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Original Research Article

Analysis of outcome of vaginal hysterectomy and pelvic floor repair by POPQ system

Komal Devnikar*[1], Tushar Palve[1], Soheil Shaikh[2], Priya Bulchandani[1], Sejal Kulkarni[1] Rajashree Thatikonda[1]

[1]Department of Obstetrics and Gynaecology, Grant Government College and Sir JJ Group of Hospitals, Mumbai, Maharashtra, India
[2]Department of Surgery, Grant Government College and Sir JJ Group of Hospitals, Mumbai, Maharashtra, India

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***Correspondence:**
Dr. Komal Devnikar,
E-mail: komaldevnikar33@gmail.com

ABSTRACT

Background: To assess the relief of symptoms and efficacy of vaginal hysterectomy and pelvic floor repair surgeries in patients with pelvic organ prolapse.
Methods: A total of 55 women participated in the study. Vaginal hysterectomy with or without anterior and posterior colporrhaphy and fothergills surgery were done in all cases. Patients were followed postoperatively about symptom relief and the anatomical correction was analyzed at 6 months using Pelvic Organ Prolapse-Quantification (POP-Q) System.
Results: The highest incidence of POP was between 41 to 50 years of age and in multiparous women with parity 2 and more than 4. 36.36% had stage III prolapse when measured using the POPQ classification. Something coming out per vaginum was the commonest complaint seen in 100% of the patients. The improvement of all symptoms was significant (p value <0.05).
Conclusions: There is significant anatomical restoration and symptom relief after surgery by POPQ.

Keywords: Pelvic organ prolapse quantification, Pelvic organ prolapse, Full term normal delivery, Lower segment cesarean section.

INTRODUCTION

Pelvic organ prolapse (POP) is defined as the descent of pelvic organs that results in the protrusion of the vagina, uterus, or both out of the vaginal introitus.[1] The prevalence of POP is 3% to 41% in previous studies because the definition of POP varies from study to study.[2-7] Pelvic organ support deteriorates with age, and hence, a majority of women over 50 years of age experience POP. The common symptoms of this condition include urinary symptoms, chronic pelvic pain, and defecatory symptoms most common being something coming out per vaginum.

Patients with symptomatic POP who show no improvement with non-surgical treatment such as keigel's exercise, or conservative management are candidates for surgical treatment. The route of surgery (abdominal or vaginal approach) depends on patient factors (age, grade of prolapse, complaints, site of prolapse, comorbidities) and the surgeon's preference.[8] Previous studies show that the vaginal approach has a shorter operation time (OT) and shorter hospital stay, early recovery, and a lower complication rate than the abdominal approach.[9-11]

Management decisions depend on the degree of prolapse and symptoms caused by it. Therefore, appropriate staging or grading of the prolapse is mandatory to make decisions regarding management

There are various surgeries done by vaginal approach, including reconstructive procedures, obliterative procedures, and procedures that preserve the uterus with a synthetic mesh.[12] Till date, hysterectomy is the recommended procedure for the treatment of POP.

The complications of hysterectomy include bladder injury, bowel injury, ureteric injury, wound infection, and postoperative hemorrhage. Hysterectomy may at times be associated with mortality. Complications of vaginal hysterectomy include urinary stress incontinence, urinary tract infection, bacterial vaginosis, pain, fatigue, urethritis and constipation, intraabdominal bleeding, bleeding from suture site, vaginal vault abscess, urinary retention, paralytic ileus, vault sepsis, thrombosis, pyrexia of undetermined cause, and intraoperative hemorrhage-necessitating blood transfusion. Despite these complications, vaginal hysterectomy is the safest procedure with minimal morbidity.[13-16]

The contraindications to vaginal hysterectomy include carcinoma of the uterus, nulliparity, narrow vagina, narrow pubic arch, and immobile uterus. In such disease conditions, abdominal hysterectomy may be the preferred choice. The experience of the surgeon and uterine size can also influence the route of hysterectomy.

METHODS

A prospective observational study was done. Patients with uterovaginal prolapse admitted in the Department of Obstetrics and Gynaecology, Cama and Albless Hospital, Mumbai to undergo vaginal hysterectomy with pelvic floor repair were enrolled for this study from June 2021 to May 2022. Sim's speculum and a graduated scale were used as a tool for measurement of the extent of prolapse. The total number of patients who consented to the study and were included in the study was 55. The data for these patients were collected and analyzed after implementing the informed consent process.

Inclusion criteria

All women above 21 years of age who have completed the family with a complaint of something (vaginal bulge) coming out per vaginum associated with urinary symptoms

Exclusion criteria

Pregnant women and women at risk of or suspicious of malignancy.

These patients were followed up for six months and improvement in symptoms and anatomical restoration was measured with help of the POPQ system.

Data collected was subjected to statistical analysis using software SPSS version 26.

RESULTS

The mean age of patients in this study was >50 or <20 years. The most common age group of patients who had pelvic organ prolapse is between 41-50 years (40%, n=22) (Table 1).

Table 1: The incidence of pelvic organ prolapse in different age groups.

Age (in years)	Number of patients (%)
<30	1 (1.8)
31-40	12 (21.81)
41-50	22 (40)
51-60	12 (21.81)
61-70	7 (12.70)
>70	1 (1.8)

Multiparous patients with 2 normal vaginal deliveries were seen to be having the highest incidence of prolapse (38.18%, n=21), followed by para 4 and more (36.36%, n=20).

Table 2: Parity distribution of patients with pelvic organ prolapse.

Parity	Number of patients (%)
Para 1	6 (10.9)
Para 2	21 (38.18)
Para 3	8 (14.54)
Para 4 and more	20 (36.36)

Women who delivered vaginally had a higher incidence of prolapse (94.54%, n=52) as compared to women who underwent LSCS (5.45%, n=3) with a significant p value <0.0001.

Table 3: Mode of delivery of patients with pelvic organ prolapse.

Mode of delivery	Number of patients (%)
FTND	52 (94.54)
LSCS	3 (5.45)

As shown in Table 4, stage III pelvic organ prolapse was the most common stage in the study population, with 20 patients having stage III prolapse (36.36%). This was followed by 17 patients having stage II prolapse (30.90%). 7 patients (12.72%) had procidentia and 5 patients (9.09%) had stage I prolapse.

All 55 out of 55 patients presented with complaints of something coming out per vaginum (100%, n=55). Urinary complaints like increased frequency of micturition, burning micturition, and urinary hesitancy were the second most common complaint seen in 18 patients (32.72%). Pelvic pain was also commonly seen in 14 patients (25.45%). Difficulty in coitus, difficulty in defecation, and difficulty in walking were seen in 3 (5.45%), 4 (7.27%), and 4 (7.27%) patients respectively as seen in Table 5.

Table 4: Classification according to the grade of prolapse before surgery.

Degree of prolapse	Number of patients (%)
First degree	5 (9.09)
Second degree	17 (30.90)
Third degree	20 (36.36)
Procidentia	7 (12.72)
Cervical elongation	6 (10.9)

Table 5: Presenting complaints of the study population at follow-up 6 months post-surgery.

Complaints	Number of patients (%)
Pelvic pain	14 (25.45)
Something coming out per vaginum	55 (100)
Difficulty in defaecation	4 (7.27)
Urinary complaints	18 (32.72)
Difficulty in coitus	3 (5.45)
Difficulty in walking	4 (7.27)
Something coming out per vaginum with AUB	5 (9.09)

Vaginal hysterectomy with anterior and posterior colporrhaphy was the most commonly performed surgery in 21 patients (38.18%). Vaginal hysterectomy was the second most commonly performed surgery in 15 patients (27.27%). Other pelvic floor repair surgeries performed were Fothergill's surgery, vaginal hysterectomy with anterior colporrhaphy only, and vaginal hysterectomy with posterior colporrhaphy only in n=11, n=8, n=2 (20%, 14.54%, 3.63%) respectively as evident from Table 6.

Table 6: Type of surgery done in the study population.

Type of surgery	Number of patients (%)
Vaginal Hysterectomy	15 (27.27)
Vaginal Hysterectomy with anterior colporrhaphy	8 (14.54)
Vaginal Hysterectomy with posterior colporrhaphy	2 (3.63)
Vaginal Hysterectomy with anterior and posterior colporrhaphy	21 (38.18)
Fothergill surgery	11 (20)

As evident from Table 7 vaginal discharge and urinary complaints were seen in 2 patients each (3.63%) respectively. Among urinary complaints, dysuria was the most common symptom. Vaginal discharge was seen in 2 patients (3.63%) and both of them were diabetic. Other are complications like hemorrhage (1.8%, n=1), vault prolapse (1.8%, n=1) and vesicovaginal fistula (n=o).

Table 7: Postoperative complications seen in the study population.

Complications	Number of patients (%)
Hemorrhage	1
Vault prolapse	1
Vault sepsis	1
Vesico-vaginal fistula	-
Vaginal discharge	2
Urinary complaints	2

Table 8: Anatomical restoration post-operatively as measured using the POP-Q classification.

Anatomic restoration	Pre-operative mean	Range	Post-operative mean	Range	P value
Mean length of point Ba	+1.6	-3 to +3	-3.27	+3 to -4	<0.05
Mean length of point Bp	+4.46	-3 to +7	-3.15	+4 to -4	<0.05
Mean length of point C	-4.45	-8 to +7	+6.45	-4 to -8	<0.05

DISCUSSION

The worldwide prevalence of uterovaginal prolapse is between 2% and 20%.[17] The incidence of pelvic organ prolapse has increased due to the increased life expectancy of the geriatric population.

Vaginal delivery and increased parity are proved as a significant risk factor for pelvic organ prolapse. In a study by Janani et al, the highest incidence of prolapse amongst the study participants was seen in multiparae with four or more vaginal deliveries at 89%. But, in our study where 94.54% (n=52) of patients were multiparous women with two or more vaginal deliveries.[18] In a study by Dhama et al, only 6 out of 100 patients had just 1 vaginal delivery whereas the remaining 49 of them were para 2 or above. Vaginal delivery disturbs, stretches, and sometimes tears the supports of the pelvic viscera. Although the exact mechanism is poorly understood, it could be due to premature bearing down before full dilatation of the cervix. Denervation changes have been documented in the pelvic floor and sphincter following vaginal delivery.

All among 55 (100%) patients underwent vaginal hysterectomy and anterior colporrhaphy whereas 38.18% (n=21) underwent posterior colpoperineorrhaphy as well. In our study, 36.36% (n=20) patients had stage III prolapse according to POP-Q classification whereas 30.90% (n=17) had stage II prolapse, 12.72% (n=7) had procidentia and only 9.09% (n=5) had stage I prolapse. These findings are similar to a prospective study done by Janani GD et al where 70.9% (n=61) patients had stage III prolapse, 17.4% (n=8) had stage II prolapse, 9.3% (n=8) had stage IV prolapse and 2.4% (n=2) had stage I prolapse (13). The findings are different from those of Pradhan et al where the majority (58.8%) of the patients had procidentia followed by 26.3% having stage III prolapse and 15% having stage II prolapse.[19]

The anatomical restoration was evaluated in our study by POPQ. The mean length of point Ba is +1.6 (range: -3 to +3) preoperatively which improved to -3.27 (range: +3 to -4) postoperatively.

The mean length of point Bp is +4.46 (range: -3 to +7) preoperatively which improved to -3.15 postoperatively. The mean length of point C is -4.45 (range: -8 to +7) preoperatively and +6.45 postoperatively. There was the significant anatomical restoration of all POP-Q parameters postoperatively (p value<0.05). In a study done by Kavya Sudha G, the mean length of point Ba preoperatively was +0.67 (Range: -3 to +6, SD: 2.46) and postoperatively was -2.79 (Range: +2 to +3, SD: 0.78). The mean length of point Bp preoperatively was +1.11 (Range: -3 to +5, SD: 2.38), and postoperatively was -2.76 (Range: +4 to -3, SD: 0.96). The mean length of point C preoperatively was -2.43 (Range: -8.5 to +10, SD: 5.17), and postoperatively was -7.93 (Range: -4 to -10, SD: 2.54).

Limitations of this study are shorter duration of follow up, one year follow up would give better results and small sample size.

CONCLUSION

In our study, it is concluded that multiparous women with 2 or more vaginal delivery have a maximum risk of UV prolapse. Vaginal delivery is a significant risk factor in the development of prolapse, due to the weakening of uterovaginal support due to bearing down. Most common complaints are something coming out of the vagina followed by urinary symptoms and pain in the abdomen. At 6 months follow-up, all the symptoms were significantly relieved after vaginal hysterectomy and pelvic floor repair surgery. Anatomical restoration as measured by POP-Q classification was also significant postsurgery.

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