

Case Report

Peritoneovaginal Fistula Alleviated Ruptured Appendicitis-Related Pelvic Abscess

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We report a case of spontaneous vaginal drainage of pelvic abscess in which a woman with a 12-day history of intractable abdominal pain presented with mucopurulent vaginal discharge. Colposcopy confirmed a perforation at the posterior fornix of the vagina and computed tomography identified a periappendiceal abscess with pelvic extension. Consequently, the patient was treated with antibiotics and interval appendectomy. The final diagnosis was spontaneous drainage of rupture appendicitis-associated pelvic abscess through a vaginal fistula.

Key words: appendicitis, periappendiceal abscess, peritoneovaginal fistula, ruptured appendicitis

Introduction

A vaginal fistula is an abnormal communication between the intestinal or urological tract and the vagina. Certain urological, colorectal, gynecological, or obstetric procedures or malignancies may be complicated by vesicovaginal or rectovaginal fistulas.¹ However, a peritoneovaginal fistula is a rare gynecological complication seldom reported as a sequela of acute appendicitis.¹⁻⁴ Here, we report a middle-aged woman presenting

with a peritoneovaginal fistula secondary to a ruptured appendicitis with pelvic extension of abscess which was spontaneously drained through a vaginal fistula and subsided after antibiotic treatment.

Case Report

A 44-year-old well-nourished female presented to our emergency department with a 7-day history of dull pain in the right lower abdominal quadrant, followed by aggravated vague lower abdominal pain for 5 days. The

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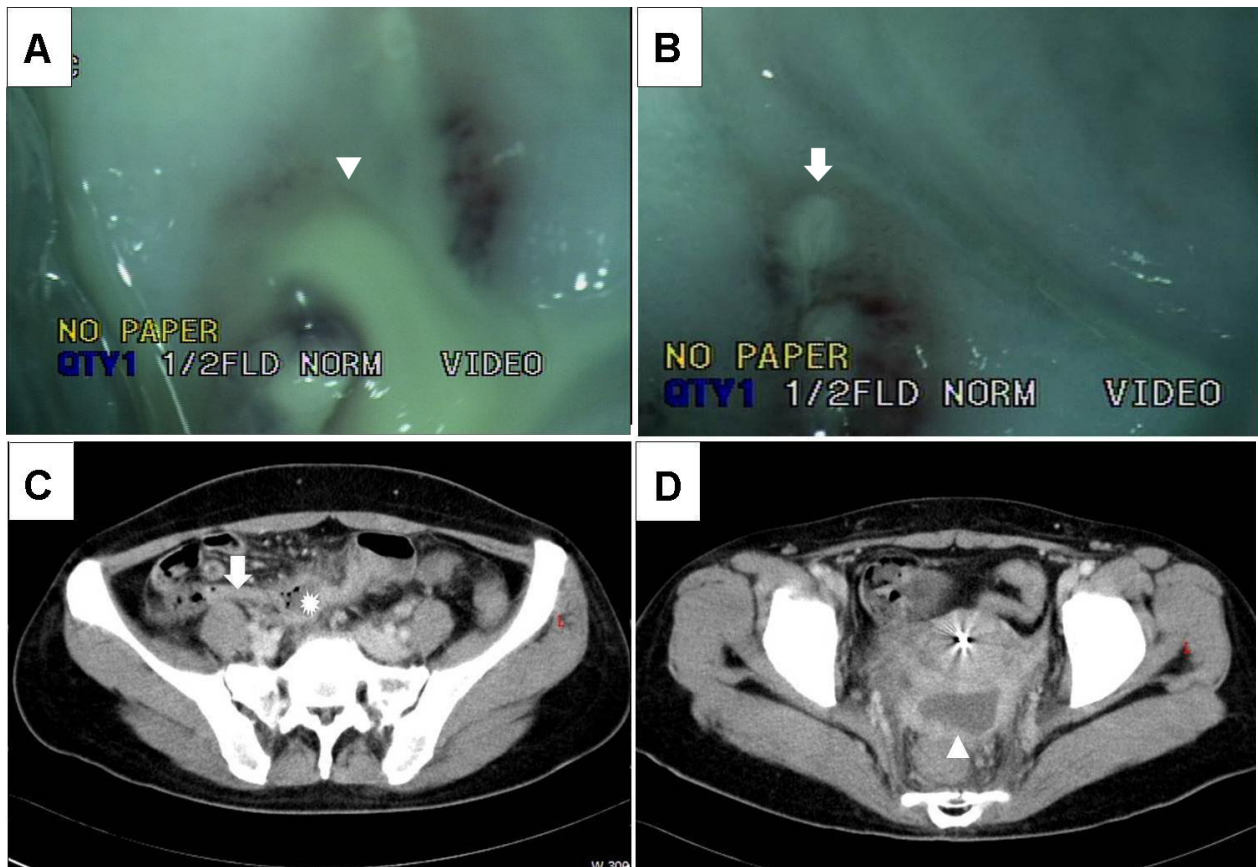


Fig. 1 (A and B) Colposcopy demonstrating purulent vaginal discharge (arrowhead) and a small perforation at the posterior fornix (arrow). (C) Abdominal computed tomography (CT) revealing an inflamed appendix (arrow) with periappendiceal abscess formation at the appendix tail portion (asterisk). (D) Pelvic CT showing pelvic abscess in the cul-de-sac (arrowhead).

abdominal pain was relieved after drainage of copious mucopurulent discharge through the vagina. Her medical history was unremarkable, except for an intrauterine device for contraception. She denied a recent history of fever, chills, diarrhea, nausea, vomiting, poor appetite, sexual intercourse, or trauma. Her vital signs were within normal limits. Her physical examination showed mild lower abdominal pain without rebound tenderness. Foul-smelling vaginal discharge was noted. Her laboratory tests revealed normal white cell count (7620/ μ L), negative blood culture, and mild elevation in C-reactive protein levels (38 mg/dL). Most of her tumor markers were within normal limits: squamous cell carcinoma antigen (0.7 ng/mL), carcinoembryonic antigen (1.52 ng/mL), and cancer antigen 19 – 9 (< 2.0

U/mL). However, her carbohydrate antigen 125 level was high (96.3 U/mL). Colposcopic examination revealed normal-appearing external orifice without translocation of the intrauterine contraceptive device. On the other hand, purulent vaginal discharge was noted from a posterior fornix perforation of size 0.5×0.5 cm (Fig. 1A and 1B). Computed tomography (CT) revealed diffuse wall thickening of the appendix with periappendiceal fluid and air collection at the tail portion, suggesting ruptured appendicitis (Fig. 1C). There was also a hypodense lesion with peripheral enhancement within the cul-de-sac, indicating periappendiceal abscess with deep pelvic extension (Fig. 1D). The patient received conservative medical treatment with empirical antibiotics (ceftriaxone and metronidazole) because of her

relatively stable condition. Subsequent colposcopy showed reduction of vaginal discharge with resolution of the pelvic abscess on abdominal sonography. We discharged the patient in a stable condition after completion of a 14-day course of antibiotic treatment.

For personal reasons, she underwent elective interval appendectomy through lower midline laparotomy at another hospital 12 weeks later. During surgery, inactive perforated appendicitis with adhesion of appendicular tip to the cul-de-sac and healing of the pelvic floor were noted. Interval appendectomy was performed smoothly. The patient resumed oral intake 2 days after surgery and made full recovery. Final pathological analysis confirmed the diagnosis of suppurative appendicitis with perforation.

Discussion

Acute appendicitis is a common surgical condition requiring urgent surgical treatment. In the worst situation, it may progress to perforation. If such a perforation is not treated in time, then it may progress to abscess formation. A ruptured appendicitis or periappendiceal abscess can result in complications such as wound infection, intra-abdominal abscess, and ileus.^{3,5,6} However, its presentation with a vaginal fistula and concomitant vaginal

discharge is extremely rare.^{3,6} Cul-de-sac in women, which is the lowest part of the peritoneal cavity close to the posterior fornix of the vagina in the supine position, is prone to fluid or pus accumulation.⁷ Our patient demonstrated no translocation of intrauterine contraceptive device and did not report any recent history of trauma. Although the pathogenesis of fistula formation with spontaneous vaginal drainage remains unclear, we surmised that a long course of ruptured appendicitis and concomitant abscess formation with deep pelvic extension may have led to such an unusual presentation.

Because of atypical symptoms or inadequate verbal expression, the complications of acute appendicitis such as perforation and abscess formation are prone to occur at the two extremes of age because of delayed diagnosis.^{3,6,8} Review of relevant literature revealed only two case reports describing spontaneous vaginal drainage caused by acute appendicitis (Table 1).^{3,6} In contrast to our case, the two patients previously reported were extremely young (3 years old). The use of colpotomy and transvaginal echo-guided aspiration for relieving periappendiceal abscess with deep pelvic extension has been seldom discussed.^{7,9} In our case, spontaneous drainage of the pelvic abscess through the posterior fornix of cervix mimicked culdocentesis that alleviated

Table 1. Reported cases of spontaneous vaginal drainage from ruptured appendicitis

Reference	Age (year)	Duration of subtle symptoms	Initial diagnosis	Duration of vaginal discharge (day)	Size of pelvic abscess (cm)	Surgical intervention	Perforation site
Yeh, et al. 2009 [3]	3	3 days	Acute appendicitis with pelvic abscess	N/A	5 × 5	Interval laparoscopic appendectomy	N/A
Sander, et al. 2001 [6]	3	2 months	Urinary tract infection	3	3 × 4	Appendectomy and partial uterus resection	Uterus
Chen, et al. (present case)	44	2 weeks	Acute gastroenteritis	7	5 × 2	Interval appendectomy	Vagina (posterior fornix)

N/A: Not available

abscess-associated toxic symptoms and inflammation.

The role of interval appendectomy after successful conservative management of complicated appendicitis remains controversial. The commonly believed indication is the prevention of recurrent appendicitis and potential appendiceal neoplasms. Andersson and Petzold¹⁰ reported that the incidence of recurrent appendicitis and malignant neoplasm in patients who underwent successful conservative management of complicated appendicitis are 7.4% and 1.2%, respectively, and the authors concluded that interval appendectomy is not required. Although we corroborate that routine interval appendectomy is not required to prevent recurrent appendicitis, we believe that Andersson and Petzold may have underestimated the incidence of malignant neoplasm. Several studies have reported high risks (16% – 29.4%) of appendiceal neoplasm in patients who underwent interval appendectomies for complicated appendicitis, particularly in patients aged over 40.¹¹⁻¹³ Thus, interval appendectomy should be considered in cases of complicated appendicitis after successful conservative management, particularly in patients aged over 40 or those who could be lost to follow-up.

In conclusion, although a peritoneovaginal fistula is an unfavorable clinical entity, its presence, along with subsequent drainage, successfully alleviated the symptoms and signs associated with ruptured appendicitis and periappendiceal abscess with concomitant pelvic extension. Moreover, in female patients with lower abdominal pain and concomitant mucopurulent vaginal discharge, the possibility of a peritoneovaginal fistula caused by pelvic abscess should be considered.

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