

Sacrohysteropexy Using Mesh for Uterovaginal Prolapsed in Women Who Wish to Retain Uterus

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Abstract

Objective: to study the ongoing results of sacrohysteropexy with Teflon mesh for treatment of uterovaginal prolapse in women who desire to preserve their uterus. **Study Design:** Cross sectional study. **Place and Duration:** Study was conducted in Gynecology department of Nishtar hospital, Multan, POF Hospital Rawalpindi and Holy Family Hospital Rawalpindi in one year duration from April 2016 to April 2017. **Methodology:** A total number of three hundred and eighty two (n=382) patients. Patients who desired to retain their uterus were evaluated by standard questionnaire, general physical examination and opturodynamic techniques. Six main outcome variables were assessed: Stress incontinence, urgency, urge incontinence, prolapse symptoms, constipation and dyspareunia. All these variables were assessed on basis of their severity. Data was analysed by using SPSS version 24. P value ≤ 0.05 was considered as significant. **Results:** in our study we observed outcome variables as stress incontinence, urgency, urge incontinence after sacrohysteropexy, observation was made on basis of relief from symptoms as mild and moderate 28.5% and 0.3%, 15.2% and 8.4%, 8.6% and 9.2% respectively. Constipation was noted as mild, moderate and severe 32.2%, 7.6% and 8.9% respectively. Dyspareunia was noted as mild and moderate 24.1% and 0.5% respectively. All of these values are lessen when compared with pre-operative baseline values. **Conclusion:** Results of our study revealed that sacrohysteropexy with Teflon mesh is an effective and successful procedure for patients who were facing uterovaginal prolapse symptoms but desired to retain their uterus for fertility or childbearing.

Keywords: Sacrohysteropexy, Uterivaginal prolapse, Teflon mesh, Stress incontinence, Constipation.

Introduction

In the first place, the evidence of uterine prolapse was found in Ebers papyrus in the 1500 BC. Its management included the smearing of prolapse in a mixture of honey and restoration of it afterwards^{1,2}. While Hippocrates in 400 BC suggested the treatment by holding the patient in upside down position vigorously joggling her. There was also another strategy used for the same purpose i.e. the introduction of a half pomegranate drenched in wine into the vagina³. In 1889, Donald and Fothergill introduced the first surgical method called "Manchester Operation 1".

Which is presented with a surgical challenge while managing the uterine prolapse surgically with reservation of uterus^{3,4}. The basic purpose of reconstruction of pelvis includes the correction of prolapse, preservation of coital function and maintenance of fecal and urinary continence⁵. The operative techniques for correcting uterine prolapse include fixation of transvaginal uterosacral ligament to sacrospinous ligament, ventral fixation, suspension of uterus using laparoscope by attaching round ligament to the rectus sheath⁶.

When conservative treatment fails to manage uterine prolapse in a young healthy nulliparous woman⁷, or when childbearing is incomplete, or woman having congenital disorder or when patient rejects the hysterectomy in order to conserve the uterus, then surgical correction is indicated among such patients^{8,9}. The surgery of uterovaginal prolapse in young women presents a surgical challenge as it is required for the preservation of child bearing potential. For this condition, abdominal sacrohysteropexy is to be done¹⁰. The aim of our study is to evaluate the effectiveness of Sacrohysteropexy procedure with mesh use.

Materials and Methods

The evaluation of three hundred and eighty two patients who desired to reserve their uterus was done by standard questionnaire, general physical examination and opt urodynamic techniques. Study was started after ethical approval from hospital ethics committee and informed consent from patients. Study was completed from April 2016 to April 2017. The definitions coincide with the ICS (International Continence Society) standards. The prolapse was referred to first degree when it got 1cm above introitus, it was second degree when the presenting part was present at the introitus, while third degree when it was outside introitus. The urodynamics were performed with the reduction of prolapse for predicting the lower urinary tract function after the surgery, and for the possibility of requirement of adding operative method in case of urethral sphincter incontinence. Acolposuspension will be done after the diagnosis of urethral sphincter incompetence.

Patients will be given spinal or general anesthesia before performing the surgery. The preoperative preparation of patients included the administration of Cephadrine 1g IM and Metronidazole 1g PR. The position

for surgery will be supine Trendelenburg. The type of incision will be low transverse or vertical. In case of sphincter incompetence, the colposuspension will be performed prior to sacrohysteropexy. Catheterization of bladder will be done and peritoneal cavity will be opened. Abdominopelvic exploration will be done. Packing of intestines will be done with moist abdominal pack and ring retractor that will be self-retaining. The uterus will be elevated with the help of uterine holding forceps. Sterile Teflon mesh bifurcated into Y shape will be used. The perforation of broad ligament at the cervico-uterine junction will be done through an avascular area with the help of scissor dissection and diathermy. One limb of the Y-shaped mesh will be inserted into the lumen. An incision will be made into the vesico-uterine peritoneum and the dissection of bladder was done distally 1-2cm in order to suture the limb of the mesh with the help of number 1 polybutylate suture with a J-needle with the cervico-uterine junction anteriorly. The same procedure was done on the opposite side. After that, the suturing of mesh was performed at the posterior cervico-uterine junction. The suturing was not done between the arms of mesh in order to escape the complete encircling of uterine isthmus. In this way, expansion of lower uterine segment was allowed to permit for pregnancy later on. Subsequently, an incision was made on the peritoneum present on the anterior surface of sacral vertebra 1 or 2. It was made continuous inferiorly in order to form two flaps of peritoneum along the pelvic floor and the anterior ligament. The dissection of anterior longitudinal ligament was done cautiously with the help of diathermy and careful dissection. No tension was ensured for the placement of mesh on the floor of pelvis and the suturing was done with the help of Ethibond 1 suture with anterior longitudinal ligament. It was followed by closure of utero-vesical peritoneum. In case of a rectocele, the dissection of rectum was done free from posterior wall of vagina. Another piece of mesh was placed on the peritoneal body, at the sides of posterior vaginal wall and then joined with posterior cervico-uterine junction. Insertion of intraperitoneal drain will be done in case of colposuspension using suprapubic catheter. All the precautionary measures were taken against the possibility of infection as a result of inserting the Teflon mesh, as it's a foreign substance. The same surgeon performed all the sacrohysteropexies. Prophylactic heparin was administered subcutaneously twice daily. The removal of intraperitoneal drain was done 24 hours after the surgery. In case of colposuspension, the regime of suprapubic catheter was also followed.

The paired observation was performed for each participant prior to and following the surgery. The calculation will be performed for the improvement of a given symptom in the patient. The improvement was referred to as decrease in intensity of symptoms after the surgery in comparison to before surgery.

Data was entered and analyzed by SPSS version 24, mean and SD will be calculated and presented for continuous variables like age, parity, BMI and gravidity. Frequency and percentages were calculated and presented for categorical variables like Stress incontinence, Urgency, urge incontinence, prolapsed symptoms, constipation and dyspareunia. Chi square test and student t-test were applied to see effect medication. P value ≤ 0.05 was considered as significant.

Results

A total number of 382 women were enrolled in this study. The mean age and follow-up time was 35.54 ± 6.58 years and 16.25 ± 2.65 months respectively.

In pre operative session stress incontinence was observed as mild and moderate 26.7% and 28.5% respectively. Urgency was observed as mild and moderate 28.8% and 35.3% respectively. Urge incontinence was noted as mild and moderate 17% and (n=68) 17.8% respectively. Prolapse symptoms were noted as mild and severe 64.1% and 35.9% respectively. Constipation was noted as mild and moderate 39% and 29.8% respectively. Dyspareunia was noted as mild and moderate 16.5% and 18.1% respectively.

In post-operative session stress incontinence was observed as mild and moderate 28.5% and 0.3% respectively. Urgency was observed as mild and moderate 15.2% and 8.4% respectively. Urge incontinence was noted as mild and moderate 8.6% and 9.2% respectively. Prolapse symptoms were noted as mild and moderate 14.9% and 7.6% respectively. Constipation was noted as mild, moderate and severe 32.2%, 7.6% and (n=34) 8.9% respectively. Dyspareunia was noted as mild and moderate 24.1% and 0.5% respectively.

The differences were statistically significant at ($p \leq 0.01$). (Table.I)

Table.I
Pre-operative and Post-operative Symptoms

Symptoms	Pre-operative	Post-operative	P-value
Stress incontinence			
Mild	102(26.7%)	109(28.5%)	<0.001
Moderate	109 28.5%	1(0.3%)	
Urgency			
Mild	110(28.8%)	58(15.2%)	p=0.000
Moderate	135(35.3%)	32(8.4%)	
Urge incontinence			
Mild	65(17%)	33(8.6%)	p=0.000
Moderate	68(17.8%)	35(9.2%)	
Prolapse symptoms			
Mild	245(64.1%)	57(14.9%)	p=0.000
Moderate	--	29(7.6%)	
Severe	137(35.9%)	--	
Constipation			
Mild	149(39%)	123(32.2%)	p=0.000
Moderate	114(29.8%)	29(7.6%)	
Severe	--	34(8.9%)	
Dyspareunia			
Mild	63(16.5%)	92(24.1%)	p=0.000
Moderate	69(18.1%)	2(0.5%)	

Discussion

Young women who were urged to retain their uterus can be managed surgically through sacrohysteropexy which proved as effective and safe method for symptom relief of uterovaginal prolapsed. In our study we observed a significant reduction in symptoms when sacrohysteropexy was performed. In our study we observed urgency, urge incontinence, constipation and dyspareunia and their severity before and after management.

Many authors have endeavoured to managed uterovaginal prolapse with different types of synthetic materials which may include strips of external oblique aponeurosis and Dacron tape but results were disappointing^{11,12}. In all procedures or mesh techniques a significant change in abdominal pressure on cul-de-sac was observed, meanwhile another technique with mesh was introduced with name of transvaginal sacrospinous fixation or sacrohysteropexy. This technique helps in significant reduction of pain.

Same as our results and conclusion Kovac SR et al¹³ conducted a study to investigate efficacy of sacrohysteropexy in women with symptomatic uterovaginal prolapse and reported that this management plan for such women who desired to preserve their uterus or further childbearing is acceptable. Successful pregnancies and deliveries were also reported in this study after sacrohysteropexy. This study is comparable with our study.

Another study was conducted on this topic by Van Lindert ACM et al¹⁴ in 1993 and reported successful treatment of uterovaginal prolapsed. They treated 61 patients of vaginal and uterine prolapsed and reported 95% good outcome or symptoms relief and pregnancies after sacrohysteropexy. A similar study was conducted by Leron Eet al¹⁵ in 2001 and concluded that use of synthetic mesh for management of uterovaginal prolapsed is a successful and fully supported with literature. In his study follow up was done till sixteen months and 53.8% women reported constipation in post operative follow up period.

In a study Costantini E et al¹⁶ used Gore tex mesh and reported that all patients who were treated with mesh were complained about vaginal heaviness and urinary dysfunction. Five of them were already undergone for hysterectomy. Overall success rate 90.4% as 19/21 patients give satisfactory compliment. Mild incontinence was observed in 3 (14.2%) patients, while in our study mild incontinence was observed in 17% patients. this study is comparable with our study.

In another study Tahir Set al¹⁷ reported 83.3% success rate of sacrohysteropexy when repaired with Teflon mesh. According to his results no post operative complications were observed and mesh erosion was observed in three patients. All patients of his study were having second degree prolapse. Moiety F et al¹⁸ al also conducted similar study on multiparous 2nd degree prolapsed women. All were treated with similar method and at the end of study he reported only one case rectal injury and one case of median sacral vein injury. Both complications are serious and unbearable so, both were managed immediately.

In 2006 Demirci F et al¹⁹ conducted a similar study on 20 patients with symptoms uterovaginal prolapse

who were managed with sacrohysteropexy mesh repair. According to his results stress incontinence was reported in 5% of patients after procedure while in our study mild stress incontinence was observed in 28.5% of patients and moderate incontinence was observed in 0.3% of patients.

Conclusion

Results of our study revealed that in women with uterovaginal prolapse who wish to retain their uterus, restoration of normal vaginal axis can be attained with an abdominal sacrohysteropexy technique with Teflon mesh. Through this procedure uterovaginal prolapse symptoms can be relieved permanently.

References

1. Khan A, Jaleel R, Nasrullah FD. Sacrohysteropexy performed as uterus conserving surgery for pelvic organ prolapse: Review of case files. *Pak J Med Sci.* 2016;32(5):1174-1178.
2. Yücel Ö, Selçuk İ, Yazıcioğlu A, Boyraz G, Bozdağ, G, & Esinler, İ. A Case of Laparoscopic Sacrohysteropexy: A Uterus Preserving Surgical Procedure for the Treatment of Uterine Prolapse. *Gynecology Obstetrics & Reproductive Medicine.* 2016;19(1):00-00.
3. Betschart C, Cervigni M, Contreras Ortiz O, Doumouchtsis SK, Koyama M, Medina C et al. Management of apical compartment prolapse (uterine and vault prolapse): A FIGO Working Group report. *Neurourol Urodyn.* 2017;36(2):507-513.
4. Meriwether KV, Antosh DD, Olivera CK, Kim-Fine S, Balk EM, Murphy M et al. Uterine preservation vs hysterectomy in pelvic organ prolapse surgery: a systematic review with meta-analysis and clinical practice guidelines. *Am J Obstet Gynecol.* 2018:S0002-9378(18)30026-7.
5. Stamatakos M, Sargedi K, Ntzeros K. Aetiology, evaluation and management of rectovaginal fistula: A rare entity and a major surgical challenge. *Hellenic J Surg.* 2014;86:72-82.
6. Brännström M. Uterus transplantation and beyond. *J Mater Sci Mater Med.* 2017;28(5):70.
7. Leron E, Stanton SL. Sacrohysteropexy with synthetic mesh for the management of uterovaginal prolapse. *BJOG: An International Journal of Obstetrics & Gynaecology,* 2001;108:629-633.
8. Demirci F, Ozdemir I, Somunkiran A, Doyran GD, Alhan A, Gul B. Abdominal sacrohysteropexy in young women with uterovaginal prolapse: results of 20 cases. *J Reprod Med.* 2006;51(7):539-543.
9. Price N, Slack A, Jackson, S. Laparoscopic hysteropexy: the initial results of a uterine suspension procedure for uterovaginal prolapse. *BJOG: An International Journal of Obstetrics & Gynaecology,* 2010;117:62-68.
10. Lakeman, M. M., van der Vaart, C. H. & Roovers, J. P. *Hysterectomy and lower urinary tract symptoms: a nonrandomized comparison of vaginal and abdominal hysterectomy.* *Gynecol. Obstet. Invest.* 2010;70:100-106.
11. Richardson DA, Scotti RJ, Ostergard DR. Surgical management of uterine prolapse in young women. *J Reprod Med* 1989;34:388-92.
12. O'Brien PM, Ibrahim J. Failure of laparoscopic uterine suspension to provide a lasting cure for uterovaginal prolapse. *Br J Obstet Gynaecol* 1994;101:707-8.
13. Kovac SR, Cruikshank SH. Successful pregnancies and vaginal deliveries after sacrospinous uterosacral fixation in 19 of 19 patients. *Am J Obstet Gynecol* 1993;168:1778-86.
14. Van Lindert ACM, Groenendijk AG, Scholten PC, Heintz APM. Surgical support suspension of genital prolapse, including preservation of the uterus, using the Gore Tex soft tissue patch (A preliminary report). *Eur J Obstet Gynaecol Reprod Biol* 1993;50:133-39.
15. Leron E, Stuart L, Stanton. Sacrohysteropexy with synthetic mesh for the management of uterovaginal prolapse. *Br J Obstet Gynaecol* 2001; 108:629-33.
16. Costantini E, Lombi R, Micheli C, Parziani S, Porena M. Colposacro-pexy with Gore-Tex mesh in marked vaginal and uterovaginal prolapse. *Eur Urol* 1998;34:111-17.
17. Tahir S, Yasmin N, Kanwal S, Aleem M. Abdominal Sacrohysteropexy in Young Women with Uterovaginal Prolapse. *APMC.* 2012;6(1):75-78.
18. Moiety F. Abdominal Sacrohysteropexy for uterovaginal prolapse: A prospective study on 33 cases. *Archiv Gynecol.* 2009;281(4):631-6.
19. Demirci F. Abdominal sacrohysteropexy in young women with uterovaginal prolapse: results of 20 cases. *J Reprod Med.* 2006;51(7):539-4