

Management of a Left Axillary Abscess Using Instillation Therapy with Negative Pressure Wound Therapy (NPWTi-d) via Genadyne DUO

DUO



Abstract:

This case study presents the successful use of instillation therapy in conjunction with negative pressure wound therapy (NPWTi-d) to treat a complex left axillary abscess. Due to the anatomical location, risk of contamination, and wound depth, a treatment plan integrating normal saline instillation and cyclic negative pressure was initiated. The intervention demonstrated effective wound cleansing, infection control, and progressive granulation, culminating in near-complete epithelialization within three weeks.

Introduction

An abscess is a localized collection of pus within tissue, typically resulting from a bacterial infection. The pathophysiology involves neutrophilic infiltration, tissue necrosis, and liquefaction, ultimately forming a purulent cavity. While incision and drainage remain the cornerstone of treatment, abscesses in anatomically challenging areas—such as the axilla—pose a higher risk for delayed healing, recurrent infection, and suboptimal wound hygiene.

Adjunctive therapies, including NPWTi-d, offer enhanced wound bed preparation by mechanically evacuating exudate and instilled fluids while maintaining a closed and controlled environment. This method facilitates debridement and bioburden control in wounds with high contamination risk.

Case Presentation

A patient presented with a painful, swollen left axillary mass, clinically diagnosed as an abscess. Due to the depth and inflammation, surgical incision and drainage were performed under anesthesia. Given the wound's complexity and location within a skin fold—predisposing it to bacterial colonization—standard post-operative care was deemed insufficient.

The Genadyne DUO NPWTi-d system was initiated on May 11, 2024. Instillation cycles of normal saline were employed to irrigate the wound bed, enhancing debris clearance and promoting a biologically favorable environment for healing.

Wound Assessment & Progression

Initial Post-Operative Findings (Day 0):

- Dimensions: 7.0 cm (L) × 3.0 cm (W) × 6.0 cm (D)
- Clinical Findings: Fresh surgical cavity with moderate exudate and perifocal erythema.
- Therapy: NPWTi-d with normal saline; instillation every 3 hours; soak time: 10 minutes; continuous negative pressure at -125 mmHg.

Second Dressing Change (Day 3):

- Dimensions: 6.0 cm × 3.0 cm × 4.0 cm
- Findings: Notable reduction in depth and inflammation; healthy granulation tissue observed. Exudate level: moderate, serous. Minimal signs of infection.

Final Assessment (June 3, 2024):

- Dimensions: 3.3 cm × 1.0 cm × 1.0 cm
- Findings: Substantial epithelialization; wound margins approximating; exudate minimal; no clinical signs of infection.
- Outcome: NPWT discontinued. Transitioned to conventional moist wound healing therapy.

Discussion

This case illustrates the utility of NPWTi-d in managing a complex post-surgical abscess in a high-risk anatomical site. The use of instilled saline facilitated removal of residual necrotic debris and microbial contaminants not visible during surgical debridement. The cyclic delivery of instillate, followed by controlled negative pressure, contributed to progressive wound contraction and tissue regeneration. The axillary location presented unique challenges, including moisture retention, skin-on-skin contact, and proximity to dense lymphatic and sweat gland structures. Conventional dressings in such areas are often compromised by movement and maceration; hence, a sealed negative pressure system was vital in maintaining wound integrity.

Conclusion

The application of Genadyne DUO NPWTi-d therapy in this case led to expedited healing, minimized infection risk, and successful wound closure. This technique proved particularly advantageous in managing anatomically complex wounds with high contamination potential. Further studies may elucidate its broader applicability in similar clinical scenarios.



05.11.24

Figure 1. Initial presentation on May 11, 2024.

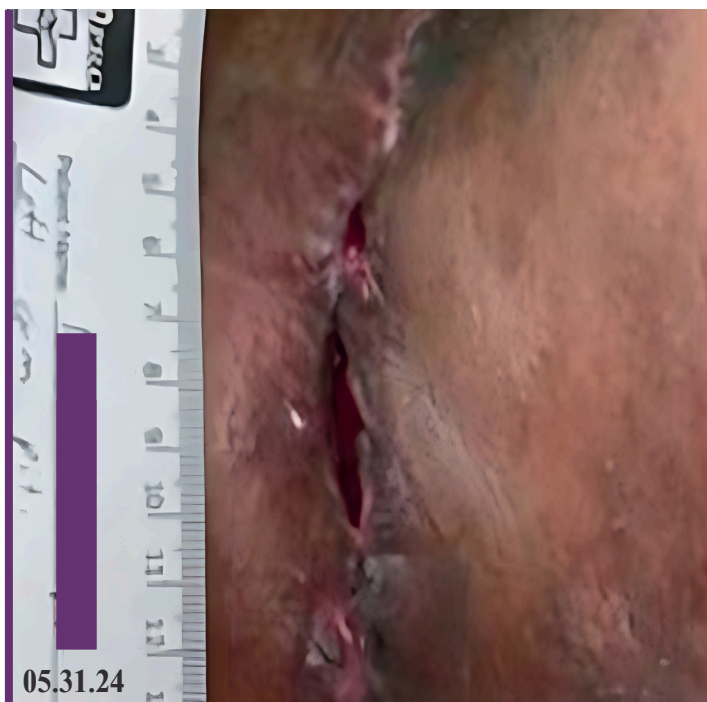
Post-operative wound immediately following surgical drainage of left axillary abscess. Notable for depth, irregular cavity contours, and moderate exudate. NPWTi-d therapy initiated same day.



05.17.24

Figure 2. Follow-up on May 17, 2024.

After 6 days of NPWTi-d therapy. Marked reduction in wound depth with healthy granulation tissue formation and reduced peri-wound erythema.



05.31.24

Figure 3. Final assessment on May 31, 2024.

Advanced granulation and near-complete epithelialization. Minimal exudate. Therapy discontinued shortly after, transitioning to standard wound care.