

## Case Report

# Levatorplasty Release and Reconstruction of Rectovaginal Septum using Allogenic Dermal Graft

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**Abstract:** The goal of reconstructive vaginal surgery include: restoration of normal anatomy, as well as maintaining visceral and sexual function. Rectocele repair can be performed utilizing a number of techniques, however some of these techniques severely distort the posterior vaginal wall anatomy and subsequently may result in dyspareunia. We report two patients with postoperative dyspareunia following levatorplasty technique for the treatment of rectocele. The patients elected to have their levatorplasty released and their rectovaginal septum reconstructed utilizing allogenic dermal graft. Postoperatively both patients are sexually active without evidence of dyspareunia or rectocele.

**Keywords:** Allografts; Cadaveric fascia; Dermal graft; Dyspareunia; Levatorplasty; Rectocele repair

## Introduction

The long-term surgical correction of rectocele remains a challenge for the gynecologic surgeon. Previously described surgical techniques include traditional posterior colporrhaphy, site-specific rectovaginal septum defect repair and levatorplasty. Cure rates using these operative techniques have been reported to range from 65% to 86%. However, surgical cure is not always defined as simply reduction of the vaginal bulge. The goals of reconstructive vaginal surgery include the re-

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establishment of normal visceral and sexual function, in addition to restoration of normal anatomy. Although levatorplasty is an accepted technique of rectocele repair, it sometimes leads to vaginal narrowing and subsequent dyspareunia. When medical therapy fails, surgical management of such patients requires release of the constriction ring, with the challenge being to maintain adequate posterior wall support. The authors report two cases of levatorplasty release and reconstruction of the rectovaginal septum using an allogenic dermal graft in patients suffering from dyspareunia and vaginal constriction following levatorplasty rectocele repair.

## Case Reports

### Case

A 53-year-old gravida 2 para 2 married woman presented with constant vaginal discomfort and entrance dyspareunia. Fourteen months prior to presentation she had undergone an anterior repair, Burch urethropexy, levatorplasty and perineoplasty for symptomatic prolapse and incontinence. Following surgery, she experienced severe dyspareunia and discontinued all sexual activity. Six months later, the primary surgeon attempted a release of the levatorplasty and perineoplasty. The patient reported no improvement in her symptoms. Over the next 3 months she attempted vaginal dilation and estrogen cream, without improvements in her symptoms. She denied any symptoms of fecal incontinence, constipation, recurrent prolapse or urinary incontinence.

Pelvic examination revealed a narrow vaginal introitus with the genital hiatus measuring only 1 cm according to the International Continence Society Pelvic Organ

Prolapse quantification evaluation (POP-Q). The remainder of the POP-Q examination was: Aa, -3, Ba -3 C -7.5, Ap -3, Bp -3, GH 1.0, PB 6.0, TVL 8.5. Palpation of the posterior vaginal wall and rectum revealed a prominent thickening approximately 5 cm in length extending from the hymen toward the vaginal apex. Palpation of this area reproduced point tenderness. There was no evidence of a cystocele or rectocele.

Levatorplasty release and reconstruction of the rectovaginal septum using an allogenic dermal graft was performed without complication. The patient was evaluated 3 months postoperatively and reported normal resumption of sexual activity without residual dyspareunia. Postoperative POP-Q revealed normal measurements, with Aa -3, Ba -3, C -7.5, Ap -3, Bp -3, GH 3.0, PB 3.5, TVL 8.5.

### Case II

A 55-year-old gravida 2 para 2 married woman presented with a chief complaint of entrance dyspareunia, pelvic pressure and tenesmus. Two years prior to presentation she had undergone an abdominal hysterectomy, Burch urethropexy and posterior repair. Eight months later, she was noted to have recurrent vaginal vault prolapse, rectocele and a fibrous stricture of the posterior vaginal wall, and had undergone an abdominal sacrocolpopexy, excision of the vaginal fibrous band, and repeat posterior repair with levatorplasty. Following surgery she experienced severe dyspareunia and persistent defecatory dysfunction, requiring splinting to evacuate the rectum. She denied any fecal incontinence or constipation. She also had worsening prolapse symptoms. Over the next year she attempted vaginal dilation, physical therapy and biofeedback, with no improvement in her symptoms.

Pelvic examination revealed a mild narrowing of the vaginal introitus, with a tight vaginal stricture measuring 4 cm in length and beginning approximately 1 cm proximal to the vaginal introitus in the area of the previous levatorplasty. This constriction ring was tender to palpation and reproduced the patient's pain symptoms. Proximal to the vaginal stricture was a large high rectocele, confirmed on rectovaginal examination. Preoperative POP-Q examination measured: Aa -2, Ba -2, C -6.5, Ap -3, Bp -3, GH 2.0, PB 4.5, TVL 9.

The patient underwent levatorplasty release and reconstruction of the rectovaginal septum using an allogenic dermal graft, without complication. She was evaluated 4 months postoperatively and reported normal resumption of sexual activity and bowel function. She denied any residual prolapse symptoms. On pelvic examination the posterior vaginal wall was well supported, without signs of stricture or rectocele. Postoperative POP-Q noted Aa -2, Ba -2, C -8.5, Ap -3, Bp 3, GH 3.0, PB 3.5, TVL 9.

### Surgical Technique

The procedure is performed under general anesthesia with the patient in the dorsal lithotomy position. A modified bowel preparation and preoperative intravenous antibiotics are recommended for all patients. A horizontal incision is made in the perineum at the posterior hymenal ring, and the mucosa overlying the levatorplasty is incised longitudinally. With a finger in the rectum, the levatorplasty is released in the midline using a scalpel. The incision is initiated at the apex of the stricture and continued distally to release the perineo-plasty. Dense scar tissue from the previous repair is resected from the midline. Blunt dissection is performed using a cotton sponge to mobilize and expose the levator muscles bilaterally. The rectal wall is visualized throughout the length of the incision. Commonly, no residual rectovaginal septum is available for site-specific defect repair. A 4 × 7 cm acellular allogenic dermal graft is then anchored bilaterally to the levator ani muscle just distal to the ischial spines, using a series of interrupted 2/0 permanent sutures. Subsequent interrupted sutures are placed from the ischial spine to the perineal body and attached to the lateral margins of the graft bilaterally. Tie-down of these sutures results in lateral attachment of the graft. Next, the perineal body is recreated using interrupted 2/0 delayed absorbable sutures and the graft is anchored distally to the perineal body with permanent sutures. This results in recreation of the normal rectovaginal septum without residual rectocele or enterocele along the posterior vaginal segment. The vaginal and perineal epithelium are closed using 3/0 delayed absorbable sutures. Finally, a rectal examination is performed to exclude rectal injury or unintentional suture penetration.

### Discussion

Traditional techniques for the surgical correction of rectocele can result in dyspareunia in 19%–32% of patients [1–3]. Levatorplasty, often performed in patients with multiple previous rectocele repairs and/or poor rectovaginal fascia, may be associated with significantly higher rates of dyspareunia owing to constriction of the vaginal introitus during reapproximation of the levator ani muscle in the midline. The authors believe the levatorplasty technique can be effective for the treatment of the anatomical defect presenting as a rectocele. However, it should be reserved for selected patients, primarily those in which preservation of sexual function is not desired.

Patients with constriction rings and introital narrowing of the distal portion of the vagina following pelvic surgery have traditionally been treated with techniques such as skin flaps, release of the constriction ring and Z-plasty. However, these procedures are most appropriate for mucosal narrowing at the introitus or distal vagina. In cases of levatorplasty, the vaginal narrowing often involves a significant length of vagina involving the

levator muscles, or may result in compromise of the posterior fascial supports and may not be amenable to such procedures. The choice of procedure will depend on the clinical presentation, the preoperative examination and the surgeon's discretion.

Patients who have dyspareunia after levatorplasty should first be treated with conservative therapy, including vaginal dilation, vaginal estrogen cream and pelvic floor rehabilitation. If there is no response, the authors believe a levatorplasty release or takedown of the constriction ring is a viable option. In such cases, takedown of the levatorplasty may leave little supportive tissue for posterior vaginal wall support. The surgical management of these patients is challenging and involves a compromise between restoring physiologic function and maintaining adequate pelvic support. Implantation of a dermal graft at the normal anatomic attachments of the rectovaginal septum accomplishes both goals with good results. Commonly used in plastic and dental surgery, dermal grafts act as an acellular matrix that promotes the subsequent ingrowth of connective tissue. Previous literature reports them to be safe and effective in various surgical procedure [4,5]. To date, we have had no significant complications with the use of dermal grafts in reconstructive pelvic surgery. Our experience with its use in the surgical correction of fistulas [6] and pelvic support defects [7] has been previously published.

Patients with persistent dyspareunia after a levatorplasty for rectocele may benefit from a levatorplasty release and reconstruction of the posterior vaginal wall using a dermal graft as described. The use of a dermal graft is applicable primarily in cases where the release of the levatorplasty or constriction ring results in poor

tissue in the midline for subsequent rectocele repair. The authors believe that the use of allogenic dermal grafts may also be helpful in patients who have failed multiple rectocele repairs, or in those who might otherwise be candidates for a levatorplasty when poor posterior fascial support is noted. Placement of this graft helps to maintain normal anatomy by creating a bridge between the lateral levator muscles and augmenting the strength of the remaining rectovaginal septum. Further studies analyzing the long-term surgical outcomes of dermal graft use in primary rectocele repair are currently in progress.

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