

Ultrasonographic Study of Urinary Tract Changes in Patients of Uterine Prolapse

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Abstract

Objectives: This study is directed towards use of ultrasonography to assess the changes in urinary tract that occur because of uterine prolapse. Ultrasonography is a safe, easily available and efficient method of assessing urinary tract. Methodology: 80 women diagnosed as Pelvic Organ Prolapse (POP) were subjected to urine examination, renal function tests and ultrasonography. Results: Incidence of UTI is high(27.5%) in uterovaginal prolapse patients. On studying these 80 cases by USG 6.25% had evidence of obstructive uropathy.

Introduction

Pelvic organ prolapse affecting millions of women worldwide. A woman has an estimated lifetime risk of 11% to undergo surgery for prolapsed or incontinence.[1]

Genital prolapse or pelvic organ prolapse is defined by the *International Continence Society(ICS)* as the descent of pelvic organ into or beyond vagina, perineum or anal canal[2].

The normal position and support of the uterus, vagina, bladder & rectum is dependant on the bony, connective tissue and muscular support.

The urinary tract and the genital tract both anatomically and developmentally associated with each other. The structures that supports the genital tract also disturbs the position of the lower urinary tract bring about retrograde changes in the upper urinary tract.

In the vast majority of woman who will develop pelvic organ prolapse, the process begins with their first vaginal delivery. Each subsequent vaginal delivery may contribute and patient may have clinical prolapse.

Prolapse becomes more common with advancing age.

The various complications of prolapse include keratinisation of the vagina, hypertrophy of cervix, decubitus ulcer, infection of urinary tract and obstructive uropathy.

Ultrasonography is a noninvasive, efficient and cheap method of assessing the urinary tract. This study is directed towards use of ultrasonography to assess the changes in the urinary tract because of uterine prolapse.

Methodology

Present study was carried out after getting clearance from the institutional Human ethical committee for one year. Total 80 patients with uterine prolapse after their consent attending OBGY OPD were included in study. ANC and PNC patients were excluded from the study.

This is prospective study. All patients were thoroughly examined and subjected to urine examination, renal function test and ultrasonography.

Statistical analysis was done.

Results

In our study patients with para 2 and para 3 forms the biggest group. From this group of 41 patients 25 had cystocele along with uterine descent.

And the second major group was formed by para 4 to para 6. Out of 35 patients 29 had cystocele.

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Table 1: Distribution of Cases According to Parity and Associated Vaginal Prolapse

| Sr. No | Parity | Number of patients with uterine descent | Associated cystocele | Associated rectocele | Associated Enterocele |
|--------|-----------|---|----------------------|----------------------|-----------------------|
| 1 | Nullipara | 1 | 1 | 0 | 0 |
| 2 | Para 1 | 2 | 1 | 0 | 0 |
| 3 | Para 2-3 | 41 | 25 | 13 | 7 |
| 4 | Para 4-6 | 35 | 29 | 16 | 9 |
| 5 | >Para 6 | 1 | 1 | 0 | 0 |

Table 2: Urine Examination in Studied Patients

| Sr No. | Components of urine examination | Number of patients | Percentage |
|--------|---------------------------------|--------------------|------------|
| 1 | Albumin | 2 | 2.5% |
| 2 | Sugar | 3 | 3.75% |
| 3 | Pus cells | 22 | 27.5% |
| 4 | Oxalate crystals | 1 | 1.25% |
| 5 | Epithelial cells | 4 | 5% |

(p<0.001)

Table 3: Distribution of cases with associated Sonographic findings

| Sr No | Associated sonographic findings | Number of Patients | Percentage |
|-------|---------------------------------|--------------------|------------|
| 1 | Cystitis | 10 | 12.5 |
| 2 | Obstructive uropathy | 05 | 6.25 |

Urine examination was done in all patients, in the study urinary tract infection was there in 22(27.5%).

Out of 80 patients 6(7.5%) patients were found with deranged renal function tests.

Incidence of urinary tract infection is highly significant ($p<0.001$) with uterine prolapse.

In present study we found cystitis in 10 patients and obstructive uropathy in 5 patients.

Discussion

Total 80 patients were studied. They were subjected by ultrasonography of pelvis kidney and bladder.

Patients with pelvic organ prolapse often have recurrent urinary tract infection. It predisposes to incontinence and to urinary infections, which is often recurrent.[3]

And may also produce renal failure due to obstruction[4]. In 5 patients out of 38 patients of 3rd degree uterine prolapse had deranged renal function tests. And out of 5 patients of procidentia 1 patient had deranged renal function test. Out of 80 patients 6(7.5%) patients were found deranged renal function test.

Uterine prolapse can cause dilatation of upper urinary tract due to uretral obstruction that, if left untreated, can impair renal function leading to anuria and arterial hypertension (5)

In present study of uterovaginal prolapse obstructive uropathy was found in 5 patients (6.25%) and cystitis in 10 patients(12.5%)

Jorge A, Bernuy c etal 1995 found incidence of obstructive uropathy in setting of genital prolapsed ranges between 4-13%(6).

In an observational retrospective survey by *Costantini E , Lazzeri M etal 2009 (7)* hydronephrosis was found in 5%.

In the largest retrospective studies by *Beverly CM, Walters MD etal 1997* asymptomatic hydronephrosis diagnosed by preoperative renal ultrasound and /or IVP was not uncommon in patients with pelvic organ prolapse (7.7%).(8) this study correlates with us.

References

1. Olsen AL, Smith VJ, Bergstrom JO. Epidemiology of surgically managed pelvic organ prolapse and urinary incontinence. *Obstet. Gynecol.* 1997;89:501.

2. Bump RC, Mattiason A, Bo K, Brubakar LP, De Lancey JO, Karsklove P. The standardization of female pelvic organ prolapse and pelvic floor dysfunction. *Am.J.Obstet.Gynecol.* 1996;175:10-17.
 3. Sourander LB, Ruikka I, Gronroos M. Correlation between urinary tract infection, prolapse conditions and function of bladder in aged female hospital patients. *Gerontologia.Clinica.* 1965;7:179-84.
 4. Young JB, Selby PL, Peacock M, Brownjohn AM. Uterine Prolapse And Urinary Tract Obstruction. *British Medical Journal.* 1984;289: 41-42.
 5. Sudhakar AS, Reddi VG, Schein M, Gerst PH: Bilateral hydroureter and hydronephrosis causing renal failure due to a procidentia uteri: a case report. *Int Surg.* 2001; 86:173-5.
 6. Jorge A. Bernuy C. Obstructive uropathy secondary to genitourinary prolapse. *Acta.Urol.Esp.* 1995;19: 247-250
 7. Constantini E, Lazzeri M, Mearini L, Zucchi A, Del Zingaro M, Porena M. Hydronephrosis and pelvic organ prolapse. *Urology.* 2009;73:263-7.
 8. Beverly CM, Walters MD, Weber AM, Piedmonte MR, Ballard LA. Prevalence of hydronephrosis in patients undergoing surgery for pelvic organ prolapse. *Obstet Gynecol.* 1997; 90: 37-41.
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