

Life Threatening Corpus Luteum Haemorrhage in a Patient on Oral Anticoagulants - A Challenging Case

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ABSTRACT

Ovulation is release of the mature egg from the ovary; there is leakage of follicular fluid and some small quantity of blood. After the rupture of follicle there may be some haemorrhage from corpus luteum; mostly this haemorrhage is minimal and does not create any problem. Sometimes the rupture may cause internal bleeding and sharp pain. Patients on anticoagulation are at higher risk for severe haemorrhage from ruptured corpus luteum. We report a rare case of internal haemorrhage in a patient who was on oral anticoagulants. 31 years old lady; Para 2 with both normal deliveries was admitted with history of pain abdomen; weakness and one episode of blackout at home. She was a known case of aortic valve replacement on oral anticoagulant and had marked tachycardia. Bedside ultrasound showed free fluid in abdomen. Inj Vitamin K and Tranexamic Acid were administered; blood and Fresh Frozen Plasma were transfused. Laparotomy revealed hemoperitoneum and ruptured corpus luteum which was sutured to attain haemostasis. She was put on regular injections of Depot Medroxyprogesterone Acetate to suppress ovulation to prevent recurrence.

Keywords: Corpus luteum, Hemorrhage, Ovulation, Anticoagulants

INTRODUCTION

Ovulation is expulsion of the mature egg from the ovary; the egg is extruded from the Graffian follicle; erroneously called rupture of the follicle. The egg comes out of the follicle by stretching due to collection of follicular fluid causing weakening and thinning of the ovarian surface. A bulge appears on the thinned out surface of the ovary called stigma or macula pellucida. There is reduction of blood supply to the stigma so that it can break easily and form an opening for the secondary oocyte to exit out. There is leakage of follicular fluid and some small quantity of blood from the opening. This process does not cause any pain but some women may experience mild pain in the lower part of abdomen called 'Mittelschmerz' which is presumed to be due to irritation of peritoneum by follicular fluid and blood released at the time of ovulation. As there is no hole or opening on the ovarian surface; the egg has to break through the ovarian wall which may cause some discomfort or pain. The opening on the surface of ovary heals spontaneously by epithelisation. The remaining Graffian follicle becomes corpus luteum (CL) which has very important endocrinal function more so if fertilization has occurred. This complete process of ovulation is physiological and does not create any problem.

Sometimes the CL fills with blood; the cyst may rupture, causing internal bleeding and sharp pain. This pain and discomfort usually passes off in a short period. The hemorrhage may occur any time from the day of ovulation up to two weeks which is the normal life span of CL. Clinical presentation is varied and unpredictable; and depends on quantum of hemorrhage. Very rarely this hemorrhage can be massive requiring blood transfusion and operative intervention. Patients on anticoagulation or with coagulation abnormality are at higher risk for severe hemorrhage from ruptured CL [1]. We report a rare case of CL hemorrhage in a patient who was on oral anticoagulants where the diagnosis was challenging. We also discuss the contraceptive options for such cases to prevent similar

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catastrophes in future.

CASE REPORT

31 years old lady; Para 2 was admitted with history of pain abdomen; weakness and one episode of blackout at home. She was admitted in medical Intensive Care Unit (ICU) as she was a known case of aortic valve replacement on oral anticoagulant and had marked tachycardia. She was examined by physician on call who suspected her to be a case of acute abdomen due to gynecological cause and was referred to gynecologist. At the time of examination she complained of pain abdomen of two days duration, which started in the lower abdomen and spread to the whole of abdomen. She had two normal deliveries and her husband had undergone sterilization two years back. There was no history of any Post-Partum Haemorrhage (PPH) or menorrhagia. She was a known case of rheumatic heart disease and had undergone aortic valve replacement six years back; was on oral anticoagulants and on regular follow up by the physician. Her Last Menstrual Period (LMP) was 20 days back and previous cycles were regular and normal. Pulse was 138/min and blood pressure was 110/60 mm of Hg. Pallor was present but there was no icterus, edema or any petechial spots. SpO₂ was maintained without oxygen or any other support. Abdominal examination revealed mild tenderness all over but there was no guarding or rigidity. Pelvic examination was normal except presence of tenderness during examination. Bedside ultrasound showed free fluid in abdomen. Laboratory investigations showed haemoglobin (Hb) to be 6.5 g, Total Leukocyte Count (TLC) and Differential Leukocyte Count (DLC) were normal and International Normalized Ratio (INR) was 2.7. Urine examination did not show any abnormality and urine pregnancy test was negative. Opinion of surgical specialist was obtained to rule out any surgical cause who wanted to rule out acute pancreatitis hence serum amylase was tested which was normal, Computed Tomography (CT) scan of abdomen did not show any organic abnormality except free fluid in the abdomen (**Figures 1 and 2**). Inj Vitamin K and Tranexamic Acid were administered, blood and Fresh Frozen Plasma (FFP) were arranged and the case was prepared for urgent laparotomy after anesthetic consultation. Packed cell transfusion and FFPs administration was started preoperatively and continued. Abdomen was opened by midline vertical incision; only cautery was used to avoid excessive haemorrhage, there was huge quantity of free blood in the peritoneal cavity (appx. 2.5 L). Pelvis was explored and it showed ruptured CL in the left ovary which was actively bleeding (**Figure 3**). The bleeding cavity and edges were closed by delayed absorbable sutures (**Figure 4**) and bleeding controlled. Peritoneal toilet was done and abdomen closed after leaving a tube drain. Postoperatively blood transfusion, FFPs and antibiotics were continued. She was administered four pints of packed cells and 12 pints of FFPs. Anticoagulants were restarted 48 h after surgery. Post-

operative period was uneventful and she was discharged after ten days. The couple was counseled about the risk of recurrence hence the need for suppression of ovulation. She was administered 150 mg of Depot Medroxyprogesterone Acetate (DMPA) before discharge with advice for three monthly injections.

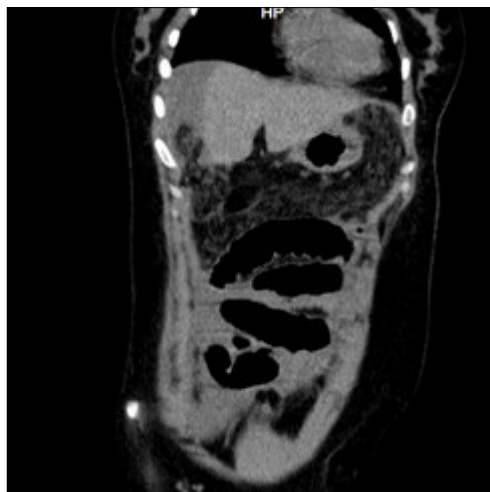


Figure 1. CT scan.

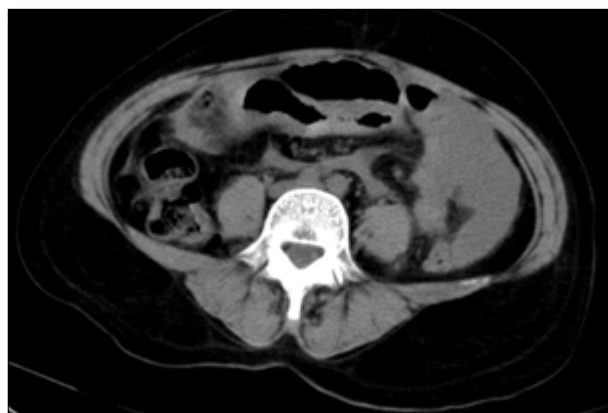


Figure 2. CT scan (Abdomen).



Figure 3. Ruptured corpus luteum.



Figure 4. Corpus luteum after suturing.

DISCUSSION

Ovulation is a normal physiological event during reproductive years but hemorrhage from CL is known to occur in some cases. CL hemorrhage may occur spontaneously or often precipitated by coitus, trauma, exercise, or internal examination [1]. This hemorrhage is usually small, may occur within the CL or outside into peritoneal cavity. In most of the cases this stops spontaneously and the patient is asymptomatic. In some cases there may be blood collection within the CL resulting in hemorrhagic CL which may be picked up on ultrasound mimicking like an endometriotic cyst. This hemorrhagic cyst may rupture and cause acute abdomen, clinical presentation appearing like a case of ruptured ectopic pregnancy. It is described more from the right ovary as it is believed that the recto-sigmoid colon helps protect the left ovary from trauma [2]. The diagnosis depends on the clinical presentation and index of suspicion. Pregnancy test must be performed to rule out ruptured ectopic pregnancy. Hemorrhage is possible even from CL of pregnancy which can further obscure and confuse the diagnosis as the pregnancy test will be positive in these cases also.

The bleeding from CL may be severe and at times life threatening especially in patients with coagulation abnormalities like those on oral anticoagulants, cases of lupus on anticoagulant therapy, anemia with thrombocytopenia [3], patients with congenital or acquired coagulation abnormality [4]. Though there are many case series in the literature on CL bleeding [1,5] but CL bleed related to prosthetic heart valve on anticoagulants has very rarely been reported [6].

Treatment depends on the clinical condition, conservative management can be tried if the diagnosis is certain and patient is stable [7]. Surgical intervention is required if diagnosis is uncertain and patient's condition is unstable, or conservative treatment fails. Open laparotomy is usually performed but laparoscopy is possible in some cases [8]. Ovarian electro-coagulation, cystectomy, wedge resection and ovarian reconstruction are conservative methods to

secure hemostasis [1]. One should make all attempts to preserve the ovary and avoid performing oophorectomy or salpingo-oophorectomy unless bleeding does not come under control [6]. In our case the ovary could be saved by electro-coagulation and suturing.

Women with any kind of coagulation abnormality have increased chances of spontaneous bleeding from many sites and this bleeding may occur from ovary at the time of ovulation. As stated by Tresch et al.'s [9] CL hemorrhage may be fatal in 3-11% of cases [9] and can recur in one fourth of the cases. The hemorrhage is possible even if INR is within or under the desired therapeutic range. The chances of CL hemorrhage can be minimized by suppression of ovulation. DMPA can be used to prevent bleeding from CL by means of ovulation suppression in women with prosthetic heart valves on anticoagulants. Our patient was put on this contraceptive only. Finding an ideal method to inhibit ovulation in these cases is a real challenge. The method should be effective, harmless, practical and acceptable by women on anticoagulation for mechanical heart valve. Oral pills containing estrogen progestogen combination can cause venous thrombosis hence they are not recommended. Progestin only contraceptives are relatively harmless, are effective contraceptives but may not result in ovulation suppression in all. Intramuscular injection of DMPA invariably suppresses ovulation. The progestin implants are similar to DMPA in suppressing ovulation and are not known to result in bleeding or hematoma at the insertion site in women on anticoagulants, but these implants are not easily available in our country. Gonadotropin-Releasing Hormone analogs (GnRHa) are another type of ovulation inhibitors. But long-term use of GnRHa is not advisable being expensive and due to their adverse effects. DMPA appears the most appropriate medication to suppress ovulation in these women; as this is safe, harmless and highly effective.

Another issue of concern is reversal of effects of anticoagulants once bleeding occurs and patient requires operative procedure. Vitamin K, FFPs, Activated Factor VII and other coagulation factors may be tried. Our patient could be managed with Vitamin K and multiple transfusions of FFPs and recovered well.

DISCLOSURE

Authors report no conflict of interest in this work.

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