ABSTRACT #44 : Robot assisted Laparoscopic repair of Genitourinary fistulae: Our journey from unconscious incompetence to unconscious competence

ABSTRACT

Hypothesis – Genitourinary fistulas are abnormal communications between the female genital tract and the urinary bladder, ureter or the urethra.
Materials and Methods: We describe a retrospective analysis of patients who underwent robot assisted laparoscopic repair of genitourinary fistula.
Results – Thirty- five patients of genitourinary fistulas underwent surgery of whom twenty four had vesicovaginal fistula, six had ureterovaginal fistula, three had vesicocervical fistula and two had vesicouterine fistula . The largest fistula was 3 cm in size. The mean age of patients was 38.33 years. The mean operative time was 178.46 minutes. The mean blood loss was 58.85 and duration of hospital stay was 3 days. Success rate in our study was 79.2% with 5 failures in complex cases. We identified the different phases of our learning curve based on the level of consciousness and competency, and could retrospectively narrow down our strengths and weaknesses, thus helping others to make our identifiable weakness.
Conclusion - Robot assisted laparoscopic repair is a feasible and effective method of genitourinary fistula repair with shorter learning curve. Our journey through the different phases of learning curve will surely be a pole star for numerous young robotic surgeons embarking on the path of robot assisted repair of genitourinary fistulas.

INTRODUCTION

GUF is a common condition and finds mention in literature since ancient times. VVF contributes to the most common type of GUF, with an incidence of 0.3-3.2% in developed countries[1] Ureterovaginal fistula occurs in about 0.5 – 2.5% cases of ureteric injury during gynaecological surgeries, approximately 1-4 weeks after the detrimental inciting event.[2] Wielding the new, sophisticated tools such as robotic systems for the repair, has fostered several benefits such as decreased patient morbidity and convalescence time, so also better outcomes in terms of surgical success rates. Ours is a tertiary care hospital with a newly set up robotic program. We hereby present a modest account of our experience with robot assisted laparoscopic repair of genitourinary fistulas, highlighting our journey through different phases of the learning curve.

MATERIAL AND METHODS

All robot-assisted laparoscopic genitourinary fistula repair surgeries performed between March 2018 and March 2022 were retrospectively assessed. A detailed cystovaginoscopy and a contrast enhanced computerized tomographic scan with delayed excretory phases for VVF and a retrograde pyelogram for suspected ureterovaginal fistulas was done. The surgeries were performed by a certified urologist trained in robotic surgeries. Patients were followed at 1 week, 3 weeks and 3 months following surgery.
Success was defined as absence of urinary leak anytime during the postoperative period.

RESULTS

35 patients underwent robot assisted laparoscopic repair of genitourinary fistula. Among these, 24 patients had a vesicovaginal fistula, following gynaecological (20/24) or obstetrical causes (4/24), 6 patients had ureterovaginal fistula following total abdominal hysterectomy (5/8), robotic simple hysterectomy (1/8) and laparoscopic hysterectomy (1/8) and robotic Wertheim's hysterectomy for cancer (1/8) .
3 patients had VCxF among whom, one had bladder communication with both cervix and uterine body separately. 2 cases had pure vesicouterine fistulae as a consequence of obstetric mishap during LSCS. Robot assisted ureteroneocystostomy was done in all the 8 cases of ureterovaginal fistula. The mean age of study population was 38.33 years. Supratrigonal VVF following abdominal hysterectomy constituted the majority of fistulae in our study. The largest fistula operated was 3 cm in size. Mean operative time was 178.46 minutes and the median blood loss was 58.85 ml. The timing of initial presentation was varying from 20 days to 20 years. There were no major post-operative complications (only clavien dindo grade1). The patients were followed up after 1 week, 3 weeks and at 3 months with a mean of 12.5 months. We achieved a success rate of 79.2% with 5 failures. 2 patients of VVF who failed had complex fistulae while another 3 had COPD and uncontrolled diabetes. 1 patient of malignant ureterovaginal fistula who underwent ureteric reimplantation, had recurrence of carcinoma cervix with involvement of ureter .

DISCUSSION

Bora et al [3] published the largest series of 30 cases in 2017 with successful outcome in 28 cases. In our experience of 35 cases we achieved a success rate of 79.2% with 5 failures. Robot assisted surgery results in lower morbidity, shorter hospital stay and quicker recovery.
Our journey started from a phase of unconscious incompetency in march 2019 when we operated the first case of vesicovaginal fistula repair. We started our robotic journey after learning from proctor, and found that our learning curve improved significantly ($p<0.05$) when we compared the operating time in second and fourth block (Case 7-12 & 19-24). *(Figure 1)*We found that we are about to reach plateau phase , and learning is an ongoing process to attain unconscious competence. In the initial Block (Case 1-6), we made the maximum mistakes with three recurrences. Eventually we operated next six cases without any conscious thought with successful outcomes. However, in our experience robot assisted genitourinary fistulae repair has a short learning curve with highly improved ergonomics.

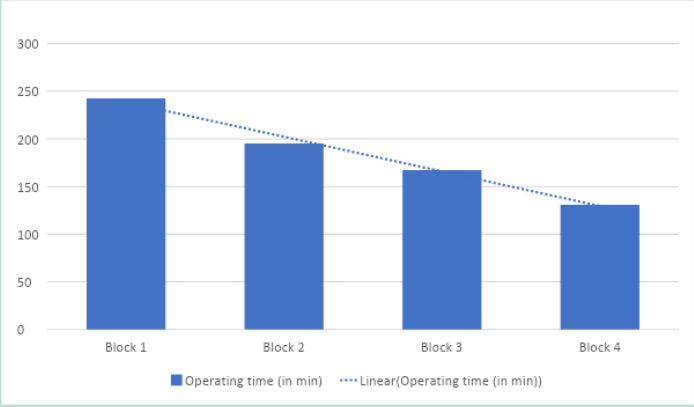

Figure 1: Learning curve for Robotic VVF

CONCLUSION

Robot assisted laparoscopic repair of genitourinary fistulas , with its excellent outcomes and high success rate, backed by minimal morbidity and complications is a promising management option for all the women suffering from this highly distressing disease. It has a short learning curve and needs expertise of around 20 cases to complete the journey from unconscious incompetency to unconscious competency.

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3. *Sharma AP, Mavuduru RM, Bora GS, Devana SK, Singh SK, Mandal AK. Robot-assisted vesico-vaginal fistula repair: a compilation. Urology. 2018 ;119:1-4.1.*