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Spontaneous Transvaginal Sigmoid Colon Evisceration and Sepsis from Complete Procidentia

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Abstract

Background: Transvaginal bowel evisceration is an exceptionally rare event. Most reported cases are of small bowel evisceration in postmenopausal woman who have undergone hysterectomy.

Case: Here, we report an isolated case of complete procidentia and spontaneous sigmoid colon evisceration leading to sepsis in an 89-year-old woman with no surgical history.

Conclusion: We highlight the risk factors, clinical presentation and treatment options for this unique multidisciplinary emergency.

Introduction

Pelvic organ prolapse (POP) is a common condition in women, with a prevalence of 41–50% (1). Complete procidentia, defined as a hernia of all three pelvic compartments through the vaginal introitus, and more specifically, a POPQ Stage IV, is much less common. Two studies attempting to determine POP prevalence found that approximately 2% of women have a POPQ Stage III.* Neither study was able to quantify the prevalence of complete procidentia as it is exceedingly low (2, 3). Although bothersome, procidentia is rarely life threatening. Severe prolapse leading to transvaginal bowel evisceration is exceptionally rare. The majority of cases of pelvic floor evisceration occur at the vaginal cuff in women who have undergone vaginal surgery(4). Here we report a case of a spontaneous transvaginal sigmoid colon evisceration causing sepsis in an 89-year-old woman with undiagnosed POP and no prior gynecological surgery.

Case

An 89-year-old postmenopausal woman with a history of four term vaginal deliveries presented to her local emergency department (ED) after noting a new large vaginal mass and bleeding after having a bowel movement. The patient had a body mass index (BMI) of 29 and no known past medical or surgical history. She also had not sought medical care for over

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*Pelvic Organ Prolapse Quantification (POPQ) is a standardized system to stage severity of prolapse. Stage III corresponds to a prolapse where the most distal prolapse is >1cm below the hymeneal ring but no further than 2cm less than total vaginal length (TVL). Stage IV represents complete vault eversion; the most distal prolapse protrudes to at least (TVL-2) cm

20 years. She denied urinary problems and bowel dysfunction, but did report that for the past few months she noticed a vaginal bulge, which she reduced intermittently.

On presentation her vital signs were unstable. She was in paroxysmal atrial fibrillation with rapid ventricular rate (RVR) to the 140s beats per minute (bpm), blood pressure (BP) of 147/90, temperature 37.3°C, and oxygen saturation (SpO₂) 96%. Labs were pertinent for a leukocytosis of 15,500, lactic acid of 2.2 and a creatinine (Cr) of 1.85. Physical exam noted a complete procidentia with a firm, enlarged uterus. Proximal to the uterus there was thought to be a multilobulated and friable mass concerning for malignancy. Computed Tomography (CT) scan of the pelvis showed complete urinary bladder, vaginal and sigmoid colon prolapse, bilateral hydroureter and hydronephrosis, and also concern for a uterine mass (Figure 1). After initial fluid resuscitation, and heart rate control with metoprolol, she was transferred to our institution on hospital day (HD) two for further evaluation and treatment.

Upon transfer, the patient's vital signs showed a temperature of 38.3°C, BP of 140/79, pulse 132 bpm, respirations 18/min, and SpO₂ 93%. On examination by the admitting surgery team, she was found to be lethargic. Her abdominal exam was unremarkable. Perineal exam showed a complete procidentia including eversion of the vagina, cervix, uterus, and eviscerated colon that appeared dusky. A portion of the posterior wall of the vagina was noted to be dark red and potentially necrotic. It was strongly recommended that the patient receive emergent surgery, however she declined. Additionally, further characterization of the eviscerated organs was unobtainable, as she also declined further noninvasive examination. Due to concern for sepsis, broad-spectrum intravenous antibiotics were started (Piperacillin-Tazobactam).

On the morning of HD three the patient had leukocytosis increased to 26,700 and creatinine increased to 2.31. Lactic acid had improved to 1.5 with fluid resuscitation. Surgery was again recommended, to which she consented. She was taken to the operating room by a multidisciplinary team including colorectal surgery, gynecological oncology, and urogynecology. Exam under anesthesia showed complete eversion of the vagina, cervix and uterus. Notably, she had a posterior vaginal wall defect, through which there was eviscerated sigmoid colon (Figure 2). Both the posterior vagina and the prolapsed colon appeared edematous and necrotic.

Laparotomy and sigmoid colectomy were performed and the resected colon was delivered through the vagina (Figure 3). The mesentery proximal and distal to the resected colon was markedly edematous and required over-sewing for hemostasis. The uterus and bladder were then reduced back into the pelvis. A total abdominal hysterectomy, bilateral salpingo-oophorectomy and upper vaginectomy were performed to remove the defect and necrotic tissue, followed by an end descending colostomy and rectopexy, and finally, a sacrocolpopexy and perineorrhaphy. Final pathology showed edema, and acute and chronic inflammation, with no evidence of malignancy.

Postoperatively, the patient was transferred to the surgical intensive care unit for ongoing sepsis management. She was extubated on post-operative day two. The rest of her post-operative course was uncomplicated apart from the diagnosis of an E. coli urinary tract

infection (UTI). Discharge vital signs were stable, with improving leukocytosis and acute kidney injury. She was discharged to a skilled nursing facility on post-operative day 11 with metoprolol for heart rate control and 14 days of levofloxacin for the UTI. Due to an elevated CHA₂DS₂-VASC[†] score, it was recommended she continue long-term anticoagulation, however the patient declined this treatment. She returned for an eight-week postoperative clinic visit. On exam her vaginal cuff was intact, with only mild apical prolapse. She was managing her end colostomy well, and there were no further complications. Due to her age and ease of present colostomy care, she declined another surgery for a colostomy take down and re-anastomosis.

Discussion

Pelvic organ prolapse is a relatively common condition in woman. Transvaginal evisceration however, is not. The peak incidence of transvaginal evisceration mirrors the peak incidence of POP and occurs primarily in postmenopausal women (1, 4). The majority of these cases occur in women who also have had a previous vaginal surgery, most commonly hysterectomy. Other associated factors that increase the risk for vaginal evisceration include recent trauma (including traumatic intercourse, vaginal deliveries, instrumentation, and foreign bodies), connective tissue disease, previous radiation therapy, or chronic increased abdominal pressure such as women with constipation or chronic cough (1, 4–7). The majority of cases reported have been of small bowel evisceration through a chronic enterocele, and it is thought that evisceration of the colon is exceedingly rare (4, 5, 7).

Transvaginal evisceration is a surgical emergency and should be treated in the same manner as any other bowel evisceration. Prompt evaluation of the eviscerated tissue and damaged vagina may lead to expeditious transfer to the operating room and successful preservation of bowel. Historically, the literature recommends an exam under anesthesia for vaginal evisceration, and subsequent emergent laparotomy via midline incision if bowel injury cannot be ruled out (4). This allows for good visualization and ease for thorough evaluation of the bowel. With the push toward minimally invasive surgery to decrease post-operative complications, recent reports have proposed laparoscopic assessment with either laparoscopic or vaginal repair (8). There are no specific data regarding outcomes based on the timing or route of closure of a vaginal defect following transvaginal evisceration. Kowalski, *et al* recommends delayed repair if there is concern for poor tissue quality and inflammation (4). Transvaginal cuff closure following total laparoscopic hysterectomy results in a three- to nine-fold reduction in the risk of vaginal cuff dehiscence when compared to laparoscopic or robotic closure of the cuff (9). Given this, transvaginal closure of the defect following evisceration may result in improved tissue integrity.

As illustrated by our case, the patient presented to our institution with a sigmoid colon evisceration and concern for sepsis. Broad-spectrum antibiotics were initiated and surgery was performed with a multidisciplinary team. We agree with previous reports that any evisceration should be treated as a surgical emergency. Furthermore, we recommend a

[†]CHA₂DS₂-VASC is a clinical prediction score to estimate the risk of stroke in patients with non-rheumatic atrial fibrillation. C = Congestive heart failure; H = Hypertension; A₂ = Age ≥ 75 years old; D = Diabetes Mellitus; S₂ = Prior stroke; V = Vascular Disease; A = Age 65–74 years old; Sc = sex category

multidisciplinary approach. In this case, colorectal surgery, gynecological oncology, and urogynecology were involved in the reduction and repair. This will help ensure appropriate surgical management and limit post-operative complications.

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Figure 1:
Computed tomography of complete procidentia. A. Coronal views, B. Axial views. White arrows point to prolapsing mass.

Figure 2:
Complete procidentia with evisceration of the sigmoid colon through the posterior vagina.
Red arrow points at uterine cervix. Yellow arrow shows uterine fundus through vaginal defect

Figure 3:
Transvaginal sigmoid colon resection