

PREOPERATIVE BLADDER BOWEL DYSFUNCTION IS THE MOST IMPORTANT PREDICTIVE FACTOR FOR POSTOPERATIVE URINARY RETENTION AFTER ROBOT ASSISTED LAPAROSCOPIC EXTRAVESICAL URETERAL REIMPLANTATION: A MULTI-CENTER STUDY

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Background: Robot-assisted laparoscopic extravesical ureteral reimplantation (RALUR-EV) has been reported as a viable minimally invasive surgical option for vesicoureteral reflux (VUR) with comparable success rates to open reimplantation at several pediatric hospitals, but postoperative acute urinary retention (pAUR) is a known occurrence after both open reimplantation and RALUR-EV. We aimed to evaluate the risk factors for pAUR after RALUR-EV.

Materials/Methods: Data for this multi-institutional retrospective cohort study of RALUR-EV patients was obtained from two tertiary referral hospitals (A and B). We collected perioperative data including age, gender, body mass index (BMI), bladder bowel dysfunction (BBD) status, VUR grade, laterality of VUR, operation time, the number of detrusorrhaphy stitches, length of hospital stay and postoperative complications. pAUR was defined as the need for urethral catheter replacement after the operation. In patients with pAUR, the urethral catheter was left in place for 2 weeks then subsequently removed with self-voiding afterward in all cases. Univariate and multivariate analysis was performed to identify risk factors for postoperative AUR.

Results: A total of 117 patients with 174 ureteral units from the two hospitals were enrolled in this study. Patients from hospitals A and B showed no difference in age, BMI, gender ratio, laterality, total op time but different weight, height, gender ratio, BBD ratio, preop hydronephrosis severity, VUR grade, console time and detrusorrhaphy stitches. The mean age at the time of surgery was 6.1 ± 3.9 years. Bilateral RALUR-EV was performed in 57 (48.7%) cases. pAUR rate was 3.4% in all patients and 7.0% in 57 patients with bilateral VUR. All 4 cases of pAUR occurred after bilateral surgery. Univariate analysis showed age ($P = 0.037$), weight ($P = 0.039$), height ($P = 0.040$), and bilaterality ($P = 0.037$) as predictive factors of pAUR. In a multivariate analysis, weight approached statistical significance ($P = 0.051$) while BBD was the only significant predictor of pAUR ($P = 0.037$).

Conclusions: Urinary retention after RALUR-EV less frequently occurred when compared to the previously reported open surgery series. pAUR occurred only in bilateral cases. Preoperative bladder bowel dysfunction but not male gender or surgical time was the most important predictive factor for pAUR after RALUR-EV.