Robotic Ultrasound Probe in Robotic Partial Nephrectomy

Introduction and Objective: Precise tumor identification during partial nephrectomy (PN) is important for successful oncologic control. Intraoperative ultrasound can help with tumor identification during partial nephrectomy. Robotic partial nephrectomy (RPN) using a laparoscopic ultrasound probe (LUP) for tumor identification requires the probe to be controlled by the bedside assistant. A robotic ultrasound probe (RUP) allows the surgeon to control intraoperative ultrasound, but the use of the RUP has not yet been evaluated in comparison to LUP. We evaluate robotic partial nephrectomy using a RUP in comparison to a LUP.
Materials and Methods: Data from 75 consecutive RPNs performed with a LUP between January 2009 and November 2010 were retrospectively analyzed against 75 consecutive RPNs performed with a RUP between November 2010 and November 2011.
Results: A total of 72 patients underwent 75 consecutive RPN using the LUP with a mean tumor size followed by 73 patients who underwent 75 consecutive RPNs using the RUP. The patient population data did not differ significantly. The robotic group had a larger tumor endophytic percentage (42.8 vs. 55.3%, p=0.004), but other perioperative factors, such as mean OR time (233 vs. 218mins), mean console time (173 vs. 156mins, p=0.095) and mean blood loss (164ml vs. 171ml, p=0.79) did not achieve statistically significant difference. All patients are free of cancer recurrence after a mean FU of 25.7 months in the LUP group and 10.2 months in the RUP group.
Conclusions: A RUP under surgeon control during RPN offers comparable tumor identification and margin rates as a LUP with advantages of increased surgeon autonomy. Source of funding: none