



Colorectal cancer presenting as tuboovarian abscess in a 40 year old patient with previous tubal occlusion



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ABSTRACT

Background: Although pelvic inflammatory disease can be seen after tubal occlusion, tuboovarian abscess is rare, with only 38 cases reported since 1975 [1]. The differential diagnosis of tuboovarian abscess after tubal occlusion should include non-infectious and non-gynecologic etiology, particularly as women age [2].

Case: A 40 year old multiparous woman with a distant history of tubal occlusion, presented with pelvic pain and suspected right tuboovarian abscess with air on CT scan. A colonic stricture was also seen, warranting further evaluation, which revealed a left tuboovarian abscess which had fistulized from a bowel perforation secondary to colorectal cancer.

Conclusion: Tuboovarian abscess is rare after tubal occlusion. These patients should be evaluated specifically for nongynecologic etiology, including colorectal cancer. Radiologic studies can be misleading, and surgical exploration should be strongly considered if a woman with a history of tubal occlusion presents with a presumptive tuboovarian abscess, particularly if the abscess contains air.

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1. Introduction

Patients with tuboovarian abscess commonly present through the emergency department, where imaging studies may be obtained before gynecologists are consulted. There is often a lack of communication between departments regarding the patient's history of tubal occlusion. The protective effects of tubal occlusion on pelvic abscess secondary to pelvic inflammatory disease [1] may be a subtlety that is not well known in non-gynecologic specialties. Additionally, radiologic studies in cases of pelvic abscess may be inaccurate due to severely distorted anatomy. Gynecologists must be diligent in exploring non-infectious etiology of pelvic abscess, particularly in women with factors which protect them from tuboovarian abscess, such as menopause [2] or tubal occlusion.

2. Case

A 40 year old multiparous patient with a history of vaginal deliveries and subsequent interval tubal occlusion by fulguration in 2008 presented to the emergency department with an acute exacerbation of chronic pelvic pain. She received a CT scan of the abdomen, and the gynecology service was consulted for a suspected right tuboovarian abscess seen on

CT scan. Of note, there was air seen radiologically in the abscess. When we interviewed the patient, we discovered that she had over eight visits to the same emergency department within the past year, with varied complaints, including bright red blood per rectum, weight loss, and abdominal pain. On review of systems, she had normal regular menses, but admitted to chronic diarrhea, hematochezia, and a documented 14 kg weight loss over the previous ten months. Her surgical history was significant only for an interval tubal ligation via laparoscopic fulguration in 2008. Family history was significant for the patient's father dying in his 70s from an unknown colon problem, and her paternal grandmother dying from colon cancer at age 70. She was afebrile upon presentation, and her abdominal exam was remarkable for moderate abdominal tenderness, with cervical motion tenderness. Her WBC was normal, and her gonorrhea and chlamydia test, and pap smear were all normal. Her CT scan showed a normal uterus and a 4 cm right adnexal collection of fluid and gas, with adjacent midsigmoid wall thickening, concerning for stricture (see Fig. 1).

She was admitted and started on broad spectrum antibiotics. Although the CT scan and pelvic ultrasound showed a possible right sided adnexal abscess, we were aware that abscesses can fistulize and create adhesions which severely distort anatomy, so left sided pathology could not be ruled out. With air seen in the adnexa, the patient's history of tubal occlusion, especially given her chronic rectal bleeding and diarrhea, we were suspicious of a ruptured diverticulum. A general surgeon was consulted, and the patient underwent a barium enema. A left colonic stricture was clearly delineated on the barium enema

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Fig. 1. Colonic stricture.

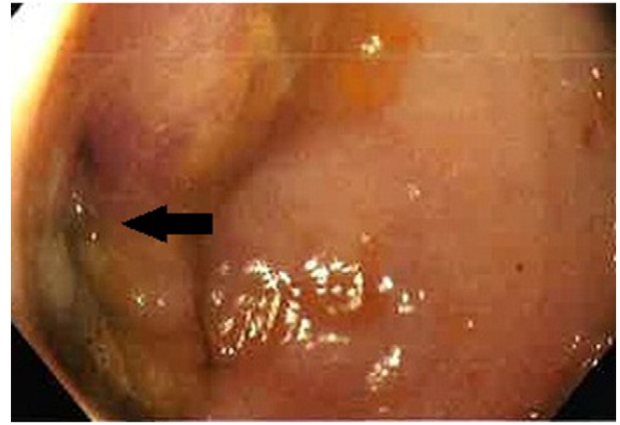


Fig. 3. Colonoscopy.

(see Fig. 2), so subsequently a colonoscopy was performed. There was an area of tight stricture just past the sigmoid colon which could not be traversed (see Fig. 3), and the biopsy taken showed well to moderately differentiated invasive colorectal adenocarcinoma.

The patient's age at diagnosis and a possible family history of colorectal cancer in her father were concerning for Lynch syndrome. Lynch syndrome, previously known as hereditary nonpolyposis colorectal cancer, is an autosomal dominant defect in the genes responsible for repairing single-base mismatches that occur during DNA replication. The genetic inability to repair these single base mismatches increase the risk of many cancers, including gynecologic, renal, and gastrointestinal cancers. In women with Lynch syndrome, the lifetime risk of endometrial cancer ranges from 27 to 71% – general population is 3%, and ovarian cancer is 3–14% – general population is 1.5% [3]. Immunohistochemistry testing to evaluate for the expression of mismatched repair genes was done, but pending at the time of her low anterior resection. We counseled the patient that it was highly likely, based on the CT finding, that the abscess would involve her uterus and ovaries, and that hysterectomy and/or oophorectomy could be necessary for adequate

surgical staging and treatment. We discussed the possibility of Lynch syndrome, and although she did not fit the Amsterdam II criteria for Lynch syndrome [4], the patient opted for a prophylactic total abdominal hysterectomy and bilateral salpingo-oophorectomy at the time of her low anterior resection, regardless of its involvement with her colon cancer.

Surgically, the anatomy was severely distorted and the colon was pulled from the left side of the pelvis to the posterior wall of the uterus. The colonic stricture previously seen on CT scan was due to the tortuous path of the colon caused by adhesions between the colon and the posterior aspect of the uterus. The abscess, which had appeared to be right sided on the CT scan, was actually a fistula which extended from the perforation in the sigmoid colon into the left ovary and uterine tube, and involved the uterine serosa. The dense adhesions of the left tube, ovary, and colon to the posterior aspect of the uterus created the appearance of the abscess being right sided on the CT scan. On pathologic examination, the uterus and left ovary were remarkable for an 8 cm fistula tract between the perforated serosa of the colon and the left tubal ostia (see Fig. 4). Her final pathology showed invasive moderately differentiated colorectal adenocarcinoma, invading the visceral peritoneum with 27 lymph nodes negative for metastatic carcinoma, T4aN0M0, Stage IIB. The uterus and left ovary were remarkable for an 8.3 cm fistula tract between the perforated serosa of the colon and the left tubal ostia. Immunohistochemistry testing showed no loss of expression of MLH-1, MSH-2, MSH-6, or PMS-2, which decreases the likelihood of Lynch syndrome in this patient [5], and a K-ras mutation was present, which is common in sporadic colorectal cancer [6].

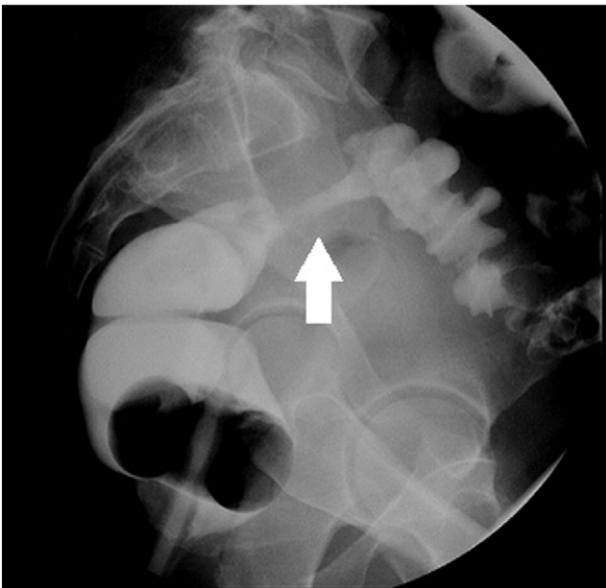


Fig. 2. Colonic stricture on barium enema.

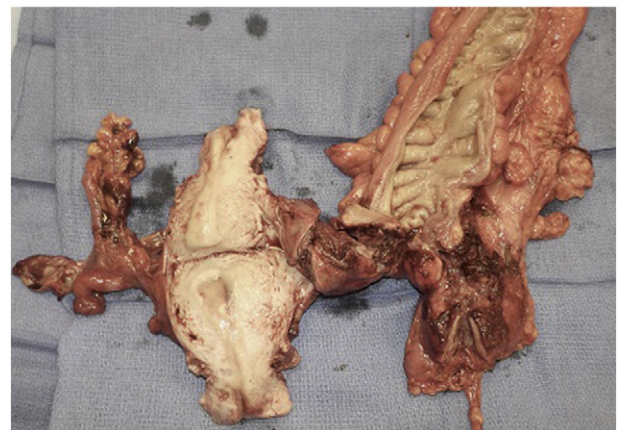


Fig. 4. Gross specimen, colon, uterus, tubes, and ovaries.

3. Discussion

There are few recent studies of the incidence of tuboovarian abscess in patients with a history of tubal occlusion, which is understandable given its rarity. Additionally, there is a paucity of data on the incidence of radiologically seen air in *surgically proven* tuboovarian abscesses. Gynecologists are consulted in cases where clinical picture and imaging favor tuboovarian abscess. We must remain vigilant in considering a broad differential diagnosis, particularly non-gynecologic etiologies, in patients with a tuboovarian abscess and a history of tubal occlusion. Abscesses distort anatomy, so laterality seen in radiologic studies may be misleading. Although medical treatment is acceptable, when there is a history of tubal occlusion gynecologists should give strong consideration to surgical exploration, particularly when air is present radiologically. Surgical treatment of a pelvic abscess is frequently complicated by extensive adhesions to adjacent bowel. Regardless of suspected origin, a multidisciplinary approach, including preoperative bowel prep and having general surgery on standby, should be considered. Patient

counseling should be thorough, including various surgical possibilities and outcomes, such as unexpected hysterectomy, bowel resection, or potentially even colostomy.

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