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Study between Laparoscopic Uterosacral Ligament Suspension versus Sacrospinous Ligament Fixation for Apical Prolapse

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Abstract

The aim of the present investigation is to study relation between Laparoscopic Uterosacral Ligament Suspension (L-USLS) versus Sacrospinous Ligament Fixation (SSLF) for Apical Prolapse. A retrospective study was performed on 45 consecutive patients who underwent L-USLS or SSLF. All surgeries were performed at a teritary medical center, an academic hospital system. All patients were evaluated in the clinic by an attending physician preoperatively. They were assessed for Pelvic Organ Prolapse Quantification (POP-Q) Stage. Patients were evaluated for occult stress urinary incontinence at the discretion of their physician. Leading edge information was translated to POP-Q Stage. Demographic, surgical and medical history, intraoperative course, postoperative complications, and postoperative follow-up data were collected from the electronic medical record. There was one cystotomy in both the L-USLS and SSLF cohorts, and one bowel injury in the SSLF cohort. All were recognized intraoperatively and repaired without postoperative sequelae. One patient in the SSLF cohort was taken back to the OR due to bleeding at the vaginal cuff that was identified in the postoperative care unit. One patient in the L-USLS group experienced a small bowel obstruction which required bowel resection. This patient had a complex surgical history with resulting dense abdominal adhesions. There were two readmissions in each group; two for pneumonia, one for enterocolitis, and one for vaginal bleeding which did not require any intervention. In conclusion, there was not a statistically significant difference in perioperative complications between L-USLS and SSLF. Given these unattainable sample sizes, the out- comes of this study are likely clinically similar.

Keywords: Laparoscopic Uterosacral Ligament Suspension, Sacrospinous Ligament Fixation, Apical Prolapse, Surgical repairs, Vaginal apical prolapse

Introduction

Pelvic organ prolapse (POP) is a typical condition, influencing around half of parous ladies, and relates with increasing age [1]. Albeit POP isn't firmly identified with death, interest in POP has expanded as personal satisfaction has become an inexorably significant factor in patients' lives. Appropriately, annual occurrence of POP a surgical procedureas of now goes from 1.5 to 1.8 cases per 1,000 ladies years [2]. Eleven percent of ladies go through POP a surgical procedure by the age of 80 years [3]. Up to 30% of ladies who go through a surgical procedure require a re-activity, with the absolute expense of POP. [4]. At the point when POP repeats after hysterectomy, it frequently presents as vaginal apical prolapse.

There are a wide range of careful medicines for vaginal apical prolapse. In this article, we talk about the achievability and adequacy of sacral colpopexy, McCall culdoplasty , sacrospinous ligament fixation (SSLF), uterosacral ligament suspension (USLS), and iliococcygeus fascia suspension (ICG) in rectifying vaginal apical prolapse.

Careful fixes are performed with local tissue or manufactured cross section. Because of concerns in regards to work entanglements, more patients are deciding to keep away from the utilization of engineered network for pelvic organ prolapse repair [2]. Vaginal uterosacral ligament suspension (V-USLS) and sacrospinous ligament fixation (SSLF) are strategies for local tissue treatment of apical pelvic organ prolapse. Until this point in time, there are no examinations contrasting perioperative difficulties and careful results between L-USLS and SSLF to direct paient advising. The essential goal of this investigation was to decide the pace of perioperative intricacies between L-USLS and SSLF.

Methods

A retrospective study was performed on 45 consecutive patients who underwent L-USLS or SSLF from May 2019 to May 2020. All surgeries were performed at University Medical Center, an academic hospital system associated with the University. University and Hospital

Institution Review Board exemption was granted for the study.

All patients were assessed in faculty by a going to doctor preoperatively. They were surveyed for Pelvic Organ Prolapse Quantification (POP-Q) Stage [8]. Patients were assessed for stress urinary incontinence at the tact of their doctor. driving edge data was meant POP-Q Stage. segment, careful and clinic history, intraoperative course, postoperative inconveniences, and postoperative subsequent information were gathered from the electronic clinical record. Relevant clinical history was characterized as any conclusions from the Charlson Comorbidity Index since it has been demonstrated to be a free indicater of carefull mortality just as long-haul endurance [9]. These conclusions incorporate history of myocardial localized necrosis, congestive cardiovascular breakdown, fringe vascular sickness, transient ischemic assault, dementia, ongoing obstructive pneumonic infection, connective tissue illness, peptic ulcer sickness, liver illness, diabetes mellitus, persistent kidney sickness, hemiplegia, or current malignant growth.

L-USLS was performed bilaterally, besides in one situation where one-sided suspension was performed because of adhesions. L-USLS was performed by plicating the two-sided uterosacral ligament with 2-0 polyethylene terephthalate stitch. SSLF was performed bilaterally in all except 10 cases and included suspending the vaginal apex to the sacrospinous ligament with the Capio suture- capturing device and 0-polydioxanone stitch. Occupant doctors partook in every single careful case. Most of patients went through attending strategies including posterior colporrhaphy, anterior colporrhaphy, midurethral sling, or salpingo-oophorectomy.

The essential goal of this examination was to assess the general pace of perioperative inconveniences. Generally perioperative intricacy rate was evaluated to permit better identification of contrasts between the two careful methodologies. Perioperative inconveniences incorporate both intraoperative and postoperative complications inside 30 days of medical procedure. Difficulties were characterized as change to laparotomy, cystotomy, ureteral injury/kinking/need for stitch release, bowel injury, return to the operating room, blood transfusion, deep vein thrombosis (DVT), pulmonary emboli (PE), ileus or small bowel obstruction (SBO), wound infection, hernia development, pelvic abscess, and medical clinic readmission. Other result information that was gathered included new buttock pain or new pelvic pain after release from the clinic, urinary tract disease, and urinary incontinence. Urinary tract infection was characterized as patient report of urinary symptoms and a positive urine culture. Urinary retention was characterized as inability to spontaneously void postoperatively requiring discharge to home with a catheter.

p values were calculated from Student's t tests for continuous variables and chi-square for categorical variables. Univariable logistic regression analysis was performed to assess predictors of perioperative complications. A $p<0.05$ was considered statistically significant. Statistical analysis was performed using SPSS Statistical software.

Results

Between May 2019 to May 2020, 45 patients taken for L-USLS or SSLF. A total of 25 women in the L-USLS and 20 women in the SSLF cohort were included in the analysis. Overall, baseline characteristics were similar between the two groups (Table 1). Women in the SSLF cohort were older than those in the L- USLS cohort. In addition, women who underwent SSLF were more likely to be post- menopausal, have a prior hysterectomy, and have a prior surgery for pelvic organ prolapse. There were no differences in POP-Q measurements between groups.

Concomitant procedures and intraoperative data are presented in Table 2. Hysterectomy was performed in 87% of patients in the L-USLS cohort and 54% of patients in the SSLF cohort ($p < 0.01$). Uterine sparing hysteropexy was performed in 9 patients; 2 in the L-USLS group, and 7 in the SSLF group. Fewer anterior and posterior vaginal repairs were required for L-USLS compared to SSLF. Total operative time was longer for the L-USLS cohort. In addition, average blood loss was lower in the L-USLS cohort and length of admission was shorter in the L-USLS cohort. After adjusted for age, comorbidities, and concurrent procedures, the length of admission and operative time remained statistically significant, but blood loss was no longer statistically significant.

There was a similar rate of perioperative complications in both groups. Using the Clavien-Dindo grading scale, in the L-USLS cohort, there were 2 grade one complications, 5 grade two complications, and 2 grade three complications. In the SSLF cohort, there were 2 grade one complications, 4 grade two complication, and 3 grade three complications. There was one cystotomy in both the L-USLS and SSLF cohorts, and one bowel injury in the SSLF cohort. All were recognized intraoperatively and repaired without postoperative sequelae. One patient in the SSLF cohort was taken back to the OR due to bleeding at the vaginal cuff that was identified in the postoperative care unit. One patient in the L-USLS group experienced a small bowel obstruction which required bowel resection. This patient had a complex surgical history with resulting dense abdominal adhesions. There were two readmissions in each group; two for pneumonia, one for enterocolitis, and one for vaginal bleeding which did not require any intervention.

Univariable logistic regression comparing outcomes between the two groups did not identify risk factors for complications (Table 4). Multivariable logistic regression was not performed due to the small number of complications identified.

Table 1: Clinical characteristics of study cohort

	USLS	SSLF
Age (mean)	59	63
BMI	28	28
Obesity (BMI ≥ 30)	36	34
Medical problems	25	20
Post-menopausal	15	14
Prior hysterectomy	13	14
Prior surgery for pelvic organ prolapse	9	20

Table 2: Intra-operative characteristics

	L-USLS	SSLF
Concomitant surgery		
Hysterectomy	25 (87)	20 (53)
Uterine sparing/hysteropexy	2 (2)	7 (6)
Trachelectomy	2 (2)	1 (1)
Anterior repair	4 (4)	66 (61)
Posterior repair	51 (45)	77 (71)
MUS	14 (12)	32 (29)
BSO	8 (7)	14 (13)
Operative time (min)	142 (± 31)	118 (± 42)
EBL (mL)	120	153
Length of admission (days)	0.68	1.06

Table 3: Perioperative complications

	L-USLS, N (%)	SSLF, N (%)
Major complications overall	6	8
Conversion to open	0	0
Cystotomy	1	1
Ureteral injury	0	0
Enterotomy	0	1
Take back to the OR	0	1
DVT or PE	0	0

	L-USLS, N (%)	SSLF, N (%)
Ileus or small bowel obstruction	1	0
Wound infection	2	1
Blood transfusion	2	0
Pelvic abscess	1	2
Re-admission within 30 days	2	1
Urinary retention	2	1
Urinary tract infection	6	1
Pelvic pain	2	1
Gluteal pain	0	1
Suture removal	0	1

Table 4: Unvariable logistic regression analysis for predictors of perioperative complications

Predictors	Unadjusted OR	95% CI
Route (L-USLS vs SSLF)	1.33	0.99–3.33
Age	1.11	0.99–1.12
BMI	0.96	0.93–1.33
Obesity (BMI ≥ 30)	0.85	0.42–1.55
Medical comorbidities	1.17	0.55–2.11
Current or former smoking	1.28	0.63−2.43
Parity	0.91	0.78–1.16
Prior surgery for pelvic organ prolapse	1.19	0.48–2.11
Concomitant hysterectomy	1.65	0.80–3.64
Anterior or Posterior repair	0.79	0.40–1.24
EBL	0.96	1.00–1.33
Operating time	1.11	0.99–1.34
Length of admission	0.89	0.48–1.11

Discussion

There was no genuinely critical distinction in peri-operative complications between L-USLS and SSLF in this study. Contrasted with the SSLF cohort, those in the L-USLS cohort had a lower EBL and length of hospital admission. However, after adjusting confounding variables (including age, concurrent hysterectomy, anterior repair, posterior repair and MUS), the difference in EBL was no longer significant.

Usable time for L-USLS in this examination was like that detailed by Barber *et al*. for V-USLS [3]. The length of emergency clinic confirmation in the L-USLS bunch was more limited than that announced for V-USLS. This abbreviated length of confirmation was striking on the

grounds that 87% of patients went through hysterectomy; notwithstanding, 38% were released on postoperative day 0 and 60% were released on postoperative day 1. Also, there was no ureteral injury or compromise in the L-USLS partner, which is reliable with earlier investigations that report a 0% pace of ureteral compromise [6, 10–12]. The low pace of ureteral injury is hypothesized to be expected to the laparoscopic approach permitting representation of the ureter course to stay away from ureter injury or wrinkling. This is an expected benefit over V-USLS as it has been related with a frequency of ureteral compromise [3, 13].

Inconveniences would be distinguished intra-operatively or during the patient postoperative period. This examination is restricted by its review nature; information gathered was restricted to that recorded in the outline. Also, there were a few patients with restricted long haul clinical development. Patients were alluded for treatment by their essential gynecologists and continued consideration with the alluding doctor after they were decided to be completely recuperated from a medical procedure. It is in this manner conceivable that some postoperative intricacies or repeats were treated at an external office. What's more, all L-USLS and SSLF strategies were incorporated, whether or not an attendant hysterectomy or hysteropexy was performed, which may modify the repeat rate.

Conclusion

In conclusion, there was not a statistically significant difference in perioperative complications between L-USLS and SSLF. Given these sample sizes, the outcomes of this study are likely clinically similar. Randomized controlled trials comparing L-USLS and SSLF are needed.

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