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Introduction & Objectives: Minimally invasive treatment using robot-assisted ureteroplasty for difficult ureteral strictures is trendy and increasing. To evaluate outcomes for robotic ureteroplasty with buccal mucosa graft (BMG) or ureteroureterostomy and ureteral re-implantation of patients treated for difficult ureteral stricture at this hospital.

Materials & Methods: This retrospective study involved data for 16 patients (18 ureters) treated with Group 1:BMG (N=11) or Group 2: Other method (N=7, ureteroureterostomy:3, Boari flap: 2 Re-implantation with Lich: 2) between Oct. 2013 and Dec. 2018. BMG was performed using an inlay graft after incising the stricture and a graft was placed on the incising side. The reconstruction was reinforced with omentum or perirenal fat. Other robotic ureteroplasty as the traditional open procedure. Preoperative, intra-operative, and postoperative variables and outcomes were assessed.

Results: The mean age of 50.78 yrs of Group 1 and 43.5 yrs of Group 2. The urethral stricture location of proximal, middle and distal was 7:3:1 of Group 1 and 5:2 of Group 2. A prior failed urethral reconstruction was present in 100% of Group 1 and 71.4% of Group 2. The median stricture length was 2.6 cm of Group 1 and 2.86 cm of Group 2. For Group 1, the operative time was 166.67 min (range 130-250), estimated blood loss was 15 ml (range 5-30), and length of stay was 3 d (range 2-5). For Group 2, the operative time was 182 min (range 70-280), estimated blood loss was 25 ml (range 10-100), and length of stay was 3.5 d (range 2-7). There were no intra-operative complications. At median follow-up of 18 mo, the overall success rate was 89% of Group 1 and 100% of Group 2.

Conclusions: Robotic Urethral Reconstruction is a feasible and effective technique for managing complex urethral strictures. Our results demonstrate that robotic buccal mucosa graft ureteroplasty is for prior failed urethral surgery and multiple urethral strictures.