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A Prospective Observational Study of Sacrospinous Ligament Fixation

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ABSTRACT

The objective of this study was to assess various aspects of sacrospinous fixation for women with vault prolapse or uterovaginal prolapse. The study group consisted of 17 women operated for various indications. Sacrospinous colposuspension was done therapeutically, or prophylactically to prevent future vault prolapse. Fortunately, they were following up regularly. They remained significantly asymptomatic in terms of recurrence of prolapse, quality of life, urogenital symptoms. Sexual function was un-hampered as very little vagina needed to be sacrificed. Minor complaints specific to the procedure were few. Mean excess blood loss from the procedure was barely 30-50cc. Additionally, 20-40 minutes were required to complete this surgery. Mean duration of hospital stay post-operatively was 3-5 days. Short and long term satisfaction levels were high. Though vagina was slightly distorted due to the unilateral fixation, it did not interfere with sexual function due to good vaginal length and depth, a direct benefit of the procedure.

Keywords: Sacrospinous ligament fixation, Uterovaginal prolapse, Vaginal hysterectomy.

INTRODUCTION

Pelvic organ prolapse is a common health problem worldwide affecting about 40% of parous women over 50 years with significant negative influence on quality of life due to associated urinary, anorectal and sexual dysfunction. Sacrospinous ligament fixation has proven to be an effective treatment for uterovaginal and vault prolapse.[1] This procedure has also been described in women who wanted to preserve the uterus to retain fertility.[2,3] Significant shortening of vagina accompanies all forms of hysterectomy.[4] Vaginal length is not compromised in this procedure. The main objective of this study is to assess various aspects of sacrospinous fixation for women with vault prolapse or uterovaginal prolapse.

MATERIALS AND METHODS

Study group consists of 17 women operated in 1 year in a Tertiary Care Centre in Mumbai, for various indications. This study was conducted from January 2013 to June 2014 after approval from ethical committee. Informed And separate consent was taken from patients for the sacrospinous procedure. Sacrospinous colposuspension was done therapeutically or prophylactically, so as to hitch the vaginal apex high up, onto an accessible, tough, reliable structure, thence, preventing future vault descensus. Patients are being regularly followed up.

All enrolled patients presented with major degree of uterovaginal prolapse or vault prolapse and after a thorough discussion of the available surgical options, chose sacrospinous fixation. The surgery was readily accepted as a prophylactic measure against vault prolapse.

A thorough history was taken. In patients with vault prolapse, details of previous operation (abdominal/vaginal hysterectomy) were noted. General examination, systemic examination and local examination was done.

Patients with a major degree of uterovaginal prolapse were operated with vaginal hysterectomy with unilateral sacrospinous fixation and patients with vault prolapse were offered sacrospinous fixation as the primary and definitive surgery. In 1 patient of vault prolapse, bilateral sacrospinous ligament fixation was done. One patient of prolapse wished to retain her uterus and sacrospinous fixation was done to anchor uterovaginal complex up.

Intra-operative and post-operative complications if any and complaints were noted. Patients were discharged after 4-6 days and were asked for follow-up after 15 days, 3 months, 6 months, 1 year and 18 months.

Per speculum examination was done at the time of follow up and status of vault was noted.

Outcome of vaginal hysterectomy with Sacrospinous ligament fixation (S.S.L.F.) & vault repair with S.S.L.F. were analyzed .The distance between the apex of vaginal vault from pubic symphysis (vaginal length) was measured to evaluate the success of S.S.L.F.

Inclusion criteria

1. Patients of Pelvic Organ Prolapse, with a prominent ischial spine, whose Coccygeal-Sacrospinous Ligament Complex (C-SSL) could be comfortably palpated on OPD evaluation.
2. Patients deemed at high risk for recurrent prolapse as a prophylactic measure.
3. Patients who wished to retain their uterus, as a primary procedure.
4. Selected cases of vault prolapse.

Exclusion criteria

1. Abnormal cervical smears.
2. Abnormal ultrasound findings of uterus or ovaries
3. Pelvic radiotherapy
4. Presence of immunological / haemato-logical disease interfering with recovery after surgery.

Surgery

All surgeries were performed by an experienced surgeon, with special expertise in sacrospinous fixation. Follow-up examinations were made in all these women. These were interviewed and underwent thorough pelvic examination. The interviews were performed with a detailed questionnaire covering satisfaction with operation, urinary & bowel function, urinary incontinence and sexual function or recurrence.

The operative steps were briefly as follows. The uterus or uterine stump was first

extirpated. Midline incision in posterior vaginal wall just lateral to sagging enterocoele sac was extended to the vaginal apex in midline. Using sharp and blunt dissection slowly, judiciously, at all times keeping rectum away, right sacrospinous ligament was made visible. Long Babcock's forceps were used to get a firm hold of the C-SSL, 2 finger medial and posterior to the spine, which is repeatedly palpated. A gentle tug on the Babcock's, causing the patient to shake, ensures that ligament is caught and not the ample fat of the ischiorectal fossa. Two non-absorbable sutures (Prolene 1-0) were placed through sacrospinous ligament and subsequently anchored securely to vagina at its highest point. Inadvertent entry into rectum was ruled out by frequent per-rectal examination through-out this procedure. As the area of dissection tends to be extensive, vascular and deeply situated in the true pelvis, any form of haemorrhage can be life threatening. Therefore additional measure of using Fibrin sealant (Tisseel VH, Baxter Healthcare, IL, USA) just before closing the vagina was used. Tisseel is indicated for the use as a haemostat, a sealant, a glue and for support of the wound healing process.

RESULTS

In our study of total 17 cases, 13 cases were of uterovaginal prolapse, 3 cases were of vault prolapse and in 1 case sacrospinous fixation was done prophylactically with non-descent vaginal hysterectomy done for dysfunctional uterine bleeding.

In our present study, maximum patients 12 (70.6%) were in age group of more than 45 years. The mean age of our patients was 51 yrs with youngest and oldest being 36 and 65 years respectively.

The present study showed maximum patients in post-menopausal status accounting for 64.70% of total cases.

In our study, the maximum number of patients of pelvic organ prolapse had parity 3 (35.29%).

In our study all the patients (100%) had vaginal delivery only. None of the patient had only caesarean section or caesarean + vaginal delivery in our study.

In our study of 3 cases of vault prolapse 2 patients (66.6%) had undergone Vaginal Hysterectomy and 1 had Abdominal Hysterectomy (33.4%).

16 (94.1%) patients in our study presented with SCOPV. 2 (11.7%) patients had menstrual complaints. Urinary problems were found in 6 (35.2%) cases, which included stress urinary incontinence (SUI) in 4 (23.5%) cases and difficulty and straining at micturition in 2 (11.7%) cases. Two patients had complaint of incomplete evacuation of bowel, which constituted 11.7%. Abdominal pain and backache were found in 4 (23.5%) cases.

Maximum number of cases 7 out of 16 (47%) of pelvic organ prolapse were of stage 3.

Average time of 20-30 minutes was added to primary surgery, for sacrospinous fixation.

Intra-operative difficulties are many such as difficulty in approaching pararectal space, dissecting the space, visualising C-SSL, grasping it and eventually placing and tying sutures in it. Fortunately we faced difficulty in 4 cases only (23.5%). We recommend use of three strategically placed thin-bladed deaver retractors as shown in the figure, to minimise these constraints. Mean blood loss was 20cc. Two of the patients (11.7%) had significant blood loss of around 150cc.

One patient (5.8%) had voiding difficulty post-operatively requiring catheterisation for nine days. Two patients (11.7%) had repeated spikes of fever on post-op day 2&3 but they recovered completely with course of higher antibiotics. Buttock pain

occurred in three women (17.6%) but resolved spontaneously in few days. Patient with bilateral sacrospinous fixation had more buttock pain as compared to other patients.

All of these women were followed for 18 months and were highly satisfied with the results of operation except for one patient of advanced degree of vault prolapse.

DISCUSSION

In this study we set out to assess the clinical outcome, complications, patients' satisfaction and quality of life after sacrospinous colpohysteropexy. At a mean follow-up of 18 months, a recurrence of the pelvic organ prolapse was rare, the satisfaction rate high and almost all women would recommend the procedure to others. [9,10] Malti *et al*[5] conducted study for intra-operative complications of SSLF in 35 cases reported only 1 case of rectal injury.

Peng *et al*[6] also conducted a study for the same and reported only one.

In present study, the most common post operative complaint, seen in 3 patients was pain in back and gluteal region. Fever was noted in 2 patients which could have been result of operative stress or some foci of infection in body. They responded well to regular antibiotics. No any case of haematoma, wound infection was noted.

Our findings were similar to the studies conducted by various authors as shown in table 12.

It is noted that bilateral sacrospinous fixation causes more buttock pain than unilateral fixation and also bilateral fixation is not possible in all cases[11], therefore unilateral fixation is preferred. However bilateral fixation is better for vault prolapse than unilateral colposuspension because it allows a symmetrical vaginal reconstruction and provides additional vaginal vault support.[12,13]

Apart from true genital prolapse symptoms, urogenital symptoms and also bowel symptoms improved after the sacrospinous hysteropexy.[14]

This is also the procedure of choice for the woman who wants to retain her uterus as was the case with one patient in our study.[2,3] With increasing life expectancy women are sexually active till later years of life and performing vaginal surgery without sacrificing vaginal length becomes the challenge. Sacrospinous fixation essentially involves hooking the vaginal apex high up onto the coccygeus-sacrospinous ligament(C-SSL) complex, ensures good vaginal length post-operatively and thus sexual function of woman is not disturbed.[15]

The recurrence rate of prolapse reported in the literature after sacrospinous ligament fixation of the vaginal vault is 18%.[16] Less information is available about prolapse after sacrospinous hysteropexy. Recurrence rates vary between 6.7 (only with regard to descensus uteri) to 26% (total recurrence of descensus uteri and cystocele / rectocele. Similarly, in our study the recurrence rate of vault prolapse was 5.8% (1/17), which was in stage I and did not require any treatment.

CONCLUSION

In conclusion, Sacrospinous Ligament Fixation with pelvic floor reconstruction is a well-documented means of correcting genital prolapse. As a vaginal procedure, it facilitates concurrent pelvic floor repair, helping patients achieve relief of symptoms.

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Table 1. Age wise distribution of cases of pelvic organ prolapse

Age-group	Present study	Percentage
<35 yrs	-	-
35-45 yrs	5	29.4%
>45 yrs	12	70.6%

Table 2. Distribution of cases according to menstrual status of women

Menstrual status	Present study	Percentage
Perimenopausal	6	35.29%
Postmenopausal	11	64.70%

Table 3. Parity wise distribution of cases of pelvic organ prolapse

Parity	Present study	Percentage
1	-	-
2	3	17.64%
3	6	35.29%
4	4	23.52%
5	3	17.64%
6	1	5.8%

Table 4. Association of pelvic organ prolapse with routes of delivery

Route of delivery	Present study	Percentage
Only vaginal delivery	17	100%
Only cesarean section	-	-
Vaginal and cesarean section	-	-

Table 5. Route of hysterectomy in cases of vault prolapse

Route of Hysterectomy	Number	Percentage
Abdominal Hysterectomy	1	33.3%
Vaginal Hysterectomy	2	66.6%

Table 6. Chief complaints in cases of pelvic organ prolapse

Chief Complaint	Number of cases	Percentage
SCOPV	16	94.1%
Menstrual complaints	2	11.7%
Urinary problems	6	35.2%
Bowel complaints	2	11.7%
Abdominal pain, backache	4	23.5%

(SCOPV=something coming out per vagina)

Table 7. Distribution of cases according to stage of uterovaginal prolapse and vault prolapse

Stage of Prolapse	Uterovaginal Prolapse	Vault Prolapse	Total Cases	Percentage
1	1	-	1	5.8%
2	4	2	6	35.2%
3	7	1	8	47.05%
4	1	-	1	5.8%
Total	13	3	16	94.1%

Table 8. Duration of sacrospinous ligament fixation

Duration of sacrospinous ligament fixation	Number	Percentage
<20 min	9	52.9%
20-30 min	7	41.17%
>30 min	1	5.8%

Table 9. Intraoperative difficulties faced during procedure

Intraoperative difficulties	No. of cases	Percentage
Difficulty to access C-SSL	2	11.7%
Difficulty in grasping the ligament	1	5.8%
Difficulty in placing/tying sutures	1	5.8%
Haemorrhage	2	11.7%
Injury to surrounding structures	-	-

Table 10. Immediate postoperative complications

Immediate Postoperative Complications	No. of cases	Percentage
Buttock Pain	3	17.6%
Haematoma	-	-
Fever	2	11.7%
Urinary Retention	1	5.8%
UTI	-	-
Wound Infection	-	-
SUI	-	-

Table 11. Studies showing immediate postoperative complications of SSLF

Post-op complications	Malti (2006)[5]	Cruikshank[7]	Lantzsch (2000)[8]	Peng *et al* (2010)[6]	Present study
No of patients	35	48	200	40	17
Buttock Pain	-	-	15 (7.5%)	5(14.3%)	3(17.6%)
Fever	5	4	-	7	2(11.7%)
UTI	4	3	16(8%)	-	-
Retention of Urine	1	-	11(5.5%)	4(10%)	1(5.8%)
Wound Infection	1	-	-	-	-
SUI	0	2	-	3(8.6%)	-
Hematoma	-	-	1	1(2.4%)	-
Death	-	-	1	-	-

Table 12. Postoperative complications at the time of follow-up

Follow-up	15 Days	3 Months	6 Months	12 Months	18 Months
Satisfaction	Satisfied except 1 pt (94.2%)	Satisfied except 1 pt (94.2%)	Satisfied except 1 pt	Satisfied except 1 pt	Satisfied except 1 pt
Perineal ache	Present in 1 pt (5.8%)	Absent	Absent	Absent	Absent
Bladder	Normal	Normal	Normal	Normal	Normal
Bowel Function	Normal	Normal	Normal	Normal	Normal
Bleeding	-	-	-	-	-
Infection	-	-	-	-	-

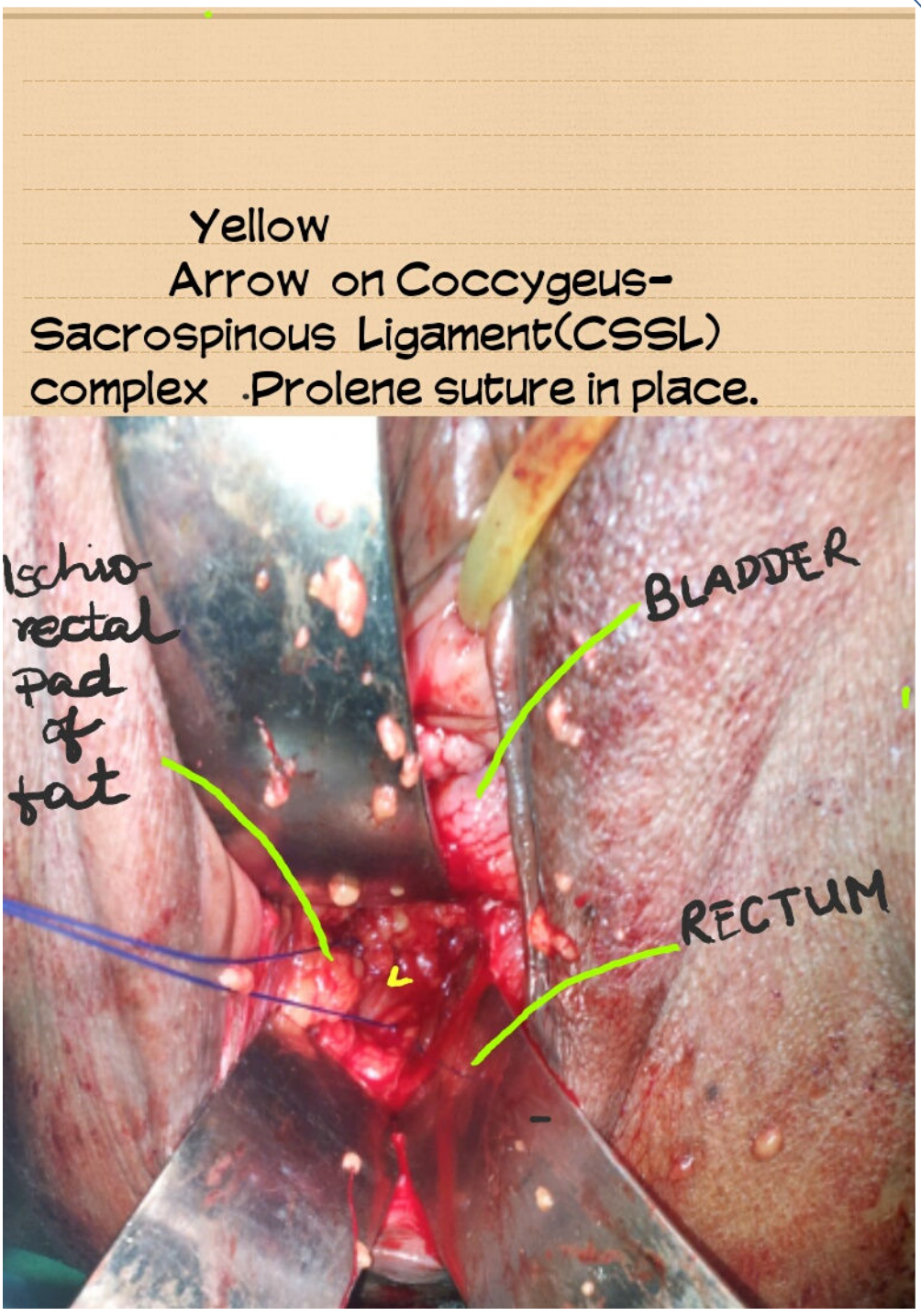

Figure 1. Use of three deaver retractors to retract bladder, rectum and pararectal pad to visualise sacrospinous ligament

(Figure taken from Dept. of OBGY ESI-PGIMSR Andheri, Mumbai)

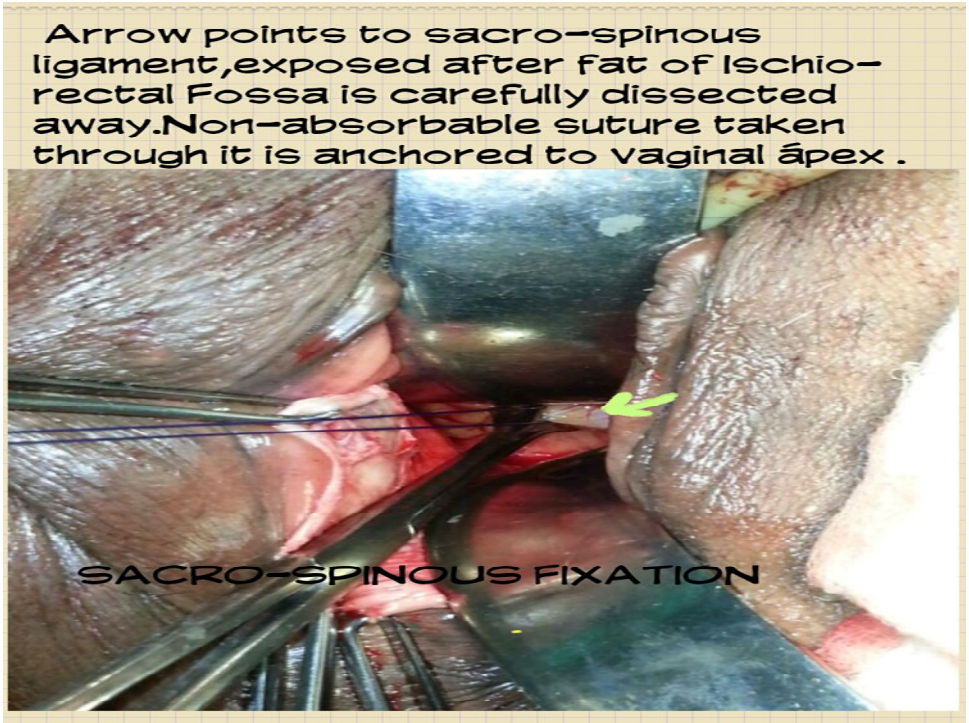

Figure 2. Showing sacrospinous ligament with suture taken through it

(Figure taken from Dept. of OBGY ESI-PGIMSR Andheri, Mumbai)