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Modified Negative Pressure Wound Therapy Using a Breast Pump Following Incision and Drainage of Lactational Breast Abscess: A Case Report

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Abstract: ***Breast abscess is a known complication of lactational mastitis and is conventionally managed with incision and drainage, antibiotics, and repeated dressings. However, delayed wound healing, milk leakage, and patient discomfort remain significant challenges. Negative pressure wound therapy (NPWT) has proven benefits in complex wounds, but its application in lactational breast abscess is limited. We report a novel, low-cost modification of NPWT using a standard breast pump combined with silver foam dressing following incision and drainage of a lactational breast abscess. The technique resulted in rapid granulation tissue formation, effective wound drainage, and simultaneous milk expression from the affected breast, with significant improvement observed within three days.***

Keywords: Breast abscess; Negative pressure wound therapy; Breast pump; Lactational breast abscess; Silver foam

1. Introduction

Lactational breast abscess commonly develops as a complication of untreated or inadequately treated mastitis. Standard management includes antibiotics along with needle aspiration or incision and drainage. Open wounds in lactating breasts pose unique problems such as persistent discharge, delayed healing, interruption of breastfeeding, and cosmetic concerns. Negative pressure wound therapy enhances wound healing by promoting granulation tissue formation, reducing edema, and improving perfusion. However, its use in lactational breast abscesses has been limited due to concerns regarding nipple trauma and milk fistula formation. This case report describes a novel modification of NPWT using a breast pump as a suction source.

2. Case Report

A lactating female patient presented with pain, swelling, erythema, and fever involving one breast. Clinical examination and ultrasonography confirmed the presence of a localized breast abscess. The patient underwent incision and drainage under appropriate anesthesia. Postoperatively, an open cavity with residual slough was noted over the superior aspect of the breast, away from the nipple–areola complex.

Technique of Modified NPWT

A modified NPWT system was constructed using silver-impregnated foam, an adhesive transparent occlusive dressing, and a standard breast pump. The silver foam was placed within the abscess cavity and extended as a channel towards the suction interface. Care was taken to leave the nipple–areola complex uncovered to prevent ischemia. The dressing was sealed to create an airtight environment. Controlled negative pressure was applied intermittently using the breast pump, allowing simultaneous wound drainage and milk expression.

Outcome

After three days of modified NPWT, the wound showed healthy granulation tissue with significant reduction in cavity size and absence of purulent discharge. The patient experienced improved comfort and was able to continue breastfeeding. No further surgical intervention or skin grafting was required.

3. Discussion

The described technique offers a low-cost and effective alternative to conventional NPWT systems. Using a breast pump provides controlled suction suitable for lactating breast tissue while facilitating milk drainage. Silver foam adds antimicrobial protection and aids wound healing. This method is particularly useful in resource-limited settings and helps prevent milk stasis and recurrence of abscess.

4. Conclusion

Modified negative pressure wound therapy using a breast pump is a safe, economical, and effective adjunct following incision and drainage of lactational breast abscess. It promotes rapid wound healing while preserving lactation and patient comfort.

Declarations

- Conflict of Interest: None
- Funding: None
- Ethical Approval: Not required
- Informed Consent: Obtained from the patient

Figures

Figure 1: Post-incision and drainage status of breast abscess showing open cavity with residual slough.

Figure 2: Wound appearance after 3 days of modified negative pressure wound therapy demonstrating healthy granulation tissue.

Figure 3: Application technique showing silver foam used to create a channel between the wound and suction system, facilitating wound drainage and milk expression.