AB074. The application of virtual reality training in anastomosis of robot-assisted laparoscopic radical prostatectomy

Bo Yang, Yinghao Sun, Chao Zhang, Fei Guo, Fubo Wang

Department of Urology, Changhai Hospital, Shanghai 200000, China

Background: To investigate the application of virtual reality training in vesicourethral anastomosis during robotic-assisted laparoscopic radical prostatectomy.
Methods: Three urologists were trained with virtual reality techniques. Parameters such as "overall score", "time to complete exercise", "economy of motion", "instrument collision", "instruments out of view", and "missed targets" were recorded before and after the training. Eighteen patients undergoing robotic-assisted laparoscopic radical prostatectomy were enrolled and grouped to receive the anastomosis procedures under certified urologists with (the study group) or without (the control group) virtual reality training. The quality of the anastomosis was evaluated.
Results: Overall score was significantly improved from 65.0±10.8 to 92.7±3.5 (P=0.014). Time of anastomosis was shortened, economy of motion improved, and instrument collisions decreased after training (P>0.05). Instrument out of view and missed targets were comparable before and after the virtual training. Eighteen anastomoses were completed. Average time of anastomosis was shortened to 25.1±7.1 min (P=0.015). The parameters of time of operation, creatinine level of drainage, postoperative hospital stay and duration of catheter drainage were comparable before and after virtual reality training. Two leakages which were observed in procedures by doctors without training need salvage sutures by a senior doctor.
Conclusions: Virtual reality training has enabled surgeons be quickly familiar with robotic system manipulation, improved their skills for vesicourethral anastomosis and shortened learning curve, thus helping them operate with high efficacy and quality.
Keywords: Prostatectomy; virtual reality training

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