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RESEARCH ARTICLE

Sacrospinous Ligament Fixation in Patients having Second-degree Uterine Prolapse

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ABSTRACT

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

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

Materials and methods: The study included 50 women having second-degree uterine prolapse. Twenty-five of them (group I) were treated with bilateral sacrospinous ligament fixation, while the others (group II) were treated with unilateral sacrospinous ligament fixation. Assessment of the efficacy, intraoperative, and postoperative complications was recorded (follow-up of patients occurred 3 and 6 months postoperatively).

Results: The mean operative time in unilateral sacrospinous fixation is 52 ± 10.6 minutes, while in bilateral procedure, it is 73 ± 12.6 minutes, but 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]

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Eleven percent of women need 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 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 abdominal approach, and sacrospinous ligament fixation shows 96 to 98% effectiveness in the 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, 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, while pelvic diaphragm involves the levator ani muscle and the coccyx.[9]

Complete pelvic organ prolapse usually occurs 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, such as decreased blood loss, reduced surgical trauma, shorter operative time, quick recovery, low cost, and shorter hospital stay.[10]

The upper part of the vagina is supported by paracolpium; in case of prolapse, defect occurs in this part, and 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 is attached from ischial spine to the lateral part of the sacrum, and 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 including 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 vessels injury.[15]

Vaginal sacrospinous ligament fixation is a successful procedure than abdominal procedures, but it may be associated with buttock pains and hemorrhage.[16]

AIM

The aim of this wok is to study the effectiveness of sacrospinous ligament fixation as a treatment of second-degree uterine prolapse, with a follow-up period for 6 months. Follow-up visits were made to assess the recurrence of prolapse, postoperative pain, and urinary tract infection (UTI).

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.

MATERIALS AND METHODS

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

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

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

Patients were subdivided into two groups; first group (I) included 25 patients, and bilateral sacrospinous ligament fixation was done for them. The second group (II) involved 25 cases, and right sacrospinous ligament 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 opened on the right side. Ischial spine was localized digitally and after retractor positioning, the ligament was made visible through blunt dissection. Permanent suture was placed through the sacrospinous ligament at least 2 cm from the ischial spine. The permanent sutures were 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 month, 3 months, and 6 months. The patients were asked about pelvic pain, frequency, urgency and dysuria (manifestations of UTI).

The correlation between intraoperative and postoperative complications, postoperative pain, examination for recurrence, and blood loss was studied.

RESULTS

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

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 was relieved by injectable analgesia, while sever pain reflected hospitalization because of pain.

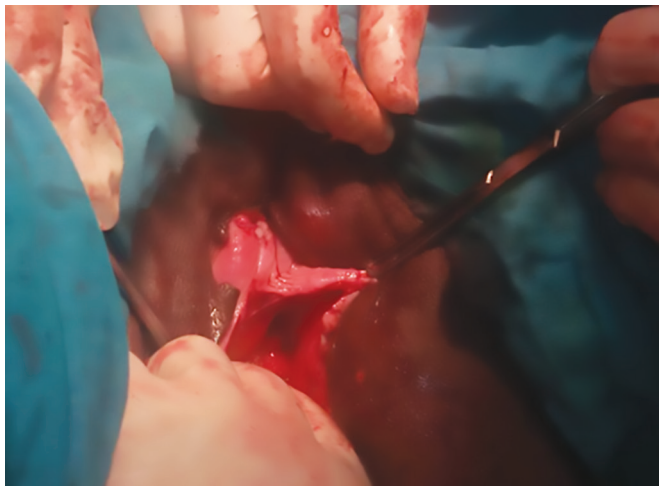

Fig. 1: Dissection on right side

Fig. 2: Sacrospinous fixation in patients with uterine prolapse

Table 1: Hemoglobin levels in groups I and II pre- and postoperative

	Group I		Group II	
Hb level, gm/dL	*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 ± 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*

*Statistically significant; SD: Standard deviation; P1 comparison between pre and post in the same group; P2 comparison between the two groups at pre- and postoperative

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

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

*Statistically significant

There were no severe pain in any patient during any visit. While patients with bilateral procedures were complaining more than those who underwent unilateral procedure, severity of pain was more in patients in group I (Table 3).

Cystocele was the only postoperative type of prolapse that was seen after operation 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 it was done only for symptomatic patients) (Table 5).

DISCUSSION

Transvaginal sacrospinous ligament fixation is a good procedure for the management of patients with uterine prolapse; minimal complication may occur with this procedure in comparison with other procedures.

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

	Group I		Group II		
	No.	*%*	*No.*	*%*	*p-value*
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			

The operative time in unilateral procedure was 52 ± 10.6 minutes, while in bilateral procedure, it was 73 ± 12.6 minutes. However, in a study performed by Demirci et al[7], the operative time was 40.9 ± 28.3 minutes. The operative time was 53 (38–110) minutes in a study performed by Nyyssönen et al.[6]

Hemoglobin levels in both groups changed minimally, denoting minimal blood loss in all patients. But in a study done by Demirci et al,[7] the preoperative hemoglobin (Hb) level was 12.1 ± 1.8 gm/dL and postoperative Hb level 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 Nyyssönen et al[6] in 12% (2 cases).

The UTI seen in patients in both groups (5 and 3 cases respectively) may be due to catheter insertion. Also in a study performed by Demirci et al,[7] UTI was found in 10% of cases[6] 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 was present in 1.7% (1 case) in a study performed by Demirci et al[7] and in two cases in a study performed by Gupta.[15]

CONCLUSION

Sacrospinous ligament fixation is a simple and effective procedure for the treatment of second-degree uterine prolapse.

Blood loss in this procedure was minimal and hemoglobin levels did not change significantly.

Pubocervical fascia plication should be performed in all sacrospinous fixation procedures either unilaterally or bilaterally to avoid cystocele.

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

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

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