

# Abdominal Sacrohysteropexy in Young Women with Uterovaginal Prolapse

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## Abstract

**Objective:** To study the results of sacrohysteropexy with Prolene Mesh for treatment of uterovaginal prolapse in women who desire to preserve their uterus. **Study Design:** Prospective observational study. **Place and duration of study:** This study was carried out in Allied Hospital, Faisalabad over a period of one year from April 2010 to April 2011. **Methods:** 12 women with uterovaginal prolapse wishing to retain their uterus underwent Sacrohysteropexy with Prolene Mesh attached to uterine isthmus and to the anterior longitudinal ligament of the first or second sacral vertebra in a tension free fashion. Subjective and objective cure of uterine prolapse and operative and postoperative complications were noted. **Results:** 12 patients

underwent Sacrohysteropexy for uterovaginal prolapse during this study period. The mean age of patient was 30 years (range 16-40 years). Ten (83.3%) were multipara while two (16.7%) were nullipara. All women had second degree uterovaginal prolapse. The mean follow up period was 12 months. No women developed intra and postoperative complications. No single case of mesh erosion was detected success rate was 83.3%. Recurrent prolapse was recorded in 2 (16.7%) women which was symptomatic and required repeat surgical treatment. **Conclusion:** Sacrohysteropexy is effective and safe procedure in women with uterovaginal prolapse who want to preserve their uteri. **Key Words:** Uterovaginal Prolapse. Conservative surgical management success.

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## INTRODUCTION

The first case of genital prolapse is mentioned in the Ebers papyrus date 1500 BC. The treatment consisted of smearing the prolapse with a mixture of honey and then replacing it. In 400 BC. Hippocrates described treatment of uterine prolapse by tying the patient upside-down and shaking her violently, or the reduction of the uterine prolapse by introducing a half pomegranate soaked in wine into the vagina. Donald of Manchester and his assistant Fothergill described the first surgical methods of treatment in 1880. This was later called the Manchester operation<sup>1</sup>. Pelvic organ prolapse (POP) is estimated to affect nearly half of all females over 50 years of age<sup>2</sup> and has a negative impact on the patient's quality of life. Women have an 11% lifetime risk of undergoing pelvic reconstructive surgery for POP or urinary incontinence<sup>3,4</sup> and the costs of prolapse surgery, as recorded in the North American population, might be in excess of 1 billion dollars<sup>5</sup>. The etiology of POP is complex and multifactorial, current treatment options include pelvic

floor muscle training, use of pessaries and surgery. Treatment depends on factors such as the severity or grade of POP, symptoms, the patients general condition and expectations and the surgeon experience. Diverse surgical approaches are now available for POP repair, the goal of which are to restore normal pelvic anatomy, to restore or maintain normal urinary, bowel or sexual function, to reduce the impact of symptoms and to improve quality of life. The decision to remove a healthy organ, such as the uterus in POP repair, must take the patient preference, need and values into consideration. Hence interest in uterus sparing surgery is growing. In the last two decades, several studies have described successful anatomical and functional outcomes after uterus preserving POP repair in both young and elderly women<sup>6</sup>. The advantages of uterus preservation include the maintenance of pelvic anatomy integrity, reduction of intraoperative blood loss, shortened operating time and hospital stay. Finally uterus preservation appears to contribute

positively to the patient's self esteem, body image, confidence and sexuality<sup>7</sup>. Procedures are Manchester operation<sup>8</sup>, uterosacral suspension and plication<sup>9,10,11,12,13</sup>, sacrospinous hysteropexy<sup>14,15</sup>, tension free vaginal mesh. These are performed vaginally<sup>16,17,18</sup>. Open abdominal uterus sparing procedures for POP repair include combined procedures, such as vaginal abdominal retropubic uterine suspension<sup>19</sup>, pectineal ligament uterine suspension<sup>20</sup> and sacrohysteropexy<sup>21,22,23</sup>. Arthure and Savage were the first to describe attachment of the prolapsed uterus to the sacrum using an abdominal approach<sup>24</sup>. However while the earliest report described the procedure using a combination of autologous grafts and retropubic suspensions, more contemporary literature focuses on sacrohysteropexy using synthetic mesh<sup>25</sup>.

Abdominal sacrohysteropexy procedure is performed using mesh fixed to uterine isthmus anteriorly & anterior longitudinal ligament over sacral promontory posteriorly.<sup>26,27,28</sup> An important point for discussion concerning abdominal surgery with or without hysterectomy is increased risk of infection or mesh erosion, some authors report significantly higher percentages of mesh erosion in patients after hysterectomy (upto 27%) compared with uterus sparing surgery or sarocolpopexy without hysterectomy (0-4%), while others found no difference<sup>29,30,31,32</sup>. It restores normal anatomy, enhances sexual function and preserves child bearing capacity. It also allows restoration of the length of the vagina without compromising its caliber, and is therefore likely to have a favourable functional outcome<sup>33,34</sup>.

## MATERIAL AND METHODS

12 women with uterovaginal prolapse wishing to retain their uterus underwent sacrohysteropexy using prolene No.1 mesh. This was prospective observational study. Duration of this study was from August 2009 to August 2010. All 12 women were selected by convenient sampling. All women who had major uterine prolapse grade-II or more and who did not want to undergo hysterectomy or were desirous of further childbearing were included in this study. The patients were evaluated by general physical examinations & pelvic examination to grade the type of prolapse. In grade-I prolapse, the leading edge of the prolapse did not descend below 1cm above the

hymenal ring. Grade-II when the leading edge of prolapse extended from 1cm above to 1cm below hymenal ring. Grade-III, 1cm beyond the hymenal ring but without complete vaginal eversion and Grade-IV where vagina is completely everted<sup>11</sup>. Patients were admitted after thorough preoperative assessment. All the patients were counseled regarding mesh erosion, infection, fever, damage to bladder or bowel, pain during sexual intercourse, vaginal discharge bleeding and failure of procedure. An informed consent was obtained from the patient for the procedure. In the sacrohysteropexy procedure after entering the abdominal cavity the peritoneum over the anterior surface of sacral vertebra 1 or 2 was incised and this was continued down to create peritoneal flaps. Using prolene 1 suture and taking care not to injure the vessels and nerves, prolene mesh was fixed to back of uterine isthmus anteriorly & anterior longitudinal ligament over sacral promontory posteriorly in a tension free manner. The peritoneal flaps were re approximated over the mesh & abdomen closed. All operations were performed by the same surgeon.

## RESULTS

12 patients underwent Sacrohysteropexy for uterovaginal prolapse during this study period. The mean age of patient was 30 years (range 16-40 years). Ten (83.3%) were multipara while two (16.6%) were nullipara & out of these patients one (8.3%) being unmarried. All women had grade-II uterovaginal prolapse. In four (33.3%) patients concomitant bilateral tubal ligation was performed. No women developed intra operative and postoperative complications. No single case of mesh erosion was recorded in our study. Recurrent prolapse was recorded in 2(16.7%) women. Success rate was 83.3%. Pregnancy was reported in one (8.3%) woman who delivered by lower segment caesarean section.

**Table-1**  
**Age distribution of patients**

Age	n=12	%age
16-20	3	25%
30-40	9	75%

**Table-2**  
**Parity of patients**

Parity	n=12	%age
Multipara	10	83.3%

Nullipara	2	16.6%
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**Table-3**  
**Degree of prolapse**

Degree of prolapse	n=12	%age
1 <sup>st</sup> grade-I	0	
2 <sup>nd</sup> grade-II	12	100%

**Table-4**  
**Complications of procedure**

Complications	n=12	%age
Mesh erosions	0	0%
Intra and post operative complications	0	0%

**Table-5**  
**Success rate of procedure**

Successful repair	n=12	%age
1 <sup>st</sup> procedure	10	83.3%
Repeat surgery	2	16.7%

## DISCUSSION

It has been estimated that half of parous women lose pelvic floor support resulting in some degree of prolapse and out of these women 10-20% seek medical care. A minor prolapse may be treated with pelvic floor exercise and vaginally inserted pessaries without the need for surgery. More serious prolapse may need surgery. Consensus is growing that the uterus can be preserved at the time of pelvic reconstructive surgery in appropriately selected women who desire it. The result of comparison trials and prospective studies have confirmed that uterus sparing surgery is feasible with shorter operating time and hospital stay having similar outcomes compared to hysterectomy<sup>30</sup>. Several approaches have been advocated for the management of uterine prolapse in young women or those who desire to retain their uteri. In Manchester's operation vaginal shortening of the uterosacral and cardinal ligaments is done with cervical amputation<sup>31</sup>. Manchester procedure is associated with several major problems such as recurring prolapse in 20% of patients, a decrease in fertility and a pregnancy wastage of up to 50%. Furthermore, cervical stenosis is frequent and makes it difficult to obtain tissue from the cervix and endometrium for cytology and histology respectively<sup>32</sup>. Synthetic material such as Dacron tape or Strips of external oblique aponeurosis, were employed to suspend the uterus to anterior abdominal wall with

disappointing results, the significant change in the normal vaginal axis causes abdominal pressure to be transmitted to the cul-de-sac, thereby increasing the possibility of subsequent enterocele formation. New generation meshes including Prolift, Seraton and Avaulta have been used successfully via the vaginal route for total prolapse preserving the uterus. The occasional disadvantage is the erosion rate<sup>35</sup>. Several authors have recommended the abdominal approach<sup>36</sup>. Insertion of mesh uterine suspension sling is done with the women under a general anaesthetic and can be carried out either as open abdominal surgery or by Laparoscopy. O'Brien and Ibrahim were the first to report laparoscopic anterior suspension of the uterus or vagina with uterus preservation. Rosenblatt et al, have published the largest case series of 40 women who underwent laparoscopic sacrocervicopexy, pelvic organ prolapse quantification system measurement was used and showed good result<sup>37</sup>.

The present study was carried out to evaluate effectiveness of sacrohysteropexy using prolene mesh for treatment of uterovaginal prolapse.

In a study carried out by Barranger et al<sup>38</sup>, the mean age of the women under going sacrohysteropexy was 35.7 years (range 29-43). The mean age of the women was 30 years (range 16-40 years) in our study. In the largest review of 30 cases by Barranger et al, all women were parous. Young and nullipara women with prolapse have been demonstrated to be more likely to have some identifiable risk factors (congenital anomalies, neurological disease, connective tissue disease than older or parous women where no obvious clinical risk factor is identified<sup>39</sup>. These findings are consistent with our study where 10 (83.3%) patients of prolapse were multipara with history of prolonged labour and delivery by unskilled person. Only two (16.6%) women in our study were nullipara, one being unmarried. This may be due to congenital weakness of pelvic supporting structures. Several different types of synthetic and biological mesh are available, which vary in structure and their physical properties such as absorbability. In study performed by Elad Leron and Stuart L & Slanton<sup>40</sup> Sacrohysteropexy was performed by using Teflon mesh while in Farhat Karims<sup>41</sup> study sacrohysteropexy was performed using prolene-1. The short term outcome was successful with zero complications. In addition it was more cost effective as the need for synthetic mesh is avoided and hospital stay is also reduced. However, it leads to erosion and

bowel adhesion and obstruction. In a study performed by Demirci and Leron E et al<sup>42</sup>, there were no intraoperative and postoperative complications. However in the largest review of 30 cases by Barranger et al<sup>38</sup> intraoperative and postoperative complications occurred in two patients (6.6%) and four patients (13.3%) respectively. Vaginal mesh erosion occurred in one woman. The mean objective and subjective follow up period was 44.5 months. Two cases of recurrent uterovaginal prolapse (6.6%) were described. In our study performed on 12 cases, there were no intraoperative and postoperative complications. During one year follow up period no single case of mesh erosion was recorded. However two patients (16.6%) had recurrent uterovaginal prolapse. Both of these were nullipara and young. Their prolapse may be due to congenital weakness of pelvic supporting structures. The success rate was 83.3%. Pregnancy after uterus sparing POP surgery is a controversial issue. Caution should be exerted in fertile women who have undergone any form of prolapse repair because the effect of pregnancy and delivery on any reconstructive procedure are still poorly understood. In 257 women who underwent uterus sparing surgery, 24 pregnancies (9.7%) and 16 deliveries, (6 caesarean section, 10 vaginal deliveries and 6 abortions) have been reported to date. (Barranger et al 2003). One patient (8.3%) in our study got pregnant, who later delivered by caesarean section<sup>38</sup>.

## CONCLUSION

Abdominal sacrohysteropexy is effective and safe treatment of uterovaginal prolapse in women who wish to retain their uteri. It maintains a durable anatomic restoration of normal vaginal axis (hence eliminating the prolapse symptoms) and sexual function without painful or rigid vaginal scarring. The success rate is excellent for correcting prolapse with minimal complications.

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