitive areas.[3,5]

Another relevant aspect was the implementation of strategies aimed at reducing local contamination. Temporary urinary catheterization facilitated safer dressing changes and contributed to limiting exposure of

the wound to urine, which may otherwise impair healing and increase infection risk. Although the use of urinary catheters must always be carefully balanced against the risk of catheter-associated complications, in this case it represented a pragmatic solution within a controlled and continuously reassessed clinical framework.

From a local treatment perspective, the use of an oxygen-enriched oleic matrix dressing appeared to support wound healing by contributing to bacterial burden control, maintenance of a favorable moist microenvironment, and reduction of dressing-related trauma. Its conformability and ease of application were particularly advantageous in a complex, irregular, and partially undermined wound. However, it is important to emphasize that the observed clinical improvement cannot be attributed to a single intervention alone. Rather, it likely reflects the combined effect of systemic therapy, optimized pain control, atraumatic local care, contamination management, and coordinated multidisciplinary follow-up.[2,4,7]

Continuity of care also emerged as a relevant factor. The integration of hospital-based and home-based management, supported by patient education and regular follow-up, facilitated adherence to treatment and reduced the burden associated with repeated hospital visits. Over time, the patient demonstrated improved engagement in the care process, increased confidence in the care team, and better coping with her condition, suggesting a positive impact of both clinical and relational aspects of care.[8]

This case has several limitations. As a single-case observation, it does not allow generalization of findings. In addition, multiple interventions were implemented simultaneously, making it difficult to isolate the specific contribution of each component of the treatment strategy. Furthermore, the absence of standardized wound measurement tools, validated quality-of-life assessments, and objective biomarkers of inflammation limits the ability to quantify treatment effects over time.

Despite these limitations, this report provides a clinically relevant example of integrated management of a complex vulvoperineal wound in a high-risk patient. It highlights the importance of individualized, atraumatic, and multidisciplinary approaches, with particular emphasis on the role of nursing care in supporting treatment tolerance, preventing complications, and promoting wound healing.[2,3]

In clinical practice, similar cases may benefit from structured care pathways that explicitly address pain control, contamination risk, tissue protection, and continuity of care across settings. Further case series and prospective studies are needed to better define effective management strategies for complex wounds in patients with hidradenitis suppurativa and associated systemic conditions.[1,6]

## Conclusion

The management of complex vulvoperineal wounds requires an integrated, multidisciplinary approach centered on pain control, atraumatic care, and contamination prevention. Nursing management plays a pivotal role in supporting treatment adherence and clinical outcomes. Further research is needed to define structured and reproducible care pathways.

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