

Robotic Assisted Laparoscopic Right Partial Nephrectomy Utilizing the A-Lap™ Retractor

Michael J. Fumo, MD Senior Staff Urologist Rockford Urological Associates
Clinical Assistant Professor of Surgery - Department of Surgery
University of Illinois College of Medicine – Rockford

Introduction:

Surgical exposure is one of the basic tenets of safe and successful surgical interventions. Visualization is necessary for a meticulous approach to surgery. Robotic surgery due to its loss of tactile feedback requires perfect visualization to ensure a safe working environment. Careful planning and use of instrumentation is necessary during robotic surgery to ensure that surrounding organs can be retracted atraumatically and sufficiently to provide a large enough working space without obstruction. During robotic nephrectomy, partial nephrectomy and adrenalectomy the liver and spleen can be particularly difficult to move away from the operative field because of their bulky yet fragile nature. There are currently many different laparoscopic retractors that have varying uses and success rates.

EZsurgical Ltd. developed the A-Lap retractor, which utilizes a compliant 3-dimensional configuration, utilizing a soft elastic net that conforms to the shape of organs. This allows easy retraction of a wide surface area. By retracting a wide surface area heavy and fragile organs like the liver can be safely retracted with little worry of fracture of the parenchyma, or trauma to the capsule.

Case report:

A 56 year-old man being evaluated for back pain was incidentally found to have a 2.5 cm posterior, upper pole right renal mass. This mass enhanced on contrast imaging and was suspicious for renal cell cancer. He presents for trans-peritoneal robotic assisted laparoscopic right partial nephrectomy. On the right side the liver can often make access and visualization of the kidney difficult during partial nephrectomy. After placement of robotic and assistant laparoscopic ports the A-Lap retractor was introduced through the EZAxess flexible port placed near the xiphoid via a 10mm incision.

The A-Lap was then used to retract the liver away from the surgical field and give excellent visualization with minimal trauma to the liver. There were many adhesions between the liver and the peritoneum that required manipulation and retraction of the liver for dissection so that the upper pole of the kidney could be completely dissected free of all surrounding tissue.

Throughout the procedure the A-Lap retractor was instrumental in safe, easy to maneuver retraction of the liver. The partial nephrectomy was completed with robotic assistance, and the patient was discharged home on post operative day 1.

Discussion:

The A-Lap retractor was successfully used to retract the liver during a robotic right upper pole partial nephrectomy. Inherent in the design of the A-Lap is the ability to conform to any shape, and therefore it works well for the atraumatic retraction of both solid and visceral organ. The large surface area of the soft elastic net facilitates optimal retraction and exposure of the surgical field while preventing injuries to the retracted organs. The EZAxess flexible port gives the surgeon the ability to not only use the A-Lap, but also any other 5-6mm laparoscopic tools as needed, thus limiting the number of ports required.



Fig.1: A-Lap Retractor and EZAxess Flexible Port.



Fig.2: A-Lap retractor during surgery. Large surface area, soft net.



Fig.3: A-Lap Retractor held with surgeon's right hand.