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Management of uterine prolapse: vaginal hysterectomy versus uterus preserving procedures

Iram Sarwar, Attiya Bibi Khan, Wajeeha Khurshid, Ansa Islam, Sadia Bibi

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Author Information

From: Department of Gynaecology & Obstetrics, Unit C, Ayub Medical Institute Abbottabad, Khyber Pakhtunkhwa, Pakistan

Dr. Iram Sarwar
Associate Professor

Dr. Attiya Bibi Khan
Assistant Professor
(Corresponding Author)
Email: atyyamir@yahoo.com

Dr. Wajeeha Khurshid
Medical Officer

Dr. Ansa Islam
Associate Professor

Dr. Sadia Bibi
Consultant Gynecologist

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ABSTRACT

Introduction: Pelvic organs prolapse is a disease in which one or more of the female pelvic organ like bladder, uterus, rectum, intestines or vaginal vault descend through the vagina. Uterus preserving procedures and vaginal hysterectomy were compared for success of repair, duration of surgery and stay, blood loss, and post operative complications especially in older women.

Materials & Methods: This study was conducted in Gynae and Obstetrics unit C of Ayub teaching hospital Abbottabad for the period of two years and 3 months from October 2018 till December 2021. Sample size was calculated and all the subjects who fulfilled the inclusion criteria underwent a complete workup including history and examination. Data collected on predesigned proforma including demographic variables, obstetrical history, history of any illness, type of prolapse, type of procedure, duration of surgery and stay in hospital, amount of blood loss, type of anaesthesia and postoperative complications. All participants were assigned to either vaginal hysterectomy or uterus preserving procedures. Data were analysed by SPSS version 10.

Results: Out of 73 patients**,** 41 had vaginal hysterectomy and AP repair and 32 patients had uterus preserving procedures. Mean duration of surgery for vaginal hysterectomy was 68 minutes and for uterus preserving procedures was 40 minutes. Mean blood loss for vaginal hysterectomy was 291 ml and for uterus preserving procedures was 155ml. Mean duration of hospital stay for vaginal hysterectomy was 5 days and for uterus preserving procedures was 3.5 days. Six patients had complications with vaginal hysterectomy and 5 patients had complications in uterus preserving procedures.

Conclusion: The advantage of uterus preserving procedures over vaginal hysterectomy is that it maintains pelvic anatomy integrity and duration of surgery, blood loss and hospital stay are significantly reduced and can be safely used in older women too.

Keywords: Uterine Prolapse; Hysterectomy, Vaginal; Pelvic Floor; Pelvic Pain; Urinary Incontinence.

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INTRODUCTION

Pelvic organ prolapse is a disease in which one or more of the pelvic organs like bladder, uterus, rectum, intestines or vaginal vault descend into or through the vagina.[1,2] Pelvic organ prolapse has a negative influence on women's quality of life and is associated with psychological, physical, and sexual problems. The prevalence of pelvic organ prolapses ranges from 2.9-50%.[3-6] Pelvic organ prolapse has different symptoms, such as frequency of micturition, urinary incontinence, sexual dysfunction, voiding difficulty, faecal incontinence, pelvic pain, low backache, and pelvic heaviness.[7,8]

There are different treatment options for women with pelvic organ prolapse, however subjective symptoms of patient are important because treatment depends upon the discomfort of the patient rather than the severity assessed by physical examination. [2]

The lifetime risk for prolapse procedure is 11-20% and vaginal hysterectomy is the most performed procedure for uterine prolapse.[9-13] The annual incidence of surgery for pelvic organ prolapse is within the range of 15-49 cases per 10,000 women-years, and it is likely to increase due to increase in life expectancy.[14,15] Little is known about the prevalence and effectiveness of different types of operations, around 30% of women need further operations due to failure.[9] Uterus preserving procedures are becoming more popular nowadays. They are thought to be less invasive; there is less blood loss, faster recovery, and few complications. They are as effective as vaginal hysterectomy with a similar rate of recurrence and repeat surgery.[16-18] Vaginal Hysterectomy prevents development of uterine cancer, but it disrupts the support of pelvic floor,[19] so to prevent vault prolapse additional vault suspension is recommended.[20,21]

Many treatment options are available for uterine prolapse including procedures with hysterectomy and procedures with preservation of uterus. Several uterus-sparing procedures are available, either by vaginal or abdominal route, with or without the use of mesh including sacrospinous ligament hysteropexy, uterosacral ligament hysteropexy, rectus fascia hysteropexy, Manchester repair, etc., but the best surgical approach is still to be proven.

The goals of any pelvic floor reconstructive surgery should be to achieve a durable result with the least invasive approach and a low rate of complications Aim of our study was to compare uterus preserving procedures mainly anterior abdominal wall Cervicopexy and modified Purandere's Cervicopexy (sling), both procedures use native tissue (rectus sheath), with vaginal hysterectomy in terms of success of repair, duration of surgery, hospital stay, blood loss and post operative complications and evaluate the outcome of uterus sparing surgeries in patients above 50 years. The current study was done to determine whether old patients can be offered uterus preserving surgeries safely.

MATERIALS & METHODS

This study was conducted in Gynaecology unit C of Ayub Teaching Hospital Abbottabad for a period of 27 months (October 2018 till December 2021). All women with uterine prolapse at stage 2 or higher (uterine prolapse 1cm above the hymen or beyond) requiring surgery were invited to participate. All participants were assigned either to uterus preserving procedures or vaginal hysterectomy. Women with co-existing prolapse of anterior or posterior wall were able to participate, concomitant repair of anterior or posterior wall was allowed. Women with previous pelvic floor or prolapse surgery, known malignancies, abnormal uterine bleeding, abnormal ultrasound findings of uterus or ovaries, immunological or haematological disorders interfering with recovery after surgery were excluded.

All gynaecologists were experienced, and residents were allowed to perform procedures under direct supervision of gynaecologists. The decision to treat uterine prolapse surgically was a shared decision by the women and her gynaecologist. Written informed consents were taken. An independent doctor who was not involved in treatment carried out the 3 months follow up. Anterior abdominal wall Cervicopexy and modified Purandere's procedures were done. For Modified Purandere's procedure, autologous facial sling of rectus sheath was used, and procedure performed by placing the patient in supine position. Abdomen was opened through Pfannenstiel incision. Dissection was carried out up to rectus sheath. Horizontal incision was made in rectus sheath approximately15cm in length. This length can be changed according to the degree of prolapse and surgeons need. Left limb of the sling approximately 1cm in width was harvested from the lower edge of aponeurosis starting from the midline of incision and separated latterly up to the lateral border of rectus muscle till the inguinal ring was exposed. Right strip was also made in similar way and both strips were held in clamps on each side. Peritoneal cavity was opened. Internal organs were inspected, a small transverse incision was given in to the peritoneum posteriorly at the supravaginal portion of cervix near to the attachment of uterosacral ligament. A long-curved artery clamp was passed through this incision into the broad ligament to the internal inguinal ring using round ligament as a guide. The facial strips were carried between the leaves of broad ligament and attached to the supravaginal portion of cervix posteriorly with a non-absorbable suture i.e., black silk No.1 using 40mm curved needle on both sides. At the end of procedure uterus was lifted and bent anteriorly along its long axis. Abdomen was closed in usual way with special reinforcement at the level of internal inguinal rings.

Anterior abdominal wall Cervicopexy was performed by placing the patient in supine position. The abdomen was accessed through a low Pfannenstiel incision, with adequate dissection of the skin and subcutaneous tissue, to open the anterior rectus sheath vertically in the middle line, together with the parietal peritoneum. The second step was to open the uterovesical pouch using a transverse incision at the Vesico-Uterine peritoneal reflection, followed by downward dislocation of the bladder until exposure of the uterine isthmus and upper (supravaginal) cervix. Then a series of three No. 1 monofilament polypropylene blue sutures were placed: the highest was just below the isthmus and the others were placed at the supravaginal cervix; care was taken to achieve adequate bite without transfixing the cervical canal. The Vesico-Peritoneal pouch was closed over to leave the 3 sutures at the right and left angles of the Vesico-Uterine peritoneal reflection incision. The third step was to extract the sutures one-by-one through the abdominal wall in the same order to render the isthmic suture the highest. The sutures were then tied to the anterior rectus sheath, and abdomen was closed.

Main outcome measures calculated were duration of surgery, amount of blood loss, duration of stay, postoperative complications, and recurrence of prolapse. SPSS 10 was used for data analysis.

RESULTS

Total 73 patients were recruited with mean age of 51.27 years (range18 years to 80 years). Out of these, 17(23.3%) had second degree uterovaginal prolapse and 56(76.7%) had third degree uterovaginal prolapse. Most patients (60.3%) were multiparous as shown in Table 1.

Table 1: Past Obstetrics History of Patients (n=73).

Past Obstetric History	Frequency	Percent
Nulliparous	04	05.5
Para1-2	09	12.3
Para 3-4	16	21.9
Para 5 & above	44	60.3
Total	**73**	**100.0**

All patients except 4 nulliparous patients gave history of vaginal deliveries and no patient had delivery through caesarean section. Out of 73 patients, 41 had vaginal hysterectomy with AP repair and 32 patients had uterus preserving procedures (Table 2).

Table 2: Frequency of procedures done on patients (n=73).

Procedure	Age (yrs)	f	%
Manchester Repair	<50 >50	02 0	02.7
Abdominal sling Operation (Modified Purendere)	<50 >50	11 02	17.8
Cervicopexy	<50 >50	08 09	23.3
Vaginal Hysterectomy	<50 >50	21 20	56.2

Regarding history of risk factors 14 patients had Asthma and cough, Constipation 29 and Perineal trauma in 4 patients.

Majority surgeries were performed under spinal anaesthesia (91.8%) and 6 patients (8.2%) were given general anaesthesia. Main outcome measures are shown in Table 3. After 3 months follow up no recurrence was reported in either case.

Table 3: Main Outcome Measures of patients receiving the two groups of procedures (n=73).

Procedures	Mean ± S.D.	Surgical Duration (mins)	Hospital Stay (days)	Surgical Complications	Surgical Blood Loss (ml)
Uterus Preserving Procedures (n=32)	Mean	40.00	3.50	5.06	155.0
	S.D.	13.38	1.14	2.37	156.47
	p-value	<0.001	0.001	0.082	<0.001
Vaginal Hysterectomy (n=41)	Mean	68.29	4.98	6.07	290.98
	S.D.	21.95	2.35	2.49	158.76
	p-value	<0.001	0.001	0.082	<0.001

DISCUSSION

In our study 57.5% patients were above 50 years, most of the patients were multiparous and had vaginal deliveries. The most important risk factors related to uterine prolapse is parity and number of vaginal deliveries. It mostly occurs due to damage caused to the pelvic floor during vaginal deliveries. Vaginal deliveries can also damage the nerve supply of pelvic muscles by foetal head and may also cause secondary pelvic myoatropy.[22] Olsen et al.,[9] and Kim[23] also reported that the common causes of pelvic organ prolapse are aging, menopause and vaginal delivery. In our study 4 patients were nulliparous, who may have genetic collagen disorder. Parker et al.,[24] indicated the genetic collagenous tissue disease is one of the important latent causes of prolapse. In our study majority of the patients had chronic cough and asthma (19.2%), and constipation (39.7%). These risk factors were also quoted by other studies.[3]

Out of 73 women 32 had uterus preserving surgery (44%), 13 of them were above 50 years of age and vaginal hysterectomy in 41 patients (56%). Both types of procedures were compared for duration of surgery, duration of hospital stay and post-operative complications like fever, pain, vomiting, readmission, and urinary tract infection. There was excellent rate of prolapse correction with the all the procedures in our study. There was significant difference between mean duration of surgery between vaginal hysterectomy group and uterus sparing surgeries (p value <0.001), mean blood loss (p<0.001) and mean hospital stay (p<0.001). Surgical complications were less in uterus preserving procedures than in vaginal hysterectomy group but not statistically significant. These findings are consistent with the 2021 systemic review on complications and objective outcomes of uterine preserving surgeries for the repair of pelvic organ prolapse versus procedures removing the uterus.[25] Postoperative minor complications were similar in both groups.

In another retrospective study 34 uterus preserving procedures and 36 vaginal hysterectomy and AP repair were compared and Maher et al.,[16] concluded that uterus preserving surgeries could be safely offered to women wishing uterine preservation. Similar results were from a study by van Brumen et al.[17]

Of patients undergoing uterus preserving surgeries, 13 were above the age of 50 years. Although uterus preserving surgeries are traditionally used to repair prolapse in young patients wishing to preserve fertility, but they can be used in older patients as well with good results. Older women may benefit more with anatomical preservation along with the benefit of less invasiveness and complications. Although Sacro-colpopexy is excellent procedure but it is difficult to learn and can have serious complications and mesh has shown complications, so we performed anterior abdominal wall Cervicopexy and modified Purandere Cervicopexy. Both procedures are easy to be learned and showed excellent results especially in older women as well.

CONCLUSION

Uterus preserving surgeries are as effective as vaginal hysterectomy for prolapse repair. Uterus preserving surgeries have less blood loss and hospital stay as compared to vaginal hysterectomy. Cervicopexy can be offered to older women as well as younger women wishing to conserve fertility.

LIMITATIONS & RECOMMENDATIONS

The study sample was small so further studies should be done to find out more about the short-term and long-term outcomes of these procedures.

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