Clinical Profile of Uterine Prolapse Cases in South India

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Abstract

Background Uterine prolapse is a common problem among women in developing countries. It is known to cause physical and psychosocial problems affecting the quality of life of patients. This study was done to determine

the risk factors, clinical features, and management practices in uterine prolapse (UP).

Methods A review of 350 case records of UP cases admitted between 2009 and 2014 was done in tertiary care hospitals.

Results Mean age at presentation of UP was 52.8 ± 13.2 years. Majority of cases were manual laborers [232 (78.6 %)]. Obstetric factors like parity ≥ 5 times [78 (22.3 %)], age at last pregnancy between 30 and 39 years (57.2 %), inadequate birth spacing (57.8 %), home deliveries [162 (58.3 %)], deliveries conducted by untrained personnel (25.3 %), vaginal deliveries (89.7 %), prolonged duration of labor (21.6 %), and heavy work in post natal period (29.8 %) were observed among cases. Correlation between age of presentation of prolapse with age at first and last pregnancy was significant. Most common associated complaint among UP cases was pain abdomen [55 (15.7 %)] and difficulty in micturition [51 (14.6 %)]. Majority were cases of third-degree prolapse [269

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(76.8 %)]. Most common associated organ prolapse was cystocele [261 (74.6 %)]. The most common operative procedure done was vaginal hysterectomy, and conservative procedure was ring pessary application.

Conclusion Public awareness on reduction in family size, support for institutional-based delivery by trained personnel, and adequate rest and exercises in early post natal period is required to minimize the occurrence of UP.

Keywords Clinical features · Hospital-based study · Management · Risk factors · Uterine prolapse

Introduction

Uterine prolapse (UP) is a common problem which can occur in women of any age group. Despite its high prevalence in developing countries, it has not received sufficient medical attention. This condition, although non-fatal, pain, and discomfort experienced by these patients, interferes with basic day to day activities. As a consequence of various physical problems, the quality of life gets affected and associated psychosocial problems make these patients socially withdrawn. It thus affects their ability to work and earn a livelihood [1].

Prolapse occurs due to weakening of pelvic support structures of the uterus. Weakening of musculature and ligaments even though multifactorial, the etiology comprises of large number of pre-disposing factors which are easily preventable. These factors are deeply related to the cultural and socio-economic background of women [2].

Information on influence of these factors in UP in the present settings is important to plan strategies to minimize its occurrence in future. Moreover, understanding of clinical presentations and management of UP would help us to further strengthen patient care practices. With this background, this study was done to determine the risk factors, clinical features, and management practices among patients with UP admitted to various tertiary care hospitals in Mangalore.

Methods

This was a retrospective review of medical case records of confirmed cases of UP admitted at Government Lady Goshen Hospital and Kasturba Medical College Hospital Attavar, Mangalore. It was conducted in March 2014 following approval from the Institutional Ethics Committee. The records of patients over the previous 5 years between 2009 and 2014 were examined by the investigators. The information was recorded using a validated proforma which included socio demographic, obstetric information,

details of presenting complaints, degree of UP, associated pelvic structure prolapse, and management modalities. Socio-economic status was assessed using modified B G Prasad's classification of 2013. Body mass index was classified as underweight, normal, and overweight based on WHO classification. Data entry and analysis were done using SPSS Inc., Chicago, IL version 11.0 Descriptive analysis was done for presenting the data into frequencies and percentages.

Results

Out of 350 cases, 285 (81.4 %) were records of patients admitted in the government hospital. Mean age of cases was 56.4 ± 12.3 years. Majority of cases were manual laborers [232 (78.6 %)], belonging to poor socio-economic status [254 (76 %)] and from rural areas [199 (62.8 %)] (Table 1).

The mean age of presentation of prolapse was 52.8 ± 13.2 years. The mean age at first pregnancy was 24.3 ± 3.8 years. There was a significant positive correlation between these variables ($r = 0.158$, $p = 0.029$). The mean age at last pregnancy was 31.4 ± 6.0 years. Correlation of this with age at presentation of prolapse was also positively correlated ($r = 0.389$, $p < 0.001$).

Several obstetric risk factors including delivery conducted by untrained personnel (25.3 %) were present among UP cases (Table 2).

Episiotomy was not done in 92 (78 %) out of 118 cases. All the cases wherein episiotomy was not done were home deliveries. Prolonged history of labor was present in 37 (21.6 %) out of 171 cases. History of obstructed labor was mentioned in 3 out of 179 cases.

Period of rest after delivery was mentioned for 4 cases out of which in 3 cases it was within 2 weeks after delivery. Heavy work during post natal period was present in 42 (29.8 %) out of 141 cases.

History of delivering big baby was present in 8 cases in whom the delivery was conducted through vaginal route in 5 cases. History of multiple pregnancies was present in 6 cases. History of unsafe abortion was present in 7 out of 276 cases. Family history of UP was present in just one case, i.e., in mother of the patient.

History of constipation was present in 21 (8.1 %) out of 260 and chronic cough in 60 (27.6 %) out of 217 patients. The various abdominal wall surgeries reported prior to onset of UP were hernioplasty (2 cases), appendicectomy (2 cases), laparoscopic sterilization (32 cases), LSCS (34 cases), and laparoscopy for ovarian torsion (1 case).

Majority were third-degree UP, 269 (76.8 %). The most common associated complaint among prolapse cases was

Table 1 Socio demographic distribution of uterine prolapse cases

	Number	Percentages
Age group (years) (<i>n</i> = 350)		
20–35	20	5.7
36–50	93	26.6
51–65	167	47.7
66–80	66	18.9
>80	4	1.1
Occupation (<i>n</i> = 295)		
Manual laborer	232	78.6
Home maker	48	16.3
Shop keeper	5	1.7
Teacher	5	1.7
Clerk	3	1.0
Beedi roller	2	0.7
Socio-economic status (<i>n</i> = 334)		
Lower	254	76.0
Middle	80	24.0
Religion (<i>n</i> = 259)		
Hindu	203	78.4
Christian	29	11.2
Muslim	27	10.4
Place (<i>n</i> = 317)		
Rural	199	62.8
Urban	118	37.2
Body mass index (<i>n</i> = 9)		
Underweight	1	11.1
Normal	2	22.2
Overweight	6	66.7
Type of diet (<i>n</i> = 166)		
Vegetarian	43	25.9
Mixed	123	74.1

pain abdomen 55(15.7 %). In this study, 73 (20.9 %) patients had UP without any associated pelvic organ prolapse (POP). The most common associated prolapse in this study was cystocele, 261 (74.6 %). The most common pattern of associated prolapse was combination of UP with cystocele, rectocele, and enterocoele observed in 85 (24.3 %) cases (Table 3).

Most common co-morbidities were hypertension [122 (34.9 %)], DM [75 (21.4 %)], and anemia [42 (12 %)]. The most common operative procedure done was vaginal hysterectomy. It was done in 252 cases, with majority of cases [187 (74.2 %)] aged ≥ 50 years (Table 4). Manchester repair was done in 3 cases among patients aged 24, 30, and 75 years.

Conservative management in the form of ring pessary was practiced among 11 (3.1 %) cases. Among them,

patients were aged ≥ 65 years in 8 cases. Advice on Kegel exercise was given to only 5 cases (Table 5).

Discussion

Age of onset of UP was 46–65 years among majority of cases which were similar to the findings of a Jordanian study where 47.2 % of cases at the time of presentation were ≥ 50 years [3]. However, in studies done in Nepal [2] and Egypt [3], majority of cases were of age group 20–29 and 30–39 years, respectively, at the time of onset. In another study done in US, rates of prolapse were found to be similar between 30–49 years and 50–89 year old women [4]. The mean age at presentation of prolapse in this study was 52.8 years compared to other studies, where it ranged from 26.2 to 50 years [1, 2, 5, 6]. From these observations, it is obvious that UP can occur in women of any age group.

Most prolapse cases in this study were of lower socio-economic status and were manual laborers by occupation which was similar to findings of a Nigerian study [7]. In studies done in Nepal [2, 8] and Tamil Nadu, India [1], greater proportion of cases was farmers. These findings infer that women engaged in strenuous occupations get exposed to raised intra-abdominal pressure over prolonged periods and thus are at risk of developing prolapse [7].

In a study done in Nepal, a positive and significant correlation was observed between age of UP and age of first child birth ($r = 0.306$, $p = 0.002$) which was similar to our findings [2].

The age at last pregnancy was 30 years and above in about two-third of cases in this study was similar to the findings of the study done in Nepal [5].

Moreover, risk of UP was more among grand multiparous women in this study. In other studies, risk was most after second delivery [1], after third delivery [9], after fourth delivery [10], and after fifth delivery [3, 7, 9, 11]. A study done in Italy [12] also reported that risk was greater even after a single birth. These observations along with age at last pregnancy as a risk factor can be explained by the known fact that process of aging causes loss of collagen and weakness of fascia and connective tissue and the risk of prolapse gets increased during subsequent child births.

In a study done in Nepal, birth spacing was not ideal in 59 % prolapse cases similar to the findings of this study [2]. Use of birth control methods for adequate spacing between pregnancies and undergoing permanent sterilization after completion of family size would be helpful in prevention of prolapse.

In this study and others [2, 12, 13], it was found that women who had delivered vaginally had a higher

Table 2 Distribution of obstetric factors among uterine prolapse cases

Age at marriage (<i>n</i> = 222)		
<18 years	42	18.9
18–23 years	99	44.6
24–30 years	79	35.6
>30 years	2	0.9
Age at first pregnancy (<i>n</i> = 191)		
<19 years	25	13.1
19–24 years	57	29.8
25–29 years	98	51.3
≥30 years	11	5.8
Age at last pregnancy (<i>n</i> = 304)		
<19 years	7	2.3
19–24 years	30	9.9
25–29 years	74	24.3
30–39 years	174	57.2
≥40 years	19	6.3
Number of pregnancies (<i>n</i> = 350)		
Nil or once	28	8.0
Twice	73	20.9
Thrice	78	22.3
Four times	80	22.9
Five or more times	91	26.0
Birth spacing (<i>n</i> = 166)		
Ideal	70	42.2
Not ideal (less than 3 years)	96	57.8
Number of deliveries (<i>n</i> = 350)		
Nil or once	39	11.1
Twice	78	22.3
Thrice	83	23.7
Four times	72	20.6
Five or more times	78	22.3
Place of delivery (<i>n</i> = 278)		
Home	162	58.3
Government hospital	90	32.4
Private hospital	19	6.8
Health center	6	2.2
Private clinics	1	0.3
Mode of delivery (<i>n</i> = 330)		
Vaginal	296	89.7
Lower segment caesarian section	34	10.3
Personnel conducting delivery (<i>n</i> = 127)		
Obstetrician	84	66.1
Relatives	30	23.7
Staff nurse	6	4.7
Trained TBA ^a	5	3.9
Untrained TBA	2	1.6
Menopausal status (<i>n</i> = 340)		
Attained	267	78.5
Not attained	73	21.5

Table 2 continued

Age at menopause (<i>n</i> = 265)		
≤35 years	8	3.0
36–44 years	76	28.7
45–49 years	106	40.0
≥50 years	75	28.3

^a Traditional Birth Attendants

prevalence of UP than women who underwent cesarean deliveries.

More than half the cases with UP in the present study had history of home deliveries and in one fourth of cases it was conducted by untrained personnel like relatives or birth attendants. In another study done in Tamil Nadu, India [1] about 40 % of women with prolapse had history of home deliveries, while in a study done in Nepal [2] 96.3 % of babies were born at home.

This again supports the fact that poorly supervised labor and delivery conducted by untrained personnel in home environment lead to faulty delivery practices like bearing down for a long time before full cervical dilation, not performing episiotomy when it is indicated and not stitching perineal tears [14]. This causes damage to supporting structures of uterus which predisposes to development of UP [3].

In a Nigerian study, 61.9 % of patients with UP had prolonged labor, i.e., duration of labor greater than 12 h which was more than our observations [7]. Also in the present study, period of rest after delivery was reported to be inadequate in few cases in comparison to hardly one to 2 weeks of rest reported in 40–87 % cases in other studies [2, 5, 6, 8].

History of doing heavy manual work in post natal period was reported by about one third of participants in this study which ranged from 14.1 to 92 % among UP cases in other studies [2, 5, 11]. As it usually takes 6 weeks for the women to attain the pre-pregnant state and 3 months for pelvic ligaments to function normally again, adequate nutrition and rest is essential during puerperium to speed up the pace of recovery [8].

Doing pelvic exercises like Kegel exercises is also essential in this period which none of the women were reported to be doing in a study done in Nepal and only by few cases in this study [2].

Few cases in this study had history of giving birth to large babies and that too by vaginal route. In a study done in USA, giving birth to larger babies had more than two times greater risk of prolapse [15].

Proportion of UP cases with chronic cough ranged from 16 to 35 % [2, 5, 6, 8] and constipation ranged from 0.8 to 28 % in other studies [2, 8, 11]. These factors were also found to be significantly associated with UP in other

Table 3 Clinical profile of uterine prolapse cases ($n = 350$)

Particulars	Number	Percentage
Age at time of prolapse		
15–25 years	8	2.3
26–35 years	31	8.9
36–45 years	67	19.1
46–55 years	88	25.1
56–65 years	104	29.7
66–75 years	44	12.6
76–85 years	8	2.3
Presenting complaints		
Mass per vaginum	304	86.9
Pain abdomen	55	15.7
Difficulty in passing urine	51	14.6
Backache	39	11.1
Watery white discharge	30	8.6
Increased frequency of micturition	30	8.6
Burning micturition	27	7.7
Stress urinary incontinence	24	6.9
Bleeding per vaginum	12	3.4
Others ^a	27	7.7
Degree of uterine prolapse		
First degree	8	2.3
Second degree	52	14.9
Third degree	269	76.8
Procidentia	21	6.0
Pattern of presentation		
Cystocele, Rectocele, Enterocoele	85	24.3
Cystocele, Rectocele	84	24.0
Cystocele	76	21.7
Cystocele, Enterocoele	11	3.1
Rectocele, Enterocoele	7	2.0
Rectocele	4	1.1
Urethrocoele	4	1.1
Cystocele, Urethrocoele	3	0.9
Cystocele, Rectocele, Urethrocoele	2	0.6
Enterocoele	1	0.3

^a Post menopausal bleeding 5, dysuria 4, menorrhagia 4, itching 3, foul smelling discharge 3, difficulty in walking 2, Urinary Tract Infection 2, dysmenorrhoea 2, incomplete evacuation of urine 1, chest pain 1

studies [5, 9] probably due to increased intra-abdominal pressure resulting in pelvic floor damage [16].

Prolapse was seen in 85 % cases in a study done in Nepal [2] who had attained menopause which was similar to our findings probably due to estrogen deficiency [14].

The most common associated symptom of UP was abdominal pain which was also reported by 84.9 % patients in a study done in Nepal [8]. The most common symptom in studies done in Egypt and Jordan [3] was vaginal

discharge, in a Nigerian study [11] it was lower back ache, while it was urinary incontinence in the study done by Palm [17]. On the other hand, a study done in Maryland, USA observed that 81 % UP cases had no associated symptoms [13].

Difficulty in micturition which was the second most common complaint observed among cases in this study was reported in 34.9 % in a study done in Jordan [3] and 50 % in a study done in Nepal [8]. This symptom occurs due to distortion of passage of urine flow following uterine prolapse. The diversity of symptoms in UP as mentioned above indicates how it can impact a woman physically, socially, and psychologically and thus affect the quality of life.

In this study, the most common type of UP was third degree which was also observed in other studies [8, 15]. First-degree variety was the most common presentation in an Italian study [12], second degree in a Nigerian study [11], and fourth degree in a study done in USA [18]. The first-degree prolapse ranged from 2.3 to 65.3 % [8, 11, 12, 15, 18, 19], second degree ranged from 16.5 to 67 % [8, 11, 15, 18, 19], third-degree prolapse ranged from 35.3 to 47 % [8, 18, 19], and fourth degree ranged from 22.3 to 37.8 % [11, 18] in other studies.

An Egyptian study reported that more than one type of prolapse in 15 % cases which were much lesser than our observations were associated POP which was reported in 79.1 % cases [3]. The most common associated prolapse with UP observed in this study was cystocele which was similar to observations of the Nigerian study [11].

In a study done in Nigeria, associated UP with urethrocoele occurred in 5.8 % cases which were more than the observations of the present study [11]. However, associated cystocele (68.6 %), rectocele (11.6 %), and enterocoele (8.3 %) among UP cases in the former study were lesser than our observations [11].

Studies done in Nigeria have reported that vaginal hysterectomy with pelvic floor repair was the most common surgical procedure which was done in 86.4–90.5 % cases, which was similar to our observations [7, 11]. A study done in UK reported that among operative procedures for UP, vaginal hysterectomy was preferred over abdominal hysterectomy [20].

Greater proportion of third-degree prolapse underwent hysterectomies in this study similar to the observations of a study done in Nepal [19]. Manchester repair was done in management of only third-degree prolapse which differed from observations in the study done in Nigeria where it was restricted to second-degree UP management [7]. Another Nigerian study observed that Manchester repair was done in 87.5 % patients under 40 years of age and rare in post-menopausal age group which was similar to our findings [11]. Hence both age and degree of

Table 4 Surgical interventions done in various stages of uterine prolapse among cases ($n = 350$)

Surgical interventions	1st degree prolapse	2nd degree prolapse	3rd degree prolapse	Procidentia	Total
Vaginal hysterectomy	4	34	198	16	252
Colporrhaphy for cystocele repair	–	4	31	1	36
Manchester repair	–	–	3	–	3
Lefort operation	–	–	1	1	2
Cystectomy	1	–	1	–	2
Thiersch wiring for rectal prolapse	–	2	–	–	2
Perineoplasty	–	–	1	–	1
Purandare's cervicopexy	–	1	–	–	1

Table 5 Non-surgical interventions in uterine prolapse cases ($n = 350$)

Non-surgical interventions	1st degree prolapse	2nd degree prolapse	3rd degree prolapse	Procidentia	Total
Avoid lifting heavy weight	1	4	38	1	44
High fiber diet/plenty of water to avoid constipation	2	4	17	1	24
Estrogen cream and other medications	1	2	19	–	22
Ring pessary	–	1	9	2	11
Tampon	–	2	6	–	8
Good nutritious diet	–	2	7	–	9
Kegel exercise	–	1	4	–	5
Avoid intercourse	–	–	2	–	2
Yoga	–	–	1	–	1

UP determine the type of surgical procedure to be adopted.

No post-operative complications were reported in any of the operated patients in this study. However, the study done in Nigeria reported vaginal bleeding in 4.1 % cases, wound infection, urinary tract infections, and vault haematoma in 1.7 % patients each following operation [11].

In the Nigerian study, 2.5 % UP cases were managed conservatively which was similar to our findings [11]. Ring pessary and Kegel exercises were the main non-operative procedure for UP cases in this study. In other studies, concomitant sling [21], ring pessaries often in combination with pelvic floor strengthening exercises [8, 11, 19], and estrogen creams [11] were the various conservative methods used.

Pessaries are being traditionally used to treat prolapse in the elderly as also observed in this study [22]. It has also been reported to be used as first-line therapy by experts in UP management [23]. However, a systematic review has found that pessaries are not very effective [24]. Moreover, users have been found to be reluctant to use it over the long run. Hence surgery which is safer nowadays by advances in techniques and anesthesia is the only real definitive treatment for prolapse [22]. However, vaginal pessary ring can be used until the patient is ready for surgery [8].

Other methods like avoidance of lifting heavy weights, Kegel exercise, and yoga used in first-degree prolapse management as reported in a Nepalese study were also observed among few patients in this study [8]. Benefits of pelvic floor muscle training in improving prolapse symptoms have been mentioned in a multicenter study done in UK, New Zealand, and Australia [25]. Pelvic floor strengthening exercises and pessary rings are suitable for local level implementation and low income settings as they are inexpensive. Muscle training has shown beneficial effects in conditions like urinary incontinence, fecal incontinence, and lower back pain besides preventing UP [26].

Conclusion

Adequate rest and regular practice of pelvic floor strengthening exercises in early post natal period, adoption of suitable family planning methods, and more of institutional deliveries are needed to prevent prolapse. The common clinical presentations experienced in UP cases should help medical professionals in early identification followed by suitable age, parity, and severity appropriate management procedure. This would result in improvement in quality of life of UP cases.

Limitations

Analysis for few variables could not be done for all UP cases due to unavailability of information in few medical records.

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Authors Contributions NJ: guarantor of this research work, design, literature search, manuscript preparation. CK: data collection, data analysis, statistical analysis, interpretation of data. BAR: concept of the study, revising the manuscript. NAA: data collection, data analysis, statistical analysis. LMH: data collection, manuscript editing, manuscript review. YJM: data collection, literature search, manuscript editing.

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Conflict of interest None.

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