Robotic vasovasostomy for vasectomy reversal: Results from a tertiary referral robotic center with more than ten years of experience

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Introduction & Objectives: Vasovasostomy has undergone numerous advances, including the use of microsurgical equipment and principles to construct a meticulous anastomosis. Recently, the widespread of robotic platforms allowed to perform this procedure using a robot-assisted approach. We here described one of the largest cohorts of men treated with robotic vasovasostomy (RAVV) at a tertiary referral robotic center.

Materials & Methods: We analysed data of patients treated with RAVV at our institution between 2008 and 2021. All surgeries were performed by experienced surgeons with a lifetime experience of >500 robotic cases. Robotic setting included two needle drivers, monopolar scissors, and 0° camera, with trocars positioned 40 cm from the surgical field (Figure 1). All patients had semen analyses three months after RAVV. Preoperative characteristics, peri-operative data, success rate, and Quality of Life (QoL) were described. The procedure was deemed successful if patients willing to have children were able to do so after surgery. QoL was assessed using the QoL – Short Form (SF) questionnaire administered three months after surgery. Fertility status and QoL were evaluated by phone interviews performed by dedicated medical doctors.
**Results:** A total of 38 patients underwent RAVV, and all patients had prior children. The median (interquartile range [IQR]) time between vasectomy and RAVV was 6 (4, 9) years, whereas median age at RAVV was 42 (38, 45) years. Median operative time was 120 (IQR: 110, 140) minutes, and no intra-operative complication was recorded. Overall, there were no post-operative complications, and all patients were discharged on post-operative day one. On semen analyses three months after surgery, median (IQR) sperm count was 36 (11, 50) million/mL. Median post-operative follow-up was 50 months (IQR: 20, 78). Among 28 patients who tried to have children after RAVV, the procedure was successful in 21/28 (75%) of them. Median QoL – SF score was 44 (IQR: 41, 47).

**Conclusions:** In men desiring a vasectomy reversal, the robotic approach is a safe and feasible surgical approach that allowed for short surgical time, and high success rate. Awaiting further investigations, and particularly cost-analyses, this surgical approach might be considered an option for vasectomy reversal according to physician’s preference.