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Sacrospinous Colpopexy for Treatment of Pelvic Organ Prolapse

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Abstract:

Surgical treatment is a feasible option for pelvic organ prolapse. Vaginal hysterectomy and pelvic floor repair is the operation of choice . For prevention of recurrence of prolapse fixation of vaginal vault to sacrospinous ligament is done . This is known as sacrocolpopexy. In this study sacrospinous colpopexy is performed as an adjunctive procedure at the time of vaginal hysterectomy to prevent recurrence of prolapse.

Materials and Methods: *This prospective observational study was conducted in the department of Gynaecology and Obstetrics of BangaBandhu Memorial Hospital, USTC from 1.1.19 to 31.12 19 for a period of one year. The purpose of this study was to evaluate the feasibility of this procedure along with vaginal hysterectomy and to assess the outcome in terms of complications , need of removal of fixation suture and recurrence of prolapse.*

Result: *Out of 72 pelvic organ prolapse patients, 24(38.7%) were in the age group between 51-60 years and 53(85.4%) were postmenopausal, 46(77.7%) came from rural community, 42(67.8%) delivered more than 5 children. Among them 70(99.9%) cases vaginal delivery were responsible factors, and 96.6% (60) had Stage III prolapse by POP-Q staging . During performing fixation of vaginal vault with sacrospinous ligament in 10(13.8%) cases there were difficulty in access of pararectal space, and in 13(18.1%) cases felt difficulty during placement of the suture. Severe back pain were felt in 25(33.4%) cases ,20(32.4%) cases had retention of urine after removal of catheter, and 20(32.4%) cases felt buttock pain in postoperative period. One patient required removal of suture due to pain and discomfort within the vagina . All patients came 72(100%) for follow up after 6weeks. POP-Q examination was done during follow up. Wound infection was not detected in any cases. Patients satisfaction regarding symptoms were good.*

Conclusion: *Sacrospinous colpopexy is an effective procedure during pelvic organ prolapse surgery as it restores vaginal supports, maintain good vaginal length and depth. So at the time of vaginal hysterectomy sacrospinous colpopexy may be adjunctive procedure to prevent recurrence and relieve of symptoms.*

Key words: *Pelvic organ prolapse, Vaginal hysterectomy , Sacrospinous colpopexy.*

Introduction:

Pelvic Organ Prolapse(POP) is a common Gynaecological problem,affecting about 40% of parous women and more than 10% women will need surgery for POP[1] POP has significant negative influence on quality of life due to associated urinary, anorectal and sexual dysfunction. One third of the patient will require surgical treatment and vaginal hysterectomy with repair for prolapse is operation of choice[2]. Incidence of vaginal vault prolapse following vaginal hysterectomy has been quoted approximately about 0.5% cases[3]. During hysterectomy if suspensory apparatus was not repaired, there are increase risk for vault prolapse. [4] Numerous operative techniques are described for the correction and prevention of vault prolapse during hysterectomy.[5] Fixation of the vault of the vagina to

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sacrospinous ligament is the operation of choice for this purpose. This operation popularly named as sacrospinous fixation or sacrospinous colpopexy.This is introduced by Randell and Nickols, Unilateral or bilateral fixation of vaginal vault can be done.[6] Sacrospinous ligament fixation is an effective method for treatment of the vault prolapse.[7] This procedure can be performed at the time of vaginal hysterectomy for advanced uterovaginal prolapse to prevent the recurrence of prolapse in future.[8] In this study sacrospinous fixation procedure was performed to evaluate the feasibility of this procedure.

Materials & Methods:

A prospective observational study was performed in the department of Obstetrics and Gynaecology of Bangabandhu Memorial Hospital, USTC, from 1.1.19 to 31.12.19 includes 72 cases. Aim of this study to perform sacrospinous fixation along with vaginal hysterectomy to prevent recurrence of pelvic organ prolapse and improve quality of life.

Patients with pelvic organ prolapse fit for surgical treatment were included in this study after excluding who was unfit for surgery & ethical clearance was taken from institutional ethical body.

All were admitted with pelvic organ prolapse for surgical treatment . After admission all cases were evaluated preoperatively for general fitness and staged in accordance with International Continence Society For Pelvic Organ Prolapse Quantification Staging System (ICS POP-Q) .

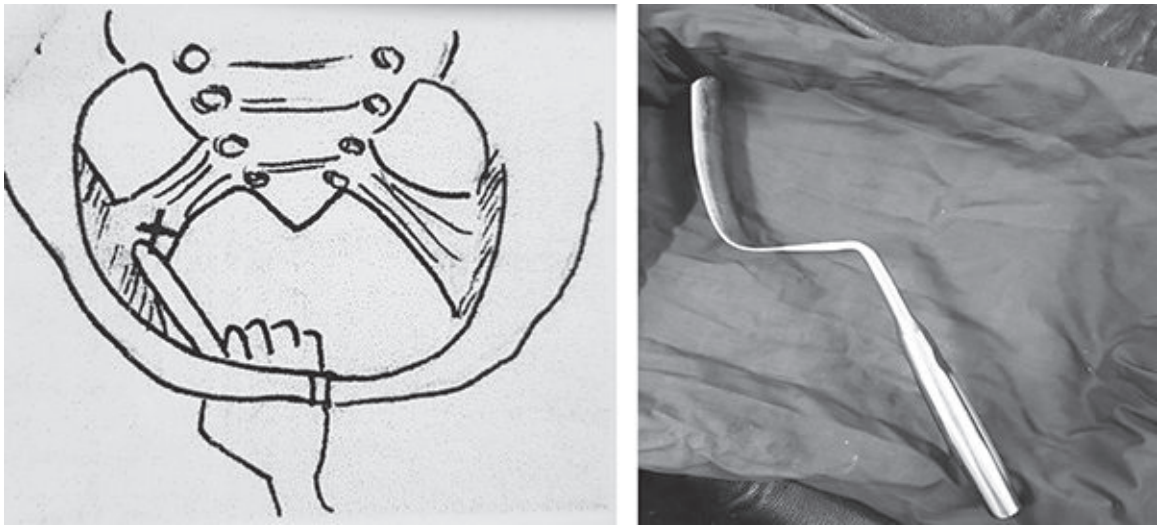
Before operation thorough discussion and informed written consent was taken .Total of 72 cases right sided sacrospinous fixation were performed along with vaginal hysterectomy and pelvic floor repair. Sacrospinous colpopexy was done prophylactically in all cases, so as to fixed up the apex of posterior wall of the vagina on to accessible tough structure like sacrospinous ligament by delayed absorbable suture for preventing vault prolapse . Per operative and post-operative complications were recorded.

Surgical outcome were measured in two ways. Primary outcome and secondary outcome. Primary outcome of this study was surgical failure, defined as recurrence of prolapse. This was evaluated by performing POP-Q examination during follow up periods. Secondary outcome includes complications like severe back pain, buttock pain, retention of urine, quality of life and patient's satisfaction.

Patients were advised to come for regular follow up for up to eighteen months to evaluate outcome.

Procedure of sacrospinous colpopexy:

All cases were operated under spinal anesthesia in lithotomy position. To reduce per operative bleeding Lidocaine Adrenalin Combination (LAC) in saline (Jungle Juice) was used. Jungle Juice was prepared by mixing 0.5 ml Adrenalin, 2 ml of 2% Lidocaine in 20 ml of normal saline.[9] This solution was infiltrated submucousally or under vaginal epithelium to facilitate separation of tissue for ease of dissection and reduce blood loss by vasoconstriction. After vaginal hysterectomy and anterior colporrhapy a transverse incision was given at the mucocutaneous junction on posterior vaginal wall from lower end of one labia minora to other side .Vaginal mucosa was separated from other tissues upto apex of the vault. by sharp and blunt finger dissection on right lateral side open



(a) (b)

Fig.-1: *(a). Location of sacrospinous ligament fixation & (b). Brisky retractor.*

the para rectal space keeping rectum posteriorly. Dissection carried out till ischial spine can be felt. Sacrospinous ligament was identified and make felt easily and visualized by retracting adjacent tissues. Sacrospinous ligament is a strong ligament which passes from ischial spine to lateral lower part of sacrum forming lower border of sacrosciatic notch.

Once right sacrospinous ligament was delineated , then synhetic absorbable monofilament polydioxanone violet No 1 suture was passed through the middle of the ligament about one and half finger breadth medial to the ischial spine to avoid injury to adjacent nerve and vessels. Before passing the suture always feeling of any vessels pulsation.

Fig 2: Showing Miya Hook and Aneurysm needle

By retracting adjacent tissues with Brisky retractor, then suture materials was passed by aneurysm needle and after passing the needle thread was pulled by Miya Hook, designed by Miyazaki in 1987.

The confirmation of correct insertion was done by tugging on the thread . Single suture was placed into the ligament in all cases .This suture was passed through the apex of vagina near to midline through posterior wall. Rest of the procedure of posterior colpoperineorrhaphy was completed. Finally knot was given by pushing knot, with tip of finger up to ischial spine keeping suture gap, from ligament to vaginal apex. So that vaginal wall came to near direct contact to ischial spine .Rectal examination was done to assess any inadvertent rectal injury. Vagina was packed for 24 hours. Indwelling urinary catheter was kept for 3 days. The angle of vagina could be seen lying retracted deep into the vagina.

Per operative and post operative complications were recorded . If there were no complications the patient was discharged after 5 days with advice to come after 6 weeks. The follow up period was done for eighteen months.

Socio demographic data along with surgical complications and out come were recorded and compared with available data in literature.

Results:

Seventy two patients were included in this study and sacrospinous procedure was done prophylactically during vaginal hysterectomy with repair operation for uterovaginal prolapse to prevent recurrence of prolapse following surgery.

Table I reports the clinical profiles of the patients. Maximum patients 24(38.7%) were in age from 50-60 years . Youngest and oldest being in 30years and 70 years respectively. Rural women (77.7%) were sufferer of pelvic organ prolapse. 99.9% women had vaginal delivery in this study. All of the partcipants were admitted for something coming down, 63(91.4%) had

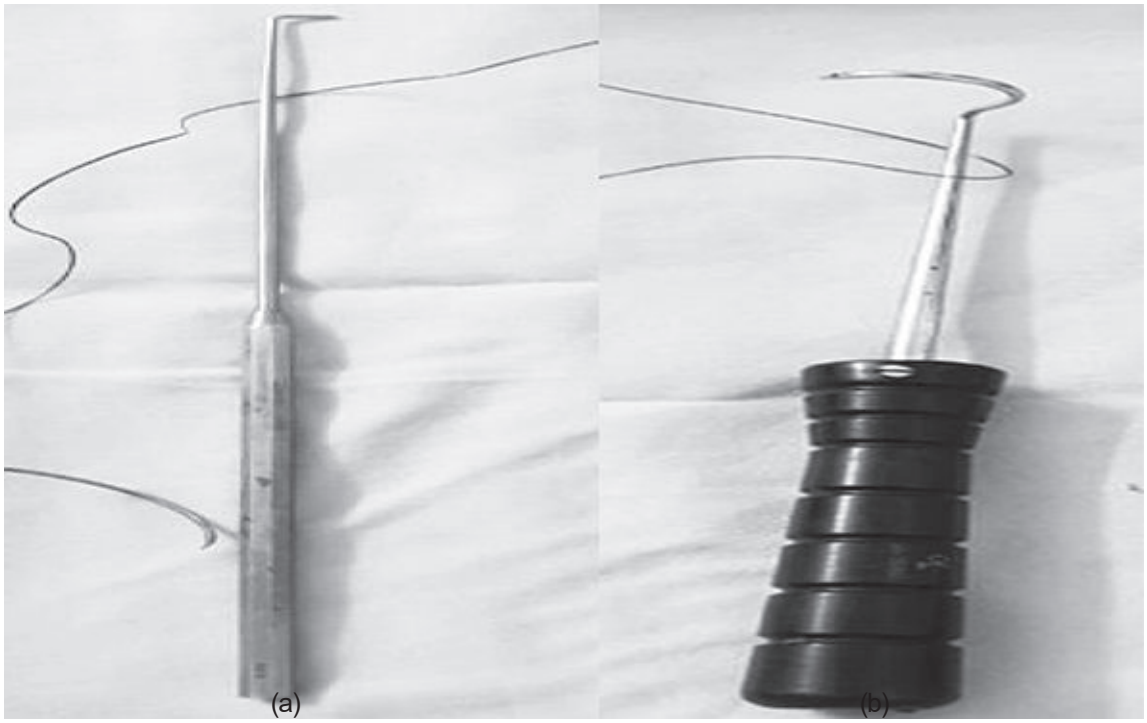


Fig.-2: *showing a) The Miya Hook, b) Aneurysm needle.*

urinary symptoms, 61.6% had bowel symptoms and blood stained discharge. 60(96.6%) patients had Stage III prolapse.

Table-I

Clinical profiles of patients

Age	Frequency	Percentage
30-40 yrs	07	11.3%
41-50 yrs	15	24.1%
51-60 yrs	24	38.7%
61-70 yrs	14	24%
• 70 yrs	12	19.3%
Parity		
1-4	30	48.3%
5-10	42	67.8%
• 10	06	27.7%
Mode of delivery		
Vaginal delivery	70	99.9%
LSCS	02	0.8%
Presenting symptoms		
Something coming down	72	100%
Urinary symptoms	63	91.4%
Bowel symptoms	21	61.6%
Blood stained discharge	21	61.6%
POP- Q Staging		
Stage I	03	9.6%
Stage II	03	9.6%
Stage III	60	96.6%
Stage IV	06	18.4%
Area of residence		
Rural	46	77.7%
Urban	26	41.9%

Table II Shows difficulties and complications of sacrospinous fixation, follow up of participants. There was no cases of injury to the rectum or bladder and none of the cases required blood transfusion due to haemorrhage. Intraoperative difficulties like difficulty in approaching pararectal space and access to the ligament in 10 cases and placement of suture with great difficulties in 13 cases . Back pain in 33.4% cases , buttock pain in 32.4% cases, were two major complications . These were relieved by analgesics. Voiding difficulties like retention of urine occurs in 20 cases (32.4%) required catheterisation few more days. All of these cases were advised for follow up for 18 months. Gradually patients were lost from followup. There was no major complications during followup period. One patient complaints of feeling of pain in the vagina due to delayed absorbable fixation suture . This was visible during speculum examination and suture was removed, then she relieved. POP-Q examination was done to assess the recurrence in the form of vault prolapse . There was no recurrence of prolapse in the follow up period.

Table-II

Difficulties and complications of sacrospinous ligament fixation & follow up of the patients.

Intra operative difficulties	No	Percentage
Difficulties in access	10	13.8%
Difficulties in placing the suture	13	18.1%
Complications		
Severe back pain	25	33.4%
Buttock pain	20	32.4%
Retention of urine	20	32.4%
Follow up		
6 wks	72	100%
3 months	60	96.3%
6 months	55	88.6%
12 months	40	64.5%
18 months	32	44.4%

Discussion:

Recurrence of prolapse following pelvic organ prolapse surgery can occur . There are many operations which can be performed for prevention of vault prolapse during pelvic organ prolapse surgery . [10] Among them three are most common namely Sacrospinous colpopexy, High uterosacral ligament suspension and Mac Call Culdoplasty. There is no definitive operation which is best as most of the repair operation are equally effective. [11] High uterosacral ligament suspension is associated with ureteric injury (11%). [12] Transvaginal sacrospinous colpopexy are common procedure done for prevention of vault prolapse . [13] Sacrospinous ligament fixation is good and effective operation , it restores vaginal supports. The procedure has few complications which can be reduce by some extra care.[14] The overall complications rate for sacrospinous ligament fixation is 6.8 % to 29%.[15] The postoperative common complaints were pain on the back and over gluteal region. These were managed by counselling and analgesics. They responded well.

Buttock pain and discomfort was reported in several studies.[16] Tseng et al. In a systemic review have summarized the complications as neurovascular injury(7.4%), urinary retention (13.4%), urinary tract infections (8.8%), cuff infection (5.6%), and cysto or enterotomy (1.1%) [17]. In a study performed by Demirci et al. 8.3% patients complained of urinary retention[18]. In a review , twenty four studies reported an overall cure rate of 84.6% and twenty one studies reported the following recurrence rate :apex 5.3%;anterior 18.3%; and posterior 2.4%. [17]

Valecha et al. In their studies (n=17)reported immediate complications as buttock pain -17.6%,fever 11.7% and urinary retention 5.8%. They reported 5.8%(1/17) recurrence rate of vault prolapse which was stage I and required no treatment[19].

In a study by De Castro et al. buttock pain was reported as the commonest . Evaluating the vaginal vault after year revealed that 95% of the patients were in stage O, and that 5% were stage I.[20]

In a study (n=32)done by Gupta, one woman had postoperative UTI, two had buttock discomfort ,one had ischiorectal abscess and two had cuff cellulitis. One had small cystocele following three years of surgery . Two women complained of dyspareunia after eight months, but in the follow up visit 12 month later , there were no further complaints.[13]

No cases were recorded as haematoma formation, or wound infection in this study.

The surgeon who perform this procedure must be familiar with the anatomy of these area to prevent complications by injury to rectum, peudendal vessels and nerves . Adequate exposure and good assistance to place the suture correctly without causing injury to adjacent structures.

With increasing life expectancy women are sexually active till later years of life and performing vaginal surgery without sacrificing vaginal length become more challenging. Sacrospinous colpopexy essentially involves hooking the vaginal apex high up on the sacrospinous ligament ensures good vaginal length postoperatively and sexual function of the women . [21] Patients satisfaction and quality of life were assessed after sacrospinous colpopexy at a mean follow up of eighteen months . The satisfaction rate were high and almost all women recommended these procedure to others. Recurrence rate of prolapse were nil in this study . This may be due to smaller sample size and duration of follow up is also short.

Conclusion:

Sacrospinous ligament fixation with pelvic floor reconstruction is well documented means of correcting genital prolapse . As it also facilitates to maintain good vaginal length and depths , helping patients achieves relief of symptoms. This operation is feasible and it is advisable to carry out in all cases of advanced uterovaginal prolapse to prevent recurrence and improve quality of life .

Limitation of this study was only it can be done when patient agree with us to perform the procedure, to maintain good vaginal length after vaginal hysterectomy. But it need further counselling , perform this additional procedure after prolapse surgery in all centre.

Recommendations for this purpose is to liberalize training program and help all gynaecological surgeon to perform this procedure.

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