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ASSESSMENT OF PELVIC FLOOR DYSFUNCTION IN POST OPERATIVE PATIENT OF VAGINAL HYSTERECTOMY WITH PELVIC FLOOR REPAIR

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ABSTRACT

Background: Uterine prolapse is the herniation of the uterus into or beyond the vagina as a result of failure of the ligamentous and fascial supports.. Changes in pelvic anatomic structure due to hysterectomy can result in impaired pelvic function because of nerve or pelvic muscle structure damage during surgery.

Objectives: This study aims to evaluate the presence of pelvic floor dysfunction in uterine prolapse patients after vaginal hysterectomy with pelvic floor repair.

Methods: A total of 80 women with utero-vaginal prolapse undergoing total vaginal hysterectomy with pelvic floor repair were enrolled in this study. Patients were followed postoperatively about relief in clinical symptoms and the anatomical correction was analyzed at 1 month, 6 months & 1 years using Pelvic Organ Prolapse-Quantification (POP-Q) System.

Results: Among the total study participants the most common age group of patients is between 51-60 years (40%). The multiparous women (parity ≥4) and vaginal deliveries were seen to be the predominant risk factors for utero-vaginal prolapse. Majority of the women (36.3%) had 3rd degree prolapse followed by second degree (31.3%). Vaginal bulge or something coming out of the vagina was the most common (98%) clinical presentation followed by urinary compliant (32.5%) and Pelvic pain (26.3%). There was significant restoration of utero-vaginal prolapse, clinical symptoms and anatomy of point when analysed with the POP-Q classification,

Conclusion: There is significant anatomical restoration of pelvic floor function and symptom relief after successful vaginal hysterectomy in utero-vaginal prolapse patients.

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Keywords: Pelvic organ prolapse quantification, Pelvic organ prolapse, vaginal hysterectomy, Vaginal delivery, Pelvic floor repair

INTRODUCTION

Pelvic organ prolapse [POP] is defined as descent of pelvic organs including uterus, vaginal cuff, bladder, small and large bowel, resulting in protrusion of vaginal uterus or both. [1]

The prevalence of POP is 3-4% in previous studies because the definition of POP varies from study to study. [2, 3]
Pelvic organs are held in their position by network of muscles, ligaments and weakening of this support system leads to prolapse.

Pelvic organ prolapse deteriorates with age and hence a majority of women over 50 years of age experience POP. Common risk factors for pelvic organ prolapse are advanced age, multiple vaginal deliveries, obesity, chronically raised intra-abdominal pressure.

POP leads to pelvic floor dysfunction which is defined as any departure from normal function of pelvic floor muscles that is of bother to the patient with associated signs and findings. [4] Common symptoms of this condition include urinary symptoms, chronic pelvic pain, defecating symptoms and most common is something coming out of per vaginum. There is a link between pelvic floor symptoms and sexual dysfunction which also negatively affect the quality of life in women. [5]

Patients with symptomatic POP who show no improvement with non- surgical treatment such as kegel's exercise or conservative management are candidates for surgical treatment. Vaginal hysterectomy with pelvic floor repair is most commonly preferred surgery for prolapse. [6] However according to several studies, hysterectomy is also a risk factor for pelvic organ prolapse and urinary incontinence [7]. It is also associated with bowel, bladder dysfunction and sexual dysfunction [8, 9].There are several possible mechanisms for development of pelvic floor dysfunction subsequent to hysterectomy. It may be due to disruption of local nerve supply, distortion of pelvic anatomy, injury to supporting structure which adversely affects functioning of pelvic floor [10].

The purpose of this study is to assess effect of vaginal hysterectomy on pelvic floor functioning and to evaluate clinical improvement of symptoms.

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MATERIALS AND METHODS

This prospective observational study was done in the Department of Obstetrics and Gynaecology in a tertiary care hospital at central India. A total of 80 women with utero-vaginal prolapse admitted in our hospital, and undergo vaginal hysterectomy with pelvic floor repair were enrolled for this study,

Inclusion criteria

- All women >40 years of age who have completed the family
- Women clinically diagnosed as utero-vaginal prolapse
- Women who willing for the study and for follow up after hysterectomy
- Patients who underwent vaginal hysterectomy with pelvic floor repair

Exclusion criteria

- Women <40 or >80 years of age
- Patients with vaginal hysterectomy for other benign condition except prolapse
- Pregnant women and women at risk of or suspicious of malignancy
- Women who not willing for the study

Sim's speculum and a graduated scale were used as a tool for measurement of the extent of prolapse. Vaginal hysterectomy with pelvic floor repair was done in all the cases. Eligible women were invited to complete a single survey and a gynaecologic POP-Q examination. All patients followed at 1 month, 6 month and 12 months Post operatively and improvement in symptoms and anatomical restoration was measured with help of the POPQ system.

The survey elicited information about proven risk factors for POP (e.g. body mass index, age, obstetric history, history of POP and pelvic floor symptoms, which were quantified using the Pelvic Floor Distress Inventory.

Statistical analysis: Data was collected and analysed using software SPSS version 22 (SPSS Statistics UK, SPSS, Chicago, IL, USA). For outcome comparison, the Pearson chi-square test or Fisher's exact test was used for ordinal variables and the independent t- test was used for continuous variables. A p-value < 0.05 was considered statistically significant

RESULTS

A total of 80 patients diagnosed as utero-vaginal prolapse undergoing vaginal hysterectomy were analysed in the present study. The most common age group of patients who had pelvic organ prolapse is between 51-60 years (40%), followed by 61-70 years age group (23.7%). Majority of the patients (43.7%) were lower socio-economic status. The multiparous patients with 4 or more normal vaginal deliveries were seen to be having the highest incidence of prolapse (37.5%), Most of them were overweight (47.5%), BMI between 25- 29.9 kg/m^2. Majority of the study

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participants (92.5%) had normal vaginal delivery.

Table 1: The socio-demographic variables of study participants

Socio-demographic variables		Number (n=80)	Percentage
Age group (in years)	41-50	18	22.6%
	51-60	32	40%
	61-70	19	23.7%
	>70	11	13.7%
Socio-economic class	Lower	35	43.7%
	Middle	31	38.7%
	Upper	14	17.6%
Parity	Para 1	9	11.3%
	Para 2	18	22.5%
	Para 3	23	28.7%
	Para 4 or more	30	37.5%
Mode of delivery	Normal delivery	74	92.5%
	Caesarian section	6	7.5%
Body mass index (BMI)	Normal	30	37.5%
	Overweight	38	47.5%
	Obese	12	15%

Majority of the women (43.7%) had 3rd degree prolapse followed by second degree (41.3%) and procidentia (15%) [Figure: 1].

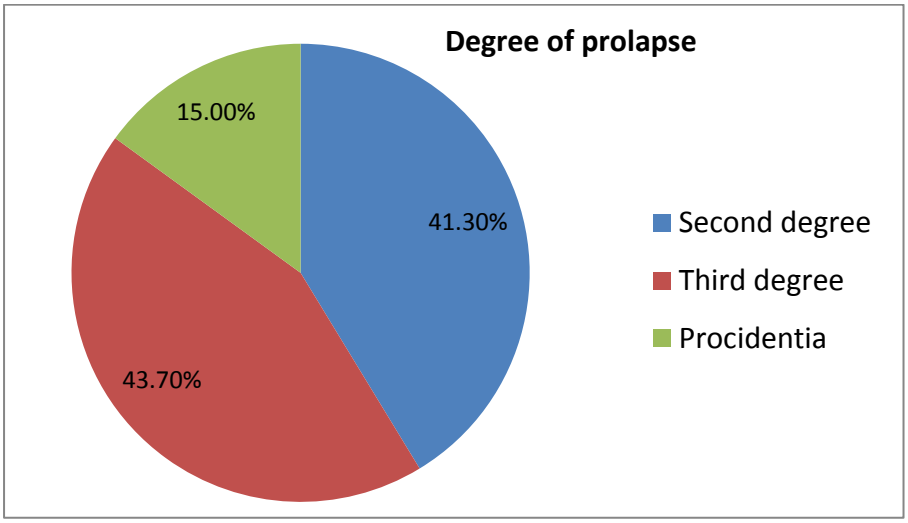

Figure 1: Classification according to the grade of prolapse among study subjects

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Vaginal bulge or something coming out of the vagina was the most common (98%) clinical presentation. Urinary compliant (32.5%), Pelvic pain (26.3%), abnormal uterine bleeding (10%), white watery discharge (8.7%), difficulty in defecation or walking (7.5%) and difficulty in coitus were the other common symptoms [Figure:2].

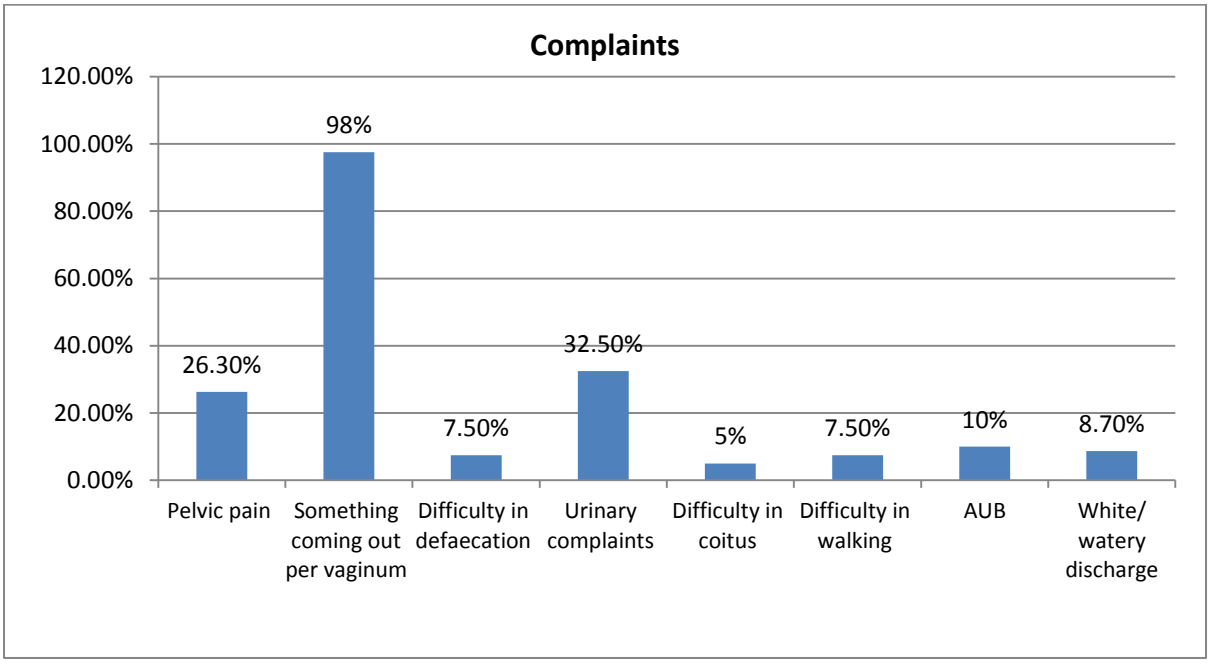

Figure 2: Presenting complaints of the study population prior to Surgery

Vaginal Hysterectomy with anterior & posterior colporrhaphy done in 45% cases, vaginal hysterectomy was in 26.3%, vaginal Hysterectomy with anterior colporrhaphy 23.7% and vaginal Hysterectomy with posterior colporrhaphy was in 5% of cases.

Table 2: Type of surgery done in the study population

Type of surgery	Number of patients (%)
Vaginal Hysterectomy	21 (26.3%)
Vaginal Hysterectomy with anterior colporrhaphy	19 (23.7%)
Vaginal Hysterectomy with posterior colporrhaphy	4 (5%)
Vaginal Hysterectomy with anterior & posterior colporrhaphy	36 (45%)

There was significant restoration of utero-vaginal prolapse and anatomy of point when analysed with the POP-Q classification, which is tabulated in Table 3.

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Table 3: Comparison between Pop-Q Stages prior to surgery and post operative follow up

POP-Q Stage of Prolapse	Preoperative		Postoperative	
	Number (n)	Percentage (%)	Number (n)	Percentage (%)
Stage I	0	00%	5	6.3%
Stage II	33	41.3%	6	7.5%
Stage III	35	43.7%	2	2.5%
Stage IV (Procidentia)	12	15%	0	00%

P<0.05-statistically significant

Significant reduction of clinical symptoms after successful vaginal surgery with pelvic floor repair

Table 4: Analyses of clinical complaint on post op follow up

Clinical complaint	Number of patients (%)
Hemorrhage	1 (1.3%)
Vault prolapse	2 (2.5%)
Vault sepsis	2 (2.5%)
Vesico-vaginal fistula	1 (1.3%)
Vaginal discharge	3 (3.7%)
Urinary complaints	3 (3.7%)
Constipation	4 (5%)
Dysparenuea	2 (2.5%)
New onset of pain	3 (3.7%)

DISCUSSION

Pelvic organ prolapse is a fairly common gynecological diagnosis that compels women to seek specialist care to address distressful symptoms that adversely impact the daily activities and quality of life of women suffering from this condition. Around half of all women above 50 years of age complain of symptomatic prolapse. Total vaginal hysterectomy can occurs changes in pelvic floor function that are caused from damage to pelvic floor innervations and pelvic fibromuscular structures during surgery [12]. The incidence of pelvic organ prolapse has increased due to the increased life expectancy of the geriatric population.

In our study multiparous women above the age of 40 years were most commonly affected from pelvic organ prolapse, in agreement with the Chen V, et al [13] and Hove SMC, et al [14].

Vaginal delivery and increased parity are proved as a significant risk factor for pelvic organ prolapse in the current study most of the patients had 92.5% had normal vaginal delivery**,** similar finding are reported by Dhama et al [15] and Janani et al [16]. Vaginal delivery disturbs stretches

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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.

Pelvic organ prolapse was seen at higher among lower socio-economic class, women belonging to such populations have barriers to accessing healthcare such as lack of accessibility; transport facilities, societal taboos or lack of awareness that prevents them from seeking healthcare at earlier ages or until it significantly affects their quality of life.

Present study found incidence of prolapse was higher in patients having high BMI, concordance results seen in a study done by Uustal Fornell E, et al [17].

In our study most of the patients underwent vaginal hysterectomy and anterior colporrhaphy, consistent with the McConnell, et al [18].

In current study one of the most common reported adverse effects of hysterectomy are lower urinary tract symptoms (LUTS), particularly urinary incontinence, accordance to the MA Gunawan, et al [19]. Development of LUTS could be explained by damage occurring during surgery to the innervations and supportive tissues of the pelvis. Symptoms that more often persisted following vaginal hysterectomy were urgency and obstructive micturition.

In our study, majority of the patients had stage III prolapse according to POP-Q classification, These findings are comparable with the Devnikar K et al [20]. The findings are different from those of Pradhan et al [21], where the majority of the patients had procidentia followed by 26.3% having stage III prolapse.

According to symptoms analysis prior to surgery, vaginal bulging sensation or something coming out of the vagina was the commonest clinical presentation in this study, consistent to many other researchers: Awotunde OT et al [22] and Verma D et al [23].

The other non- urinary symptoms noticed in patients in the study according to decreasing frequency were low backache, difficulty in coitus, difficulty in defecation, difficulty in walking and white/watery discharge per vaginam. These proportions are similar to the study done by Janani et al [16].

After vaginal hysterectomy and 6-month followed up the PHQ-9 scores were significantly decreased in the study subjects, similar results also obtained by Xie M, et al [24] and D Liu, et al [25].

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When pre-operative and postoperative symptoms were compared, there was significant relief of all symptoms (p value <0.05). M.G.Ucar et al [26], reported similar outcomes with significant relief of all symptoms after vaginal hysterectomy with pelvic floor repair.

Urinary symptoms and improvement in their sexual lives was also improved significantly at follow-up done 6 months post-surgery, this has been corroborated with the Ulrich et al [27] and Glavind et al [28]

CONCLUSION

We have concluded that multiparous women and normal vaginal deliveries were the common predisposing factors for the development of pelvic organ prolapse. The high incidence of pelvic organ prolapse in the older age groups is because of weakening of the utero-vaginal support. Most common complaints are vaginal bulge or something coming out of vagina and 3rd degree prolapse was the most common. At follow-up, all the general as well as urinary symptoms were significantly relieved after vaginal hysterectomy with pelvic floor repair surgery. Anatomical restoration as measured by POP-Q classification was also significant post surgery.

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