

RESEARCH ARTICLE

Sacrospinous Ligament Fixation in Patients with 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: The aim is to test the effectiveness of this procedure in the treatment of second-degree uterine prolapse.

Materials and methods: The study included 50 women with second-degree uterine prolapse. Out of 50 women, 25 (group I) were treated with bilateral sacrospinous ligament fixation, while the other 25 (group II) were treated with unilateral sacrospinous ligament fixation. The efficacy and intraoperative and postoperative 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, it is 73 ± 12.6 minutes. However, postoperative pain is more in bilateral than unilateral procedure.

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

Keywords: Sacrospinous ligament, Second-degree uterine prolapse, Vaginal procedure.

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INTRODUCTION

Genital prolapse is a major health problem. It affects 40% of multiparous women above 50 years.¹

About 11% of women need surgical procedures 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 seen in increased frequencies in postmenopausal women. Pelvic organ prolapse is diagnosed if any pelvic organ is 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 occurs in 0.5 to 1.8% of patients.⁵

Vault prolapse occurs in 11.6% of patients with history of hysterectomy for uterine prolapse. In these conditions, vaginal correction is better than an abdominal approach. Sacrospinous ligament fixation shows 96 to 98% effectiveness in management of posthysterectomy vaginal vault prolapse.⁶

Many factors may lead to genital prolapse, such as multiparity, forceps, or ventouse vaginal deliveries, large-sized fetus, protracted labor, 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-threatening condition, but affects female's quality of life. Pelvic organ prolapse may be in anterior vaginal wall or 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, vesicovaginal fascia, and rectovaginal fascia. The pelvic diaphragm involves the levator ani muscle and the coccyx.⁹

Complete pelvic organ prolapse usually occurs after damage of vaginal support and therefore, it should be corrected surgically to treat the prolapse. In this condition, hysterectomy will not improve the prognosis and conservation of the uterus may add some advantages like decreased blood loss, reduced surgical trauma, shorter operative time, quick recovery, low cost, and shorter hospital stay.¹⁰

Upper part of the vagina is supported by paracolpium. In the case of prolapse, defect occurs in this part; sacrospinous ligament fixation will help correct this.¹¹

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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 is attached from the ischial spine to the lateral part of the sacrum; its fixation keeps the vaginal axis in the midline. It is easy 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. This includes avoidance of laparotomy and its complications, less postoperative pain, less hospital stay, and decreased cost.¹⁴

Many complications may occur during transvaginal sacrospinous ligament fixations, such as rectal injury, ureteric injury, pudendal nerve trauma, or internal pudendal vessel injury.¹⁵

Vaginal sacrospinous ligament fixation is a successful procedure compared with the abdominal procedures, but it may be associated with buttock pain and hemorrhage.¹⁶

AIM

The aim 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 are needed to assess recurrence of prolapse, postoperative pain, and urinary tract infection (UTI).

MATERIALS AND METHODS

The study included 50 patients with second-degree uterine prolapse after signing of a written consent.

Complete medical and surgical histories were taken. Ultrasound examination to exclude any uterine or adnexal pathologies was done.

All operations are performed under spinal anesthesia in lithotomy position. Preoperative antibiotics and thrombosis prophylaxis were given.

Patients were subdivided into two groups: Group I included 25 patients, bilateral sacrospinous ligament fixation was done while group II involved 25 cases, right 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 pararectal space opens on the right side. Ischial spine was localized digitally and after retractor positioning, the ligament was made visible through blunt dissection. A 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. The posterior vaginal wall was closed with absorbable sutures.

Postoperatively, a bladder catheter was placed and removed after 6 hours. All patients were advised to abstain from heavy physical work for a minimal period of 6 weeks.

Follow-up visits were performed at 1 week, 1, 3, and 6 months. The patient was asked about pelvic pain, frequency, urgency, and dysuria (manifestations of UTI).

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

RESULTS

Sacrospinous fixation was performed in all patients; bilateral procedure was performed in group I, while right sacrospinous ligament fixation was done in patients in group II (Figs 1 and 2).



Fig. 1: Dissection on right side



Fig. 2: Sacrospinous fixation in patient with uterine prolapse

Table 1: Hemoglobin level in groups I and II preoperative and postoperative

Hemoglobin level gm/dL	Group I		Group II	
	Preoperative	Postoperative	Preoperative	Postoperative
Range	9.22–12.9	8.0–11.6	10.8–13.8	10.2–12.9
Mean ± SD	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 preoperative and postoperative in the same group; p2: Comparison between the two groups at preoperative and postoperative; SD: Standard deviation; *Statistically significant

Hemoglobin level as an indicator for blood loss was followed. There was no significant difference between hemoglobin levels in both groups (Table 1).

The operative time was longer in patients in group I than in group II (Table 2).

Patients were asked about postoperative pain. Mild pain was relieved by oral analgesia, moderate pain relieved by injectable analgesia, while severe pain reflecting hospitalization because of pain was observed.

No severe pains in all patients at any visit were observed. While patients with bilateral procedures were complaining more than patients with the unilateral procedure, the severity of pain was more in patients in group I (Table 3).

Cystocele was the only postoperative type of prolapse seen after operation and seen in both groups (from 14 to 18% of patients) (Table 4).

The UTI was a common finding after this procedure; it was seen in patients in both groups (it was diagnosed by complete urine analysis and was done only for symptomatic patients) (Table 5).

Table 2: Comparison between the two studied groups regarding operative time

Operative time (minutes)	Group I	Group II
Range	60–90	40–65
Mean	73 ± 12.6	52 ± 10.6
p-value	0.013*	

*Statistically significant

Table 3: Comparison between the two studied groups regarding postoperative pain

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

*Statistically significant

Table 4: Comparison between the two studied groups regarding incidence of cystocele

	Group I		Group II	
	No.	%	No.	%
Cystocele	7	14.0	9	18.0
p-value	0.233			

Table 5: Comparison between the two studied groups regarding postoperative UTI

	Group I		Group II	
	No.	%	No.	%
Postoperative UTI	5	10.0	3	6.0
p-value	0.093			

DISCUSSION

Transvaginal sacrospinous ligament fixation is a good procedure for management of patients with uterine prolapse. Minimal complications may occur with this procedure in comparison with other procedures.

Operative time in unilateral procedure is 52 ± 10.6 minutes, while in bilateral procedure, it is 73 ± 12.6 minutes. In a study performed by Demirci et al,⁷ the operative time was 40.9 ± 28.3 minutes. Operative time was 53 (38 to 110) minutes in a study performed by Nyysönen et al.⁶

Hemoglobin level in both groups changed minimally denoting minimal blood loss in all patients. In a study done by Demirci et al,⁷ the preoperative hemoglobin level was 12.1 ± 1.8 gm/dL and postoperative hemoglobin 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 pubocervical fascia with all procedures. Cystocele was also seen in a study performed by Gupta.¹⁵ Recurrence of prolapse was seen in a study performed by Nyysönen et al⁶ in 12% (2 cases).

Urinary tract infection is seen in patients in both groups (5 and 3 cases respectively) and may be due to catheter insertion. Also, in a study performed by Demirci et al,⁷ UTI seen in 10% of cases in cases in ref⁷ where sacrospinous fixation was done. And UTI was seen in one case in a study performed by Gupta.¹⁵

Wound infection is not seen in our cases, while it is present in 1.7% (1 case) in a study performed by Demirci et al⁷ and in 2 cases in a study performed by Gupta.¹⁵

CONCLUSION

Sacrospinous ligament fixation 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.

Right sacrospinous ligament fixation is effective as bilateral fixation with minimal side effects.

Postoperative pain, UTI, and cystocele are the complications in this procedure.

Compliance with Ethical Standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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