PP-061: A NOVEL SALINE-FILLED LAPAROSCOPIC CAMERA SLEEVE AS A LOW-COST INTRAOPERATIVE BREAST SIZER: PROSPECTIVE CLINICAL EVALUATION IN IMMEDIATE IMPLANT-BASED BREAST RECONSTRUCTION

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Background

- Accurate selection of implant size is a critical step in implant-based breast reconstruction. Several methods have been described to estimate breast volume and determine the appropriate implant size, including anthropometric measurements, volumetric assessment, three-dimensional imaging, and intraoperative sizing techniques. Intraoperative options range from commercially manufactured implant sizers to simple, low-cost alternatives such as saline-filled gloves, bags, cotton sizers, and other improvised devices.
- Although commercially manufactured sizers provide a practical and direct method for assessing implant dimensions and volume intraoperatively, their cost and availability may limit their use, particularly when multiple sizes are required or specialized equipment is unavailable. The development of inexpensive alternatives has therefore been explored by several authors. [1–4]
- There remains a need for simple, readily available, sterile, and low-cost methods that can facilitate intraoperative implant sizing while providing a practical approximation of the definitive implant.
- We therefore explored the use of a sterile laparoscopic camera sleeve filled with saline as an intraoperative breast sizer for implant-based breast reconstruction.

Methods

- A prospective case series was conducted between August 2025 and June 2026, including 55 patients (62 breasts) undergoing immediate implant-based breast reconstruction. A sterile laparoscopic camera sleeve was filled with incremental volumes of normal saline and used intraoperatively as a temporary breast sizer to assess breast volume, projection, and symmetry. The definitive implant size was selected based on the intraoperative clinical assessment and the volume and dimensions provided by the sleeve sizer. Device integrity, sterility, cost, implant selection, and patient-reported satisfaction with breast size and symmetry were prospectively evaluated.



a Sizer matching with the implant intraoperative
b-d 3cases of left NSM with good size matching between both breasts (implant size used attached to each photo)

Results

- The laparoscopic sleeve sizer was successfully used in all 62 reconstructions. No sleeve rupture, leakage, or sterility-related problems were observed. No intraoperative implant exchange was required following definitive implant insertion, and no patient underwent revision surgery for implant size mismatch during follow-up.
- The device added negligible cost compared with commercially manufactured breast sizers. In patients with tight soft-tissue envelopes, the saline-filled sleeve occasionally produced greater projection than the definitive implant, requiring appropriate clinical judgment during final implant selection. All patients reported satisfaction scores of ≥8.5/10 regarding postoperative breast size and symmetry.

Conclusions

- A saline-filled laparoscopic camera sleeve appears to be a simple, practical, and low-cost alternative to commercially manufactured breast sizers. It provides intraoperative assessment of implant volume, projection, and symmetry and may be particularly useful when commercial sizers are unavailable or impractical. Further comparative evaluation is warranted to determine its accuracy relative to commercially manufactured sizers.

References

- Gabriel & Maxwell 2019 → principles of implant selection and tissue-based measurements.
- Shia et al. 2018 → actual implant-volume estimation in DTI using breast volume and specimen weight; their study included 145 NSM patients and developed predictive formulas.
- Ishii et al. 2019 → particularly valuable for your argument because it specifically describes an inexpensive cotton/saline/plastic-bag sizer as an alternative to expensive commercial sizers.
- Cantrell et al. 2024 → very relevant because it describes a lap pad-based low-cost intraoperative breast sizer

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