

## Haemorrhagic Corpus Luteal Cyst in a Young Female: A Case Report from Pakistan

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### ABSTRACT

The present case highlights the potential of misdiagnosis of functional cysts in young females presenting with acute abdominal pain and radiological findings consistent with other common gastrointestinal and urological disorders. A young female suffers bouts of acute abdominal pain. Initially, no radiological or clinical abnormalities were observed. Later, the patient developed signs of systemic infection and underwent two laparoscopic surgeries. Diagnosis of haemorrhagic corpus luteal cyst was established on histopathology. It is essential to thoroughly investigate acute abdominal pain as one of the differentials for ovarian cysts. Always consult a gynaecologist to rule out reproductive diseases in young females.

**Keywords:** Corpus luteal cyst, Cystic ovary, Functional cyst, Haemorrhagic, Misdiagnosis, Reproductive diseases.

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### INTRODUCTION

Acute abdominal pain is one of the foremost symptoms experienced by women with gynaecological and obstetrical issues. Various conditions can present as acute abdomen in young women during pregnancy and in the non-pregnant state. Retrograde menstrual blood refers to the backflow of menstrual blood into the body during menses.<sup>1</sup> Retrograde menstruation is only a medical concern when it leads to symptoms or other conditions, such as endometriosis.<sup>2</sup> The menstrual debris carries sloughed-off tissue from the endometrium, the uterus lining that sheds monthly. These endometrial cells will then be carried backward through the fallopian tubes, the ovaries, and the surrounding pelvic cavity. According to Sampson's theory, the retrograde flow of menstrual blood is linked to the development of endometriosis.<sup>3</sup> Apart from endometriosis, another differential for acute abdomen in young fertile women is ovarian cysts. About 8 to 18% of women worldwide develop ovarian cysts at some point in their lives. Functional ovarian cysts include follicular, corpus luteal, and theca luteal cysts.<sup>4</sup>

Specifically mentioned in the context of our case report, a Corpus luteal cyst is a functional ovarian cyst that occurs when the follicle ruptures to release the egg but then seals up and swells with fluid 4-5. Corpus luteum cyst rupture with consequent hemoperitoneum. On USG, free fluid was shown in

the abdomen. This condition should be promptly recognized and treated because a delayed diagnosis may result in ovarian torsion, reducing women's fertility, and intra-abdominal bleeding (concealed) may be life-threatening.

### CASE REPORT

A 23-year-old female patient with no known comorbid presented to the Emergency Department of a tertiary care hospital with complaints of acute abdominal pain. According to the patient, she was in her usual state of health when she developed abdominal pain nine days back. The pain was localized to the suprapubic region, intermittent diffuse, increasing in severity with an intensity of 7/10 on the Pain Index Scale. The pain was not relieved by taking analgesics. The pain was not associated with any aggravating factors. On systemic history, there was urgency and an increase in the frequency of urination and low-grade fever. The last menstrual period was on 31st March 2019.

On examination, the vitals of the patient were pulse 102 bpm, blood pressure 120/80mm of Hg, temp 1000F, respiratory rate 15/min and SpO2 98% at room air. The patient was conscious, well-oriented in time & space, and had GCS 15/15.

On abdominal examination, the abdomen was soft, tenderness was positive in the hypogastrium, there was no organomegaly, and the liver and spleen were not palpable.

The patient was admitted to the acute medical unit, and initial management was done with Paracetamol, and Ketorolac was given intravenous stat

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to relieve pain. Investigations were advised, including complete blood count, urine detailed report, serum C-reactive protein, liver function tests, serum amylase and lipase, renal function tests, and abdominopelvic ultrasound.

Red blood cell indices and total leukocyte count were within the normal reference range. Urine RE did not reveal any abnormality. Serum amylase was 99 U/L, slightly elevated. C-reactive protein was normal. Other laboratory reports remained non-significant.

Ultrasound came back with unremarkable findings. However, the pain remained persistent even after the administration of painkillers.

The patient was shifted to the ward, managed, and evaluated further. Analgesics and broad-spectrum antibiotics were also administered intravenously. The ultrasound scan was repeated after two days, but no significant finding was observed. CBC showed total leukocyte count (TLC) with a neutrophilic shift. Menses were also started (Figure-1), but the pain was not relieved. As the pain was persistent, a diagnostic laparoscopy was planned three days after admission.

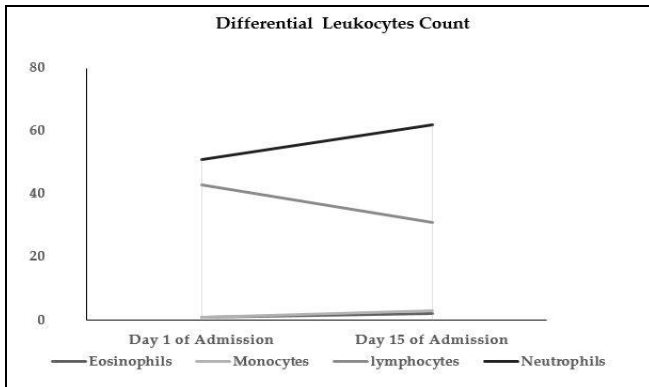


Figure-1: Total Leucocyte Count (TLC) Trend of the Patient

The patient was told about the procedure and kept nil per oral 24 hours before the procedure. The patient was counselled and informed verbal and written consent was obtained from the guardians. According to the laparoscopic findings, the right paracolic gutter was filled with blood, and the appendix was inflamed.

An appendectomy was done and sent for histopathology. During surgery, the mesoappendix bled more than usual, due to which surgery was complicated. A pelvic drain was placed for 48 hours postoperatively. There was suspicion of backflow of menstrual blood, but no gynaecological cause was

seen. The patient was shifted back to the ward after recovery. The patient was mobile the very next day. Vitally stable, discharge bag contained less than 100ml of blood. The patient was discharged and advised to return for a follow-up after two weeks.

Four weeks after laparoscopy, the patient again experienced lower abdominal pain associated with tenderness. The baselines turned out to be normal.

A gynaecologist was consulted for the abdominal pain. Ultrasound of the pelvis was repeated, which showed a 7.6 cm by 5.2 cm by 5cm right ovarian adnexal cyst containing 112 ml of fluid. A preliminary diagnosis of an endometriotic cyst of the ovary was established. The patient was advised Diane-35 for three months. The ultrasound scan was repeated, and the findings were the same. The patient started experiencing severe pain in the lower abdominal pain of intensity 10/10 on the pain scale index. A day later, the patient underwent an emergency laparoscopy due to worsening pain to rule out ovarian torsion. Laparoscopically, right ovarian cystectomy with right ovarian reconstruction was done (Figures-2-4), and fertility was conserved. The cyst was sent to the laboratory for histopathology. The report showed a corpus luteal cyst containing two haemorrhagic areas.

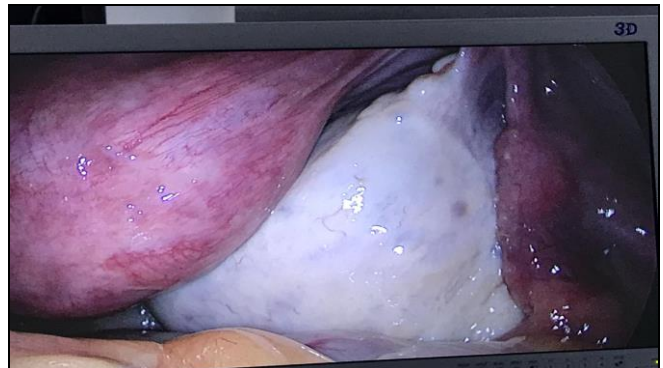


Figure-2: Right Ovarian Cyst lying Behind the Uterus



Figure-3: Right Ovarian Cyst when Clamped to Remove

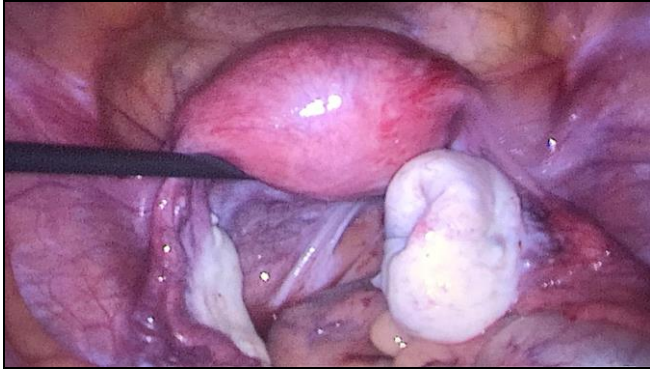


Figure-4: Right Ovarian Reconstruction

The patient was vitally stable and shifted to the ward. The patient was discharged on an oral Cefspan capsule and Panadol three days after the second laparoscopy. Follow up after 14 days, and then three months later, her ultrasound and hormonal tests (FSH, LH, and Prolactin) were repeated. All reports were normal.

## DISCUSSION

The present case highlights the potential of misdiagnosis in the case of a corpus luteal cyst in a young female presenting with acute abdominal pain and radiological findings consistent with other common disorders of the abdomen. In this case, a young female suffers bouts of acute abdominal pain; however, no radiological and clinical abnormality was observed initially. Later, the patient developed signs of systemic infection and underwent a diagnostic laparoscopy. The per-operative findings revealed blood in the paracolic gutter, which raised the suspicion of backflow of menstrual blood. However, no gynaecologist was consulted. The patient's condition worsened, and he eventually underwent another laparoscopic surgery, which revealed a haemorrhagic and cystic right ovary. The diagnosis of a corpus luteal cyst with multiple haemorrhagic areas was established on histopathology.

An ovarian cyst with the haemorrhagic area is a common cause of abdominopelvic pain in females of reproductive age.<sup>6</sup> For female patients of child-bearing age, it is important to rule out reproductive organ disorders as well as other more common gastrointestinal diseases.<sup>7</sup> The most common underlying cause of acute abdominal pain in young females is a corpus luteal cyst, followed by a follicular cyst or a corpus albicans cyst.<sup>8</sup> In a clinical analysis of acute abdominal pain in over seven hundred cases, it was found that the rate of misdiagnosis was 2.8%. In the series, 19(2.5%) patients with corpus luteal

cyst rupture and one patient with acute haemorrhagic salpingitis were misdiagnosed with ectopic pregnancy. At the same time, one patient with a pelvic abscess was misdiagnosed with ovarian cyst torsion. This indicates the potential of the acute gynaecological abdomen for misdiagnosis<sup>9</sup>.

It is therefore recommended to thoroughly evaluate the patients and be extra cautious when a female patient in her child-bearing years presents with acute abdominal pain with no known comorbidities. A gynaecological consultation should be availed in such cases to rule out female reproductive disorders.

## Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

ST, MAD: Conception, data acquisition, drafting the manuscript, critical review, approval of the final version to be published.

Author agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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