Safety and Efficacy of Robotic-Assisted Repair of Inguinal Hernia
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Introduction

Robotic technology provides another tool in the arsenal of the minimally-invasive surgeon with emerging uses for general surgical procedures. Given the limited working space in the pelvis, the increased dexterity offered by the robot may prove beneficial in the repair of inguinal hernias. Currently, there are only a few studies examining the use of robotic technology for inguinal hernia repair. Our aim was to detail our experience with robotic inguinal hernia repair at an academic institution.

Materials and Procedures

We performed a retrospective chart review on all patients who had undergone robotic inguinal hernia repair from March 2015 to April 2018. Preoperative demographics, operative characteristics, and postoperative outcomes were analyzed using RStudio software. The primary outcome was hernia recurrence.

Results

There were 43 patients, 40 of which were male. The patients had a mean age of 56 years (range 18-85 years). The mean BMI was 26.4 (range 17.5-42.3).

Thirteen of the patients had bilateral hernias. All operations were performed transabdominally and all but one included fixation of synthetic polypropylene mesh. Regarding mesh fixation, 23 patients had suture only, 14 had tacks only, 1 had a combination of suture and tacks, 2 had suture and glue, 2 had tacks and glue. The mean patient in-room time was 4.0 hours, mean operative time was 2.9 hours, and the mean robot docked time was 2.0 hours. Thirty-two patients were discharged on the day of surgery. One patient was kept overnight for treatment of urinary retention. The other 10 patients were kept for one or two nights of observation. Thirty patients were operated on primarily, none of the patients had wound infections, 11 developed seromas, and one patient had a groin hematoma. At a median follow up of 37.5 days, there was one recurrence. This was discovered incidentally during a urological procedure and was repaired.

Discussion

Our results support the growing body of literature reporting the safety and efficacy of the da Vinci robot in inguinal hernia repair.1-3 Given the diversity of hernia laterality, size, and defect type, our data shows the robot can be applied to a wide variety of cases. Our patients had a range of comorbidities, with hypertension most frequently reported. Over half of the patients in this study had BMIs in the overweight or obese categories, supporting previous work that robotic surgery is a safe option for patients with higher BMIs and patients with medical comorbidities. Our institution concludes that a robotically-assisted approach to inguinal hernia repair should be considered as a surgical option for unilateral and bilateral hernia repair.

The limitations of this study are largely due to the retrospective design. These include: a lack of diversity in hernia complexity (only one hernia was incarcerated); it is not a comparative study between other approaches; and we were not able to report on postoperative pain.

Conclusions

Robotic surgery in inguinal repair is safe and effective and should be considered a viable alternative to laparoscopic and open repairs. Longer term studies will further define the role of this technology.

References


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