

Recurrent Groin Lymphocele Following Bilateral Rectus Femoris Flap Reconstruction

Karina Butani, BA¹; Jessica Reid, MS¹; James Pai, MS¹; Alexis Edmonson, MD²; William Aukerman, MD³; Abigail Chaffin, MD, FACS, CWSP, MAPWCA³

[1] Tulane School of Medicine [2] Tulane School of Medicine, Department of Surgery [3] Tulane Surgery, Division of Plastic Surgery

Introduction

- Lymphatic leaks represent significant complications following vascular surgery, contributing to delayed wound healing and increased patient morbidity and infection rates.¹
- Management includes conservative measures as well as operative techniques, such as lymphatic ligation and muscle flaps.^{1,2}
- Muscle flaps are frequently employed to obliterate dead space and demonstrate high success rates, reported at approximately 95%.³

Case Presentation

- A 60-year-old male with significant comorbidities, including peripheral artery disease, coronary artery disease, poorly controlled COPD, tobacco use, and alcohol dependence, presented with right lower extremity pain and bilateral thigh claudication.
- He subsequently underwent an open aortobifemoral bypass, which was complicated by bilateral groin lymphoceles.
- Lymphatic drainage measured greater than 200 cc per day from the right groin and 50 – 100 cc per day from the left groin.
- Bilateral groin exploration was performed with localization of leaking lymphatic channels using intraoperative blue dye injection.
- Identified lymphatic channels were sealed using an advanced vessel-sealing device, followed by bilateral rectus femoris muscle flap reconstruction for vascular graft coverage and complex layered closure with negative pressure wound therapy.

References

1. Nicksic PJ, Condit KM, Nayar HS, Michelotti BF. Algorithmic approach to the lymphatic leak after vascular reconstruction: a systematic review. *Arch Plast Surg.* 2021;48(4):404-409. doi:10.5999/aps.2020.02075
2. Salna M, Takayama H, Garan AR, et al. Incidence and risk factors of groin lymphocele formation after venoarterial extracorporeal membrane oxygenation in cardiogenic shock patients. *J Vasc Surg.* 2018;67(2):542-548. doi:10.1016/j.jvs.2017.05.127
3. Basnayake O, Jayarajah U, Dissanayake D. Bilateral rectus femoris myocutaneous flaps to salvage exposed axillo-bifemoral graft of bilateral groins. *SAGE Open Med Case Rep.* 2023;11:2050313X231165631. Published 2023 Apr 20. doi:10.1177/2050313X231165631
4. Barchitta M, Maugeri A, Favara G, et al. Nutrition and Wound Healing: An Overview Focusing on the Beneficial Effects of Curcumin. *Int J Mol Sci.* 2019;20(5):1119. Published 2019 Mar 5. doi:10.3390/ijms20051119

Results

Preoperative and Intraoperative Findings



Figure 1A: Postoperative appearance following aortobifemoral bypass prior to groin exploration.



Figure 1B: Intraoperative dye-guided identification of lymphatic channels during groin lymphocele exploration.



Figure 1C: Rectus femoris muscle flap elevation.

Initial Postoperative Findings After Initial Groin Exploration



Figure 2A: Postoperative appearance of the right groin following groin exploration and muscle flap coverage.

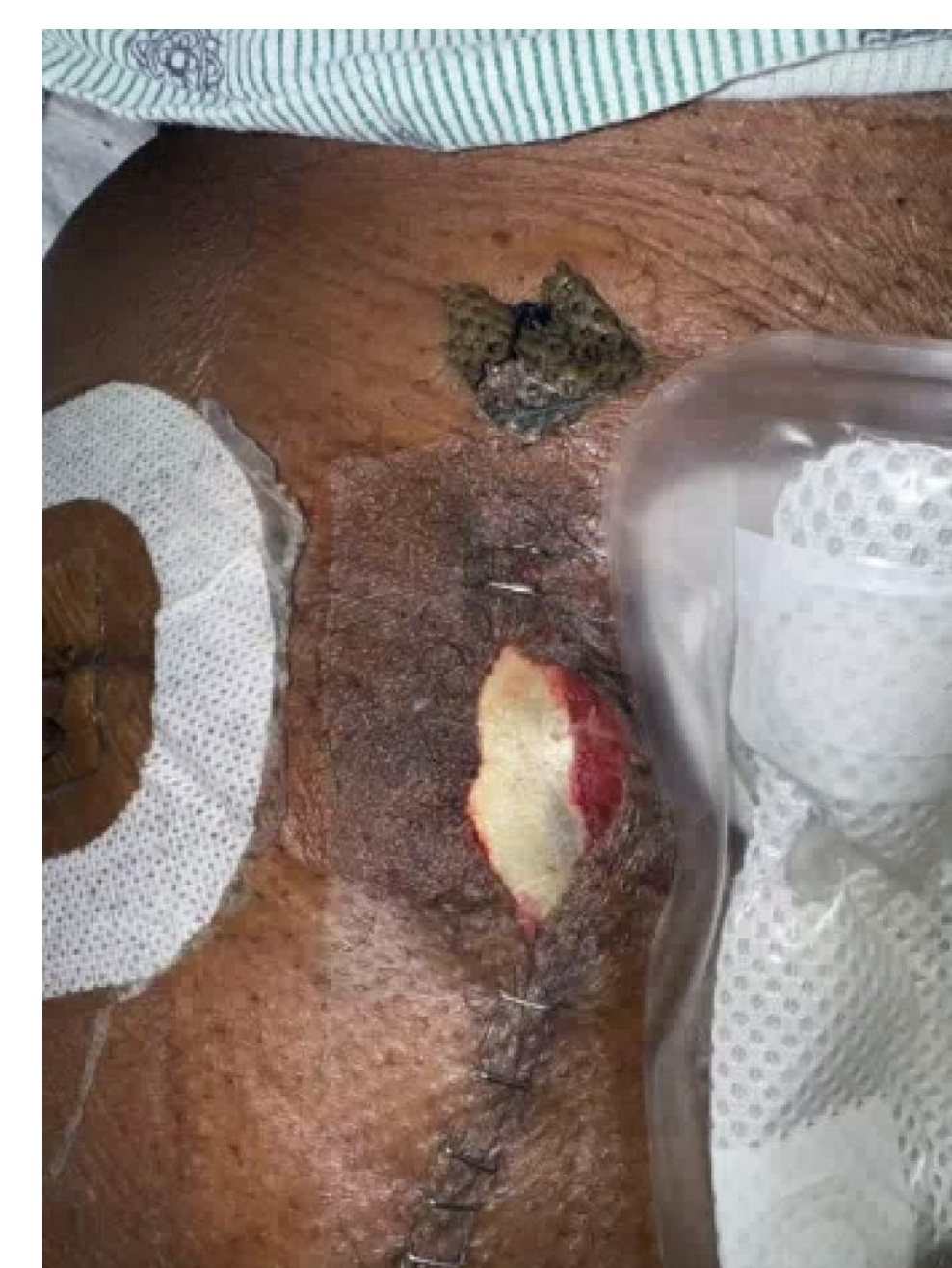


Figure 2B: Close-up view of the right groin wound demonstrating focal dehiscence following groin exploration and muscle flap reconstruction.



Figure 3A: Postoperative appearance of the left groin following groin exploration and muscle flap coverage.



Figure 3B: Close-up view of the left groin wound demonstrating focal dehiscence following groin exploration and muscle flap reconstruction.

Initial Postoperative Findings After Repeat Groin Exploration



Figure 4A: Postoperative appearance of the right groin wound following repeat groin exploration for persistent lymphatic drainage.



Figure 4B: Postoperative appearance of the left groin wound following repeat groin exploration for persistent lymphatic drainage.

Key Pearls

- Adequate wound healing is contingent upon a patient's nutritional status.
- Severe metabolic dysfunction can compromise otherwise reliable surgical reconstructions.
- Untreated lymphoceles can serve as a nidus for infection and delay wound healing, particularly in the groin where bacterial burden is high.

Results

- Postoperatively, the patient experienced persistent drainage from the right groin, requiring prolonged negative-pressure therapy.
- Despite oral supplementation and parenteral nutrition, prealbumin levels failed to normalize and wound healing remained delayed.
- At two-month follow-up, distal perfusion was intact; however, the persistence of right-sided lymphatic leakage despite adequate arterial flow highlights that local perfusion cannot overcome systemic metabolic failure.
- Patient underwent repeat full groin wound exploration with sharp excisional wound debridement of the area. His postoperative course has been without complications. At the most recent follow-up, both groin incisions remain well-healed.

Conclusion

- This case highlights the paramount importance of metabolic optimization when managing complex surgical patients.
- Chronic alcohol use and malnutrition are known to impede crucial physiological processes, including fibroblast maturation and collagen synthesis.
- Optimizing outcomes in this population requires a comprehensive, multidisciplinary approach.