

Debulk first and bypass later- the hybrid surgery sequence for advanced fluid predominant lymphedema

Background

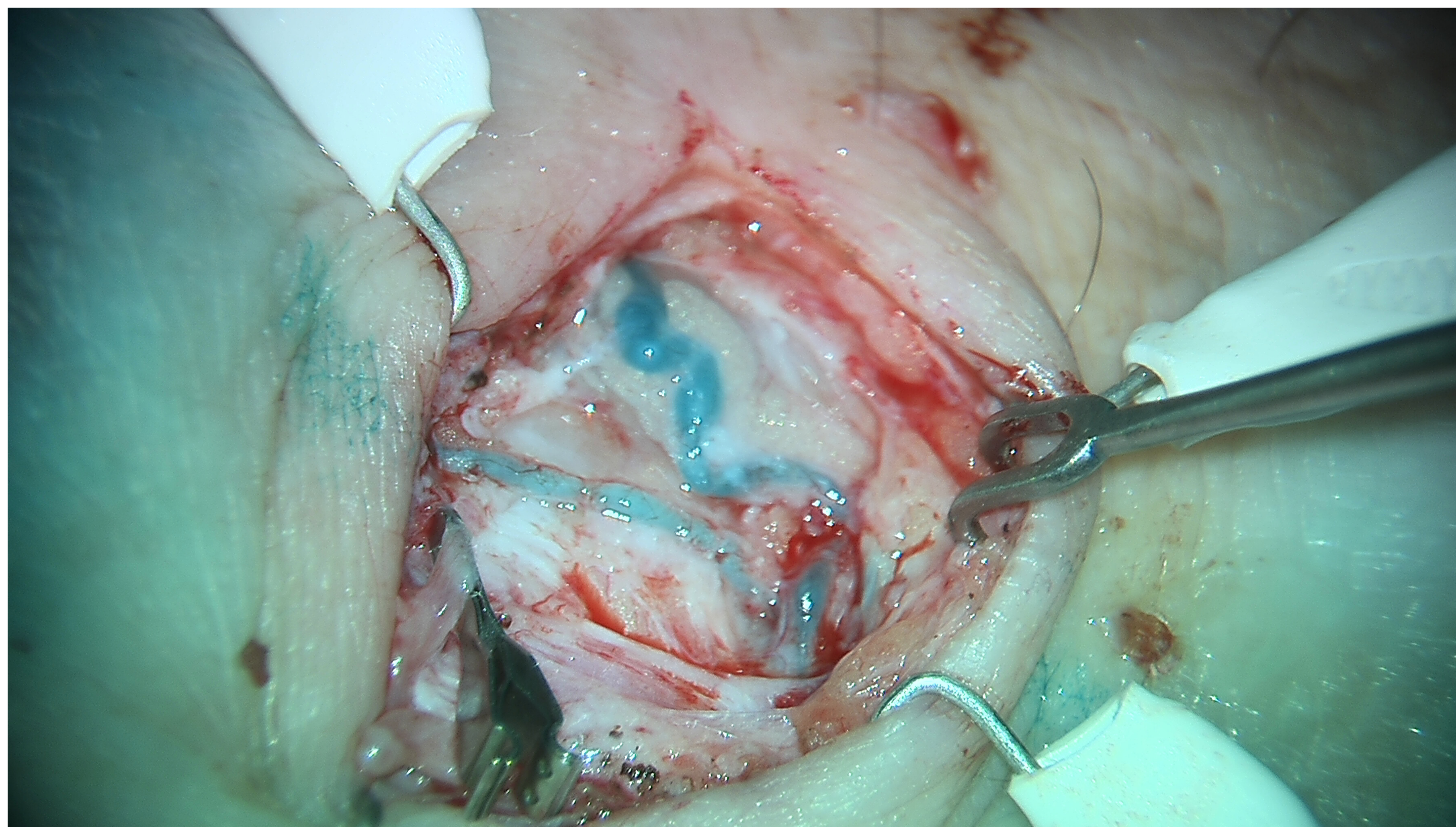
- The conventional approach for fluid predominant lymphedema, even when advanced, involves a physiologic procedure such as lymphaticovenular anastomosis (LVA) or lymph node transfer (VLNT) to address lymphatic stasis, while disregarding concurrent fat deposits.
- Subsequent liposuction then requires a conservative and LVA sparing approach. Our consistent observation of improved lymph flow in post liposuction Indocyanine green lymphography (ICGL) prompted us to formulate the 'hybrid'-debulk first and bypass later surgical sequence.

Methods

- Patients who underwent hybrid surgical approach for an extremity lymphedema, between January 2020 and June 2022, were included.
- Standardized outcomes tracking involved patient-reported symptoms, clinical examination, bioimpedance and ICG lymphography.

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LVA incision site in the leg of a patient 2 years post liposuction. Lymph collectors were found to be multiple and ectatic, although encased with fibrosis.

Conclusion

LVA after liposuction, the hybrid approach, is technically feasible and effective

Results

- Total 102 patients underwent liposuction debulking of upper/lower limbs and they all exhibited volume reduction and ICGL evidenced improved lymphatic flow.
- In 8 patients, a physiologic procedure was sequentially performed in the same limb segment (Hybrid approach).
- Eight limbs (4 forearms and 4 legs) in 8 females, age 35-67 yrs.
- Duration of disease 9.8 ± 7.4 years
- 3 Primary, 5 secondary
- LVA performed 28 ± 14 months after lipo-debulking
- 5 ± 2 lymphatics connected using 3 ± 1.5 exploratory incisions
- $78 \pm 32\%$ lymphatic vessels were ectatic
- At the last follow up (4 to 15 months postop), all patients reported reduced heaviness, swelling and/or pain.
- 3 of the 8 patients (2 arms, 1 leg) could significantly reduce compression garment strength and/or wear time after 5 to 12 months postop.
- ICG lymphography showed faster flow and/or new tortuous vessels and/or new linear patterns at 3, 6 and/or 12 months follow up.
- Bioimpedance and 3D camera derived limb volume confirmed reduced fluid accumulation.