International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Mahajan S et al. Int J Reprod Contracept Obstet Gynecol. 2024 Dec;13(12):3761-3764
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20243621

Case Report

High sacrospinous fixation for managing recurrent pelvic organ prolapse, an innovative approach: a case report

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Received: 12 October 2024
Accepted: 08 November 2024

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ABSTRACT

A case of 45-year-old female patient with recurrent pelvic organ prolapse (POP) following a previous vaginal hysterectomy and pelvic floor repair. Despite initial relief for 4 years, she again developed complaints of something coming out of vagina, leading to significant discomfort and functional impairment. Physical examination revealed complete vaginal vault eventration with cystocele and rectocele, along with a deficient perineum Preoperative evaluations confirmed the necessity and feasibility of surgical intervention. A specifically tailored approach was used to treat multiple pelvic floor defects using high sacrospinous fixation combined with Anterior colporrhaphy, posterior colpoperineorrhaphy and enterocoele repair. Postoperative outcomes demonstrated substantial improvement in symptoms and functional recovery, and overall restoration of pelvic floor supports. High sacrospinous ligament fixation (SSLF) is a safe, effective, and simple procedure for prevention and treatment of vaginal vault prolapse.

Keywords: POP, Transvaginal SSLF, High sacrospinous fixation, Vault prolapse

INTRODUCTION

Pelvic organ prolapse (POP) is the descent of one or more of the anterior vaginal walls, posterior vaginal wall, the uterus (cervix), or the apex of the vagina (vaginal vault or cuff scar after hysterectomy).[1] leading to significant discomfort and functional impairment. The lifetime risk of undergoing surgery for POPs or urinary incontinence is 11.8%, with a higher risk in women aged 50-79.[2] Risk factors contributing to the development of POP include parity, vaginal delivery, advancing age and increased body mass index (BMI).[3]

Surgical management of POP aims to restore the normal anatomy and function of pelvic floor.[4] The recurrence of POP, particularly after surgical interventions, remains a significant challenge. Clarks et al found that 12% undergo second surgery within 6 years, and Denman et al found the recurrence rate was 17% at 10 years.[5,6] Studies have shown that pre-operative stage and genital hiatus size are critical predictors of recurrence.[7] SSLF is an effective vaginal procedure for correcting apical prolapse.

CASE REPORT

A 45-year-old female presented with recurrent symptoms of vaginal bulging, urinary difficulties, and discomfort exacerbated by activities such as standing, squatting, and laughing. Physical examination revealed complete vaginal vault eventration with cystocele and rectocele, along with a deficient perineum (Figure 1 A and B).

Previously she underwent vaginal hysterectomy with pelvic floor repair in 2016 for similar complaints, providing initial relief for four years before symptoms recurred again in 2020.

Diagnostic assessment

Preoperative assessments included PAP-smear and routine blood and urine investigations.

Surgical technique

The patient underwent surgical procedure consisting of transvaginal high sacrospinous fixation combined with anterior cystocele repair, enterocoele repair, and colpoperineorrhaphy. The approach aimed to restore pelvic floor integrity and alleviate symptomatic burden by addressing both the anatomical distortions and the deficient perineum while maintaining good vaginal length.

Surgery was done in lithotomy position with patient under spinal anaesthesia. The vaginal wall is dissected laterally to expose the pararectal space on the right side (Figure 2). Carrying blunt finger dissection, a window is created between the rectovaginal space and ischial spine. Dissection is done until we reach the ischial spine. The ischial spine as a prominent landmark, the sacrospinous ligament, is palpated and identified medial to it. This sacrospinous ligament is a glistening white structure that originates from the ischial spine and attaches to the lower part of the sacrum (Figure 3). Prolene no. 1 suture is placed through sacrospinous ligament starting from the superior border from above downward direction. The suture should be placed medial to the ischial spine so that neurovascular bundle is not injured. At point of new vaginal apex, the sacrospinous sutures are placed through the full thickness of vaginal tissue. When healing occurs, vaginal epithelium is fused with the sacrospinous ligament and vault due to fibrosis, and it remains suspended up nicely thereafter.

At the very outset right SSL is accessed by dissecting between vagina and rectovaginal fascia in the rugosity-free area of the upper vagina, lateral to the enterocoele sac (Figure 4). Rectum is well away so injury is unlikely. Anterior colporrhaphy and Enterocele repair done. Posterior colpoperineorrhaphy done separately to fully repair the pelvic floor defects (Figure 5).

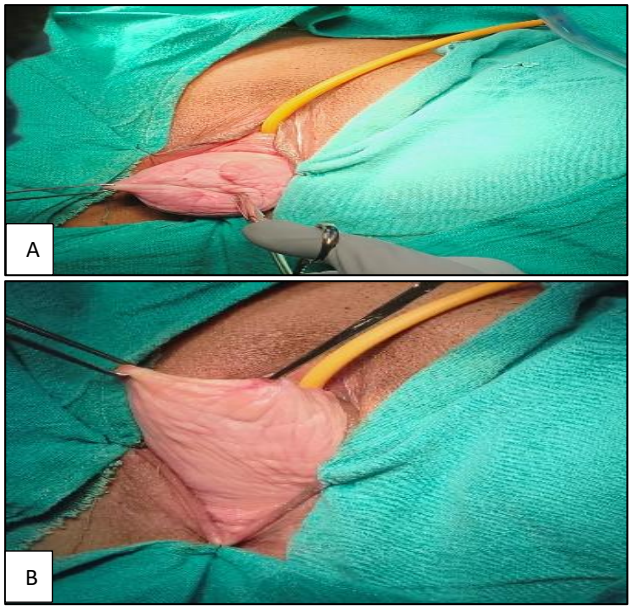

Figure 1 (A and B): Pre operative picture of patient.

Figure 2: Para recta space being created so as to reach sacrospinous ligament.

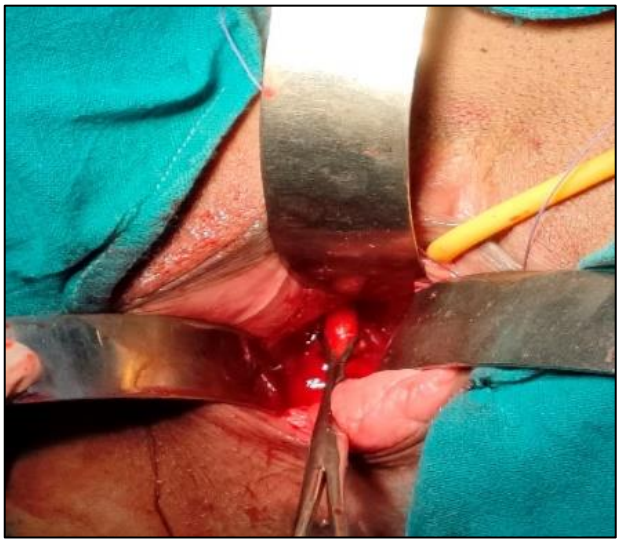

Figure 3: Sacrospinous ligament identified.

Figure 4: Fixed sacrospinous ligament being shown.

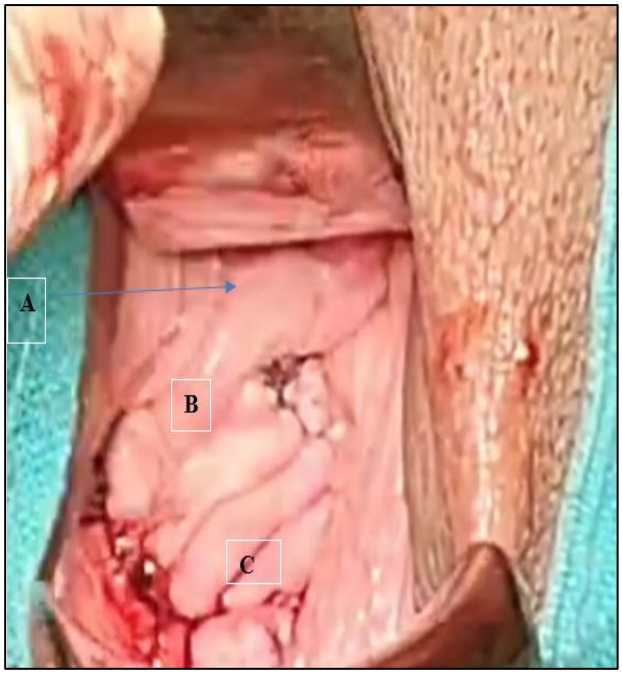

Figure 5 (A-C): Repair of all compartment defects-cystocele and anterior compartment repair, enterocele repair and colpoperineorrhaphy/ posterior compartment repair.

Outcome

Postoperative recovery was uneventful, with significant improvement in symptoms including vaginal bulging, urinary difficulties, bowel disturbances and sexual discomfort. Patient was given broad-spectrum antibiotic for 7 days and was given strict instructions not to lift weight and avoid heavy work for 10 to 12 weeks.

Follow-up assessments confirmed the restoration of pelvic floor support and overall functional improvement.

DISCUSSION

SSLF is one of the most utilized surgical procedures in the management of POP. In the last two decades, polypropylene mesh was extensively used to reinforce weakened tissues in order to improve long term outcome.[8] Due to recent US FDA warning in 2019 about mesh-related complications, traditional vaginal procedure of SSLF using native tissues for prolapse repair has once again come to the forefront.[9,10]

The upper third of the vagina (Delancey's biomechanical level I) is suspended from the pelvic walls by vertical fibres of the paracolpium, which is a continuation of the cardinal ligament. The sacrospinous ligament suspension seeks to restore the level I vaginal support.[11] Numerous techniques for correction of vault prolapsed have been described.[12] Transvaginal route for SSLF avoids the potential complications of laparotomy and general anaesthesia used in abdominal route and is more cost-effective.[13] Traditional transvaginal sacrospinous fixation approach uses long perineorrhaphy incision starting at the fourchette and thus entails long dissection with increased recovery time, more post-operative pain and blood loss. Our technique of high Sacrospinous fixation using pararectal space to access the sacrospinous ligament for fixation offers several advantages over traditional methods. At the very outset right SSL is accessed by dissecting between vagina and rectovaginal fascia in the rugosity- free area of the upper vagina, lateral to the enterocoele sac. Rectum is well away so injury is unlikely. By minimizing dissection and enhanced visualization, operative time is reduced and there is lower risk of complications such as infection, blood loss, postoperative pain and reduced risk of rectal injury. Thus, high SSLF, an innovation over the traditional transvaginal SSLF, is safer and more effective option for patients.

SSLF is versatile allowing for tailored treatment based on individual patient's compartment prolapse status.[14] For recurrent prolapse cases, suspension of the apex should be accompanied by the corresponding repair of weak compartment for better long-term outcome. We feel that pelvic floor reconstructive surgery should view the pelvis as a whole dynamic unit and repairing one compartment might cause pressure to another. In the present case apart from doing high sacrospinous fixation of vault, strengthening of anterior and posterior compartment of pelvic floor was done along with cystocele, enterocoele and rectocele repair.

CONCLUSION

While selecting the approach, concurrent management of anterior and posterior vaginal wall prolapse, which is present in no less than two-thirds of cases with total prolapse, should be considered. SSF being a vaginal procedure, apart from managing vaginal wall prolapse, keeps the vaginal axis in the midline and enables adjustment of the vaginal length.

ACKNOWLEDGEMENTS

Authors would like to thank to ESIC hospital, Basaidarapur, Delhi.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Mahajan S, Valecha SM, Rajput DA. High sacrospinous fixation for managing recurrent pelvic organ prolapse, an innovative approach-a case report. Int J Reprod Contracept Obstet Gynecol 2024;13:3761-4.