

# Vaginal Rectopexy for Rectal Prolapse in Advanced Pelvic Organ Prolapse: A Review of Surgical Strategies

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**How to cite this paper:** Williams, C., Isagba, E., Jackson, M., Smith, S. and Neal, A. (2025) Vaginal Rectopexy for Rectal Prolapse in Advanced Pelvic Organ Prolapse: A Review of Surgical Strategies. *Open Journal of Obstetrics and Gynecology*, 15, 1634-1639. <https://doi.org/10.4236/ojog.2025.1510136>

**Received:** August 18, 2025

**Accepted:** September 27, 2025

**Published:** September 30, 2025

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## Abstract

Pelvic organ prolapse (POP) is a common condition in women, frequently involving the anterior or posterior vaginal compartments. While biologic grafts are increasingly used in cystocele repair, their application in rectocele repair remains rare and underreported. A 61-year-old female presented with fecal incontinence, mixed urinary incontinence, and symptomatic pelvic organ prolapse, including a stage II midline cystocele, rectocele, and suspected rectal prolapse. She was scheduled for anterior and posterior vaginal wall repair. This case illustrates a novel use of biologic grafting in rectocele repair with concurrent rectal prolapse management. While graft use in anterior repairs is becoming more common, its application in posterior compartment defects is less explored. This report contributes to the limited literature supporting biologic augmentation in complex posterior prolapse and highlights the need for further investigation into the long-term outcomes of biologic graft use in posterior compartment repairs.

## Keywords

Pelvic Organ Prolapse, Cystocele, Rectocele, Vaginal Rectopexy, Biological Graft, Rectal Prolapse, Case Report

## 1. Introduction

This case report presents a 61-year-old female with symptomatic pelvic organ prolapse who underwent anterior and posterior vaginal wall repair. In addition, a min-

minally invasive vaginal rectopexy was performed to correct a grade 3 rectal prolapse using a biologic graft for rectal fixation. This approach is notable given the limited literature on the use of biologic grafts in vaginal rectopexy. This case highlights a potential alternative to traditional native tissue repairs with synthetic mesh and may support further exploration of biologic materials in pelvic floor reconstruction [1]-[3].

## **2. Case Report/Presentation**

### **2.1 Initial Presentation**

A 61-year-old woman presented with progressive pelvic floor dysfunction, including fecal incontinence, mixed urinary incontinence, and symptomatic pelvic organ prolapse. She had a history of perineal pressure, incomplete bowel evacuation, and bothersome vaginal bulge. Initial evaluation by her primary care physician revealed a stage II midline cystocele, rectocele, urethral hypermobility, and suspected rectal prolapse. Pelvic examination confirmed anterior and posterior vaginal wall laxity with associated perineal descent [4].

### **2.2. Procedural Intervention**

The patient was taken to the operating room and placed in a lithotomy position. Following administration of local anesthesia with 0.25% Marcaine and epinephrine, the anterior vaginal wall was incised vertically to expose the endopelvic fascia. The paravesical space was carefully dissected, and the cystocele was repaired by plicating the fascia with interrupted 2-0 Vicryl sutures. Hemostasis was maintained throughout.

Subsequently, the posterior vaginal wall was addressed. Local anesthesia and hydrodissection facilitated tissue separation. Excess vaginal tissue was excised, and the rectovaginal fascia was dissected and plicated with 2-0 Vicryl sutures. The dermal biological graft was then placed over the fascia, and it was intentionally selected to be used due to its thickness. The sacrospinous ligament was fixed to the perineal body to support the vaginal apex. Intraoperatively, a large grade 3 rectal prolapse was identified. Bilateral Prolene sutures were placed into the perirectal tissue to elevate and reduce the prolapse. The posterior vaginal wall was closed using running locking sutures. Attention was then directed to the mid-urethra. After local anesthesia, a suburethral incision was made, and a mid-urethral sling was placed bilaterally via a transobturator approach. Sling tension was adjusted appropriately, and cystoscopy confirmed ureteral patency and absence of injury. The incision was closed with interrupted sutures.

The patient tolerated the procedure well. Vaginal packing was placed, surgical counts were confirmed correct, and she was transferred to the recovery room in stable condition. Follow-up was scheduled for two weeks postoperatively.

### **2.3. Follow-Up and Outcomes**

Intraoperative evaluation confirmed a grade 3 rectal prolapse, according to the

Oxford Rectal Prolapse Grading System. The Oxford Rectal Prolapse Grading system provides a way to clinically explain the severity of a prolapse, with grade 3 indicating a prolapse that is of full thickness extending beyond the anal verge, which assists in the decisions regarding management. The patient's postoperative course was monitored closely over a three-month period. On the day of surgery, she tolerated the procedure well without intraoperative complications. At her two-week follow-up, she reported some vaginal bleeding and discharge. By the six-week visit, the bleeding had resolved, though she continued to experience mild pain; importantly, she denied any recurrence of stool incontinence. On examination at 2 weeks, 6 weeks, and 3 months, there was no evidence of stool in the vaginal vault or fistula tract, and no complications were noted. At her three-month follow-up, the patient reported a marked improvement in symptoms, had resumed walking and normal daily activities, and overall demonstrated a favorable recovery following the combined vaginal rectopexy and pelvic floor repair.

### 3. Discussion

#### Literature Review

Pelvic organ prolapse is defined as the descent of pelvic organs that herniate into the vagina, often due to damaged ligaments or muscle weakness. Posterior wall prolapse includes different pathologies such as external rectal prolapse, internal rectal intussusception, enteroceles, sigmoidoceles, or posterior enteroceles [5] [6]. In cases of rectal prolapse, surgical options include vaginal rectopexy, posterior suture rectopexy, posterior mesh rectopexy, resection rectopexy, and perineal approaches [7]. Our team introduced a transvaginal sacrospinous suture rectopexy. The sacrospinous ligament has been a cornerstone landmark for vaginal vault suspension for decades. By avoiding entry into the peritoneal cavity, this minimally invasive technique may broaden treatment options and make surgery feasible for patients who might otherwise be poor candidates [8].

Ventral or vaginal rectopexy can be performed using native tissue, synthetic mesh, or biologic grafts, as utilized in this case. With rising safety concerns related to synthetic mesh, particularly erosion associated with pore size in pelvic floor repairs [9], some surgeons have turned to biologic alternatives. A 15-year retrospective cohort study [4] supports the use of biologic mesh, stating that minimally invasive repairs using biologic grafts offer favorable short- and long-term recurrence rates and fewer complications compared to synthetic mesh. However, this study was limited, as it was based on a single surgeon's experience, which limits generalizability.

In a case series comparing the use of synthetic mesh and biological mesh in laparoscopic ventral rectopexies, recurrence rates and morbidity outcomes were comparable in the two groups. However, in terms of functional outcomes, this study found that *de novo* symptoms were less reported in the group that utilized the biological mesh [10]. A systematic review of laparoscopic ventral mesh rectopexies

found that the mesh-related erosion after the procedure was more frequent after utilizing synthetic mesh, compared to biologics [11]. Because existing cost analyses are both limited and outdated, meaningful comparisons between biologic grafts and synthetic mesh could not be made, and the overall economic implications remain unclear. Future studies are needed to clarify the economic impact of these interventions. Along with the overall scarcity of published data on biologic graft use in vaginal rectopexy, this highlights the need for future studies to address cost-effectiveness and long-term outcomes. This present case contributes additional insight into its feasibility and favorable short-term outcomes.

#### 4. Conclusions

Most rectopexy procedures are performed abdominally, typically as ventral mesh rectopexy or posterior suture/mesh rectopexy. In contrast, the vaginal approach to rectopexy is uncommon and therefore rarely reported in the literature, particularly when utilizing a biologic graft for rectal fixation. While biologic grafts have not markedly demonstrated superior outcomes compared to synthetic mesh in posterior compartment repairs such as vaginal rectopexy, they are associated with lower rates of mesh-related complications, which may make biologic grafts preferable in cases where minimizing complication risk is a high priority.

After surgery, the patient demonstrated an overall favorable postoperative recovery. Early bleeding and discharge resolved by 6 weeks, with no complications such as incontinence. At the 3-month follow-up, the patient resumed normal activities, ambulated without difficulty, and exhibited excellent surgical outcomes. The method of combining rectopexy with sacrospinous suspension with graft worked well in this patient and could help guide future cases where rectocele and rectal prolapse coexist.

Although this represents a single case with short-term follow-up, it highlights the feasibility and potential benefits of vaginal rectopexy with biologic graft augmentation. A key limitation of this report is that it describes a single case with only three months of follow-up. While the early outcome was favorable, this timeframe does not capture long-term risks such as recurrence rates, graft durability, mesh-related complications, and long-term functional results. An optimal follow-up strategy would involve scheduled assessments at 6 months, 12 months, and annually thereafter. This should include clinical examinations, imaging studies when indicated, and validated symptom questionnaires assessing continence, constipation, and quality of life. Continued patient surveillance and larger studies with extended follow-up will be important to better evaluate the durability and safety of vaginal rectopexy with biological mesh. This case contributes to the limited literature and suggests that vaginal rectopexy with biologic graft may be a safe and effective alternative in select patients with complex pelvic organ prolapse. This technique may expand the reconstructive options available to surgeons managing patients with concurrent rectocele and rectal prolapse.

## Declaration

Dr. Chau Williams serves as a surgical consultant for Coloplast in the field of urology. No sources of support were received for this study.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

- [1] Abdelnaby, M., Fathy, M., Abdallah, E., Balata, M., Arnous, M., Mikhail, H.M., *et al.* (2021) Laparoscopic Ventral Mesh Rectopexy versus Transvaginal Posterior Colporrhaphy in Management of Anterior Rectocele. *Journal of Gastrointestinal Surgery*, **25**, 2035-2046. <https://doi.org/10.1007/s11605-020-04823-z>
- [2] Azadi, A., Casey, S., Ramanujam, P., Tehranchi, D. and Ostergard, D. (2020) Repair of Posterior Vaginal Wall Defect Using Biologic Graft for Stage III-POP-Q Pelvic Organ Prolapse in a Patient with History of a J-Pouch. *Case Reports in Obstetrics and Gynecology*, **2020**, Article ID: 8892014. <https://doi.org/10.1155/2020/8892014>
- [3] Brown, R. and Ellis, C. (2014) The Role of Synthetic and Biologic Materials in the Treatment of Pelvic Organ Prolapse. *Clinics in Colon and Rectal Surgery*, **27**, 182-190. <https://doi.org/10.1055/s-0034-1394157>
- [4] Maher, C., Feiner, B., Baessler, K., Christmann-Schmid, C., Haya, N. and Marjoribanks, J. (2016) Transvaginal Mesh or Grafts Compared with Native Tissue Repair for Vaginal Prolapse. *Cochrane Database of Systematic Reviews*, **2017**, CD012079. <https://doi.org/10.1002/14651858.cd012079>
- [5] Lonne, M.L.R., Cao, A.M.Y., Jenkin, A., Convie, L.J., Stevenson, G.E., Moloney, J.M., *et al.* (2025) Long-Term Outcomes after Minimally Invasive Ventral Rectopexy for Rectal Prolapse Using Biological Graft Prosthesis: A 15-Year Retrospective Cohort Study. *Diseases of the Colon & Rectum*, **68**, 608-615. <https://doi.org/10.1097/dcr.0000000000003661>
- [6] Karram, M. and Maher, C. (2013) Surgery for Posterior Vaginal Wall Prolapse. *International Urogynecology Journal*, **24**, 1835-1841. <https://doi.org/10.1007/s00192-013-2174-z>
- [7] Kelley, J.K., Hagen, E.R., Gurland, B., Stevenson, A.R. and Ogilvie, J.W. (2023) The International Variability of Surgery for Rectal Prolapse. *BMJ Surgery, Interventions, & Health Technologies*, **5**, e000198. <https://doi.org/10.1136/bmjst-2023-000198>
- [8] Chill, H.H., Hadizadeh, A., Leffelman, A., Paya Ten, C., Chang, C., Goldberg, R.P., *et al.* (2025) Long-Term Outcomes of Transvaginal Sacrospinous Ligament Suture Rectopexy. *International Urogynecology Journal*, **36**, 1425-1433. <https://doi.org/10.1007/s00192-025-06099-w>
- [9] Evans, C., Stevenson, A.R.L., Sileri, P., Mercer-Jones, M.A., Dixon, A.R., Cunningham, C., *et al.* (2015) A Multicenter Collaboration to Assess the Safety of Laparoscopic Ventral Rectopexy. *Diseases of the Colon & Rectum*, **58**, 799-807. <https://doi.org/10.1097/dcr.0000000000000402>
- [10] Drissi, F., Rogier-Mouzelas, F., Fernandez Arias, S., Podevin, J. and Meurette, G. (2023) Moving from Laparoscopic Synthetic Mesh to Robotic Biological Mesh for Ventral Rectopexy: Results from a Case Series. *Journal of Clinical Medicine*, **12**, Article No. 5751. <https://doi.org/10.3390/jcm12175751>
- [11] Balla, A., Quaresima, S., Smolarek, S., Shalaby, M., Missori, G. and Sileri, P. (2017)

Synthetic versus Biological Mesh-Related Erosion after Laparoscopic Ventral Mesh Rectopexy: A Systematic Review. *Annals of Coloproctology*, **33**, 46-51.  
<https://doi.org/10.3393/ac.2017.33.2.46>