CASE REPORT

Fallopian tube prolapse presenting as a peritoneovaginal fistula

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Introduction: *Peritoneovaginal fistula is an extremely rare cause of persistent vaginal leakage following a hysterectomy. Likewise, fallopian tube prolapse is an uncommon but known complication of hysterectomy. Fallopian tube prolapse resulting in peritoneal leakage has yet to be reported in the literature.*
Clinical case: *A 27-year-old female presented with a two year history of continuous leakage per vagina. The leakage started shortly after an abdominal hysterectomy. Examination noted clear fluid emanating from a vaginal lesion located at the level of the vaginal cuff. An extensive workup ruled out vesicovaginal and ureterovaginal fistula. Surgical exploration noted that the lesion was a prolapsed fallopian tube, which was resected vaginally.*
Discussion: *This is the first reported case of peritoneovaginal fistula associated with a prolapsed fallopian tube.*
Conclusion: *Vaginal resection of the fallopian tube remnant and reclosure of the vaginal cuff results in cure of the leakage.*

Key Words: fistula, urinary incontinence, fallopian tube, prolapse, peritoneal fluid

Introduction

Patients who present with vaginal leakage following vaginal or pelvic surgery must always be evaluated for presence of a fistula. Vesicovaginal fistulae are the most common etiology, and often result from excessive dissection of the bladder during hysterectomy. Alternatively, stitches which incorporate the bladder during closure of the vaginal cuff may predispose a patient to fistula formation. While bladder fistulae are often the etiology for continuous vaginal leakage following hysterectomy, other rarer etiologies must be ruled out. These include ureterovaginal, urethrovaginal and peritoneovaginal fistulae. We present the first reported case of peritoneovaginal fistula resulting from partial prolapse of a fallopian tube after hysterectomy.

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Case presentation

A 27-year-old gravida 5 para 2 female presented with a two year history of vaginal leakage, which began shortly after an abdominal hysterectomy. Her leakage was described as constant, day and night, requiring the use of eight pads per day. She described urinary frequency, voiding every hour during the day, and waking up three to four times at night, but denied urge incontinence. She was initially treated with anticholinergic therapy with no improvement in the amount of leakage or her frequency. The patient did report rare stress incontinence with heavy coughing. A sexual history noted that the patient had severe dyspareunia which began after the hysterectomy. Prior to her hysterectomy, the patient had two cesarean sections, as well as a diagnostic hysteroscopy. Additionally, a diagnostic laparoscopy noted small bowel and omental adhesions.

Evaluation in the office setting consisted of a physical examination. The patient was noted to be morbidly obese with a body mass index of 42. Pelvic examination revealed a mass at the level of the vaginal cuff in the

Figure 1. Pelvic examination revealing fallopian tube prolapse with clear leakage at vaginal cuff.

midline, Figure 1. A significant amount of clear fluid was seen emanating from this site, and palpation here elicited significant tenderness.

A dye test was performed to evaluate presence of vesicovaginal fistula. Three hundred mLs of saline mixed with methylene blue was instilled via a foley catheter, and the patient was asked to ambulate for 3 hours after insertion of a vaginal tampon. Inspection of the tampon noted no evidence for blue staining. Cystoscopy was unremarkable and no evidence for fistula was seen.

Further evaluation for the leakage consisted of a double-dye test in order to investigate for potential ureterovaginal fistula. The patient was placed on oral phenopyrazidine, 200 mg which was started the night prior to an office evaluation. At the office visit, her bladder was once again filled with 300 mL of methylene blue-stained saline and she was asked to ambulate with a vaginal tampon. Interestingly, only the apex of the tampon stained orange.

Due to suspicion for ureterovaginal fistula, an intravenous urogram was performed, which showed no evidence for ureteral extravasation, Figure 2. Subsequently, an exam under anesthesia and retrograde pyelograms were done to further confirm absence of ureterovaginal fistulae, and again, was negative. A vaginogram at this time was unremarkable and showed no extravasation, despite visualization of leakage from the lesion, Figure 3.

The patient was consented for vaginal exploration with possible peritoneovaginal fistula repair. We elected to perform urodynamics, as the patient did have some complaints of stress incontinence in addition to continuous leakage. Cystometrogram demonstrated no evidence of detrusor overactivity and normal bladder compliance. Valsalva-induced leakage could not be elicited even at maximum capacity of 400 mL. Due to these findings, no concomitant anti-incontinence procedure was planned.

At the time of exploration, a fistulogram was performed which confirmed presence of a tubular structure traveling cephalad, Figure 4. The lesion appeared to be a remnant fallopian tube which had prolapsed through the vaginal cuff. This was resected vaginally and transected several centimeters above her vaginal apex. Her vaginal cuff defect was closed in a single layer with 2-0 Vicryl suture. She was discharged home from the recovery area the same day voiding spontaneously.

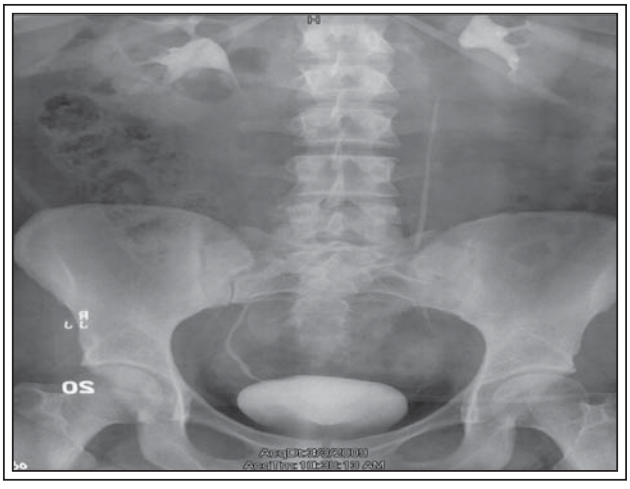

Figure 2. Intravenous urogram demonstrating no evidence for ureterovaginal fistula.

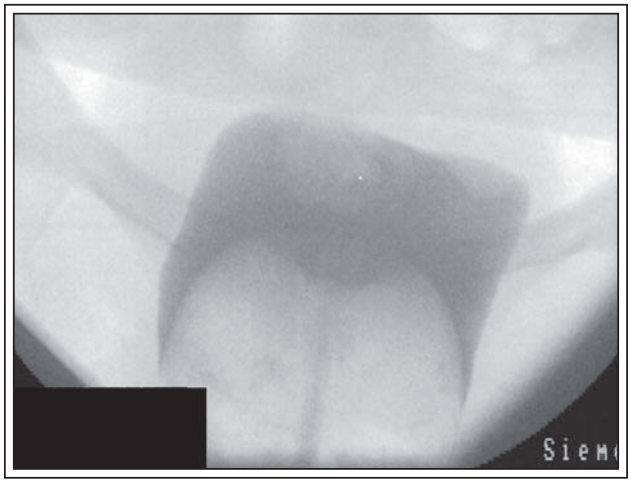

Figure 3. Vaginogram showing no extravasation of contrast.

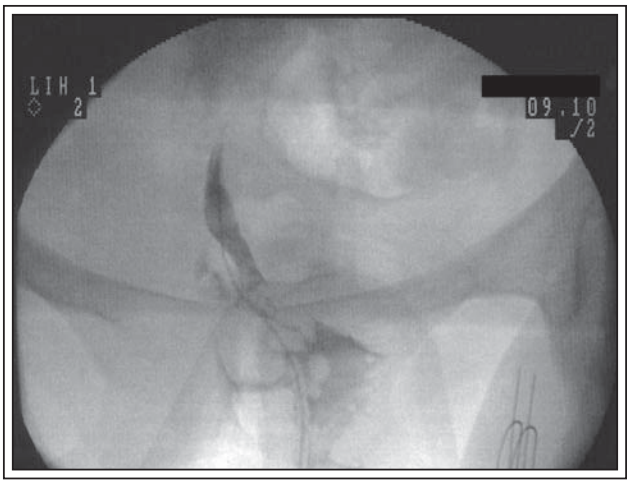

Figure 4. Intraoperative fistulogram of fallopian tube remnant.

Final pathologic evaluation demonstrated that the lesion was a fallopian tube remnant. At 5 month follow up, the patient has noticed a significant difference in her symptoms. Her leakage throughout the day and night has subsided. She no longer requires pads and only notices occasional mild stress incontinence with coughing, laughing or sneezing.

Discussion

To our knowledge, this is the first reported case of a peritoneal leak associated with a fallopian tube prolapse after abdominal hysterectomy. Upon review of her original operative report, it became evident that her hysterectomy was extremely challenging, secondary to obesity as well as excessive bleeding which occurred throughout the case. Her attempted closure of the vaginal cuff had been performed with interrupted figure-of-eight sutures of 0-chromic suture. Fallopian tube prolapse may be more common after nonclosure of the vaginal cuff.[1]

This patient presented with significant vaginal leakage which led to an extensive workup including urodynamics, cystoscopy, and multiple imaging modalities. This patient was utilizing eight pads daily, which seemed like quite a large number for a peritoneal leak or tubal secretions. Therefore, we performed urodynamics in order to differentiate continuous leakage from stress incontinence. If the urodynamics had revealed valsalva-induced leakage we were prepared to offer her a concomitant midurethral sling at the time of her salpingectomy.

The orange staining during double-dye testing in this patient may have been from staining of either fallopian tube secretions or peritoneal fluid, neither of which has been reported previously in the literature. Phenopyrazidine has been reported to cause orange discoloration of body fluids, however, case reports have been limited to lacrimal secretions and urinary and fecal discolorations.[2] Locating the exact cause of the positive dye-test was very challenging and could not be determined in this patient.

Once diagnosed, fallopian tube prolapse may be managed in a minimally invasive manner, either laparoscopically or vaginally.[3-5] Others have reported repair of peritoneovaginal fistula with a transvaginal approach or laparoscopic approach.[6] We felt this patient would be best managed with a vaginal approach, considering her morbid obesity and multiple prior abdominal surgeries. In her case, it appeared that the fallopian tube remnant had formed a conduit for peritoneal fluid to exit. Proximal fistulae to the peritoneal cavity have been reported after fertility procedures, but never concomitantly with a tubovaginal fistula.[7,8] Resection of the fallopian tube above the vaginal cuff and reclosure of the cuff cured her continuous leakage. □

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