Ascites, high CA-125 and chronic pelvic pain in an unusual clinical manifestation of Enterobius vermicularis ovarian and sigmoid colon granuloma

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Summary

We present a case of a 36-year-old Caucasian woman with ascites, elevated CA-125, an enlarged left ovary and chronic pelvic pain who underwent an unnecessary surgical intervention because of suspected malignant disease. During the operation ovarian and sigmoid colon granulomatous tumors caused by Enterobius vermicularis infestation were revealed.

In this case, the presence of Enterobius vermicularis ova in the abdominal cavity appears to have caused a sufficient reaction to produce symptoms and signs of malignancy leading to surgical intervention. Moreover, awareness that such lesions may occur is important since the lesions and clinical signs may be misinterpreted as being malignant with subsequent unnecessary surgical intervention.

Key words: Ascites; CA-125; Chronic pelvic pain; Enterobius vermicularis; Malignancy.

Introduction

Chronic pelvic pain is a common complaint among women of reproductive age. It is often due to infection (pelvic inflammatory disease), endometriosis or adhesive disease. An additional ovarian tumor mass, ascites and high serum CA-125 seem to be typical of malignant ovarian disease.

Parasitic infestation with concomitant pain is not usually considered in the differential diagnosis. The most common infestation is caused by Enterobius vermicularis.

The life cycle of this parasite starts with the ingestion of the eggs, which then hatch in the small intestine where the adult worm resides and mates. The mature pinworm (Enterobius vermicularis) also inhabits the lumen of the cecum, the proximal part of the ascending colon and the appendix. The gravid females migrate to the anogenital region and there they lay eggs [1]. Gravid females can find their way into the genital tract during their nocturnal wandering over the perineum and gain access to the peritoneal cavity by crawling up the vagina, uterus and fallopian tubes [2, 3].

CA-125 is an antigenic determinant on a high-molecular-weight glycoprotein that is expressed by epithelial ovarian tumors and other normal or abnormal tissues of Müllerian origin (endometriosis, pelvic inflammatory disease, etc.). Elevation of serum CA-125 may be caused by ascites of either malignant or benign origin [4]. The diagnosis of ovarian cancer should inevitably be considered for patients with pelvic masses and elevated serum CA-125.

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When ascites and pleural effusion are present, the possibility of metastatic disease should always be considered.

Case Report

A 36-year-old Caucasian woman, gravida 2, para 1, from a little island in the Adriatic sea, was admitted to "Merkur" Zagreb University Hospital on January 27, 1998 due to pelvic pain and high fever (up to 39°C). The pain was not associated with her menses and was intermittent in nature. She also complained of bilateral pelvic pain during intercourse and she had collapsed at home. The patient denied any weight loss, gastrointestinal complaints, or irritation of the vulva, vagina or anus. She had no pets at home.

She had had an acute adnexitis one year earlier. She was cured "ex juvantibus" by oral antibiotics and antipyretics.

Her last menstrual period had been ten days earlier. Internal pelvic examination revealed normal external genitalia with bilateral adnexal tenderness, with a slightly enlarged left ovary. Her abdomen was soft and nontender. The values of the laboratory data measurements were within normal limits. Ultrasound revealed a small empty uterus and a small amount of free clear fluid in the cul de sac. On the right side of the uterus there was a slightly dilated fallopian tube. The left ovary was enlarged up to 42 mm in diameter. Color Doppler measurements did not reveal any pathological neovascularization. CA-125 was elevated (140.7 kU/l). Serum beta-chorionic gonadotropin was negative. Pap smear was in normal range. Gastroduodenoscopy was also performed – without pathological findings. Computed tomography (CT) examination showed abdominal free fluid, an enlarged left ovary and findings typical of an old perityphlic abscess. Colonoscopy revealed a few viable worms (Enterobius vermicularis) in the cecum. Histological findings of the proximal colon wall biopsy revealed mixed inflammation with normal glandular tissue.

Fig. 1

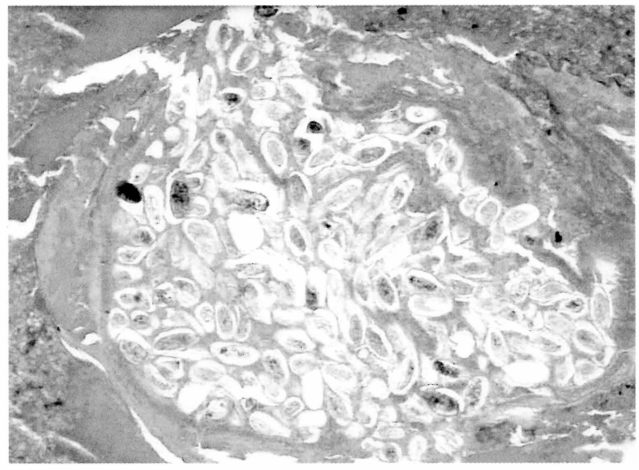

Fig. 2

Figure 1. — Granulomatous inflammation with Enterobius vermicularis ova on the tissue of the resected left ovary.
Figure 2. — PAS-enlarged granulomatous inflammation with Enterobius vermicularis ova on the tissue of the resected left ovary.

Considering the persisting abdominal pain, high serum CA-125 and ascites, exploratory laparotomy was performed; 150 ml of clear ascites, an occluded and chronic inflamed right fallopian tube, bilateral thin periadnexal adhesions and a normal right ovary were discovered. The left fallopian tube was normal, but the left ovary was enlarged with a 35 x 25 x 10 mm in size bizarre tumor on the ovarian hilus. Three serous nodular tumors, 10 mm in diameter, were found on the sigmoid colon. On the right side of the pelvis an old organized perityphlic abscess was discovered. There was still no evidence of pelvic endometriosis. The patient underwent right salpingo-oophorectomy, appendectomy and resection of the tumor on the left ovary. We also excised the tumors on the sigmoid colon. Histopathological examination revealed chronic salpingitis and appendicitis with lymphocytic infiltration. Granulomatous inflammation with Enterobius vermicularis ova were found on the tissue of the resected left ovary (Figures 1 and 2). The ova had morphologic features resembling those of pinworm eggs. An identical histopathological finding was also found in the resected sigmoid colon specimen. Cytologic examination of ascites revealed lymphocytes and serous cells.

Oral antiparasitic medication followed postoperatively. The treatment involved 100 mg of mebendazole orally with a second dose in two weeks to treat possible reinfection. The patient was under surveillance of a parasitologist for the next three weeks. She fine good and had no symptoms of disease. Family members were also treated to eliminate asymptomatic reservoirs.

Discussion

Enterobius vermicularis is the most common cause of helminthic infection diagnosed in the pediatric population. It may be found in atypical sites: the genital tract, omentum, liver, lung and epididymis. In adult women pinworm granulomatous lesions can simulate leiomyoma, fibroma, endometrioma, a tuberculous lesion and especially malignancy [1].

Our case report is a unique example of patient with gastrointestinal and upper genital Enterobius infestation in whom ascites, fever, chronic pelvic pain, an enlarged ovary and elevated serum CA-125 persisted.

The presence of Enterobius vermicularis ova in the abdominal cavity appears to have caused a sufficient reaction to produce symptoms and signs of malignancy leading to surgical intervention. Moreover, awareness that such lesions may occur is important since the lesions and clinical signs may be misinterpreted as being malignant with subsequent unnecessary surgical intervention.

Pinworm granulomas on the serous surface of the sigmoid colon and ovary, without argumentative infestation of the appendix, fallopian tubes and lower parts of the genital tract have opened the question as to how pinworms can reach the peritoneal cavity apart from the genital tract.

There are two possible routes for the spread of pinworm to the abdominal cavity; migration through the female genital tract or tissue penetration of the intestinal wall.

The majority of adult patients are asymptomatic. However, symptoms of Enterobius vermicularis infestation in women can include perineal pruritus, weight loss, vulvovaginitis, and chronic salpingitis with concomitant pelvic pain. In those patients pinworms have been documented on pap smears, and throughout the genital tract including the endometrium, fallopian tube, as well as in granulomas involving the ovary and pelvic peritoneum [2].

In our patient the possibility of ascending of pinworms from the perineum through the genital tract to the ovary and serous surface of the sigmoid colon is very slight, because pinworm eggs in the fallopian tubes and vaginal smears were not found.

Our patient probably had a preexisting appendical ulceration that allowed penetration of the pinworms into the peritoneal cavity. Histopathological findings revealed an appendix with lymphocytic infiltration.

In two surgical series the incidence of Enterobius infestation was low and commonly associated with an appendix that appeared normal [5]. Less commonly, the appendix specimen shows acute and chronic inflammatory changes, peritoneal granulomas and periappendical adhesive disease, as in our case.

These studies have demonstrated the importance of pathological identification of nematodes and their oocytes, to make a specific diagnosis. Although inflammation of the genital tract has been found to be associated with the presence of the pinworm, it is difficult to decide whether the worms settled through the intestinal wall in a previously inflamed area.

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