

SUPPLEMENTARY FILE

Supplementary File 1

Vattikuti Collective Quality Initiative Database

Vattikuti Collective Quality Initiative (VCQI) is a prospective multinational collaborative web-based database for various robotic surgical procedures maintained by Vattikuti Foundation.^[7-9] For RAPN, data is added by 18 contributing institutions from 9 countries (United States, United Kingdom, India, Italy, Portugal, Belgium, Turkey, and South Korea). Five centers from India added data to this database. It is to be noted that all these five centers are high volume with fellowship training programs sponsored by the Vattikuti Foundation. For various perioperative variables, data are added to the system by each participating center.

Preoperative data

Baseline demographic data for each patient are collected such as age at the time of surgery, sex and body mass index. Other preoperative data included clinical tumor size (modality not specified), presenting symptoms (absent/local/systemic), solitary kidney, multifocal tumor, bilateral tumors, side of surgery (right/left), face of tumor (anterior/posterior), polar location of tumor (upper/mid/lower), and preoperative renal nephrometry score (not specified how and by whom it is estimated). The preoperative biochemical evaluation included hemoglobin, creatinine, estimated glomerular filtration rate (eGFR) as estimated by the modified diet in renal disease (MDRD) equation.

Intraoperative data

Operative data included surgical approach (retroperitoneal/transperitoneal), operative time, type of ischemia (warm/cold/none), ischemia time and blood loss. Data for IOAE were obtained by combining three domains separately reported in the Vattikuti database, i.e., intraoperative complications, conversion to radical nephrectomy/open surgery and intraoperative blood transfusion. Data for intraoperative complications are entered in a closed-end question with six options to select from. These included “Gross violation of tumor bed,” “Major bleeding from the tumor bed,” “Injury to major vessels,” “Injury to abdominal organs,” “conversion to open,” and “others.” Postoperative complications (up to 30 days following surgery) were recorded as per the Clavien–Dindo classification.

Postoperative variables

Discharge values for hemoglobin, creatinine, and eGFR were also recorded. Patients with at least one year of follow-up creatinine were reported for pentafecta outcomes.

Limitations of the database

1. Data to VCQI are contributed by different centers across the country. This may account for heterogeneity in surgical techniques, learning curves, and perioperative management of patients.
2. Lack of data on surgeon experience.
3. Data is lacking on the modality used for reporting tumor size and tumor complexity score. Furthermore, data on who calculated the RENAL nephrometry score is also lacking. Due to the retrospective and multicentric nature of the study, a central review of all the radiology was impossible.
4. There is a lack of data on operative details, such as the technique of resection enucleation versus resection versus enucleoresection. Details on clamping technique (selective, superselective, artery only or *en mass* clamping) and model of robot (Si, X, or Xi) is lacking.
5. Data precisely for hilar and completely endophytic tumors is also lacking from the database.
6. Lack of data on intraoperative use of adjunctive techniques such as indocyanine green, intraoperative ultrasound and frozen section.
7. Data is also lacking for the intraoperative repair of the pelvicalyceal system and type of renorrhaphy.
8. Follow-up guidelines employed may vary from center to center.

Contributing centers

1. Department of Urologic Oncology, Max Institute of Cancer Care, New Delhi*
2. King’s College, London, King’s Health Partners, UK
3. The Medicity Hospital, New Delhi, India*
4. Rajiv Gandhi Cancer Institute and Research Centre, New Delhi, India*
5. Humanitas Research Hospital, MI, Italy
6. Chennai Urology and Robotics Institute, Chennai, India*
7. Swedish Medical Center, Seattle, WA, USA

8. Henry Ford Hospital, Detroit, MI
9. ORSI Academy, Melle, Belgium
10. Central Ohio Urology Group and Mount Carmel Health System Prostate Cancer Program, Columbus, OH, USA
11. Yonsei University Health System, Seoul, South Korea
12. Peter MacCallum Cancer Centre, Royal Melbourne Clinical School, University of Melbourne Melbourne, Australia
13. Kokilaben Dhirubhai Ambani Hospital, Mumbai, India*
14. University of Miami Health System, Miami, Florida, USA
15. Urological Research Institute (URI), IRCCS Ospedale San Raffaele, Milan, Italy
16. Center for Robotic and Minimally Invasive Surgery, Hospital Da Luz, Luz Saúde, Portugal
17. San Luigi Gonzaga Hospital of Orbassano, Turin, Italy
18. Acıbadem M.A., Aydınlar University, Altuzinade Hospital, Department of Urology, Istanbul, Turkey

*Indian centers that contributed the data to the present study.