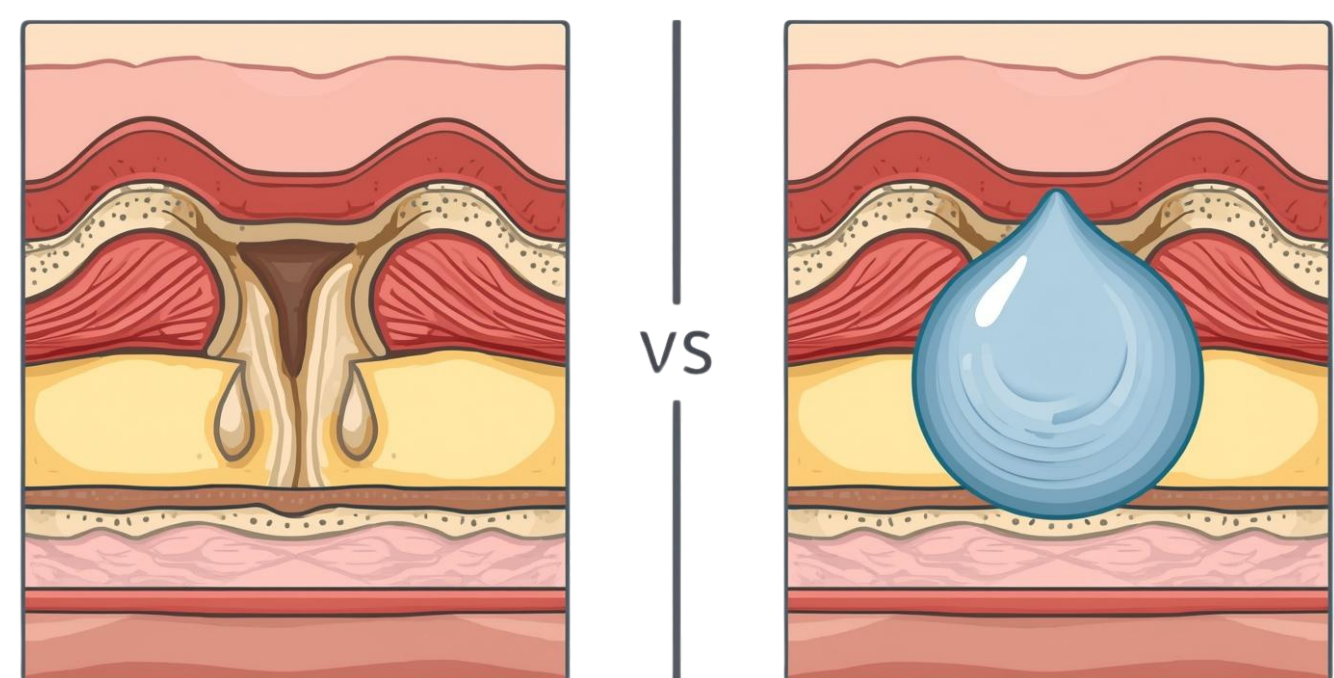


Primary Defect Closure in Minimally Invasive Direct Inguinal Hernia Repair: A Propensity-Weighted Analysis

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Background



Closure may reduce postoperative bulging and seromas but may increase operative time and tissue tension. The impact of primary fascial defect closure on outcomes in minimally invasive inguinal hernia repair remains unclear.

Methods



Retrospective study of 4,209 elective, unilateral, minimally invasive direct inguinal hernia repairs from the national ACHQC registry. Inverse Probability of Treatment Weighting (IPTW) adjustment included 12 baseline covariates.

Cohort Selection

Total Cohort: 4,209 patients

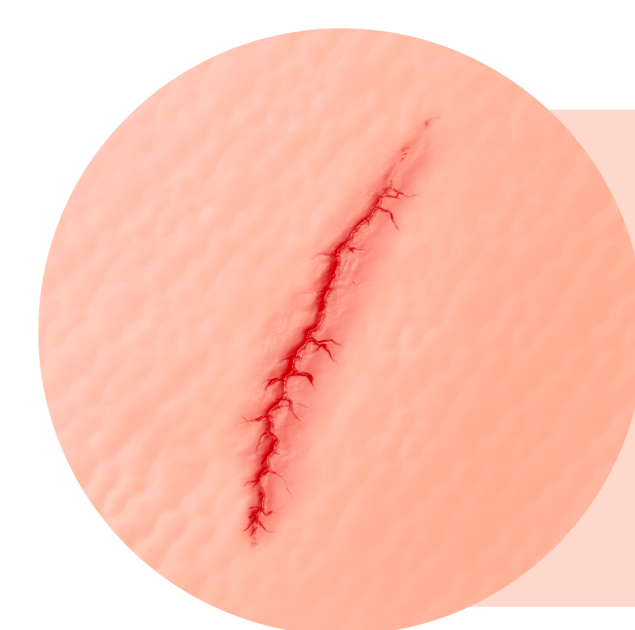
Closure: 298
No Closure: 3,911



Robotic Subgroup: 2,172 Patients

Robotic Closure: 280
Robotic No Closure: 1,892

Clinical Outcomes



↓ **42% SSO**

3.6% vs 6.2% | $p = 0.034$

Primary defect closure significantly reduced 30-day SSOs

Readmission Observations

Higher cardiac readmissions noted in the closure group (2.2% vs 0.3%, $p < 0.001$). However, this was driven by very low absolute event counts (3 vs 1).

No Difference in Early Recurrence

30-day rates of reoperation and hernia recurrence were similar between the closure and non-closure groups.

Robotic Subgroup Trends

A directional wound benefit remained (3.9% vs 5.1%) but did not reach statistical significance ($p = 0.330$).



Study Limitations



Residual confounding from unmeasured variables (surgeon skill, institutional protocols), low absolute cardiac event count ($n=4$) limits mechanistic interpretation, 30-day follow-up precludes recurrence assessment.

Conclusion

Primary defect closure reduced 30-day SSOs by 42%, supporting selective closure in patients with larger defects or higher wound complication risk.