

A case report: Co-existence of Acute Appendicitis and Ovarian Cyst Rupture

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Abstract

A wide spectrum of differential diagnoses should be considered in the management of acute abdominal or acute pelvic pain in young women in the premenopausal period. In this case-report, an acute appendicitis case, which is observed accompanying with ovarian cyst rupture, was reported.

Keywords: Acute appendicitis, Emergency, Ovarian cyst rupture, Young woman

Introduction

The exact cause of acute appendicitis is unknown. It most often occurs between the ages of 10 and 20, with a male to female ratio of 1.4/1 (1). Typically, it initially presents with periumbilical colic-like pain. By virtue of peritoneal irritation, the pain begins to be localized and sharpens within 24 hours, and nausea, vomiting and loss of appetite can associate. Classically, it is diagnosed with a persevering pain in the right lower quadrant and observing appendix diameter greater than 6 mm, thickened wall, lymphadenopathy, surrounding fluid accumulation and fat stranding. Abdominal and pelvic computed tomography (CT) screening, color Doppler ultrasonography, and magnetic resonance imaging (MRI) can be used to visualize (2).

It can be very challenging to determine the aetiology of acute abdominal (AA) or pelvic pain, especially in young women (3). Although the AA pain has very specific findings, a large list for differential diagnosis should be considered when a patient with acute right-sided abdominal pain,

even the case vigorously reminds of acute appendicitis. Gastrointestinal diseases such as inflammatory bowel diseases, infectious enterocolitis, radiation enteritis and diverticular diseases, vascular diseases such as abdominal aortic aneurysm and mesenteric ischemia, urological diseases such as urolithiasis and pyelonephritis, Mittelschmerz pain and pelvic inflammatory diseases, gynaecologic and obstetric disorders such as ectopic pregnancy, ovarian torsion and ovarian cyst can mimic acute appendicitis with their signs and symptoms (4).

Since ovarian cysts may be completely normal physiologically or they may be a precursor of a malignant condition, they should be evaluated in a wide diagnostic range. Ovarian cysts are really very common and mostly do not display any sign or symptoms. However, if it splits, it can mimic AA or pelvic pain and even peritonitis.

Case report

A thirty-one years old young woman admitted to the Dr. Ersin Arslan Training and Research Hospital, Emergency Department, with a six-hour history of lower right abdominal pain and pressure, on the 8th of February, 2023. She had a body temperature of 37.5°C, blood pressure was 100/60 mmHg, pulse was 96/min and respiration was 16/min. According to the anamnesis received from the relatives, she did not have any surgical-laparoscopic intervention or infertility treatment-tamoxifen usage history. She vomited twice until admission, was not displaying any sign of gastrointestinal or genitourinary tract bleeding, and did not have menstrual cycle irregularity. There was no evidence of free fluid in the pelvis/abdomen in physical examination. She had some rebound and tenderness in the lower quadrants of the abdomen and a negative pregnancy test.

She had a white blood cell count higher than normal, which was $10.8 \times 10^9/L$ ($4-10 \times 10^9/L$). When we examined the subtypes, neutrophil count was $10 \times 10^9/L$ ($2-7 \times 10^9/L$), lymphocyte count was $0.5 \times 10^9/L$ ($0.8-4 \times 10^9/L$), monocyte count was $0.3 \times 10^9/L$ ($0.12-0.8 \times 10^9/L$), eosinophil count was $0.0 \times 10^9/L$ ($0.02-0.5 \times 10^9/L$) and basophil count was $0.0 \times 10^9/L$ ($0-0.1 \times 10^9/L$). The patient had all the other haematological parameters such as hemoglobin, haematocrit, red blood cell count, platelet count, mean corpuscular hemoglobin, red cell distribution width, mean corpuscular volume and mean platelet volume in normal range. The patient was consulted to general surgery department with the AA/acute appendicitis referral diagnosis.

In general surgery department, a CT screening for both upper and lower abdomen was immediately ordered. In CT screening, the patient was diagnosed as both acute appendicitis and ovarian cyst rupture (Figure 1).

The patient was co-operated by both general surgery and obstetrics & gynaecology departments. Both appendectomy and cystectomy surgical procedures were applied.

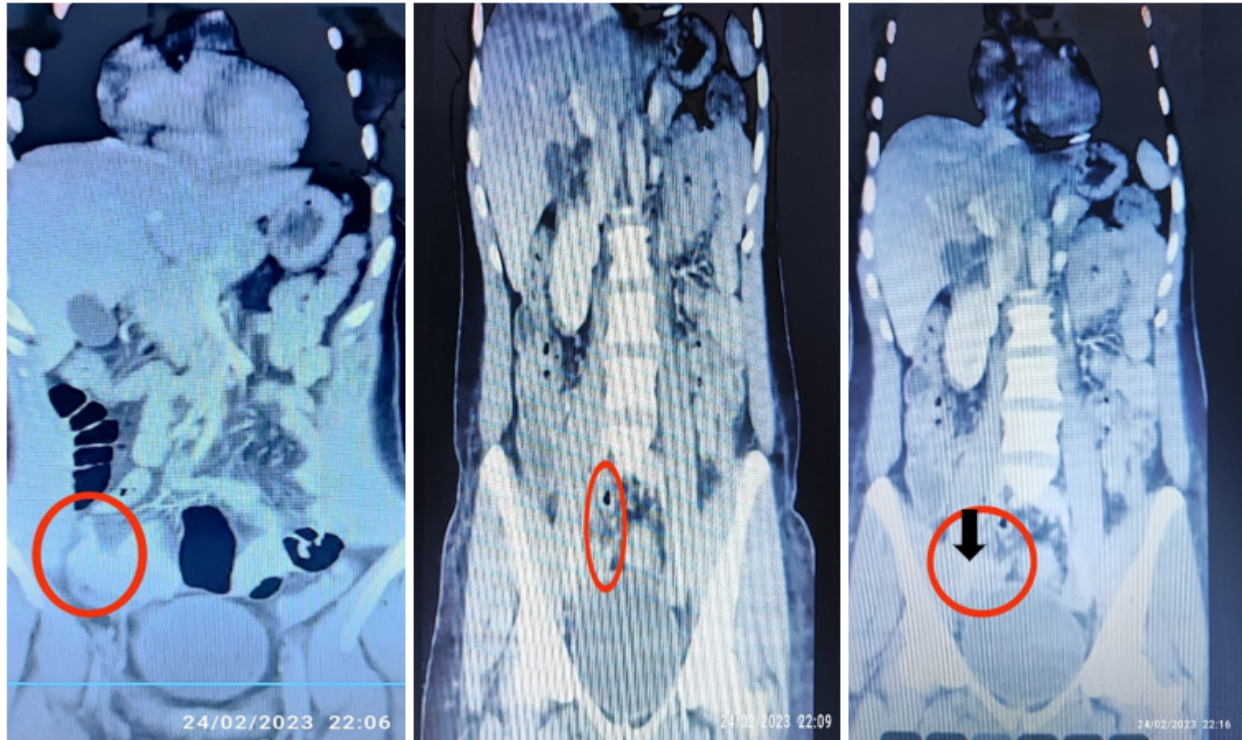


Figure 1: a. Detection of acute appendicitis in CT. It was confirmed by the pathology report that it was 6.5 cm long, 1.5 cm thick, appendicitis material covered with fibrinous material on the outside. **b. and c.** Detection of ruptured ovarian cyst in the region of right adnexa. In the c. image, indicated by black arrow, disintegration of the cyst wall is visualized, can be considered in favour of cyst rupture.

Discussion

An ovarian cyst, even if it splits, might present very dull signs and symptoms of pelvic pain, such as difficulty in emptying bowels, pain during sex, a more frequent need to urinate if it presses on urinary bladder, heavy–irregular periods or even lighter periods than normal, bloating or swollen tummy even after a very modest meal and some fertility problems (5). The subtypes of ovarian cysts are range in a wide spectrum, from benign functional–luteal cysts to ovarian malignancies (6,7). It is thought that when a follicle during cycle failed to rupture, a thin–crusted and polished cyst forms. Asymptomatic functional cysts might result in deterioration of menstrual cycles due to increased granulosa cell mass and hormonal stimulation.

Although acute appendicitis is a well-known clinical diagnosis for decades, it is often misdiagnosed in patients who are presented to the emergency department with lower right abdominal pain. Particularly in women, right lower abdomen pain has a much wider differential diagnosis range. General surgeons might encounter gynaecological pathologies in women who underwent laparotomy with the pre-diagnosis of acute appendicitis. In one of the previous studies, it is found that 12.8% of women who were operated because of acute appendicitis pre-diagnosis are actually have a gynaecologic pathology causing lower right abdominal pain. Interestingly, it is

declared as a result of the same study that 7.2% of those women have ovarian cyst rupture, and 4.2% have corpus hemorrhagicum cyst rupture (8).

Rupture, haemorrhage, and torsion are the most common complications of the ovarian cysts (9). Presentation of ruptured ovarian cysts of both functional/luteal and non-functional/neoplastic/malign ovarian cysts with abdominopelvic pain to emergency departments are not uncommon. Despite the fact that most of the cases are seen to be followed-up conservatively, women, who are screened as having larger cysts in diameter and larger free fluid accumulation on imaging, are inclined to be selected to undergo surgical intervention. (10).

Conclusion

In patients presenting with acute abdominal pain, ovarian cyst should be included in the differential diagnosis.

Conflict of interest

All co-authors declare that there is no conflict of interest.

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