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Introduction & Objectives: Ureteropelvic junction obstruction (UPJO) compromises the free passage of urine from the renal pelvis to the ureter and can be corrected by pyeloplasty. Perceived advantages of minimally invasive pyeloplasty over open surgery are lower complication rates, less pain and better cosmetics. The use of robot-assisted dismembered pyeloplasty (RAP) has increased in recent years thanks to its perceived advantages such as greater range of motion, 3D vision and tremor reduction. We aimed to evaluate the surgical outcomes of RAP and complication rates.

Materials & Methods: Data from consecutive cases of RAP performed between March 2014 and July 2018 at our institution were collected. Perioperative data and clinical outcomes were reported. All patients had physical examinations including kidney ultrasound every 3 months and renal scintigraphy in 6-12 months postoperatively. The success of RAP was defined as a relief of the initial symptoms and improvement of obstruction seen on nuclear medicine renal scintigraphy.

Results: In total, 50 patients were included in this series. Median age was 31 (IQR: 20-50.5), 50% were females and 58% were right RAPs. Pain was the main presenting symptom in 70% of the patients and recurrent UTI was present in 14% of the patients. Only 16% of the patients were asymptomatic with renal scan showing obstruction. Mean console time was 88 min (range 36-153) and blood loss was in all patients negligible. All patients in this series were stented either before the surgery (38%) or during RAP. Crossing vessel was found as a leading cause of obstruction in 66% of patients. There were no intraoperative complications in this group. Postoperative complications were seen in 4 cases (three Clavien II and one Clavien IIIb). The most serious complication was bleeding from a trocar incision that required surgical intervention. The success rate of RAP during the mean follow up of 20.5 months was 98%, only one patient required additional surgery.

Conclusions: In our series, RAP showed good perioperative results and high success rates. We believe that RAP is an effective minimally invasive method for correction of UPJO.