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Original Research Article

# Effect of traditional versus site specific anterior repair in reduction of urinary symptoms in women with pelvic organ prolapse

**Aditi Sawant[1,*], Anuja Bhalerao[1], Kritika Bhalerao[2]**

[1] *Dept. of Obstetrics and Gynaecology, NKP Salve Institute of Medical Sciences and Research Centre, Nagpur, Maharashtra, India*
[2] *Datta Meghe Institute of Medical Science, Wardha, Maharashtra, India*

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ABSTRACT

The present study was undertaken to evaluate effect of traditional anterior repair versus site specific anterior repair in reduction of urinary symptoms in women with Pelvic organ Prolapse. During the study period of 2 years 140 women belonging to reproductive, peri-menopausal and postmenopausal age groups were included in the study. Employing past literature, the sample size calculated was 140. All women were assessed pre-operatively by the assessment method – Pelvic organ prolapse quantification (POP-Q) system. 70 women belonging to Group A were treated according to vaginal hysterectomy with traditional anterior repair and 70 women belonged to Group B who were treated according to vaginal hysterectomy with site specific anterior repair.Post-operatively, all women were followed up till 7th post-operative day and were assessed for anatomical and functional improvement to determine a better method for repair in reduction of urinary symptoms in women with pelvic organ prolapse.

Our study shows functional and anatomical outcomes of traditional anterior repair and site specific anterior repair. 48 of 70 women (68.2%) who were subjected to traditional anterior repair and 52 of 70 women (73.4%) who were subjected to site specific anterior repair had marked functional improvement after surgery. 58 of 70 women (83.2%) belonging to traditional anterior repair group and 67 of 70women (95.3%) belonging to Site specific anterior repair group had considerable anatomical improvement post-operatively. This impresses the role of site specific anterior repair in women with pelvic organ prolapse for attaining better functional and anatomical outcome.



## 1. Introduction

Pelvic organ prolapse can be defined as a downward descent of female pelvic organs, including the bladder, uterus, post hysterectomy vaginal cuff and the small or large bowel resulting in protrusion of vaginal walls, uterus or both.[1]

Pelvic organ prolapse is a poorly understood condition that affects millions of women worldwide.[2] It is a disease with low morbidity and it affects primarily quality of life.[1]

Poor understanding of symptoms related to pelvic organ prolapse makes it difficult to counsel patients as to which of the symptoms will improve with treatment.[2]

Women with pelvic organ prolapse may present with a variety of bladder dysfunctions such as increased frequency of micturition, urge incontinence and stress urinary incontinence.[2–6] Most studies evaluating outcomes of pelvic organ prolapse surgery have focused exclusively on anatomical success without considering the most important issue for the patient which is patient relief.[4]

Limited studies have been conducted to understand the frequency of symptoms and exact way to lead to the

* *Corresponding author.*
*E-mail address*: a.sawant1617@gmail.com (A. Sawant).

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outcome, improvement or relief of symptoms following surgery for pelvic organ prolapse is the important goal of International Community. A careful consideration of various factors as risk factors, symptomatology, specific surgical interventions is necessary for clinicians considering appropriate management.

There is paucity of guidelines for selection of surgery for various symptoms for pelvic organ prolapse so such setting in low research setting will be of great value in synthesising evidence regarding management in women of pelvic organ prolapse. There has been a trend towards repair of site specific defects in the anatomy of pelvic floor for management of pelvic organ prolapse. Till date review of literature reveals very few studies comparing the symptomatic outcome in relation to type of surgery as traditional anterior repair of pelvic organ prolapse versus site specific anterior repair of pelvic organ prolapse. This study therefore is being done to determine the veracity of hypothesis – Site specific anterior repair of pelvic organ prolapse is better than Traditional anterior repair of pelvic organ prolapse.

### *1.1. The objectives of the study are as follows*

1. To evaluate effect of traditional pelvic prolapse surgeries on reduction in urinary symptoms.
2. To evaluate effect of site specific anterior repair in reduction of urinary symptoms.
3. To compare traditional versus site specific anterior repair in reduction of urinary symptoms.

## 2. Materials and Methods

This hospital based prospective, comparative, experimental, longitudinal, randomized controlled trial of centre to study the Effect of Traditional Versus Site specific anterior repair in reduction of Urinary symptoms in women with pelvic organ prolapse in 140 reproductive, perimenopausal and postmenopausal women admitted to gynecology-ward of a tertiary care hospital was carried out in the Department of Obstetrics and Gynecology over 2 years after proper and adequate authorization from Institutional Ethics Committee.

Women with pelvic organ prolapse with history of urinary symptoms (frequency/urgency/incomplete bladder emptying/urine leakage with coughing)

### *2.1. Method of measurement*

By Pelvic Organ Prolapse – Quantification (POP-Q) system

Nine specific measurements in centimeters are recorded as indicated.

Type of surgery (vaginal hysterectomy with traditional anterior repair and site specific repair) to be done for women with Pelvic Organ Prolapse was selected by randomisation (Ralloc software). Women with prolapse with urinary symptoms requiring surgery were randomized in 2 groups.

**Table 1:** Data collection tool was a case record form

| Anterior wall | Anterior wall | Cervix |
|---|---|---|
| Aa | Ba | C |
| Genital hiatus | perineal body | total vaginal length |
| gh | pb | tvl |
| Posterior wall | posterior wall | posterior |
| Ap | Bp | fornix D |

Aa- 3 cm proximal or apical to external urethral meatus on anterior vaginal wall
Ap-3 cm proximal to the hymen on posterior vaginal wall
Ba- most distal portion of the remaining anterior vaginal wall
Bp-most distal portion of the remaining posterior vaginal wall
C-most distal edge of cervix or vaginal cuff
D-posterior fornix
gh-measured from middle of external urethral meatus to posterior midline hymen
Pb-measured from posterior margin of gh to middle of anal opening
Tvl –depth of vagina when point D or C is reduced to normal position

Group A women were subjected to – traditional anterior repair

Group B women were subjected to Site specific anterior repair along with vaginal hysterectomy and posterior repair.

The surgery was done by two surgeons of the same experience and skill. Women were assessed post-operatively on day 7 for functional outcome of surgery depending upon the individual history (pre-operative and post-operative) in the form of complete/incomplete/no relief of symptoms and for anatomical outcome depending upon the pre-operative and post-operative POP-Q assessment.

## 3. Results

The present study was undertaken to study the Effect of Traditional anterior repair Versus Site specific anterior repair in reduction of Urinary symptoms in women with pelvic organ prolapse. The anatomical and functional improvement with traditional anterior repair and site specific anterior repair was assessed.

### *3.1. Age distribution*

Table 3 showing distribution of women according to age in traditional anterior repair and site specific anterior repair group

Table 8 depicts 60 women (42.85%) with complete anatomical improvement post-operatively; of which 12 women (17.1%) were assessed and evaluated according to POP-Q and subjected to traditional anterior repair and remaining 48 women (68.6%) were evaluated by POP –Q and subjected to site specific anterior repair. 66 women (48.9%) showed incomplete improvement and remaining 14 women (4.62%) showed no improvement. All 14 women of no improvement belonged to traditional anterior repair group A. None were without improvement in site specific repair group B.

**Table 2:** Showing distribution of women according to age in traditional anterior repair and site specific anterior repair group

| Age in years | Traditional anterior repair | | Site specific anterior repair | | P-Value |
|---|---|---|---|---|---|
| | Number of women | Percentage | Number of women | Percentage | |
| 40-45 | 2 | 2.9% | 3 | 4.3% | 0.0 |
| 46-50 | 22 | 31.4% | 19 | 27.1% | |
| 51-55 | 2 | 2.9% | 2 | 2.9% | |
| 56-60 | 13 | 18.6% | 21 | 30.0% | |
| 61-65 | 23 | 32.9% | 22 | 31.4% | |
| 66-70 | 8 | 11.4% | 3 | 4.3% | |

**Table 3:** Showing distribution of women according to urinary symptoms done in traditional anterior repair & site specific anterior repair group

| | | Traditional anterior repair | | Site specific anterior repair | | P Value |
|---|---|---|---|---|---|---|
| | | Number of women | Percentage | Number of women | Percentage | |
| Urinary Complaints | Bulge in vagina | 31 | 44.3% | 17 | 24.3% | 0.02 |
| | Sense of urgency/ frequency of urination | 61 | 87.1% | 67 | 95.7% | |
| | Incomplete bladder evacuation | 60 | 85.7% | 65 | 92.9% | |
| | Has to push bulge inside for complete urination | 15 | 21.4% | 27 | 38.6% | |
| | Urine leakage with coughing | 14 | 20.0% | 14 | 20.0% | |

*multiple responses allowed

**Table 4:** Showing distribution of women according to level of prolapse in traditional anterior repair & site specific anterior repair group

| | | Traditional method | | Site specific method | | P Value |
|---|---|---|---|---|---|---|
| | | Number of women | Percentage | Number of women | Percentage | |
| Level of prolapse | Level 1 | 21 | 30% | 15 | 21.42% | 0.0 |
| | Level 1,2 | 34 | 48.57% | 23 | 32.85% | |
| | Level 1,2,3 | 28 | 40% | 32 | 45.71% | |

*multiple reponses allowed

**Table 5:** Showing distribution of women according to surgery done

| Surgery | Frequency | Percentage |
|---|---|---|
| Vaginal hysterectomy with traditional anterior repair | 70 | 50% |
| Vaginal hysterectomy with site specific anterior repair | 70 | 50% |
| Total | 140 | 100% |

Table 9 shows functional and anatomical outcomes of traditional anterior repair and site specific anterior repair. 48 of 70 women (68.2%) who were subjected to traditional anterior repair and 52 of 70 women (73.4%) who were subjected to site specific anterior repair had marked functional improvement after surgery. 58 of 70 women (83.2%) belonging to traditional anterior repair group and 67 of 70women (95.3%) belonging to Site specific anterior repair group had considerable anatomical improvement post-operatively. This impresses the role of site specific anterior repair in women with pelvic organ prolapse for attaining better functional and anatomical outcome.

## 4. Discussion

Meta-analytical research today shows POP-Q is being used by only 3% investigators. There is paucity of guidelines and studies for use of a particular classification in deciding the

**Table 6:** Showing comparison of means of preoperative and postoperative pop-q in traditional anterior repair and site specific anterior repair group

| POPQ classification | Type of repair | Pre-operative | Post-operative | Standard deviation | P values |
|---|---|---|---|---|---|
| Aa | T | 0.40 | -2.49 | 16.0 | 0.02 |
| | S | 0.52 | -2.47 | 20.1 | |
| Ba | T | 0.76 | -1.55 | 13.6 | 0.05 |
| | S | 1.51 | -1.58 | 19.6 | |
| Ap | T | 1.46 | -1.62 | 2.0 | 0.04 |
| | S | 1.4 | -1.7 | 9.8 | |
| Bp | T | 0.97 | -1.43 | 13.0 | 0.06 |
| | S | 0.01 | -1.54 | 18.2 | |
| C | T | 3.18 | -2.85 | 8.3 | 0.05 |
| | S | 2.65 | -2.94 | 16.3 | |
| D | T | 3.48 | -7.68 | 20.0 | 0.03 |
| | S | 4.24 | -7.71 | 23.5 | |
| Total vaginal length | T | 7.71 | 8.39 | 25.1 | 0.05 |
| | S | 7.87 | 8.41 | 11.0 | |
| Genital hiatus | T | 4.42 | 4.54 | 10.2 | 0.007 |
| | S | 4.51 | 4.84 | 13.6 | |
| Perineal body | T | 3.40 | 3.42 | 23.1 | 0.0009 |
| | S | 3.52 | 3.81 | 23.4 | |

**Table 7:** Showing post operative anatomical improvement of anterior vaginal wall prolapse

| | Traditional Anterior Repair | | Site Specific Anterior Repair | | |
|---|---|---|---|---|---|
| Anatomical improvement of anterior vaginal wall prolapse | Number of women | Percentage | Number of women | Percentage | P value |
| Complete improvement | 12 | 17.1 | 48 | 68.6 | |
| Partial improvement | 44 | 62.9 | 22 | 31.4 | 0.0 |
| No improvement | 14 | 20.0 | 0 | 0.0 | |

**Table 8:** Showing functional and anatomical outcome after traditional anterior and site specific anterior repair in women with pelvic organ prolapse

| Outcome measure | Traditional anterior repair | Site specific anterior repair |
|---|---|---|
| Functional outcome | 48(68.2%) | 52(73.4%) |
| Anatomical outcome | 58(83.2%) | 67(95.3%) |

type of surgery for pelvic organ prolapse.

Our study was undertaken to find a better surgery for relief of symptoms postoperatively.

The above study concludes that site specific repair for anterior vaginal wall prolapse with urinary symptoms was more effective than traditional anterior colporraphy.

There was significant improvement anatomically and functionally in women with pelvic organ prolapse with urinary symptoms who where treated with site specific repair compared to traditional repair.

**Table 9:** Comparison with other studies

| Studies | Weber et al (2001) | Rodriguez et al (2005) | Maher et al (2008) | Raizada Nivedita et al (2010) | Thakare Yuvraj et al (2014) | Vandana Dhama et al (2015) | Bhalerao et al (2015) | Our study |
|---|---|---|---|---|---|---|---|---|
| Sample Size | 114 | 98 | 30 | 100 | 50 | 100 | 95 | 140 |
| Mean Age (Years) | 64.7 +/-11.1 Years | 65+/- 15 years | - | 60+/-10years | 51-70 years | 48+/- 12 years | 49+/- 12 years | 56.76+/- 7.28years |
| Presenting Symptoms | Mass coming out per vaginum-100% | Mass coming out per vaginum-100% Urinary symptoms | Mass coming out per vaginum-100% Urinary symptoms-74% Bowel symptoms-34% | Mass coming out per vaginum-84% | - | - | Mass coming out per vaginum-100% Urinary symptoms | Mass coming out per vaginum-100% Urinary symptoms-100% Bowel symptoms-30% |
| Intervention Used | 30%-standard anterior colporrhaphy 42% standard push mesh 46% ultralateral anterior colporrhaphy | 26%-vaginal hysterectomy 45%-enterocele repair 94%-rectocele repair | | - | Hysterectomy-88% Uterine conservation with repair-12% | Elective vaginal hysterectomy-100% | Vaginal hysterectomy with Traditional repair-47% Vaginal hysterectomy with Site specific repair-53% | Vaginal hysterectomy with Traditional anterior repair-50% Vaginal hysterectomy with Site specific anterior repair-50% |
| POP Q findings | Preoperative score- Aa 6.9 +/- 2.7; postoperative score, Aa 1.1 +/- 0.8) | | | | | | | Pre-operative: Post-operative : Pre-op Aa : 0.52 Post-op Aa : -2.47 Pre-op Ap : 1.4 Post-op Ap : -1.7 Pre-op Ba : 1.51 Post-op Ba : -1.55 Pre-op Bp : -0.1 Post-op Bp : -1.54 Pre-op C : 2.65 Post-op C : -2.94 Pre-op D : -4.24 Post-op D : -7.71 Pre-op gh : 4.51 Post-op gh : 4.84 Pre-op pb : 3.52 Post-op pb : 3.81 Pre-op tvl : 7.87 Post-op tvl : 8.41 |
| Fs success rate | | | | | | | Site specific -86.37 Traditional – 82.28% | Site specific anterior repair-95.3% Traditional anterior repair-83.2% |

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None.

## 6. Conflict of Interest

The authors declare no conflict of interest.

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## Author biography

**Aditi Sawant,** Junior Resident 3

**Anuja Bhalerao,** Associate Professor

**Kritika Bhalerao,** Junior Resident 1

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