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## A comparative study of post-surgical outcome between abdominal sacrocolpopexy and abdominal high uterosacral suspension for vault prolapse

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### Abstract

**Background:** Pelvic organ prolapse has become an important health and social issue. With increasing life expectancy in women risk of post hysterectomy vault prolapse. Various operative procedures have been suggested for vault prolapse. This study aims to compare the surgical outcome of the abdominal High Uterosacral ligament suspension and the abdominal Sacrocolpopexy.

**Materials and Methods:** This is a retrospective study. A total of 50 patients with history of reconstructive surgery for stage 3 vault prolapse 6months back were included in the study. These patients were divided into 2 groups. Group I included patients who had undergone abdominal sacrocolpopexy for vault prolapse. Group II included patients who had high uterosacral suspension for vault prolapsed. Each patient was thoroughly examined and meticulous history was taken and recorded. The anterior posterior and central compartment defect were analysed using Pelvic Organ Prolapse Quantification (POP-Q) and Total Vaginal Length was measured. Patients's subjective assessment of quality of life post surgery was assessed using (i) pelvic floor distress inventory (PFDI-20) &(ii) pelvic floor impact Questionnaire.(PFIQ-7) [9].

**Results:** Out of 50 patients group I(sacrocolpopexy group) included 28 patients. Group II (high uterosacral suspension group) had 22 patients. Sacrocolpopexy proved to be better to high uterosacral suspension in the posterior compartment defect, the postoperative mean for Bp was (-2.49±1.89 versus -2.04±1.28, P=0.008). The high uterosacral suspension was superior to sacrocolpopexy in the anterior compartment. Aa(-2.38±1.1Vs--2.78±0.42, P<0.04). Both surgeries were equally effective in treating central compartment defects. Total vaginal length was more in sacrocolpopexy gp. (6.43±0.72 versus 4.89±0.69, P=0.04)

**Conclusion:** Sacrocolpopexy is more beneficial for posterior compartment defects in pelvic organ prolapse. Uterosacral suspension is beneficial for treatment of anterior compartment defects and urinary symptoms. Both surgeries are equally effective in central compartment defect treatment.

**Keywords:** Prolapse, sacrocolpopexy, uterosacral suspension, mesh repair, POP-Q

### 1. Introduction

Pelvic organ prolapse has become an important health and social issue.It occurs due to the disintegration of the endopelvic connective tissue due to a number of causes including high parity with multiple vaginal births, post-menopausal status, poor nutritional status and chronic medical conditions e.g. diabetes and connective tissue disorders [1,2].

With increasing life expectancy in women risk of post hysterectomy vault prolapse has considerably increased. Vault prolapse is a common complication post hysterectomy. International Continence Society has defined vault prolapse as a descent of the vaginal cuff below a point that is 2 cm less than the total vaginal length above the plane of hymen [3]. Other pelvic floor defects like cystocele, rectocele and enterocele are usually associated in 70 percent cases of vault prolapse. Vault prolapse has a deleterious effect on the quality of life of a woman and causes varying degree of symptoms related to urinary ano rectal and coital dysfunction.

The main aim of vaginal reconstructive surgery is return of abnormal pelvic organ relationship to normal state [3]. The choice of surgery for vault prolapse depends on the patients symptoms, her concerns and her limitations related to prolapse. Proper knowledge of the pelvic anatomy and careful assessment of the pelvic defects by the operating surgeon is required to select the appropriate technique of surgery. Various operative procedures have been suggested for vault prolapse [4,5].

Abdominal sacrocolpopexy has been found to be an effective treatment for vault prolapse. It involves the suspension of the vaginal vault to the sacral promontory with a prolene mesh.

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It is effective enough for correction of multiple compartment defects and preventing recurrence.

High uterosacral suspension is another technique used by surgeons for vault prolapse. It involves approximation of uterosacrals and vaginal apex is suspended to the uterosacrals by non absorbable sutures. It does not require mesh however has a little higher chance of uretric injury.

### Material and methods

This study was conducted at the Obstetrics & Gynaecology department of Heritage Institute of Medical Sciences, Varanasi.

This a retrospective observational study. A total of 50 patients with history of reconstructive surgery for stage 3 vault prolapse 6 months back at Heritage Institute of Medical Sciences, Varanasi were included in the study.

These patients were divided into 2 groups. Group I included patients who had undergone abdominal sacrocolpopexy for vault prolapse. Group II included patients who had high uterosacral suspension for vault prolapse.

Patients with history of multiple surgeries for vault prolapse were excluded from the study. Each patient was thoroughly examined and meticulous history was taken and recorded.

The anterior posterior and central compartment defect were analysed using Pelvic Organ Prolapse Quantification (POP-Q) and Total Vaginal Length was measured.

Patients's subjective assessment of quality of life post surgery was assessed using (i) pelvic floor distress inventory (PFDI-20) & (ii) pelvic floor impact Questionnaire. (PFIQ-7) [9].

### Statistical analysis

The data are recorded as a mean  $\pm$  standard deviation. The Mann-Whitney  $-$ Test was used to analyse the post operative results between the two groups. The chi-square test was used for categorical data. The IBM SPSS statistics version was used.

### Results

Out of 50 patients group I (sacrocolpopexy group) included 28 patients. Group II (high uterosacral suspension group) had 22 patients. The POP-Q results post operatively showed that there was a significant difference in mean Aa which was  $-2.38 \pm 1.1$  in patients who had undergone sacrocolpopexy (group I) as compared to  $-2.78 \pm 0.42$  cm in patients who had high uterosacral suspension (group II). There was more improvement in Ba in group I patients in which the mean was  $-2.51 \pm 0.54$  as compared to group 2 in which it was  $-2.34 \pm 1.40$ . Total vaginal length (TVL) was found to be more in patients of group I which was  $6.43 \pm 0.72$  cm as compared to group II which was  $4.89 \pm 0.69$  cm. The point C was improved more in group I which was  $-6.29 \pm 2.80$  as compared to  $-4.72 \pm 2.87$  in group II. Table 1.

The patients' satisfaction assessment regarding the quality of life was assessed using (i) pelvic floor distress inventory (PFDI-20) & (ii) pelvic floor impact Questionnaire. (PFIQ-7). The PFDI-20 score was improved more in group II. The POPDI-6 domain & UDI-6 domain was significantly relieved in patients of group II (high uterosacral suspension) as stated in Table 2. PFIQ-7 was almost similar in both groups. Table 2.

**Table 1:** POP-Q assessed between patients who underwent sacrocolpopexy & high uterosacral suspension

POP-Q	Sacrocolpopexy (N=28)	High Uterosacral Suspension (N=22)	P value between two groups <sup>a</sup>
Aa	$-2.38 \pm 1.1$	$-2.78 \pm 0.42$	0.04
Ba	$-2.51 \pm 0.54$	$-2.34 \pm 1.40$	0.1
Ap	$-2.56 \pm 1.01$	$-2.56 \pm 0.7$	0.01
Bp	$-2.49 \pm 1.89$	$-2.04 \pm 1.28$	0.008
C	$-6.29 \pm 2.80$	$-4.72 \pm 2.87$	0.01
TVL	$6.43 \pm 0.72$	$4.89 \pm 0.69$	0.04

a-Mann Whitney-U test

**Table 2:** Quality of life assessed with pfdi-20, popdi-6, udi-6, cradi-8 & pfiq-7 scores between patients who underwent abdominal sacrocolpopexy and high uterosacral suspension.

	Abdominal Sacrocolpopexy (Group I(N=28))	High Uterosacral Suspension Group II(N=22)	P Between Two Gps <sup>a</sup>
PFDI -20	$46.34 \pm 35.45$	$24.03 \pm 19.60$	0.01
POPDI-6	$14.22 \pm 13.67$	$6.45 \pm 8.97$	0.03
UDI-6	$17.23 \pm 15.56$	$7.67 \pm 11.01$	0.02
CRADI-8	$7.67 \pm 6.76$	$5.69 \pm 8.86$	0.4
PFIQ-7	$15.78 \pm 29.67$	$16.76 \pm 26.89$	0.3

a-Mann Whitney test

### Discussion

In our study post surgery prolapse assessment in patients treated for vault prolapse as assessed by POP-Q measurement revealed that there was more improvement in central compartment defect in patients who underwent sacrocolpopexy. The total vaginal length was more in patients of sacrocolpopexy. There was better correction of posterior compartment defect in patients of sacrocolpopexy. The anterior compartment defect was improved more in patients who underwent high uterosacral suspension in our study. These findings are similar to the study conducted by Rondini *et al.* who found in their study that sacrocolpopexy was better for correction of posterior defects [6, 7].

One small prospective RCT compared abdominal sacrocolpopexy (n=54) versus high uterosacral ligament suspension (n=56) in women with point C greater than 1cm

beyond introitus. A success of 100 percent versus 82.5 percent was reported in abdominal sacrocolpopexy and high uterosacral suspension respectively [8].

In our study the patient satisfaction related to urinary and bowel complaints post surgery as assessed by PFDI-20 Score was more in patients who underwent high uterosacral suspension patients. A study conducted by Bakisololo *et al.* in 2018 showed that there was no improvement of colorectal-anal symptoms in both surgeries [9]. Similarly study of Silva *et al.* revealed that there was no benefit in bowel symptoms post vaginal uterosacral suspension [10].

In our study it was seen that both sacrocolpopexy and high uterosacral suspension were good enough for central compartment defect as no recurrence was noticed. However sacrocolpopexy involves use of a prolene mesh. Thus there is a

risk of mesh related complications like mesh erosion etc [7]. Longer operative time is required for sacrocolpopexy and may be associated with troublesome bleeding from sacral venous plexus. High uterosacral suspension on the other hand is associated with complication like uretric injury [7].

### Conclusion

Both sacrocolpopexy and high uterosacral suspension are safe procedures especially for central compartment defect<sup>11</sup>.proper selection of patients of patients should be done in patients with additional anterior and posterior compartment defects. Patient satisfaction for urinary symptoms is more in high uterosacral suspension. sacrocolpopexy needs more operative time and skill.

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