

PROSPECTIVE EVALUATION OF SURGICAL OUTCOMES OF ROBOTIC-ASSISTED COLPO- AND CERVICOSACROPEXY FOR THE MANAGEMENT OF APICAL PELVIC SUPPORT DEFECTS

Aims of Study: To evaluate the surgical and anatomic outcomes of robotic-assisted colpo- and cervico-sacropexy for the management of apical pelvic support defects.

Study Design: A prospective observational study of women undergoing robotic-assisted colpo- or cervicosacropexy between June 2008 and January 2010 was conducted. Demographic data including age, body mass index (BMI), and parity was obtained. Immediate operative outcomes including surgical times, estimated blood loss (EBL), complications, and length of hospital stay were recorded. Data regarding stage of prolapse preoperatively, at 6 weeks, 6 months and 12 months were compared and a mixed-effects repeated-measures ANOVA model was used to compare the mean stage of prolapse for each time period using point C of the POPQ as a representative measurement of prolapse. Tukey's HSD was used to adjust for multiple comparisons. Statistical analysis was performed using SAS with a significance level of $p=.05$.

Results: We performed a total of 85 robotic-assisted sacropexy procedures for apical support defects during the study period. Demographic and operative data is presented in Table 1. Of the 85 total cases, 48 were colposacropexy procedures and 37 were supracervical hysterectomy with concomitant cervicosacropexy. Of the total cases, 33% (28/85) were for stage II prolapse, 54% (46/85) were for stage III, and 13% (11/85) were for stage IV. At 6 weeks post-operative follow-up, 96% (80/83) had stage 0 prolapse, 2.4% (2/83) had stage I prolapse, and 1.2% (1/83) had stage II prolapse. At 6 months follow-up, 77% (24/31) had stage 0 prolapse, 6.5% (2/31) had stage I, and 16% (5/31) had stage II. At 12 months follow-up we were able to obtain data on only 12 cases, with 11/12 having stage 0 prolapse and only 1 case having stage II recurrent prolapse. No cases had recurrent stage III or IV prolapse. Table 2 is a summary of the LS Means of point C of the POPQ staging at each time interval. ANOVA indicated that there was a significant difference in stage of prolapse by time period ($F(3/108)=228, p<.0001$). Tukey's HSD indicated that there was a significant improvement in degree of prolapse from preoperative stage to each of the follow-up time periods. There was not a significant difference in stage of prolapse from the 6 week assessment to the 12 month follow-up. Table 3 contains the summary of differences from preoperative degree of prolapse to each follow-up interval. Surgical complications included 8 urinary tract infections, 1 case of pneumonia, 1 cardiac arrhythmia, 4 cystotomies, and 2 proctotomies. All cases complicated by cystotomy and proctotomy were colposacropexies and not cervicosacropexies. There were 2 cases of mesh erosion, one noted at 6 weeks follow-up and one at 6 months follow-up. Both of these cases were uncomplicated colposacropexies.

Table 1
Mean Demographic Data and Surgical Outcomes

	N	Mean	SD
Age	81	59.00	8.85
BMI	81	27.58	4.42
Parity	78	2.72	1.47
Total Surgical Time (min)	81	194.78	54.00
Docking Time (min)	64	5.30	2.96
Console Time (min)	47	105.85	37.74
EBL (cc)	80	49.94	48.00
Length of Hospital Stay (days)	81	1.60	0.72

Table 2
Mean for Point C on POPQ

	LS Mean	SE	95% CI	
Pre op	1.5	0.30	0.89	2.06
6 weeks	-8.7	0.28	-9.28	-8.17
6 months	-8.2	0.47	-9.09	-7.22
12 months	-7.1	0.73	-8.57	-5.68

Table 3
 Mean Difference in Point C on POPQ from Preoperative Assessment to Follow-up

Time	Difference	SE	95% CI	
Pre-op to 6 weeks	10.2	0.42	9.12	11.29
Pre-op to 6 months	9.6	0.56	8.17	11.10
Pre-op to 12 months	8.6	0.79	6.54	10.67

Interpretation of Results: Robotic-assisted sacropexy is an effective surgical treatment for the management apical pelvic organ support defects with a low complication rate. Our surgical operative console time appears to be significantly shorter than previously reported (1,2).

Concluding Message: Robotic-assisted sacropexy is an effective and efficient surgical treatment approach for the management apical pelvic organ support defects.

References

1. Geller EJ, Siddiqui NY, Wu JM, Visco AG. Short-term outcomes of robotic sacrocolpopexy compared with abdominal colposacropexy. *Obstet Gynecol* 2008;112:1201-6
2. Elliott DS, Krambeck AW, Chow GK. Long-term results of robotic-assisted laparoscopic sacrocolpopexy for the treatment of high grade vaginal vault prolapse. *J Urol.* 2006;176(2):438

<i>Specify source of funding or grant</i>	None
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Virginia Commonwealth University Medical Center IRB
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes