introduced a novel non-tissue suturing laparoscopic partial nephrectomy (NTS-LPN) and compared clinical outcomes with conventional laparoscopic partial nephrectomy (C-LPN) in our institution.

METHODS: A hundred-eighty-five patients who underwent partial nephrectomy since 2004 were divided between NTS-LPN group (NTS) (n=98) and C-LPN group (C) (n=87). The surgical maneuver of NTS differs with C after excising tumor with renal artery clamping. The resected surface was simply coagulated using a soft-coagulation system (a VIOTM system and an IO electrodeTM) without parenchyma suturing. After declamping, a TachoSil® is attached on coagulated surface. Perioperative data including the parenchymal volume of post-operative renal ischemic volume (PRIV) and the change of residual renal volume (RRV) calculated by 3D-CT volumetry, postoperative kidney function and adverse events were compared between 2 groups.

RESULTS: Mean operative time and renal ischemic time in NTS (146±34.0min/15.6±7.45min) were dramatically shortened as compared to those in C (236±77.8min/54.8±27.4min). Mean operative blood loss was similar between NTS (43.3±61.5ml) and C (65.9±91.9ml). Renal parenchymal damage as shown PRIV was significantly less in NTS group than that in C at the point of post-operative 3, 6, 12 months (NTS: 4.26±2.29ml, 2.37±1.02ml, 1.67±0.55ml / C: 19.4±5.49ml, 15.9±6.20ml, 13.1±6.00ml). Renal atrophy as shown RRV postoperative 3, 6, 12 months was also significantly less in NTS than that in C (p<0.01). No positive surgical margin was observed in NTS, but only one case in C. Serum creatinine values of each point (1/3/6/12 months) were comparable in both groups. According to Clavien-Dindo classification, major complications of IIIa (postoperative bleeding, minor urinary leakage and peri-renal abscess) were observed in C, whereas 2 cases of minor urinary leakage in NTS. In addition, 6 cases of pseudo aneurysm were only observed in C.

CONCLUSIONS: A novel technique of NTS-LPS could spare operative and ischemic time and nephron loss as well without increasing invasiveness compared with conventional tissue-suturing partial nephrectomy.

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ROBOT ASSISTED LAPAROSCOPIC PARTIAL NEPHRECTOMY FOR A T2B LESION: TECHNIQUE AND OUTCOMES
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INTRODUCTION AND OBJECTIVES: Since the advent and integration of the robotic platform, more complex surgery is being performed via a minimally invasive approach. Reports of surgeons completing complex partial nephrectomies robotically have surfaced, but most focus on the location of a small tumor and very few, if any at all, have presented data on >T2a lesions. We present the technique and successful outcomes for resecting a T2b renal mass with the robotic platform.

METHODS: This is a 45 year old female patient who presented to the emergency department with chest pain. A chest CT scan did not reveal any pulmonary abnormalities, but did show the upper portion of a large, left renal mass. A subsequent CT scan of the abdomen and pelvis revealed a 13.5cm, cystic/solid renal mass, grade IV on the Bosniak grading system. The RENAL nephrometry score was 12x. She underwent a robot assisted laparoscopic partial nephrectomy. She was placed in a right lateral decubitus position. We utilized the da Vinci Xi system and performed a 3 arm procedure with a single, 12mm assistant port. During the procedure, care was taken to leave the upper pole/mass in situ and limit dissection around it because of its size and the cystic nature of the mass. We liberally utilized intraoperative ultrasound to ensure that the resection margins were negative for tumor.

RESULTS: The total operative time was 171 minutes. The warm ischemia time was 29 minutes. Estimated blood loss was 200mL. The patient was discharged home on post-operative day 2 and there have been no complications at > 30 days of follow up. Pre-operative creatinine was 0.79 and post-operative creatinine was 0.81. The final pathology was pT2a, Nx, Mx, Clear cell, Grade III, margins negative.

CONCLUSIONS: We present what we believe to be one of the first cases of a T2b, central, renal mass excised via a robot assisted laparoscopic partial nephrectomy. We believe that careful pre-operative planning, meticulous dissection and liberal use of intra-operative ultrasound can ensure success for complex lesions such as this and that size should not limit the utilization of nephron sparing surgery.

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