

CHANGES IN ROBOTIC-ASSISTED LAPAROSCOPIC SACROCOLPOPEXY OPERATIVE TIME: AN ANALYSIS OF TECHNICAL FACTORS

Hypothesis / aims of study

Robotic-assisted laparoscopic sacrocolpopexy has been shown to result in increased operative times compared to conventional laparoscopic sacrocolpopexy although it is a newer procedure. The purpose of this study is to evaluate the effect of specific technical aspects of the procedure on total operative time.

Study design, materials and methods

The records of 64 women undergoing robotic-assisted laparoscopic sacrocolpopexy between 2008 and 2011 from a single urogynecology practice were reviewed. Consecutive patients were initially divided in half by year of surgery and then matched based on prior hysterectomy, type of concomitant hysterectomy, and concomitant lysis of adhesions. Operative time was defined as the time elapsed between the first surgical incision and completion of the entire surgical procedure. The number of mesh flaps and sacrocolpopexy sutures placed, other concomitant pelvic floor procedures, and the numbers of robotic arms utilized were routinely recorded throughout the study period. Student's t-test, Mann-Whitney U test, and Fisher's exact test were used where appropriate.

Results

11 patients were matched in each group: The mean (SD) operative time for group 1 and group 2 was 295 (57) and 220 (50) minutes, respectively ($p=0.004$). During sacrocolpopexy, the median [range] number of vaginal sutures in groups 1 and 2 were 11 [8-16] and 7 [3-8], respectively ($p=0.0001$). The median [range] number of anterior longitudinal ligament sutures in groups 1 and 2 were 3 [2-6] and 2 [2-3], respectively ($p=0.08$). The median [range] number of mesh flaps used in groups 1 and 2 were 2 [1-2] and 1 [1], respectively ($p=0.01$). The robotic 3rd arm was utilized in 10/11 (90.9%) of group 1 patients and 2/11 (18.2%) of group 2 patients ($p=0.002$). Age, BMI, parity, preoperative prolapse stage, concomitant sling and/or anterior colporrhaphy, estimated blood loss, and median length of stay were similar between groups. 4/11 (36.4%) of group 1 patients and 10/11 (90.9%) of group 2 patients had concomitant posterior colporrhaphy ($p=0.02$). Mean follow-up in groups 1 and 2 was 13 and 5 months, respectively. Postoperatively there were no differences between groups with respect to anatomic outcomes.

Interpretation of results

Decreased number of sutures and mesh flaps placed and decreased use of the robotic third arm appear to decrease operative time during robotic-assisted laparoscopic sacrocolpopexy in matched subjects.

Concluding message

Procedural modifications such as limiting the number of sacrocolpopexy sutures and mesh flaps placed and limiting utilization of the robotic third arm appear to decrease operative time without altering postoperative anatomic outcomes. Robotic surgery is known to lack tactile cues compared to conventional laparoscopic surgery, therefore numerical suture placement may decrease with surgeon experience.

References

1. Marie Fidela R. Paraiso, MD, J. Eric Jelovsek, MD, Anna Frick, MD, MPH, Chi Chung Grace Chen, MD, and Matthew D. Barber, MD, MHS. Laparoscopic Compared With Robotic Sacrocolpopexy for Vaginal Prolapse: Randomized Controlled Trial. *Obstet Gynecol.* 2011 Nov;118(5):1005-13

Disclosures

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