

# CLINICAL AND URODYNAMIC STUDIES IN PATIENTS WITH URINARY PROBLEM IN GRADE III AND GRADE IV UTERINE PROLAPSE

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**Abstract:** Back ground. Stage III and IV uterine prolapse are associated with urinary incontinence. Type of urinary continence ,symptoms and relation to urodynamic studies have been variably described. .Methods: Design of the study. It was prospective interventional study .Setting. Study was conducted in tertiary care teaching hospital in south India.Participants:51 patients with grade III and grade IV prolapse. Intervention: Urinary symptoms evaluation and urodynamic study was done before and after pessary . Results:9 patients with clinical incontinence were normal urodynamically. Improvement in incontinence in 30 patients after pessary insertion versus 13 patients without pessary insertion. Improvement was very obvious in stress incontinence group. There was no serious complications observed while using pessary. Conclusion :Clinical symptoms are primary in the diagnosis of urinary incontinence with uterine prolapse ,complemented by urodynamicstudy.Pessary insertion in patients with urinary incontinence, particularly stress incontinence, in those with grade III and IV prolapse decreases the urinary incontinence.

**Keywords:** Mixed incontinence, stress incontinence, urge incontinence

## Introduction

Gynaecologists have pondered for years the paradox that while moderate pelvic floor relaxation is associated with genuine stress urinary incontinence, women with prolapse outside the introitus rarely complain of incontinence. it may not be brought to notice as it does not bother for some while embarrassing or only surgical option belief for others. It makes care giver to ask pertinent questions .Studies have shown that there is little relationship between the volume of urine lost and the distress that it causes a patient. The degree to which women are bothered by leakage is influenced by various factors including cultural values and expectations regarding urinary incontinence<sup>1,2</sup> In observational study involving 202 patients with urinary symptoms, detailed history, pelvic examination and introital sonography were compared with urodynamic study. Most prevalent complaint was mixed urinary incontinence (33.17%), followed by stress incontinence (31.68%) and urge incontinence (13.37%). 66.33% were normal o urodynamic studies. Authors concluded that none of the urodynamic parameters individually or in combination were found to be very useful for establishing a diagnosis.<sup>3</sup> The analysis of retrieved data showed that pessaries constitute important, non surgical , firstline option for urinary incontinence with genitourinary prolapse especially for stress urinary incontinence(SUI) with high patient satisfaction rate and relatively free of major complications if they are fit properly.<sup>4</sup>A 75% of women were satisfied with behavioural therapy, while only 33% were satisfied with a pessary at 3 months, but at 12 months the success rate declined in both groups and the statistically significant difference in outcome between the two groups was no longer present in one randomized control trial <sup>5</sup>

prolapse has been shown to urodynamically increase urethral resistance .there is Also at increased risk for SUI after surgical correction of prolapse in as high as 16%after anterior colporrhaphy or manifest with reduction of prolapse. There has been scanty literature availability on mixed urinary incontinence(MUI). This study was undertaken to determine the frequency of abnormal urodynamic test in women with genitourinary prolapse. .

## Material and methods

Objective of study : To determine the prevalence of urinary incontinence in patients with severe genitourinary prolapse, to correlate clinical urinary incontinence with urodynamic studies and effect of pessary insertion on urinary incontinence. **Design of the study:** It was prospective interventional study . Setting: Study w Participants:51patients admitted with diagnosis of grade III and grade IV prolapse in the Department of Obstetrics and Gynaecology ,Kasturba Medical College, Mangalore were enrolled after written consent Exclusion criteria : patients with diagnosis of urinary tract infection. Detailed demographic information or other obvious pathology, urinary symptoms, underlying comorbid conditions ,examination findings , investigations, treatment were recorded in predesigned proforma. Definition for the clinical diagnosis of urinary problems were as per ICS .Urinary incontinence was defined as involuntary loss of urine which is objectively demonstrable and a social or hygienic problem.Stress urinary incontinence was defined as involuntary loss of urine when intravesical pressure exceeds the urethral closing pressure in absence of detrusor instability and is objectively demonstrable.<sup>5</sup>Urge incontinence was defined as Unstable bladder as shown objectively to contract spontaneously or on provocation during filling phase ,while the patient is attempting to inhibit the micturition. Mixed Urinary incontinence was defined as presence of both urge incontinence and stress incontinence in the in the same patient. Over active bladder was defined as urgency with or without urge incontinence, frequency, nocturia with no proven infection. Patients were investigated urine sugar, microscopy, urinary protein and urine culture and sensitivity for ruling out urinary tract infection and any other urinary tract pathology<sup>6</sup>

Subsequently urodynamic study was carried out as per the standard described technique and values were recorded. Pessary insertion was carried out followed by repetition of urodynamic study. Aim of urodynamic study was to reproduce patient symptoms and to synchronous urodynamic events, define detrusor function and urethral function during both filling and voiding<sup>7</sup>

Vaginal ring pessary was inserted to ensure complete reduction of prolapse in an attempt to restore the normal urethral axis. Examination, Urodynamic test was repeated after pessary placement .Based on urodynamic findings patients were grouped into: 1.SUI 2.UUI, 3.mixed incontinence (MUI) and 4.no urodynamically detected abnormality.

Statistical analysis: Results were analysed using microsoft xl and SSPS version 16 for mean,range,standard deviation calculation, and cross tabulation.

## RESULTS

Age of study patients was 55.5years +/-10.269 years(mean=/ $\pm$ SD) with range 21 years to 70 years(table1). Majority were post-menopausal women with 44(86.3%) out 51 belonging to this group (table2).Body mass index 24.90+/-2.5 with range of 20 to 29.

	N	Min	Max	Mean	Std. Deviation
AGE	51	21	70	55.55	10.269
BMI	51	20	29	24.90	2.555

Table 1 showing age and BMI distribution in study population

MENOPAUSE		
	Frequency	Percent
POST MENOPAUSE	44	86.3
PRE MENOPAUSE	7	13.7
Total	51	100.0

Table 2 showing proportional distribution of post menopausal woment

Multipara topped thecategory followed by grand multipara and nullipara with 37(72.5%),13( 25.4% ) and 1(2%) respectively(table3).

PARITY	FREQUENCY	%
NULLIPARA	1	2%
MULTIPARA	37	72.5%
GRANDMULTI	13	25.4%

Table 3 showing paritydistribution in study population

STAGE OF PROLAPSE		
	Frequency	Percent
III	32	62.7
IV	19	37.3
Total	51	100.0

Table 4 showing distribution of stage of prolapse

Stage4 prolapse was present in thirty two out of 51 patients(62.7%)(Table 4).There was no urinary incontinence in 56.9% ,UUI in 23.5%, SUI in 13.7% and MUI in 5.9%of patients (Figure1).

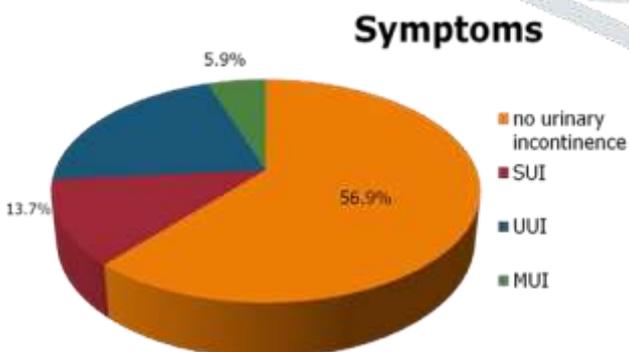


Figure 1showing frequency of urinary incontinence

Urodynamic SUI was present in 16 and 4 patients before and after pessary insertion (table5 ).There was no change in frequency of UUI with pessary application (table 6).There was decrease in number from7to2 urodynamically significant MUI after pessary insertion.(table7).

	urodynamic SUI before pessary	urodynamic. SUI after pessary
Absent	35(68.6%)	47(92.1%)
Present	16(31.4%)	4(7.8%)

Table 5 SUI Before and after Pessary

	Urodynamic UUI before pessary	Urodynamic UUI after pessary
Absent	44(86.3%)	44(86.3%)
Present	7(13.7%)	7(13.7%)

Table 6 UUI before and after Pessary insertion

	Urodynamic MUI before pessary	Urodynamic MUI after pessary
Absent	44(86.3%)	49(96.1%)
Present	7(13.7%)	2(3.9%)

Table 7 MUI before and after pessary insertion

Twenty two patients were having clinical symptoms of UI . Thirty patients were found be positive for urodynamic study. Urodynamic study increased the diagnostic chance in asymptomatic or no revealing patients by 36%. Nine symptomatic UI were negative for urodynamic study. Pessary decreased urodynamic significant UI from 30 to 13 (Table 8).

	Symptomatic	Symptomatic	Urodynamic before pessary insertion	Urodynamic after insertion of pessary
1	SUI	7(13.7%)	16(31.4%)	4(7.8%)
2	UUI	12(23.5%)	7(13.7%)	7(13.7%)
3	MUI	3(5.8%)	7(13.7%)	2(3.9%)

Table 8 comparison of urodynamic study before and Pessary insertion

Pessary insertion decreased SUI (from 31.4% to 7.8%) more than MUI .it had no effect on detecting UUI(table).Occult SUI was more frequent in grade 4 prolapse than grade 3 prolapse (table9)

## Discussion

'ICS' Definition :Involuntary loss of urine when the intravesical pressure exceeds more than urethral closure pressure, in absence of detrusor instability, which is a social or a hygienic problem that is objectively demonstrable. people usually present with involuntary leakage of urine on effort, exertion or on sneezing or coughing<sup>5</sup>. Observation of involuntary leakage from the urethra , synchronous with exertion/ effort or sneezing, coughing that is when the intravesical pressure exceeds more than urethral closure pressure in incontinence.

In the present study 23.5% of patients with grade III/IV had occult urinary incontinence compared to a study by Bruce A et al<sup>8</sup> where 59% had occult urinary incontinence and 58% in a study by David C et al.<sup>9</sup>

	SUI	UUI	MUI	Total
Bruce A, Rosenzweig et al	40.9%	40.9%	23%	59%
Present study	13.7%	23.5%	5.8%	43%
Dvid C., Chalkin et al	58%	-	-	58%

Table 9 comparison of different study with present study

.The patient with hypermobility and stress incontinence is usually cured if the hypermobility is corrected<sup>4,10</sup>. Positive benefits were observed in present study too significant improvement in urodynamically significant UI as reflected in table 8. There improvement urodynamically in 17 more patients after pessary insertion. Having urethral hypermobility and having clinical stress incontinence is not the same thing as observed in one study<sup>9</sup>. 9 clinically diagnosed were urodynamically significant as noticed in present study. Many women with severe stress incontinence have no urethral mobility at all and many women with incontinence among to other causes (Eg detrusor instability) also have urethral hypermobility as a coincidental finding that is irrelevant to their main problem<sup>10,11</sup>. No single bladder neck position is uniformly associated with continence or withincontinence. Patients who have stress incontinence in the presence of normal urethral support are different.

**Limitations of study:** Sample size was small. It was single centre study.

#### Conclusion:

Preoperative urodynamic evaluation before and after prolapse reduction is advised for correct diagnosis of urinary incontinence in patients with genitourinary prolapse. Establishment of the final diagnosis of urinary incontinence and planning of management should be based on detailed history, physical examination, bladder diaries, and careful interpretation of urodynamic data. Urodynamic study is supplementary to clinical diagnosis, not a substitute. Pessary insertion in grade III and IV uterine prolapse improves the urinary incontinence.

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