Optimizing Efficiency in a New Robotic Surgery Program: The Cost-Effective and Time-Saving Role of V-LOC Sutures in Urology

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Introduction

Robotic-assisted urological surgeries have improved surgical outcomes and patient recovery (1). With a newly established robotic program, there is a need for innovations to enhance proficiency. V-LOC barbed sutures simplify suturing by eliminating knot tying, reducing operative time, and supporting surgical learning.

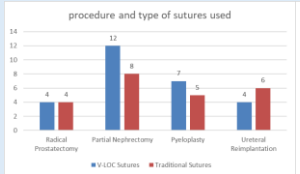
Aim

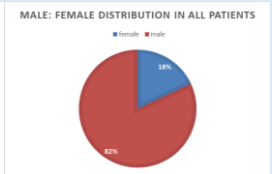
To evaluate the benefits of V-LOC sutures in robotic urology, focusing on cost-effectiveness, operative time reduction, and their role in improving the surgeon's learning curve.

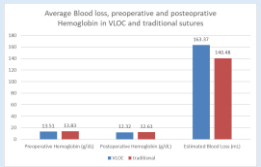
Study Design

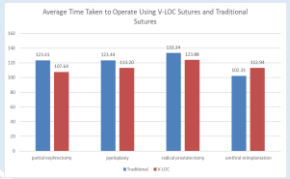
A mixed-methods approach was employed through a retrospective analysis of 50 robotic urology cases performed over the past two years, including radical prostatectomy, partial nephrectomy, pyeloplasty, and ureteral reimplantation. Quantitative data were collected from electronic medical records, surgical logs, and cost reports, while qualitative insights were obtained from surgeon feedback using semi-structured interviews that explored ease of use, efficiency, and overall satisfaction.

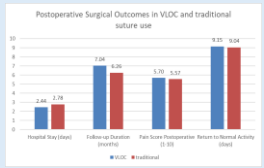
Results

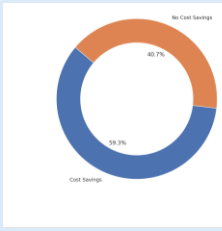




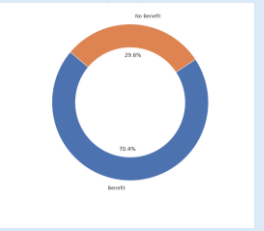




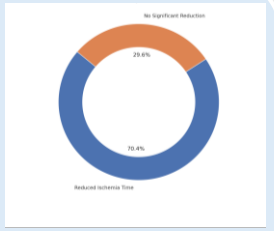




Cost analysis



Learning Curve



Ischemia Time

A total of 50 robotic urological procedures were analyzed, including 27 using V-LOC sutures and 23 with traditional sutures. The cohort consisted of 82% male and 18% female patients. Average operative time was shorter with V-LOC (112.3 vs. 119.6 minutes), and total cost per procedure was slightly lower ($3033 vs. $3041). In partial nephrectomy, V-LOC reduced mean ischemia time (24.8 vs. 25.7 minutes). Overall, 70% of surgeons reported faster proficiency, and qualitative feedback highlighted improved suturing speed, precision, and easier learning, which enhanced efficiency, accelerated the learning curve, and supported smoother integration of robotic techniques.

Conclusion

In this series of 50 robotic urological procedures (27 using V-Loc, 23 traditional), V-Loc sutures were associated with reduced operative time, a shorter learning curve, and comparable costs. Surgeons reported improved suturing speed and precision, allowing greater focus on other critical aspects of robotic surgery, suggesting that V-Loc use can facilitate integration of robotic training in surgical programs, despite the study's small sample size.

References

Jones, D. J., et al. "Impact of Barbed Sutures on Operative Time in Robotic-Assisted Laparoscopic Procedures." Journal of Robotic Surgery , vol. 12, no. 3, 2018, pp. 231-238.