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Case Report

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Case Report on an Unusual Presentation of a Corpus Luteum Hematoma

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ABSTRACT
The common causes of acute pelvic pain include appendicitis, functional ovarian cyst, ruptured ectopic pregnancy, ovarian hyperstimulation syndrome, renal colic, adnexal torsion or fibroid torsion. Ovarian vascular complications have been reported in women on oral anticoagulation presenting as an acute pelvic pain. Although such vascular complications with anticoagulation therapy are rare, a detailed history, clinical examination, and laboratory workup to confirm the diagnosis and timely intervention is needed to reduce morbidity and mortality. We hereby report successful management of a haemorrhagic ovarian cyst due to coagulopathy in a woman with mechanical heart valves with timely surgical intervention.

Keywords: Corpus luteum hematoma, Anticoagulants, Haemorrhagic ovarian cyst, Management

Introduction

The presentation of acute abdomen in females of reproductive age is a relatively common occurrence in the emergency department. A comprehensive array of differential diagnoses must be considered, including but not limited to ruptured appendicitis, renal colic, adnexal torsion, ruptured haemorrhagic corpus luteum, and ruptured ectopic pregnancy. Timely diagnosis and management are crucial for preserving both the reproductive organs and the patient's life [1].

Females with prosthetic heart valves face a heightened risk of thromboembolic events, thereby necessitating long-term anticoagulant therapy [2]. Patients undergoing anticoagulation are at an increased risk of bleeding during ovulation and may, on rare occasions, develop intraperitoneal haemorrhage. The primary reason for the occurrence of bleeding is the reduced likelihood of clot formation due to effective anticoagulation. The incidence of haemorrhagic ovarian cysts among women receiving anticoagulants is reported to be approximately 1%, although this incidence escalates when the International Normalized Ratio (INR) exceeds 4. Life-threatening haemorrhage may arise from cystic rupture, with a mortality rate exceeding 11% due to resulting hemoperitoneum. Such cases present a significant challenge, as immediate reversal of anticoagulation is often required to manage any ongoing haemorrhage [3]. We describe a case of corpus luteum hematoma in premenopausal women with mechanical heart valves on anticoagulation therapy who presented in emergency with acute abdomen and was managed successfully with laparoscopy and adequate blood products.

Case Report

A 24-year-old nulligravida presented to the casualty with complaints of pain in the abdomen in the right iliac region for two days. The patient complained of abdominal pain, which gradually progressed to excruciating pain and was associated with two episodes of vomiting. The patient was a known case of drug-induced Chronic Kidney Disease (drug not known) resulting in bilateral renal failure, four years ago. She was on maintenance haemodialysis thrice a week. She later developed infective endocarditis leading to mitral and aortic valve regurgitation and had undergone valve replacement surgery two years ago. After the valve replacement, the patient was started on anticoagulation medications tablet warfarin daily (6mg /7 mg

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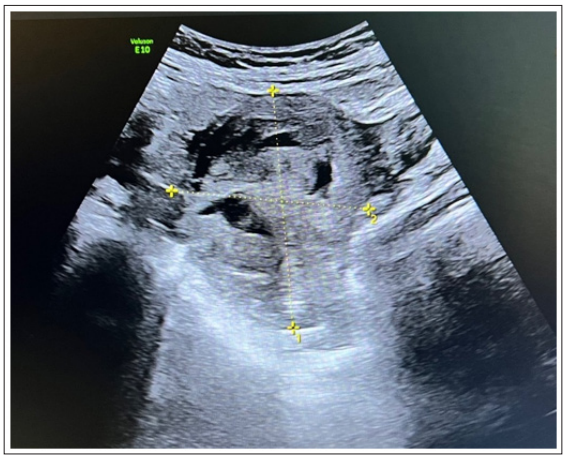
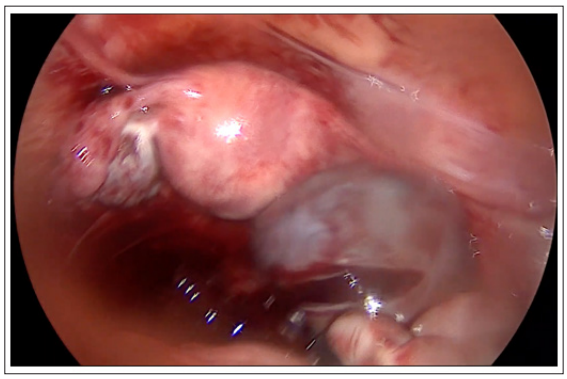
alternate days). On presentation, she was post-ovulatory (normal menses eighteen days back). Her menstrual cycle was for about three to four days every thirty days, with regular average flow associated with no clots and no dysmenorrhea. Neither bleeding disorders nor a family history of orifice-related bleeding was present. On examination, patient was hemodynamically stable. On abdominal examination, there was no distension with moderate tenderness in the right iliac fossa. There was no palpable mass. The liver and spleen were not palpable.

Her blood profile showed mild anaemia with normocytic normochromic features on the peripheral smear. The coagulation profile of the patient revealed a prolonged prothrombin time (PT) of 49.3 seconds with a raised INR of 3.52 and prolonged partial thromboplastin time (PTT) of 42.1 seconds. A urine pregnancy test ruled out pregnancy. She had elevated serum creatinine levels (5.02 mg%) with normal blood urea levels. Tests for the function of the liver were within normal parameters. Ultrasound of the abdomen revealed an enlarged oedematous globular well-defined heterogeneous hyperechoic mass on right side of size 59mm × 51mm x 57mm mass (volume 90ml). On colour doppler no evident internal vascularity was seen. No free pelvic fluid was present. The clinical presentation and sonographic features were suggestive of adnexal torsion.

A multidisciplinary team of doctors agreed to a surgical approach after improving patients coagulation profile. The anticoagulants were halted. The coagulation profile was normalised (INR 1.41 and PT 19.8) after receiving 30mg vitamin K injections intravenously, four fresh-frozen plasma (FFP) units and one packed red cell units. The decision of laparoscopic approach was undertaken as the patient was hemodynamically stable and fit for surgery. Laparoscopy revealed no alterations in reproductive track anatomy (no torsion) except for right ovarian mass (corpus luteum haematoma). 80ml haemorrhagic fluid and 25gm clots were drained out. As the patient wished for future conception, the ovarian tissue was preserved. The visceral organs were inspected during the operation, and no signs of haemorrhage, endometriosis, or adhesions were found. The incised tissue was taken for histopathological examination, where the corpus luteum wall appeared normal. Following a recommendation for a coagulation profile after 15 days, monthly monitoring was to continue until an INR of 2.5 was considered therapeutically acceptable. Thereafter, thorough three-monthly monitoring was to be carried out.





Discussion

Functional ovarian cysts include follicular cysts and corpus luteum cysts. Haemorrhage typically occurs in the latter half of the menstrual cycle (days 16–29), following the vascularization phase that occurs post-ovulation. The corpus luteum is characterized by high vascularity, which can lead to increased blood accumulation, resulting in distension and hematoma formation. These hematomas may undergo partial or complete resorption, which subsequently leads to cyst formation. An increase in intraluminal pressure may result in spontaneous rupture and intra-abdominal haemorrhage if the bleeding persists. Most instances of bleeding from a ruptured corpus luteum are self-limiting and may go unnoticed, resolving spontaneously [4]. However, a minority of cases can present with massive hemoperitoneum, leading to acute abdomen or even shock. The estimated mortality rate within this patient group ranges from 3% to 11%, with a recurrence risk of 25% to 31%. It is essential to closely monitor the coagulation profile of patients on long-term anticoagulants to mitigate such complications [5].

Corpus luteum hematoma is an uncommon condition in which patients may present to the emergency department with acute abdominal pain, accompanied by tenderness in the lower abdomen, nausea, vomiting, and, albeit infrequently, syncope. This condition may mimic acute salpingitis, acute appendicitis, adnexal torsion, and ruptured ectopic pregnancy. A urinary pregnancy test is mandatory in these cases and typically yields a negative result for corpus luteal hematoma [1]. Treatment principles focus on controlling the haemorrhage and salvaging the ovaries. Nonetheless, a conservative approach is not always feasible; surgical intervention may be required in cases of hemodynamic instability or diagnostic uncertainty, as exemplified by our case where ultrasound findings were suggestive of adnexal torsion [3]. Prior to any surgical intervention, it is essential to normalize the coagulation profile utilizing vitamin K, prothrombinase complex concentrate and FFP. In the context of resuming anticoagulation therapy for patients who have experienced major bleeding due to warfarin and who possess mechanical heart valves, the recommended safe period ranges from 7-14 days following the onset of bleeding [6].

Considering the possibility of ovarian cyst haemorrhage recurrence, ovulation suppression should be contemplated, particularly in cases where long-term anticoagulant therapy is necessary. Long-term anovulatory treatment utilizing progestational agents, low-dose combined oral contraceptive pills, or gonadotropin-releasing hormone analogues is advisable for patients with congenital and iatrogenic clotting disorders.

Such approaches are deemed safe and do not elevate the risk of thromboembolic events. The administration of Depot Medroxyprogesterone Acetate proves to be an effective contraceptive method for preventing recurrent corpus luteum haemorrhage, as it exerts minimal influence on the majority of coagulation parameters [7]. Diligent surveillance during follow-up is imperative, which should include close monitoring of anticoagulation intensity, lipid profiles, systolic and diastolic blood pressure measurements, weight assessments, as well as comprehensive physical and gynaecological examinations.

Conclusion

Patients undergoing oral anticoagulant therapy are at an increased risk for bleeding tendencies and a higher likelihood of recurrent haemorrhagic ovarian cysts. Although massive hemoperitoneum resulting from the rupture of an ovarian cyst is uncommon, it poses a potentially life-threatening situation if not diagnosed and treated promptly. Conservative management may be considered for hemodynamically stable patients; however, a low threshold for surgical intervention should be maintained in the presence of diagnostic uncertainty, accompanied by emergency reversal of anticoagulation and subsequent resumption of therapy postoperatively, guided by the potential risk of rebleeding. While the risks associated with specific hormonal contraceptives in this patient demographic warrant further exploration, hormonal contraception may serve as a safe and effective method for ovulation suppression and the prevention of future recurrences.

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