reconstructed 3D surgical model of the targeted anatomy, named augmented reality (AR), We reported our experience of AR-assisted laparoscopic surgery (ARLS) on patients with retroperitoneal disease.
Materials and Methods: From January 2010 to August 2015, totally 41 cases with retroperitoneal disease were treated by ARLS in our hospital. 24 laparoscopic adrenalectomies, Ten laparoscopic pyeloplasty for Ureteropelvic Junction Obstruction (UPJO), three ureteroureterostomies for retrocaval ureter, three laparoscopic partial nephrectomies and one retroperitoneal tumor excision. Their medical records were analyzed, and the relevant literature was reviewed.
Results: All procedures were successfully completed without conversion to open surgery. There were no perioperative complications. There was neither postoperative mortality nor morbidity at the time of discharge and during follow-up.
Conclusions: AR provided precisely intraoperative decision-making by extensive understanding of the 3D topography of the surgical target, the 3D course of the surrounding vasculature, and the proximity of vital anatomic structures in advance of embarking on the actual surgical procedure.

MP2-2:
BOWEL COMPLICATION IN RETROPERIONEOSCOPIC NEPHROURETERCTOMY

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Purpose: Bowel complication in retroperitoneoscopic nephroureterectomy is relatively rare condition. We reviewed the incidence and possible mechanisms of bowel complication in single medical center.
Material and methods: During 2006-2015 October, we performed 550 retroperitoneoscopic nephroureterectomy in NCKU hospital. We reviewed all cases including chart record, operation note, assessed the incidence of bowel complication and analyzed etiology, management and outcomes.
Results: 3 cases(0.55%) had bowel complication,including 2 bowel perforation and 1 small bowel obstruction. No intraoperatively bowel injury was identified. Two patients with bowel perfoation were detected by massive drainage amount, and abnormal drainage color on postoperative 4th and 7th day. One patient developed small bowel obstruction 3 weeks after surgery. All 3 cases underwent exploratory laparotomy. In 2 cases of bowel perforation, no evidence of needle, cutting, or suture injury or thermal injury was noted around injury site. Possible mechanism of injury may related to previous abdominal operation history, which resulted in adhesion over intestine and peritoneum, and micro-injury may happen when we dissected retroperitoneal space. In the case of small bowel obstruction, the cause of small bowel obstruction was internal herniation due to peritoneal defect.
Conclusion: Previous abdominal operation history and locally advanced cancer may connected to higher bowel injury rate during retroperitoneoscopic nephroureterectomy. Careful retroperitoneal dissection, inspection of surgical field again after the surgery, and repair of peritoneal defect are needed in these cases. Monitoring surgical drainage can detect bowel injury earlier, and early intervention may lower morbidity and mortality.

MP2-3:
USING A HARMONIC SCALPEL "DRILLING AND CLAMPING" METHOD TO IMPLEMENT ZERO-ISCHEMIC ROBOT-ASSISTED PARTIAL NEPHRECTOMY

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Purpose: Robot-assisted partial nephrectomy (RAPN) has gradually become a popular minimally invasive nephron-sparing surgical option for small renal tumors. Ischemic injury should be minimized because it impacts renal function outcomes following partial nephrectomy. Herein, we detail the technique and present initial perioperative outcomes of our novel harmonic scalpel "Drilling and Clamping" method to implement zero-ischemic RAPN.
Materials and Methods: We prospectively collected baseline and perioperative data of patients who underwent zero-ischemic RAPN performed by our harmonic scalpel "Drilling and Clamping" method. From April 2012 to December 2014, a total of 19 consecutive zero-ischemic RAPN procedures were performed by a single surgeon.
Results: For 18 of the 19 cases, RAPN using our harmonic scalpel "Drilling and Clamping" method was successfully completed without the need for hilar clamping. The median tumor size was 3.4 cm (range: 1.8–6.2); operative time was 3.2 hours (range: 1.9–4.5); blood loss was 100 ml (range:30–950); and postoperative hospital stay was 5 days (3–26). One patient required intraoperative blood transfusion. Two patients had intra or postoperative complications: one was converted to traditional laparotomy because of massive bleeding, while another had post-operative stress ulcer. Pathology confirmed renal cell carcinoma in 12 patients (63.2%), angiomyolipoma in 6 patients: (31.5%), and oncocytoma in one patient (5.3%). Mean pre- and post-operative serum creatinine (0.82 mg/dl and 0.85 mg/dl, respectively), estimated glomerular filtration rate (eGFR) (84.12 and 82.18, respectively), and hemoglobin (13.27g/dl and 12.71g/dl, respectively) were comparable.
Conclusion: We present a novel zero-ischemic technique for RAPN. We believe that this technique is feasible and reproducible. Our initial results are encouraging and further studies are ongoing.

MP2-4:
THE NERVE BRANCHES BETWEEN THE DORSAL PENILE NERVES AND THE CAVERNOUS NERVES SHOULD BE THE DETERMINANT OF ERECTILE FUNCTION

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Purpose: Literatures showed the changes of neuronal nitric oxide synthases (nNOS) in the dorsal penile nerves (DPNs) are consistent with the cavernous nerves (CNs) injury in rat model. However, the anatomical relationship and morphological changes between the DPNs and the CNs after injury have never been clearly explored in rats.
Materials and Methods: There are 5 groups including a sham group, and four groups of 7^{th} day, 14^{th} day, 21^{th} day and 28^{th} day after BCNI. Anatomical relationships between the DPNs and the CNs were dissected. The erectile function, immunohistochemistry and transmission electron microscope were also done.
Results: The DPNs connect the CNs through communicating nerve branches in rats. In the 14^{th} day, the number of the DPNs small branches is lowest and the worst damage of myelin sheath in BCNI group. The number of the nNOS positive nerves, including main and small branches of DPNs, is positively correlated with the ICP.
Conclusion: We demonstrated communicating nerve branches between the DPNs and the CNs in rats. The loss of small branches and reduced number of nNOS positive nerves could be a representative feature of the DPNs after BCNI. The communicating nerve branches could be the determinant of erectile function in rats.

MP2-5:
IS IT APPLICABLE FOR POSTVASECTOMY SEMEN ANALYSIS WITH THE IMPLEMENTATION OF AUA CLEARANCE PARAMETER

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Purpose: To evaluate the postvasectomy semen analysis (PVSA) with the special clearance parameter suggested by American Urological Association.