Technical Aspects of Robotic-Assisted Laparoscopic Fistula Repair: Case Report And Retrospective Cohort Analysis

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Introduction and Objectives: Urinary tract fistulas (UTF) are a diverse set of abnormal anatomical connections, most commonly from iatrogenic causes. Traditionally, repairs have been performed in an open fashion, but as minimally invasive techniques become more widespread, the robotic-assisted laparoscopic (RAL) platform has been successfully employed in these complex repairs. The aim of our study is to highlight our institution's recent experience with RAL UTF repairs and to highlight our surgical technique.

Methods: We retrospectively reviewed the medical records of all female patients who underwent RAL UTF repairs by a single surgeon. These included vesicovaginal (VVF), vesicouterine (VUF), vesicocervical (VCF), ureterovaginal (UVF), rectovaginal (RVF) and colovesical (CVF) fistula repairs. We analyzed patient demographics, fistula characteristics, perioperative factors, complications, and outcomes. The video highlights our RAL surgical technique for a representative UVF repair in a 33-year-old female.

Results: 17 females underwent robotic fistula repairs between 12/2013 and 7/2021. 94% of the fistulas were iatrogenic, 53% of the fistulas were between the bladder and female organs, 24% were GI fistulas, and the remaining 24% were ureterovaginal. All cases were completed robotically with only 1 intraoperative complication of a ureteral injury. Median hospital LOS was 1 day. All cases included a concomitant procedure. At a median follow-up of 5 months, 5 patients had recurrences (71% success rate). Of the 5 patients that recurred, 2 had hx of cancer and 1 had a history of radiation. No other 90-day complications were recorded.

Conclusions: RAL approaches to UTFs offer feasible repairs with good success rates and low rate of complications.