Tubo-Sigmoid Fistula Secondary to Perforated Appendicitis

Abbas Rahimi, Ahmad Reza Rasekhia

Abstract
Infection and inflammation of organs adjacent to the gastrointestinal tract may cause a pathological connection. In this report, complicated appendicitis caused protrusion of the right ovary and tube into the sigmoid colon of a 40-year-old woman. The mass, appearing as a polypoid lesion during colonoscopy, caused abdominal pain and bleeding and proved to be right adnexa pathologically.

Key words: Fistula, uterine tube, intestine, appendicitis

Introduction
Due to close proximity of the female internal reproductive organs with gastrointestinal and genitourinary organs, communication may occur between the female reproductive organs and small or large intestine [1-3].

The communication between the fallopian tube and the small or large bowel is a very rare disease [4-6]. This communication can result from obstetric, surgical and medical complications such as Cesarean section, dilatation and curettage, perforated appendicitis, inflammatory bowel diseases, and pelvic radiation [7,8].

The patient may be asymptomatic or present complaints from a wide range of symptoms. Many may be under investigation for infertility with vague symptoms of dysmenorrhea, cyclic hematuria, and foul-smelling menses [9,10].

Several radiological modalities may demonstrate a fistulous tract between female internal genitalia and the intestine [11,12].

In this case we present a female with rectal bleeding and a history of perforated appendicitis and a protruding mass from the sigmoid colon into the lumen. The mass proved to be a part of the right fallopian tube.
Case
A 40-year-old woman sought medical attention due to rectal bleeding. The patient had a past history of perforated appendicitis 3 years ago; she was operated on and discharged from the hospital after recovery. The patient had complications 3 days after operation and presented with abdominal pain, fever and leukocytosis. Sonography revealed small intrapelvic abscesses which responded well to intravenous antibiotic therapy. The patient discharged from the hospital 4 days later in good condition.

In her recent admission, she had fresh rectal bleeding, especially after defecation, since 3 days prior to admission. Vital signs were within normal ranges. The abdomen was soft without tenderness.

She underwent a colonoscopy which showed an 8×9-centimeter pedunculated polypoid mass 25 centimeters from the anal verge. The lesion could not be resected or biopsied due to its floating behavior. The patient was then referred to the General Surgery Clinic of Shahid Mohammadi Hospital, Bandar Abbas, Hormozgan, for surgical intervention with differential diagnosis of a lipoma, gastrointestinal stromal tumor (GIST) and polyp.

The patient was scheduled for an operation with impression of a rectosigmoid mass. A laparotomy was done through a low midline incision. Severe adhesion was meticulously released. The adhesions included attachment of the right ovary, right tube and cecum, penetrating into the large redundant sigmoid colon and extending into the lumen (Figure 1). Hydrosalpinx was also present in the left tube. Complete excision of the mass was done (Figure 2), the bowel defect was repaired, and the mass was sent for pathological studies. Microscopic examination revealed chronic salpingitis (Figure 3) and squamous metaplasia (Figure 4).

Figure 1. Penetration of right adnexa into the sigmoid colon seen intra-operatively.

Figure 2. Complete excision of the mass consists of right adnexa.

Figure 3. Histopathological examination of the mass reveals chronic salpingitis, H&E×40.

Figure 4. Squamous metaplasia of the intraluminal mass, H&E×400.
Discussion

A fistula between the fallopian tube and the intestine is very rare. Many risk factors, including pelvic inflammatory disease (PID), Crohn's disease, diverticular disease, appendicitis, pelvic or obstetric surgery, and other inflammatory conditions, have been described in the literature as the primary causes of a fistula [2,9]. These fistulas may take place between the fallopian tube and gastrointestinal tract, including the rectosigmoid colon, appendix, cecum, and small bowel [4,13].

Many patients may be asymptomatic [4,5,11] or may be under research for infertility and discovered during hysterosalpingography [11].

A patient with a rectal mass protruding into the lumen secondary to inappropriately treated PID is also reported by Simstein. Barium enema showed a 10-centimeter sessile mass confirmed by proctoscopy. Biopsy revealed chronic salpingitis with squamous metaplasia [14].

A case of a tubo-sigmoid fistula as a rare complication of pelvic inflammatory disease is described resulting from PID after a Cesarean section forming a tubo-ovarian abscess and a resulting fistula into the sigmoid colon [5].

Appendicitis as the pathogenesis of a fistula between the right tube and the appendix has been described previously [15,16]. A fistula between the right fallopian tube and appendix developed due to untreated appendicitis in a young female being investigated for infertility [15].

Our patient was similar to this case in that both patients had a history of perforated appendicitis.

Crohn's disease with a lifetime risk of 20–40% may cause a fistula to the rectum, bladder and the fallopian tube [6].

Diverticular disease is another cause of inflammatory fistulas between the sigmoid colon and female genitalia causing a salpingosigmoid fistula secondary to sigmoid diverticulitis [7].

Although many of these fistulas may be incidentally found during investigation for infertility, they may be diagnosed intraoperatively in very rare cases [6,17].

Our case is between rare cases which have been found during surgery. A colonoscopy revealed a polypoid mass of sigmoid which, during surgery, was found to be the right fallopian tube protruding to the lumen of the sigmoid colon.

Conflict of interest statement

The authors have no conflicts of interest to declare.

References

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