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Research Article

HEMORRHAGIC CORPUS LUTEAL CYST - A GREAT IMITATOR

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ABSTRACT

A haemorrhagic corpus luteal cyst can present with profuse bleeding after cyst rupture mimicking an emergency situation as of an ectopic pregnancy. It is rightly described as an imitator because most of the times it is confused with more grievous conditions requiring a meticulous and systematic approach for proper management of the patient. The thought to ponder in such cases is that a similar set of signs and symptoms may mimic different pathologies and disease scenario, but, a good clinical history along with thorough examination can give the key for the correct diagnosis and help in making the right decision at the right time. Furthermore, the risks v/s benefits of medical and surgical management should be judged appropriately for the best outcome.

INTRODUCTION

A patient, when presents with a triad of symptoms of amenorrhea, abdominal pain and vaginal bleeding, then the most common diagnosis is thought to be ectopic pregnancy. But when UPT comes out to be negative, then there could be an extensive list of differential diagnosis, most commonly thought of being,

1.Incomplete abortion
2.Chronic ruptured ectopic pregnancy
3.Resolving pregnancy
4.Tubercular endometritis
5.Ovarian neoplasm torsion
6.Capsular haemmorhage in degenerating fibroid

Now in this same scenario, if the patient presented with severe anemia with hemoperitoneum, in atrial fibrillation, then one would approach such a case with the possible diagnosis of either a chronic ruptured ectopicor ruptured hemorrhagic corpus luteal cyst. The key to such a patient's mind-boggling mystery should be obtained from thorough history.

History

A 25year old female, was admitted in medicine department, with the chief complaints of chest pain and breathlessness for 3 days. Patient was a k/c/o Rheumatic Heart Disease with history of balloon mitral valvotomy 11years back and the patient was on Penicillin, Frusemide, Metoprolol and Acitrom for the last 3years. Her Hb came out to be 3.7g/dl, and ultrasound reported a Tubo-Ovarian mass with mild-moderate ascites for which the patient was referred to Obs& Gynae. 2D ECHO done reported, severe MS, moderate MR, mild AR, mild to moderate TR, moderate pulmonary artery hypertension, normal ventricular function, Ejection fraction 60%, in atrial fibrillation.

After transfer to Obs& Gynae, the patient's history was: P1L1 with amenorrhea for 3 months followed by irregular episodes of bleeding per vaginum associated with severe pain abdomen and abdominal distension for last 5-6 days. GC- E4V5M6. Pallor- +++. BP- 90/60 mmHg. PR- 120-200 bpm, irregularly irregular, normal volume, no radio-radial or radio-femoral delay. CHEST- clear. CVS examination- SIS2 could not be well differentiated due to gallop rhythm. Murmur could not be appreciated. No parasternal heave. Apex beat present in the 5th intercostal space. Local examination- Active bleeding present. Abdominal examination- Abdomen distended, free fluid present, bowel sounds present, non-tender. Per speculum examination- Bleeding seen coming through os. Per vaginum examination- Cervix backwards, uterus 16 weeks size, A/V, soft, non-tender, cervical motion tenderness present, B/L fornicial fullness and tenderness present. UPT was negative. A Transabdominal ultrasound showed free fluid in the Morrisons pouch and the pelvis with floating uterus and an adnexal mass of around 5 x 6 x 4.5 cm with heteroechoic collection in the Pouch of Douglas suggestive of clots. Same findings were confirmed on a Transvaginal scan and the uterus was found to be empty with thickened endometrium. Gestational sac was not visualized even in the adnexa.

So, with the classical triad of symptoms on history, clinical examination, free fluid in the abdomen suggestive of

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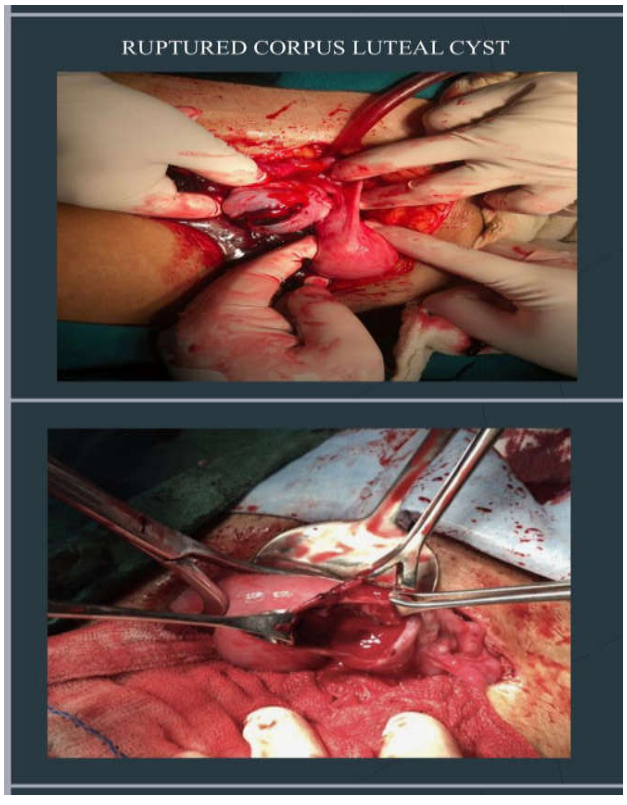
hemoperitoneum, a negative UPT and history of intake of anticoagulants for the last 3 years, decision for exploratory laparotomy i/v/o ruptured corpus luteal cyst/ chronic ruptured ectopic pregnancy was taken. As suspected, a right sided ruptured hemorrhagic corpus luteal cyst was seen which was bleeding actively (Fig. 1). Hemoperitoneum of around 1L with clots of around 750 cc was evacuated. As ovarian tissue was necrosed and bleeding actively, a right sided salpingo-oopherectomy was performed. A total of 2 PRBC and 4 FFP were transfused. Since the patient was in AF with severe blood loss, she was shifted to ICU and kept on ventilator.

Patient was transfused 4 PRBC and 6 FFP during her post-operative period and was on strict vital monitoring with regular CBC, LFT, KFT, PT/INR follow up. She was started on Inj. Amiodarone in infusion followed by Tab Amiodarone 200mg BD, Tab Diltiazem 120 mg OD along with potassium sparing diuretic from day 1 for the control of rhythm and Tab Acitrom was started from 5th post-operative day. Anticoagulants are usually started after 24 hours but in our case, the patient was in AF having unstable vitals. So, she was kept on vigilant monitoring of vitals and blood loss assessment and anticoagulants were started once her condition improved. On day 15, she was discharged in satisfactory condition. Presently, the patient is doing well.



DISCUSSION

The corpus luteum is a highly vascular structure. Being thin-walled, it is prone to hemorrhage even if bleeding is usually contained inside the cyst [1]. Massive hemoperitoneum from a ruptured corpus luteum cyst is mostly associated with systemic anticoagulation, coagulation disorders, von Willebrand disease and sickle cell anemia [2,3,4].

Hallatt *et al* [5] described the first large series of patients with corpus luteum hemorrhage and hemoperitoneum, stating that this entity occurs at all stages of a woman's reproductive life with a wide range of volumes of hemoperitoneum and concluded detailed bleeding history from all surgical patients is critical, and maintaining a wide differential diagnosis can aid in appropriate work-up and optimize peri-surgical management.

Multiple sonographic patterns have been defined for hemorrhagic ovarian cyst and it has also been called the "great imitator"[6]. Corpus luteum cyst rupture with intra-abdominal hemorrhage may appear ultrasonographically identical to a ruptured ectopic pregnancy as in our case. A negative serum pregnancy test may be a discerning feature [5,7]. Computed tomography scan of the abdomen/pelvis is of limited value and usually supports the diagnosis of ruptured ectopic pregnancy [8].

Agarwal M *et al* [9] managed a 22year female, on anticoagulants, with the same clinical presentation conservatively. She had a negative UPT and USG showed moderate hemoperitoneum with enlarged adnexa. She presented with stable vitals & mild pallor. Patient was transfused 2 units of blood and was provisionally kept prepared for laparotomy in case she developed hemodynamic instability. However, she remained stable and her hemoglobin built up after blood transfusion. On fourth day, anticoagulant therapy was reintroduced at a lower dose to prevent any cardiac thrombo-embolic episode.

Vats G *et al* [10] reported of a 25year female, presenting on the 19th day of her menstrual cycle with pain abdomen for 1 day. Ultrasound revealed a complex collection in the pelvic cavity of around 300cc in right adnexa and small amount of collection in left adnexa. Her vitals were stable. After 10hours of observation and conservative management, her abdomen was tense, tender and girth was increased. Ultrasound showed bulky right ovary (4.9 × 3.2 cm) with no vascularity suggestive of torsion and mild free fluid in the pelvic cavity. Emergency laparotomy in view of ovarian torsion was done. Intraoperatively, there was hemoperitoneum of around 500cc with ruptured corpus luteal cyst of right ovary.

Pandit K *et al* [11] reported a study of 2 cases. First, a 24year female with emesis and severe abdominal pain for 4-6 hours with a negative UPT &thick walled cystic lesion (54 x 46 mm) in right adnexa abutting the uterus on USG. Heterogeneous area suggestive of organized hematoma was seen surrounding the right adnexal cyst. Moderate haemorrhagic fluid was seen in the peritoneal cavity. It was masquerading a ruptured ectopic gestation with massive hemoperitoneum. On exploration by laparoscopy, approximately 2 L of hemoperitoneum, about 500 cc clots and a 4 x 5 cm large right ovarian corpus luteal cyst was noted with rupture. Second, a 45year female with lower abdominal pain along with 2-3 episodes of emesis for 4-5 hours. She denied vaginal bleeding and had no gynaecologic problems. She was a k/c/o Ischaemic Heart Disease, with angioplasty done a month ago and was on antiplatelet medications since then. Ultrasound revealed a large subserosal fibroid of size 84 x 55 x 103 mm along the fundus of the uterus. The clinical findings were not consistent with the ultrasound findings, therefore MRI was recommended which showed a complex left ovarian mass and large amount of intraperitoneal fluid with radio density of blood. Tumour markers Ca 125, CEA, AFP and BhCG were normal. After reviewing the laboratory, ultrasound and MRI studies, the diagnosis of possible ruptured ovarian cyst was formulated and an emergency exploratory laparoscopy was recommended. Upon exploration, an organised hematoma 10 x 10 cm was noted in the pelvis. Hemoperitoneum with old dark red blood

about 1.5 L was evacuated. Right side ruptured corpus luteal cyst was seen with no evidence of active bleeding.

Mode of Management

For the management of hemoperitoneum, a standard algorithm is not reported in literature. Historically the treatment of corpus luteum hemorrhage was exclusively surgical**,** while nowadays it can be managed with a conservative approach. In either case the treatment targets at preserving ovarian function as well as at eliminating the source of bleeding [12]. In particular, the conservative approach is the first choice treatment when the patient is hemodynamically stable (systolic BP > 90 mmHg) with hemoglobin values that keep being constant over 4–6 hours of monitoring [13]. In case of unstable vital signs, the patient needs surgical treatment. Laparoscopy represents the first minimally invasive approach [14] that can eventually be converted to laparotomy in case of failure or of unstable vital signs such as important hemoglobin decrease over 4–6 hours (.2 g/dL) with increasing hemoperitoneum on follow-up imaging studies [13, 15].

Contraceptive Advice

A very important aspect for the future wellbeing of such a patient is the need to practice contraception to prevent any threat later in life due to pregnancy or its complications. Barrier methods (condoms) cannot be considered due to high failure rate. Intrauterine contraceptive devices (Cu-T) are avoided as there is risk of heavy menstrual bleeding and pelvic infection. Steroidal contraception (OCPs, DMPA) are an absolute contraindication in patients with circulatory diseases (WHO MEC-Category 4). Non-steroidal contraception (Centchroman) should be advocated. Sterilization- The patient is at a high risk for operative procedure and may not be able to withstand anesthesia, hence, VASECTOMY SHOULD BE ENCOURAGED for her partner.

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