



Vaginal sacrospinous hystopexy in treatment of second degree uterine prolapse

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ABSTRACT

Background: Sacrospinous ligament fixation is a simple procedure we use today to treat cases with uterine prolapse.

Aim of the work: is to test the effectiveness of this procedure in treatment of second degree uterine prolapse

Patients and methods: The study included 50 women having second degree uterine prolapse. 25 of them (group A) treated with bilateral sacrospinous ligament fixation while the others (group B) treated with unilateral sacrospinous ligament fixation.

Assessment of the efficacy, intraoperative and post-operative complications are recorded (follow up of patients occurred 3 and 6 months postoperatively)

Results: Mean operative time in unilateral sacrospinous fixation is 52 ± 10.6 minutes, while in bilateral procedure is 73 ± 12.6 minutes. but post operative pain is more in bilateral than unilateral procedure

Conclusions: Sacrospinous ligament fixation is effective treatment for patients having second degree uterine prolapse. Unilateral is better than bilateral sacrospinous operation regarding postoperative pain

Summary: vaginal sacrospinous hystopexy is an effective treatment for second degree uterine prolapse

Keywords: second degree uterine prolapse; sacrospinous ligament; vaginal procedure.

SOMMARIO

Background: la fissazione del legamento sacrospinoso è una semplice procedura che viene usata attualmente per trattare i casi di prolasso uterino.

Scopo del lavoro: testare l'efficacia di questa procedura nel trattamento del prolasso uterino di secondo grado

Pazienti e metodi: lo studio ha incluso 50 donne con prolasso uterino di secondo grado. 25 di loro (gruppo A) sono state trattate con fissazione bilaterale del legamento sacrospinoso mentre le altre (gruppo B) sono state trattate con fissazione unilaterale del legamento sacrospinoso.

Vengono registrati la valutazione dell'efficacia, le complicanze intraoperatorie e post-operatorie (il follow-up dei pazienti si è verificato 3 e 6 mesi dopo l'intervento).

Risultati: il tempo operativo medio nella fissazione sacrospinosa unilaterale è di $52 \pm 10,6$ minuti, mentre nella procedura bilaterale è di $73 \pm 12,6$ minuti, ma il dolore post operatorio si è presentato più nella procedura bilaterale che unilaterale

Conclusioni: la fissazione del legamento sacrospinoso è un trattamento efficace per i pazienti con prolasso uterino di secondo grado.

L'operazione sacrospinosa Unilaterale è meglio della bilaterale per quanto riguarda il dolore postoperatorio.

Sommario: l'isterosacropessi vaginale è un trattamento efficace per il prolasso uterino di secondo grado

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INTRODUCTION

Genital prolapse is a major health problem; it affects 40% of multiparous women above 50 years⁽¹⁾.

11% of women needs surgical procedure to correct some sort of genital prolapse, recurrence occurs in 30% of these women and another surgical operation will be performed⁽²⁾. Genital prolapse is increased in postmenopausal women. Pelvic organ prolapse is diagnosed if any pelvic organ displaced from its normal position⁽³⁾. Pelvic organ prolapse may be seen after hysterectomy especially if uterine prolapse was the indication⁽⁴⁾. After hysterectomy, vault prolapse occur in 0.5–1.8% of patients⁽⁵⁾. Vault prolapse occur in 11.6% of patient with history of hysterectomy for uterine prolapse. In these conditions vaginal correction is better than abdominal approach; sacrospinous ligament fixation shows 96 to 98 % effectiveness in management of post hysterectomy vaginal vault prolapse⁽⁶⁾. Many factors may lead to genital prolapse like; multiparity, forceps or ventose vaginal deliveries, large sized fetus, protracted labour and congenital weakness of fascial support⁽⁷⁾. Risk factors for pelvic organ prolapse include recurrent vaginal deliveries, obesity and advanced age. Genital prolapse is not a life threatened condition but affects female's quality of life. Pelvic organ prolapse may be in anterior vaginal wall, apical or posterior vaginal wall leading to cystocele and urethrocele in anterior vaginal wall prolapse, uterine prolapse or vaginal vault prolapse in apical prolapse and rectocele and enterocele in posterior vaginal wall prolapse. Also prolapse may be combined⁽⁸⁾.

Two main structures prevent pelvic organ prolapse; endopelvic fascia and pelvic diaphragm. Endopelvic fascia includes cardinal ligaments, uterosacral ligaments, vesico-vaginal fascia and recto-vaginal fascia. Levator ani muscle and the coccyx together are forming the pelvic diaphragm⁽⁹⁾. Complete Pelvic organ prolapse is usually occur after damage of vaginal support, so it should be corrected surgically to treat the prolapse, hysterectomy in this condition will not improve the prognosis and conservation of the uterus may add some advantages like decrease blood loss, reduce surgical trauma ,shorter operative time, quick recovery, low cost and shorter hospital stay⁽¹⁰⁾.

Upper part of the vagina is supported by paracolpium, in case of prolapse; defect occurs in this part, sacrospinous ligament fixation will correct this⁽¹¹⁾. The key in management of genital prolapse is to correct weak native fascial

support⁽¹²⁾.

The aim in genital prolapse management is to correct anatomical defects, restore sexual function, maintain urinary bladder and intestinal functions prevent recurrence and improve quality of life⁽¹³⁾.

Sacrospinous ligament attached from ischial spine to the lateral part of the sacrum, its fixation keeps the vaginal axis in the midline. Easily to be performed through the vaginal approach that helps in concurrent correction of anterior and/or posterior vaginal wall prolapse. This approach in management of pelvic organ prolapse has many advantages includes avoidance laparotomy and its complications, less postoperative pain, less hospital stay and decreased cost⁽¹⁴⁾. Many complications may occur during transvaginal sacrospinous ligament fixations like: rectal injury, ureteric injury, pudendal nerve trauma or internal pudendal vessels injury⁽¹⁵⁾. Vaginal sacrospinous ligament fixation is a successful procedure than abdominal procedures but it may associate with buttock pains and hemorrhage⁽¹⁶⁾.

AIM OF THE WORK

Is to study the effectiveness of sacrospinous ligament fixation as a treatment of second degree uterine prolapse, with follow up period for 6 months. Follow up visits to assess recurrence of prolapse, postoperative pain, and urinary tract infection.

PRIMARY OBJECTIVES

- Effectiveness of reducing utero-vaginal prolapse between group A and group B
- Operative time differences between both groups

SECONDARY OBJECTIVES

- Blood loss difference
- Pain and need for analgesia
- Hospital stay(how many days)
- Complications

PATIENTS AND METHODS

The study included 50 patients having second degree uterine prolapse without any other form of genital prolapse, after signing of a written consent. All patients included in the study with utero-vaginal prolapse POPQ | | C with the

point C $>-1\text{cm}$ and $<+1\text{cm}$ in POP Q classification system. The aim was to test the effectiveness of the procedure in treatment of second degree uterine prolapse. Success of the procedure was determined if point C $\leq -1\text{cm}$ in the POP Q classification system in all patients.

Surgical success of the apical compartment at 6 monthly follow up in both study groups as a primary outcome, if cervix at or above mid - vagina ($C < -\text{TVL}/2$)

Complete medical and surgical histories were taken. Ultrasound examination to exclude any uterine or adnexal pathologies. All operations are performed under spinal anesthesia in lithotomy position. Preoperative antibiotics and thrombosis prophylaxis were given. Patients were subdivided into 2 groups; first group (A) included 25 patients, bilateral sacrospinous ligament fixation was done. While the second group (B) involved 25 cases, RT sacrospinous fixation was performed.

To perform sacrospinous fixation; Vertical posterior vaginal wall incision was done and separated from the rectum. The rectovaginal space was exposed. The epithelium was dissected laterally and the Para rectal space opens on the right side. Ischial spine was localized digitally and after retractor positioning the ligament is made visible through blunt dissection. Permanent suture was placed through the sacrospinous ligament at least 2 cm from the ischial spine. The permanent sutures will be placed through the posterior side of the cervix at the level of uterosacral ligaments attachments. The posterior vaginal wall closed with absorbable sutures. Postoperatively bladder catheter is placed and removed after 6 hour. All patients are advised to abstain from heavy physical work for a minimal period of 6 weeks.

Follow up visits were performed at one week, one month, three months and six months. The patient was asked about pelvic pain, frequency, urgency and dysuria (manifestations of urinary tract infection).

Correlation between intraoperative and postoperative complications, postoperative pain, examination for recurrence and blood loss

RESULTS:

There is no any statistical significance between the two groups regarding the demographic and patients' criteria; patients' age, parity and BMI.

Sacrospinous fixation was performed in all patients, bilateral procedure performed in group A while right sacrospinous ligament fixation in patients in group B. **Figure(1-3).**



Figure 1
Preoperative assessment of patient with 2nd degree uterine prolapse



Figure 2
Another case with 2nd degree uterine prolapse

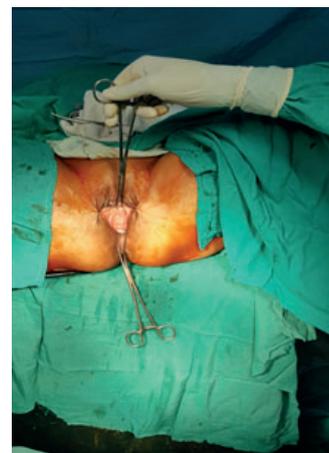


Figure 3
Intraoperative assessment of patient with pelvic organ prolapse

Hemoglobin level as an indicator for blood loss was followed. There was no significantly difference between hemoglobin levels in both groups while Hb level was changed significantly postoperatively. **Table 1.**

Table 1
Haemoglobin level in group A & B pre and post operative.

Hb level gm/dl	Group A		Group B	
	Pre-operative	Post-operative	Pre-operative	Post-operative
Range	9.22-12.9	8.0-11.6	10.8-13.8	10.2-12.9
Mean±S.D.	11.5±1.03	10.9±1.21	12.0±0.98	11.7±1.07
P1	0.091		0.109	
P2			0.11	0.039*

P1 comparison between pre and post in the same group
P2 comparison between the two groups at pre and post operative.

The operative time was longer in patients in group A than in group B **Table 2, Figure (4-8).**

Table 2
Comparison between the two studied groups regarding operative time

Operative time (min)	Group A	Group B
Range	60-90	40-65
Mean	73±12.6	52±10.6
P	0.013*	

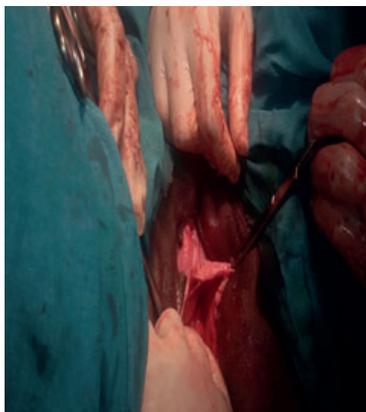


Figure 4
Dissection on Rt side of the vagina



Figure 5
Dissection on Rt side to find Rt sacrospinous ligament



Figure 6
Blunt vaginal dissection to reach Rt sacrospinous ligament



Figure 7
Feeling Rt sacrospinous ligament



Figure 8
Dissection of Lt Sacrospinous ligament

Patients were asked about postoperative pain. Mild pain denoting pain that relieved by oral analgesia, moderate pain relived by injectable analgesia while sever pain reflecting hospitalization because of pain (analgesia in the form of ketoprofen 10 mg oral or injection). No sever pains or dyspareunia or limitations in daily activities were present in all patients at any visit. While patients with bilateral procedures was complaining more than unilateral procedure, and severity of pain was more in patients in group A. **Table 3**

Table 3
Comparison between the two studied groups regarding postoperative pain

	Group A		Group B		P
	No.	%	No.	%	
1 month					0.041*
No	23	46.0	34	68.0	
Mild	10	20.0	9	18.0	
Moderate	17	34.0	7	14.0	
3 month					0.022*
No	30	60.0	41	82.0	
Mild	6	12.0	5	10.0	
Moderate	14	28.0	4	8.0	
6 month					0.011*
No	36	72.0	47	94.0	
Mild	4	8.0	2	4.0	
Moderate	10	20.0	1	2.0	

Cystocele was the only post operative type of prolapse that seen after operation and seen in both groups (from 14 to 18% of patients) **Table 4**, **Figure (9-10)**.

Table 4
Comparison between the two studied groups regarding postoperative pain

	Group A		Group B	
	No.	%	No.	%
Cystocele	7	14.0	9	18.0
P	0.233			



Figure 9
Mild cystocele after bil. Sacrospinous ligament fixation, at 6 months follow up visit

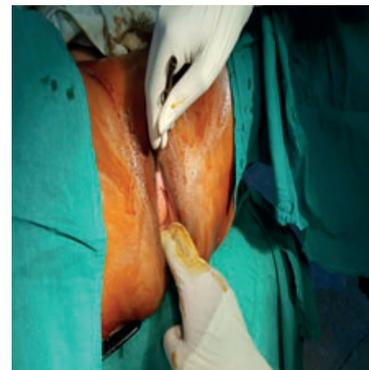


Figure 10
assessment of genital organ prolapse after bil. Sacrospinous ligament fixation, at follow up visit

Cystocele was tested regarding the position of Ba point after surgical correction.

Urinary tract infection was a common finding after this procedure, it was seen in patients in both group (it was diagnosed by complete urine analysis; it was done only for symptomatic patients, presence of pus cells more than normal or presence of bacteruria are diagnostic for UTI) **Table 5**.

Table 5
Comparison between the two studied groups regarding postoperative UTI

	Group A		Group B	
	No.	%	No.	%
Postoperative UTI	5	10.0	3	6.0
P	0.093			

Hospital stay in all groups was less than one day (between 6 to 12 hours) without any differences between both groups.

Success of the procedure was measured using recurrence of uterine prolapse in follow up period, we found that no recurrence in all patients in both groups.

DISCUSSION

Transvaginal sacrospinous ligament fixation is a good procedure for management of patients with uterine prolapse, minimal complication may occur with this procedure in comparison to other procedures. Operative time in unilateral procedure is 52±10.6 minutes while in bilateral procedure is 73±12.6 minutes. While in a study performed by Demirci F et al⁽¹⁷⁾ the operative time was 40.9±28.3 minutes. Operative time was 53 (38 to 110) minutes in a study performed by Nyysönen V et al⁽¹⁵⁾.

Hemoglobin level in both groups is changed minimally denoting minimal blood loss in all patients. But in a study done by Demirci F et al⁽¹⁷⁾ the preoperative Hb level was 12.1±1.8 gm/dl and postoperative Hb was 10.0±1.7 gm/dl. Cystocele is seen in postoperative follow up period in both groups (14% and 18%) so it is important to enforce pub cervical fascia with all procedures. cystocele was also seen in a study performed by Gupta P⁽⁶⁾. Recurrence of prolapse was seen in a study performed by Nyysönen V et al⁽¹⁵⁾ in 12 % (2 cases). Urinary tract infection is seen in patients in both groups (5 and 3 cases respectively) may be due to catheter insertion. Also in a study performed by Demirci F et al (17) UTI is found in 10% of cases⁽⁶⁾ where sacrospinous fixation was done. And UTI was seen in one case in a study performed by Gupta P⁽⁶⁾. Wound infection is not seen in our cases while present in 1.7% (1 case) in a study performed by Demirci F et al⁽¹⁷⁾ and in 2 cases in as a study performed by Gupta P⁽⁶⁾ **Table 6.**

Table 6
Comparison with similar studies

	Our study				Gupta P	Demirci F et al		Nyysönen V et al
	unilateral		bilateral			Preop.	Postop.	
Operative time(min.)	52±10.6		73±12.6		-	40.9±28.3		53
Hb level(gm/dl)	Preop.	Postop.	Preop.	Postop.	-	Preop.	Postop.	-
	11.5±1.03	10.9±1.21	12.0±0.98	11.7±1.07		12.1±1.8	10.0±1.7	
Postoperative cystocele	14%		18%		Present	-		12 %
Postoperative UTI	5		3		1	10%		-
Wound infection	0		0		2	1		-

CONCLUSIONS

Transvaginal Sacrospinous hystropexy is a simple effective procedure for treatment of second degree uterine prolapse. Blood loss in this procedure was minimal and hemoglobin levels were not changed significantly. Pubocervical fascia plication should be

performed in all sacrospinous fixation procedures either unilateral or bilateral to avoid cystocele. Rt sacrospinous ligament fixation is effective as bilateral fixation with minimal side effects. Postoperative pain, UTI and cystocele are the complications for this procedure.

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