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Enterocoele manifesting as recurrent anterior rectal prolapse: A case report

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ABSTRACT

INTRODUCTION AND IMPORTANCE: An enterocoele is a true herniation of small bowel through the recto-vaginal septum, most commonly occurring transvaginally. Although the prevalence of enterocoele is not as low as previously thought, enterocoeles manifesting transrectally or with rectal prolapse are exceedingly rare and without established surgical guidance.

CASE PRESENTATION: A medically complex, oxygen-dependent patient presented with full fecal incontinence and transrectal enterocoele associated with recurrent anterior rectal prolapse. This was diagnosed via defecography and repaired under regional anesthesia through an open transabdominal approach of posterior cul-de-sac obliteration, uterosacral ligament vaginal vault suspension and simplified ventral suture rectopexy. Surgical planning was determined through a multidisciplinary care-conference, with preference for an approach with minimal respiratory compromise and repair durability. Short-term, this patient has complete resolution of bulge symptoms, and improved fecal continence.

CLINICAL DISCUSSION: In addition to history and examination, dynamic imaging of the pelvic floor, specifically defecography, is particularly useful in identifying enterocoeles that present as a component of pelvic organ or anorectal prolapse. As there are no established standard surgical treatment approaches for these rare conditions, surgeons must consider several points prior to proceeding: the repair of the defect, the symptoms the repair targets, and repair durability.

CONCLUSIONS: Complete assessment and specialist consultation should be pursued prior to surgical repair for anorectal pathology. For this patient, an open transabdominal native tissue repair under regional anesthesia was successful, emphasizing that approaches to surgical correction of such rare presentations must be individualized.

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1. Introduction

An enterocoele is a true herniation of the small bowel through the rectovaginal septum, most commonly occurring transvaginally and in women status post-hysterectomy (making up 18 % of all enterocoeles, and almost two-thirds of the women with symptomatic enterocoeles) [1,2]. Although earlier reviews reported enterocoele as an uncommon occurrence, a 2006 prospective review of a defecography database revealed 104 of 912 patients had findings of enterocoele; a prevalence of 11 %. Notably, only 25 patients had isolated enterocoele, and only one patient demonstrated an extraperineal (transrectal) enterocoele, with concomitant rectal prolapse [3]. Transrectal enterocoeles manifesting with rectal prolapse are exceptionally rare and very few cases have been reported. Considering how infrequently this condition is encountered, there is no established standard surgical treatment, although one case report

utilized laparoscopic anterior rectopexy, while another utilized transvaginal reconstructive surgery [4–6]. The majority of enterocoeles are not detected on physical exam and require dynamic imaging of the pelvic floor to detect their presence. To visualize this aberrant anatomy and anorectal function, use of defecography is often employed [7]. This case discusses a patient presenting to an academic institution with complete fecal incontinence and a transrectal enterocoele associated with recurrent anterior rectal prolapse, which was successfully diagnosed via defecography and repaired through an open transabdominal approach of posterior cul-de-sac obliteration (Moschowitz type), uterosacral ligament vaginal vault suspension and simplified ventral suture rectopexy. Postoperatively patient reported resolution of bulge symptoms and fecal incontinence. This case report has been reported in line with the SCARE Criteria [8].

2. Case presentation

An 81 year old gravida 2 para 2 woman presented to the Female Pelvic Medicine and Reconstructive Surgery (FPMRS) ser-

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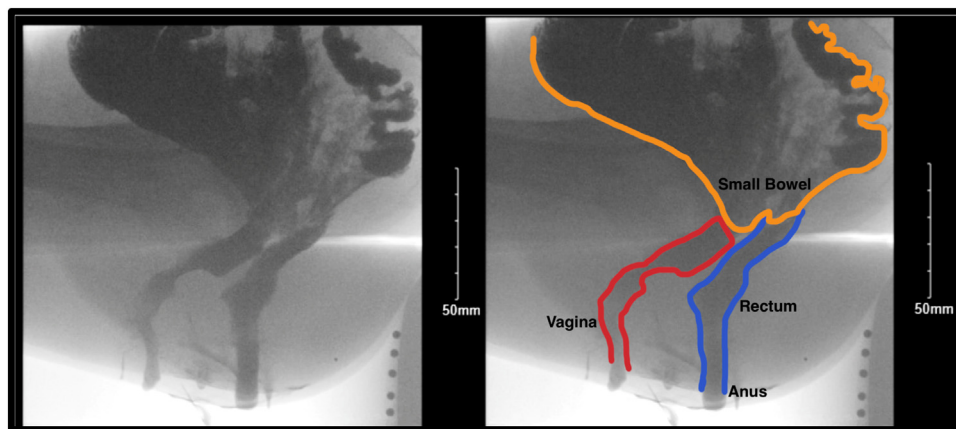


Fig. 1. Left: Barium paste instilled into vagina and rectum, demonstrating patent anal canal and significant anal incontinence at rest. Right: same image with color edits to outline key structures. Red line: vagina. Blue line: anus and rectum. Orange line: small bowel.

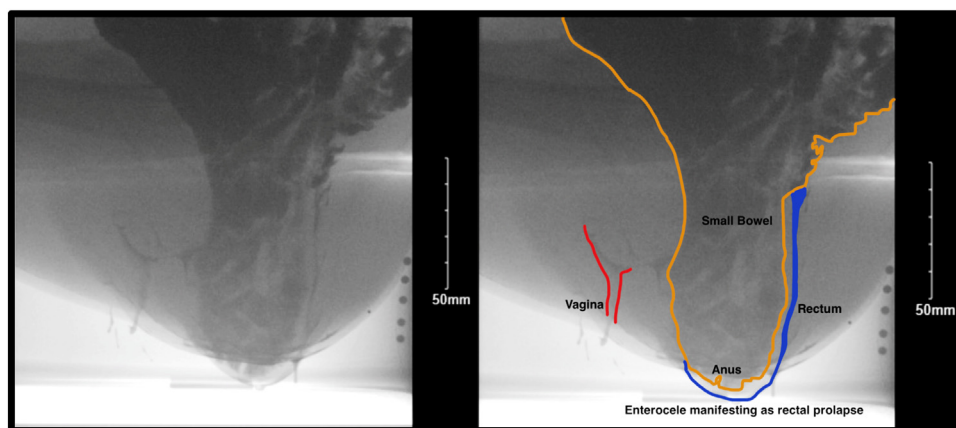


Fig. 2. Left: After multiple Valsalva maneuvers to attempt rectal evacuation, there is progressive development and inferior descent of an enterocele anterior to the rectum and posterior to the vagina. The enterocele progresses beyond the anus, and beyond the gluteal clefts externally. Rectal prolapse difficult to distinguish as rectal assessment is limited by anal incontinence and early rectal evacuation. Right: same image with color edits to outline key structures. Red line: vagina. Blue line: anus and rectum. Orange line: small bowel.

vice as a referral for repair of a symptomatic large enterocele, initially thought to be associated with an anal defect on recently completed defecography. This patient previously underwent perineal proctectomy (Altemeier’s repair) in 2016 for full thickness rectal prolapse. Other relevant history includes Non-Hodgkin’s lymphoma status post an exploratory laparotomy in 1985 followed by total abdominal chemoradiation therapy, as well as open cholecystectomy and total abdominal hysterectomy (TAH) with bilateral salpingo-oophorectomy (BSO). Additionally, she had recently been diagnosed with *Mycobacterium avium* pneumonia which worsened her chronic obstructive pulmonary disease (COPD) and was now oxygen dependent. Medication, allergy, family and psychosocial history were noncontributory, and patient was independent in all activities of daily living.

On presentation, this patient reported a severely bothersome large bulge protruding from her anus for 1.5 years that required manual reduction for comfort, and was consistent with her prior rectal prolapse. This patient also reported full fecal incontinence for 5 years despite scheduled bulking agents, and intermittent bloody mucosal discharge per rectum. She had previously declined colostomy for management of fecal incontinence. On pelvic examination, patient displayed vaginal atrophy and surgically absent uterus and cervix. Her pelvic organ prolapse quantification (POP-Q) was Aa -2, Ba -2, C -6, Gh 3.5, Pb 5, TVL 8, Ap 0, and Bp 0, notable for stage 2 rectocele. Rectal exam revealed 4/5 sphincter tone at

rest, without any evidence of sphincteric defect. There was an area of weakness palpated at the anterior rectal wall on digital rectal examination. While in supine position, the patient did not demonstrate significant enterocele or rectal wall prolapse with Valsalva effort. While sitting on a commode, the patient did demonstrate a large bulge extending beyond the gluteal clefts with Valsalva effort, however on examination it was difficult to ascertain if this bulge was an enterocele through the anus or recurrent rectal prolapse. The patient ultimately desired surgical correction of her condition as bulge symptoms were most bothersome, understanding that the surgical goal was to normalize her pelvic anatomy and support.

This patient’s recent defecography results (completed 6 months prior) were reviewed at a multidisciplinary case-conference between FPMRS and Colorectal Surgery (Figs. 1 and 2). The consensus was that this patient had an enterocele protruding through her anterior rectal wall (i.e. an enterocele protruding through a recurrent anterior rectal prolapse). Through this care-conference, surgical correction techniques were discussed, and consensus was reached to proceed with open transabdominal repair under spinal anesthesia due to this patient’s respiratory status.

In June 2020, the patient underwent an open transabdominal posterior cul-de-sac obliteration (Moschowitz type), uterosacral ligament vaginal vault suspension with simplified ventral suture rectopexy, extensive lysis of adhesions, and cystoscopy under spinal anesthesia with a FPMRS fellowship-trained surgeon. Intra-



Fig. 3. Anterior rectal prolapse containing underlying transrectal enterocele.

operative findings confirmed enterocele manifesting as anterior rectal prolapse (Fig. 3). Once extensive adhesions between the pelvis and small bowel were lysed, attention was turned to posterior cul-de-sac obliteration, which was successfully completed using multiple sutures of 0-Vicryl in a purse-string fashion. The uterosacral ligaments were then secured to the posterior vagina and anterior rectum using 0-Prolene suture. At procedure completion, there was excellent elevation of the vagina and rectum, obliteration of the posterior cul-de-sac and closure of the enterocele sac. Her immediate postoperative course was uncomplicated, and she was discharged home on postoperative day one as she was passing flatus, tolerating a general diet, ambulating, and pain was controlled. She was given routine postoperative instructions, emphasizing the avoidance of exercise and lifting greater than 15 pounds until cleared postoperatively, and long-term avoidance of defecatory straining. At 8-week in-office FPMRS follow up, this patient was noted to have an uncomplicated post-operative course. She adhered to post-operative instructions and denied any bothersome bulge symptoms or fecal incontinence while continuing her bowel regimen.

3. Discussion

Transrectal enteroceles within rectal prolapse are exceptionally rare. In addition to a thorough history and examination, dynamic imaging of the pelvic floor is particularly useful in identifying enteroceles that present as a component of prolapse (including X-ray or magnetic resonance imaging (MRI) defecography studies, although MRI may not readily be available) [1].

There are no established standard surgical treatment approaches for this rare condition. It is equally important to note that even for isolated enterocele or isolated rectal prolapse, there is not consensus on preferred surgical method [2,6,9]. When considering surgical management of any pelvic floor defect, several points must be considered: the repair of the defect, the symptoms the repair targets, and repair durability [1]. Available literature on the outcomes of either enterocele or rectal prolapse repair imply that abdominal surgery has the lowest recurrence rate, but is associated with higher rate of complications, morbidity and mortality when compared to perineal surgery [2,9]. When assessing prophylactic enterocele repair at the time of vaginal hysterectomy comparing vaginal Moschowitz repair, an abdominal McCall-type repair with culdoplasty/plication of pelvic ligaments, and a peritoneal-only closure of the pouch of Douglas, the abdominal McCall-type procedure proved statistically superior at three years ($p = 0.004$), with only two of 32 patients developing recurrence, while the other two procedures carried failure rates of 30–39 %.

Fascial repair and re-establishing fascial support structures can produce a long-term result [10].

This patient's complex medical history, including a previous perineal proctectomy for rectal prolapse, made accurate diagnosis of her condition paramount. When determining the most appropriate surgical approach, abdominal or perineal approaches were discussed, noting that this elderly patient failed a prior perineal surgery for rectal prolapse, had prior abdominal surgeries including a TAH, BSO, had prior chemoradiation, and was oxygen dependent with COPD. As such, it was primarily determined that spinal anesthetic should be prioritized to preserve respiratory status, and an open transabdominal native tissue repair to obliterate the posterior cul-de-sac and restore pelvic organ support could provide the most durability for this patient. While this approach was utilized in this patient, cases utilizing general anesthetic are amenable to minimally invasive approaches.

In the structurally sound pelvis, the posterior vagina is anchored to the rectum by the rectovaginal fascia, while the upper vagina is suspended by the cardinal and uterosacral ligaments [1]. Rectopexy is the restoration of rectal support back to a more anatomic position, typically completed with mesh or suture fixing the rectum to the sacral promontory [11]. One case series of 9 women with complete rectal and uterovaginal prolapse were treated between 1998–2007 with TAH, posterior cul de sac obliteration and modified ventral suture rectopexy (defined as suturing the anterior rectal wall to the posterior vaginal wall with 3 permanent sutures). Full continence with regular bowel movements was restored in all patients, and there have been no known recurrences [12]. A prior 2004 paper evaluating the management of enteroceles reiterated previous notions that elevation and straightening of the rectum by fixing it to the vagina, with or without mesh, would address the enterocele and significantly improve rectal symptoms [13]. In essence, we performed a simplified ventral suture rectopexy in this patient by incorporating the anterior rectum in the vaginal suspension by fixing it to the uterosacral ligaments, in an effort to elevate and straighten the rectum.

To conclude, rare cases pose unique challenges in pelvic floor reconstructive surgery, however, individualized, multidisciplinary approaches can lead to excellent results.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

N/A.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Authors contribution

Ushma J. Patel performed literature review, chart review and wrote this case report with oversight and consultation from all authors. Samantha Miller performed literature review on and assisted writing background with oversight and consultation from

all authors. Christine A. Heisler participated in patient care, coordinated obtaining patient consent, and directly oversaw and reviewed this case report.

Registration of research studies

Not Applicable.

Guarantor

Ushma J. Patel.

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