

## Original Article

## Outcome of Colpocleisis in Advanced Pelvic Organ Prolapse in Elderly Women

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## Abstract

To find out the safety, effectiveness and outcome of colpocleisis in advanced pelvic organ prolapse in elderly women. A prospective study was conducted in Sheikh Hasina Medical College, Tangail (250 bedded general hospital, tangail) among 75 female patients aged 60 years and above with diagnosed cases of Pelvic Organ Prolapse (POP) during the period from February 2014 to February 2018 who had no desire in coital function. Patient information were recorded pre-operative, per-operative and post-operative period. Urodynamic investigation (uroflometry and post void residual urine) were done during pre-operative and early postoperative period. Follow up was done at 6 week, 3 month and then annually. Main outcome measures were relieving symptoms, recurrence of prolapse and development of urinary incontinence. Patient satisfaction (Subjective outcome) measured by interview during follow up. Colpocleisis was performed in 75 patients.

Mean (age of the patients was 66.69 SD  $\pm$ 5.9 years, mean BMI 18.12 SD  $\pm$ 1.69 kg/m<sup>2</sup> and mean parity 5.56 SD  $\pm$ 1.9. Majority of operation done under saddle block, only 21.31% was done under local anaesthesia. Mean operation time was 36.16 SD  $\pm$ 6.23 minutes, mean blood loss was 41.61 SD  $\pm$ 8.34 ml and mean hospital stay was 2.24 SD  $\pm$ 0.49 days. Objective and subjective outcome were same 98.7% only 1.3% patient developed recurrent prolapse (Failed operation) and 1.3% patient developed urinary urge incontinence. The mean differences were significant for the pre and postoperative maximum urinary flow rate, voided volume, post void residual urine (P value is 0.001). Colpocleisis is safe, effective with high success rate in the management of advance pelvic organ prolapse, who do not wish to preserve coital function. So it can be considered as one of surgical option for treating advance pelvic organ prolapse.

**Keywords:** Colpocleisis, advanced pelvic organ prolapse.

## INTRODUCTION

Pelvic organ prolapse (POP) is a condition that affects millions of women with a prevalence estimated in a clinical population to be 40% of parous woman.<sup>1</sup> Age and parity are well known risk factors for the development of POP.<sup>3</sup> Parity being the strongest risk factor with an adjusted risk ratio of 10.85.<sup>3</sup> Neurologic injury to the pelvic floor and underlying connective tissue disorders have also been implicated.<sup>4-6</sup> Other predisposing factors include chronic conditions that increase abdominal pressure such as heavy lifting, chronic cough, bowel dysfunction, previous hysterectomy, oestrogen deficiency.<sup>7-9</sup>

Pelvic organ prolapse (POP) is a disorder that decrease quality of life due to associate symptoms, recurrent urinary tract infection, and frequent surgical interventional in women.<sup>10</sup> In most countries, POP usually occurs in middle, elderly or advanced age ( $\geq$  80 years) female patients.<sup>11</sup>

The condition of women with uterovaginal prolapse is managed expectantly, surgically or with pessaries. Expectant management is appropriate in the presence of small and asymptomatic prolapse, whereas pessaries are useful in women with concurrent disease that may

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preclude surgery. Large and symptomatic pelvic prolapse may be managed with pessaries and surgically. The choice is dependant on the type and degree of prolapse, the women's general health, need for coital or reproductive function and the presence or absence of urinary symptoms. In general, women who are elderly have no desire for sexual intercourse or who are medically unfit, have their prolapse symptoms controlled with a pessary. Using pessary is not universally successful and may not be acceptable by some women.<sup>12</sup>

There choice for surgical management of procidentia are colpocleisis, sacrospinous fixation and sacrocolpopexy abdominally, either open or laparoscopically.<sup>12</sup> In contrast to the pelvic reconstructive surgeries colpocleisis is an obliterative procedure for women with uterovaginal prolapse, who do not wish to preserve vaginal function for sexual intercourse.<sup>12</sup> The procedure was first described by Leon LeFort 1877 and the modified operation is still being performed today. The advantage of this technique over sacrospinous fixation and sacrocolpopexy lies in the fact that damage to adjacent organs, major vessels or nerves is unlikely, as the planes of dissection are superficial. The procedure is also quick to perform, with a short recovery time and can be carried out under local anaesthesia if necessary.<sup>13</sup> The aim of this study was to see the outcome of colpocleisis.

## MATERIALS AND METHODS

This prospective study was conducted in Sheikh Hasina Medical College, Tangail (250 bedded general hospital, Tangail) during the period from February 2014 to February 2018. We select 75 patients who had high stage uterine prolapse with advanced anterior and posterior compartment prolapse (procidentia) who had no desire to coital function. Age group of study population was 60 years or more. Patient with POP who had received any surgical treatment related to prolapse, who had desire to preserve coital function, who had cervical and urinary pathology and who had urinary stress incontinence needs additional surgical intervention, were excluded from this study population.

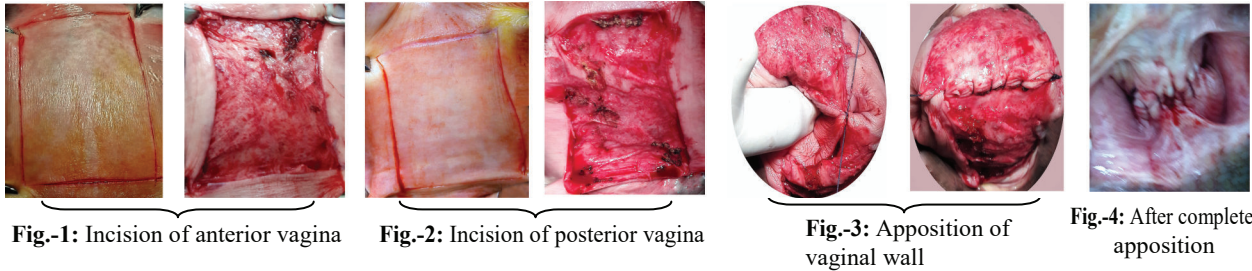
The diagnosis was made based on history and clinical examination. The preoperative stage of genital prolapse was classified by the POP-Q staging system. For pre anesthetic checkup all routine investigations were done in all patients and Echocardiography was done some patients. In addition in all patient paps smear and transvaginal sonography (TVS) were performed before surgery to exclude cervical and uterine pathology. Before the operation, all the patients were counseled about the desire for future vaginal intercourse with informed consent from patient and her

husband. History, physical examination and personal information were recorded preoperatively using questionnaire. This included presenting symptoms associated problem and urinary symptoms.

Colpocleisis operation were carried out under regional anaesthesia (saddle block) and those patient who were highly morbid and unfit for regional and general anaesthesia, they were selected for local anaesthesia. While using local anaesthesia we used lidocaine (2%) 2-3 mg/kg body weight was used or with adrenalin (3-5 mg/kg body weight mixed with normal saline) operation began with the marking of two rectangles in both the anterior and posterior vaginal mucosa and then removed after dissection. The muscularis layers of the anterior and posterior vagina were brought together with a serial row of imbricating sutures with delayed absorbable sutures (1.0 vicryl). The vaginal mucosa without dissection was sutured into a tunnel for drainage purpose. After obliteration of the vagina, perineorrhaphy was performed with plication of the levator ani muscle and perineal body. The intra-operative variable such as operation time, total blood loss, peroperative complication and early postoperative complication were recorded. Blood loss was measured by pre-weighed absorbed fabricated mat. Urodynamic investigation (uroflowmetry and post void residual urine) were done preoperative and early postoperative period, if maximum flow rate < 15 ml/s and post void residual urine  $\geq$  100 ml was defined as voiding dysfunction. To track the experience complication and satisfaction with operation, the patient were instructed to come at follow-up at 6 weeks, 3 month and then yearly, whenever she felt any problem. Most of the patient attended for follow up upto 6 weeks & three month but few patient complete the schedule. Main outcome measures were relieving distressing symptoms recurrence of prolapse, development of urinary incontinence and patient satisfaction with operation.

Regarding the patient's overall impression of the procedure two main aspect was inquired. For overall outcome measure the patients were inquired about their feeling for which they underwent the operation was removed completely or partially and had developed any newer complaints. For satisfaction they were asked whether they were satisfied with the outcome, and if not, when did they dissatisfaction begin and what symptoms bother them.

Data were analyzed using SPSS version 18.0 and presented as mean  $\pm$  standard deviation, median or percentage depending on variables. Student t test and pair t test were use to compare the continuous data before and after the operation. A p value of <0.05 was considered to be a statistically significant difference.



**RESULTS**

Seventy five patients were observed during the study period the mean age of studied patients was 66.69 ±5.9 years ranged from 60 to 90 years with most frequent age group 60 to 65 years. The mean BMI of patients has been recorded 18.12 kg/m<sup>2</sup> with SD±1.6. The maximum number of patients found to be under weight (76%). Among the patients 45.3% of them gave history of delivery five children or less and rest of them had more than five children. According to co-morbidities of patient Diabetes malitus, Bronchial Asthma, CVD, Heart disease, Thyroid disease, Kyphosis, among them 25.33% patient had 1 co-morbidity, 52% patient had 2 or more co-morbidities and 2.67% patient had no co-morbidities. With the protrusion of utero vaginal bulge outside the vagina, among all the patients, 72% of them reported difficulty in micturation, 36% reported difficulty in defecation, 26.7% had constipation and 54.7% had backache. The surgery was carried out under regional anaesthesia (saddle block) (78.7%) and local anaesthesia (21.3%). (Table-I).

**Table-1 : Characteristic of study population (N=75)**

Parameters	Mean	±SD
Age (Yrs)	66.67	±5.9
Body Mass Index	18.2	±1.69
Parity	N	%
≤5	34	45.3
>5	41	54.7
Medical Co-morbidities		
1 Co-morbidity	19	25.33
≥2 Co-morbidity	39	52
Co-morbidity Absent	17	22.67
Patient's symptoms at presentation		
Protrusion of uterovaginal bulge outside the vagina	75	100
Difficulty in micturation	64	72
Difficulty in defecation	27	36
Constipation	20	26.67
Backache	41	54.67

The surgery was carried out under saddle block (regional anaesthesia) (78.7%) and local anaesthesia 21.3% The mean duration of operation was 36.166.23, range (30-60) min. The mean Blood loss was recorded during operation 41.618.34 ml, range (30-80) ml. The mean hospital stay after operation was 2.240.49 days, range (1-3) days. The mean duration of Foley's catheterization was 1.020.16 days, range (1-2) days. None of patient developed voiding difficulty duration post operative period. (Table-II)

**Table-II : Peri-operative and post-operative parameter of study population**

Parameter	Values (mean+SD) (Range)
Anesthesia Saddle Block	59 (78.7%)
Local Anesthesia	16 (21.3%)
Operation time (min)	36.166.23 (30-60)
Blood loss (ml)	41.618.34 (30-80)
Hospital Stay (day)	2.240.49 (1-3)
Duration of Foley's catheter (day)	1.020.16(1-2)
Post operative voiding difficulty	Nil

During the follow up, anatomical success, recurrent prolapse, incontinence and recurrent UTI was reported by 98.7%, 1.3%, 1.3% and 2.7% respectively. Almost in all cases patients were satisfied (90.7%) with the treatment outcome. 8% of them expressed of being very satisfied with the intervention. In one case the patient found to have more expectation about the treatment outcome (Table-III). The mean differences were significant for the pre and postoperative maximum urinary flow rate, voided volume, post void residual urine, where in each of these cases, P value was 0.001. It was not significantly different in terms of the means of voiding time before and after colpocleisis (Table-IV).

**Table-III: Distribution of the patients according to outcome and satisfaction during follow up**

Parameters		Number	Percentage
Anatomical success		74	98.7
Recurrent prolapse		1	1.3
Voiding difficulty	Nil		
Incontinence	Stress	Nil	
	Urge	1	1.3
	Mixed	Nil	
Urinary tract infection		2	2.71
Urinary retention	Nil		
Patients satisfaction	Very satisfied (delighted)	6	8.0
	Satisfied	68	90.7
	Not satisfied	1	1.3

**Table-IV : Distribution of patients according to their Uroflowmetry parameters before and after colpocleisis**

Distribution of patients according to their Uroflowmetry parameters before and after colpocleisis			
Parameters	Preoperative	Postoperative	P Value
Maximum flow rate (ml/s)	15.73 ± 4.33	21.15 ± 3.94	0.001
Voided volume (mL)	162.64 ± 54.18	226.85 ± 48.45	0.001
Voiding time (s)	47.53 ± 35.42	29.15 ± 6.11	0.767
Post void residual urine (mL)	41.56 ± 17.96	10.69 ± 9.58	0.001

## DISCUSSION

Pelvic reconstructive surgery is especially challenging in elderly and advanced age women with high stage POP.<sup>14</sup> Most of these women have comorbidities which increases the incidence of adverse outcomes during and after surgical intervention.<sup>15</sup> Though various modalities of treatment for POP are available but colpocleisis may be an appropriate choice for high stage POP who do not desire vaginal coital function. In present study 75 patient undergone colpocleisis. The mean age of patient was 66.69 range (60-90) with SD±5.9 years, mean BMI were 18.12±1.69 kg/m.<sup>2</sup> Study done by Amenda J.O'leary et al<sup>12</sup> found median age was 79 years (range 59-92) which was nearly similar to present study and study done by Soo chen Ng<sup>16</sup> found BMI 23.86±5.03 which is higher than the present study because most of our patient belonged to poor socio-economic condition. The prevalence of medical co-morbidities is high in older women. Soo chen Ng<sup>16</sup> reported 69.1% of patient had two or more medical co-morbidities. In present study 52% patient had two or more medical co-morbidities. Amenda J.O'leary et al<sup>12</sup>

reported in study of LeFort partial colpocleisis 25 out of 27 women had pre-existing morbidities. In the present study 59% patient operation was done under saddle block (regional anaesthesia) and in 21.3% patient under local anaesthesia who felt mild pain and discomfort per-operatively. None of patient developed per-operative and post-operative complication. None of the patient complained moderate to severe pain during hospital stay and follow up. In our study mean operation time was 36.16 minute with SD±6.23, mean blood loss 41.61±8.34 ml, mean hospital stay was 2.24±0.49 days and duration of Foley's catheter insertion was 1.02±0.16 days. Study done by Soo chen Ng<sup>16</sup> found mean operation time was 78 minutes (30-135 minutes) and mean blood loss was 153.8 ml (30-450 ml) which was little higher than our study, because they reported that they had some patient of fragil pelvic floor and poor coagulation function and bleeding diathesis. Ghezzi at el<sup>14</sup> compared various pelvic reconstructive surgical methods in 138 women age 75 years or older and reported obliterative colpocleisis had a shorter operation time and less estimated blood loss

compared with vaginal hysterectomy. In the present study during follow up we found anatomical success in 98.7% and failed operation (recurrent prolapse) in 1.3% patient. one patient developed urge incontinence and one patient developed recurrent UTI. On self assessment while asking question about level of satisfaction with colpocleisis 98% patient said that they were satisfied, among them 8% patient were delighted (very satisfied) and one patient (1.3%) not satisfied due to failed operation. Our failed case had heart failure, bronchial asthma and obese and was done under local anaesthesia. Study done by Soo chen Ng<sup>16</sup> revealed high success rate after colpocleisis in women age 70 years or over (mean age 81) with advanced pelvic organ prolapse and self assessment showed 87.5% patient successful. A retrospective study by Zebede S, Smith AL et al<sup>15</sup> involving 325 patient who under went LeFort colpocleisis in which 93% of patient reported being cured or greatly improved. Another study by Fitzgerald MP, Richter HE<sup>17</sup> reported high surgical satisfaction after colpocleisis. In present study according to patient symptoms 72% patient had difficulty in micturition. Pre and post-operative uroflometry found that significantly improved maximum flow rate voided volume and post operative residual volume, P value 0.001. A retrospective study by Smith AL, Karp DR<sup>18</sup> involving 210 patient who underwent colpocleisis found 5 patient (12.5%) developed post operative voiding dysfunction and two patient 5% required intermittent self catheterization. Another study by Abbasy S. Lowenstein L<sup>19</sup> reported an improvement urinary symptoms without causing significant urinary retention in 38 patient with concomitant colpocleisis and mid urethral sling operation. The limitation of our study is follow up period is short and there is limited facilities of urodynamic study.

## CONCLUSIONS

Outcome (objective and subjective) of colpocleisis in the treatment of advanced pelvic organ prolapse are high with low level of morbidity and recurrence. Colpocleisis is safe and effective management in selected elderly patient with the advanced pelvic organ prolapse, who no longer desire to maintenance vaginal coital function. This operation can be performed under local anaesthesia. It dose not require deep extensive tissue dissection and avoids an intra-abdominal approach. Colpocleisis can be considered as one of the surgical option for treating pelvic organ prolapse.

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