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ROBOTIC SACROHYSTEROPEXY IN PATIENTS WITH UTERINE PROLAPSE

Introduction
Recently, treatment of pelvic organ prolapse has evolved with the advent of robotic surgery, which has enabled surgeons to perform this surgery with greater ease and feasibility. In those women who desire a uterine-sparing repair, robot-assisted sacrohysteropexy (RSH) may be an ideal option for minimally invasive surgery in select cases. However, there have been only a few reports about RSH to date. The aim of this study is to introduce our surgical technique of RSH and clinical outcome in patients with uterine prolapse.

Design
From Aug 2012 to Sep 2013, 8 patients underwent RSH due to uterine prolapse. Medical records of these patients were retrospectively reviewed. Pelvic organ prolapse quantification (POPQ) was measured pre- and postoperatively to evaluate the degree of uterine prolapse. Success of RSH was defined as POPQ grade 0 or I. Pelvic floor distress inventory-short form (PFDI-SF) questionnaire was investigated to measure subjective response. A brief surgical technique of RSH is as follows. Patients are placed in dorsal lithotomy with steep Trendelenburg position (30°). Two meshes (anterior, 4 X 5 cm; posterior, T-shaped with 4cm width, nonabsorbable polypropylene monofilament mesh, Gynemesh, Gynecare; Ethicon, Somerville, NJ, USA) were placed after anterior and posterior peritoneal dissection. Anterior mesh could be omitted in the case of a small-sized uterus. T-shape mesh is placed on the posterior dissection plane, and both arms of the mesh were drawn through the peritoneal tunnel of the broad ligament. Anterior and posterior meshes are combined with suture on the anterior side of the uterus. The tail of the T-shape posterior mesh is fixed with the anterior longitudinal ligament on the sacral promontory. The peritoneum is then re-approximated over the mesh with absorbable sutures.

Results
Median age of 8 patients was 66 (range 43-72) years, and median follow-up duration was 5.1 (3.0 to 13.7) months. Operation time from incision to close, including docking time, was 263 (235 to 440) min. Median estimated blood loss was 150 (20 to 1800) ml. Median length of hospital stay was 4 (2 to 8). Median BMI and ASA score was 26.4kg/m^2 (21.8 to 28.7) and 2 (1-2), relatively. Mid-urethral sling due to stress incontinence (n = 4) and partial nephrectomy due to RCC (n = 1) were performed together with RSH. In terms of POPQ, C-point was improved from preoperative 3 (0 to 5) to -6 (-5 to -8) at last follow-up, and D-point from 3 (0 to 5) to -7 (-6 to -10) ($p < 0.05$). Preoperative POPQ grade were IV; 14.3% (n = 1), III; 71.4% (n = 5), and II; 14.3 (n = 2). All patients were improved to 0; 42.8% (n = 3), and I; 57.2% (n = 4) at last follow-up (success rate: 100%). The preoperative score of PFDI-SF was 42 (26 to 68), and decreased to 8 (2 to 50) at last follow-up ($p < 0.05$). There was no difference of post-void residuals between pre- and post-operative follow-up. Initial case had sacral plexus injury with massive bleeding (1800ml) and needed transfusion. This case was converted to pure laparoscopic sacrohysteropexy. There was no mesh erosion during the follow-up. Two patients had preoperative cystocele, and which continued postoperatively and needed cystocele repair.

Conclusion
With short period of follow-up, RSH may offer promising results regarding the restoration of vaginal anatomy and improved quality of life. In addition, RSH is feasible and safe method for uterine prolapse as a minimally invasive surgery. Robotic surgery for uterine prolapse may accelerate the learning curve of less experienced surgeons.

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