

Value of Rectus Sheath Suspension of Vaginal Vault in Total Abdominal Hysterectomy

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ABSTRACT

Background: Surgical management of vaginal vault prolapse post hysterectomy has improved with the use of the recto suspension technique. The technique is also used for prolapsing of the posterior vaginal wall rectus sheath suspension was described as a quick procedure with low morbidity and a short hospital stay.

Objective: This study was aimed to evaluate rectus sheath suspension used as a treatment for vaginal vault prolapse after total abdominal hysterectomy.

Patients and Methods: This interrupted time series clinical trial estimated the value of rectus sheath suspension of vaginal vault which was done on 50 patients undergoing total abdominal hysterectomy, at the Department of Obstetrics and Gynecology, Al-Azhar University Hospitals, Damietta.

Results: Follow-up in the first week showed that the number of cystocele decreased to 5 (10%). Also, in the 1st month of follow-up; after three months post-operative it increases to 7 (14%) cases. We found a significant decrease in cystocele number from pre and postoperative and a slight increase from 1st to 3rd months

Conclusion: Using autogenous rectus fascia strips for suspension of vaginal vault in total abdominal hysterectomy is effective method for prophylaxis against vault prolapse after total abdominal hysterectomy and decrease number of postoperative cystocele in patients with preoperative mild cystocele, it also devoid of any serious complications such as described with other techniques.

Keywords: Rectus Sheath, Abdominal Hysterectomy, Vaginal Vault prolapse, Colpopexy.

INTRODUCTION

Vaginal vault prolapse after hysterectomy for benign illness occurs approximately 1.8 percent of the time, but when the procedure is done for genital prolapse, the frequency rises to 11.6 percent ⁽¹⁾.

The recto suspension approach has improved surgical management of vaginal vault prolapse following hysterectomy. The method is further applied on prolapsed posterior vaginal walls ⁽²⁾.

The simple treatment with minimal morbidity and a brief hospital stay that **Milani et al.** ⁽³⁾ and **Husby et al.** ⁽⁴⁾ initially described is known as rectus sheath suspension.

Sacrospinous suspension was replaced with the less invasive recto suspension of the vaginal vault procedure. The perineal body is sandwiched between the vaginal vault and a polypropylene intravaginal sling (IVS) ⁽⁵⁾.

This study was aimed to evaluate rectus sheath suspension used as a treatment for vaginal vault prolapse after total abdominal hysterectomy.

PATIENTS AND METHOD

This series interrupted time clinical trial study was aimed to estimate the value of rectus sheath suspension of vaginal vault. It included a total of 50 patients undergoing total abdominal hysterectomy, attending at Department of Obstetrics and Gynecology, Al-Azhar University Hospitals, Damietta.

Inclusion criteria: Patients undergoing abdominal hysterectomy and having mild cystocele and rectocele

Exclusion criteria: Patients undergoing vaginal hysterectomy and patients with a history of pelvic floor operation.

Ethical consent:

This study was ethically approved by Al-Azhar University Ethics Committee. Written informed consent of all the participants was obtained. This work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

All patients were subjected to:

Complete history taking (Medical, obstetric, and previous pelvic floor surgeries).

Complete physical examination:

Procedures:

Recto suspension of vaginal vault through flap sheath screwing on vaginal vault after hysterectomy, the right and left flap is about 2cm width and 1cm length, the right flap passed through rectus muscle and partial peritoneum to be screwed at the right angle of the vaginal vault, the same as regard left flap but it will be screwed at the left angle of the vaginal vault.

Statistical analysis

SPSS Software (version 23) was used to perform a statistical analysis of patient data. According to data distribution, descriptive data were expressed as either means with standard deviation or median with ranges. Frequency distributions were used to describe categorical variables. Independent sample t-tests were used to detect differences in the means continuous variables and chi-square tests were used in cases with low expected frequencies. P value <0.05 are considered significant.

RESULTS

Table 1 shows the demographic data of study participants; only 38% (19) had history of previous CS delivery. Mean number of parity were 3.9 and ranged from 2 to 7 times.

Table (1): Demographic data and obstetric and gynecological history.

	Mean± SD	Range
Age (years)	47.8± 5.1	36-56
BMI (kg/m ²)	20.7± 3.8	15-27
Parity	3.9± 1.4	2-7
Mode of Delivery	N	%
NVD	31	62
CS	19	38
Abnormal Uterine Bleeding	33	66
Post-Menopausal Bleeding	13	26
Chronic Pelvic pain	4	8
History of D and C	10	20

According to table 2, preoperative Mean anterior vaginal wall length was 5.6cm while posterior was 7.5cm and all patients were complaining of recto and cystocele.

Table (2): Preoperative data.

Vaginal Wall length (Cm)	Ant	Post
Mean± SD	5.6± 0.6	7.5± 0.7
	N	%
Rectocele	50	100
Cystocele	50	100

Postoperative follow-up in the first week showed that the number of cystorectocele decreased to 5(10%). Also, in the 1st month of follow-up; after three months post-operative it increases to 7 (14%) cases. Anterior vaginal wall lengths at 1st week, 1st month, and 3rd month were 7.6, 7.8, and 7.8 cm respectively. While posterior vaginal wall lengths at 1st week, 1st month, and 3rd month were 9.5, 8.7, and 10.1 cm respectively (Table 3).

Table (3): Postoperative data.

CYSTORECTOCELE	Week	Month	3 Months
N	5	5	7
%	10	10	14
Postoperative Vaginal Wall length			
Ant (Cm)	7.6± 0.9	7.8± 0.9	7.8± 0.9
Post (Cm)	9.5± 2.2	8.7± 3.4	10.1± 1.2

Table (4) showed 12% (6) cases of wound infection which responded to frequent dressing and systemic antibiotics and 10% (5) cases of wound dehiscence

Table (4): Postoperative Complications:

Complications	N	%
WOUND DEHISCENCE	5	10
WOUND INFECTION	6	12

Table (5) showed a significant decrease in cystorectocele number from pre and a postoperative and slight increase from 1st to 3rd months.

Table (5): Comparison of frequency of cystrectocele pre and postoperative:

Follow Up	Cysto-cele	Rectocele	CYSTORECTOCELE	P value
Week	50	50	5	>0.0001
Month	50	50	5	>0.0001
3 Months	50	50	7	>0.0002

Table (6) there was a significant increase in the anterior vaginal walls in 1st week, 1st month, and 3rd month of follow-up. And there was a significant increase in the posterior vaginal wall during 1st week and 3rd month of follow-up.

Table (6): Comparison of Vaginal Wall length pre and post-operative:

Week	Pre	Post	P value
Ant	5.6± 0.6	7.6±0.9	>0.0001*
Post	7.5± 0.7	9.5±2.2	0.008*
Month	Pre	Post	P value
Ant	5.6±0.6	7.8±0.9	>0.0001*
Post	7.5±0.7	8.7±3.4	0.167
3 Months	Pre	Post	P value
Ant	5.6±0.6	7.8±0.9	>0.0001*
Post	7.5±0.7	10.1±1.2	>0.0001*

DISCUSSION

The current study was designed to evaluate rectus sheath suspension of vaginal vault during Total abdominal hysterectomy in cases of vaginal prolapse.

Correction of the apical defect remains a surgical challenge: vaginal apex suspension is the keystone of surgical repair for pelvic organ prolapse.

After a hysterectomy, vaginal vault prolapse can be treated surgically in a variety of ways using either an abdominal or vaginal approach (6).

For post-hysterectomy vaginal vault prolapse, anterior and posterior vaginal wall repair and enterocele sac obliteration are insufficient: This common repair treatment does not support the vaginal vault, placing dyspareunia and vaginal constriction and shortening at risk (7).

The two accepted surgical procedures are an abdominal treatment like a sacrocolpopexy or a vault suspension operation, or a vaginal sacrospinous fixation (8). Vaginal repair frequently results in a narrower, shorter vagina with reduced function (9).

Jenkins and Mccoubrie ⁽¹⁰⁾ reported that the rectus sheath tendon flap was used successfully in 20 patients with vaginal vault prolapse, with little problems.

In order to treat post-hysterectomy vaginal vault prolapse, anterior abdominal wall colpopexy using autogenous rectus fascia strips has the advantage of keeping a physiologically useable vagina, its diameter, and its depth with no known recurrence ⁽¹¹⁾.

A research comparing abdominal colpopexy with sacral fixation and the rectus fascia for the management of prolapsed vagina after hysterectomy found that the abdominal method produces superior outcomes ⁽¹²⁾.

In our study, there were a significant increase in the anterior vaginal wall in 1st week, 1st month, and 3rd month of follow-up. There was a significant increase in the posterior vaginal wall during 1st week and 3rd month of follow-up.

For post-hysterectomy vaginal vault prolapse, anterior and posterior vaginal wall repair, as well as enterocele sac obliteration, are insufficient. This common repair procedure does not support the vaginal vault, and there is a risk of vaginal constriction and shortening, which could lead to dyspareunia ⁽¹¹⁾.

De Lima and Valente ⁽¹³⁾ in their a straightforward surgery, anterior abdominal wall colpopexy employing autogenous rectus fascia strips, was described to treat post-hysterectomy vaginal vault prolapse. In a group of nine patients operated on for full prolapse of the vaginal vault following hysterectomy, seven of whom have been followed up for six months to 12 years, normal vaginal calibre and depth were achieved, and no recurrence has occurred.

In the current study, postoperative complications analysis showed 12% (6) cases of wound infection which responded to frequent dressing and systemic antibiotics and 10% (5) cases of wound dehiscence

We found a statistically significant decrease in cystoectocele number from pre and a postoperative and a slight increase from 1st to 3rd months

A retrospective evaluation of a modified rectus sheath fascial sling used to treat vaginal vault prolapse following hysterectomy was conducted. Ten women who had had hysterectomy were enrolled in the study at District General Hospital in South Wales.

All of the women were healed of vaginal vault prolapse symptoms. There were no difficulties throughout the procedure. There have been no new urinary symptoms. One lady developed an enterocele, which was treated with the implantation of a proline mesh into her abdomen ⁽¹⁴⁾.

At Worthing General Hospital, a second retrospective case series was carried out to evaluate the clinical results of abdominal vault suspension (AVS) using rectus sheath strips to treat vaginal vault prolapse. 34 people had their vaginal vault suspended through this

procedure. Every 3-6 months and every 90 months, patients were followed up on through questionnaire. The process was not very tough at any point. In contrast, 6% of patients experienced new issues. Ninety-four percent of patients reported subjective improvement of their prolapsed symptoms. In either the long-term or postoperative periods, there were no reports of gastrointestinal problems ⁽¹⁵⁾.

Anterior abdominal wall colpopexy using autogenous rectus fascia strips was used to treat 27 cases of post-hysterectomy vault prolapse (24 after vaginal and 3 after complete abdominal hysterectomy). Result Except for mild symptoms including vomiting, fever, and urine retention in 3.7 percent of patients (n=1), there were no severe problems. Furthermore, no recurrences have been seen throughout the investigation ⁽¹⁶⁾.

In another study **Mahendru** ⁽¹¹⁾ there have been 51 examples of post-hysterectomy vault prolapse: Anterior abdominal wall colpopexy with autogenous rectus fascia strips were used to treat 45 women after vaginal hysterectomy and 6 women after complete abdominal hysterectomy. On follow-up, there were no serious problems or recurrences.

CONCLUSION

Using autogenous rectus fascia strips for suspension of vaginal vault in total abdominal hysterectomy is effective method for prophylaxis against vault prolapse after total abdominal hysterectomy and decrease number of postoperative cystoectocele in patients with preoperative mild cystoectocele, it also devoid of any serious complications such as described with other techniques.

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