

Different Clinical Presentation of Corpus Luteal cyst Haemorrhage: Case Report

Suman Kumari^{1*}, Pratiksha Gupta², Pallavi Shekhawat,³ Anupama Rani⁴

^{1,2,3,4}Department of Obstetrics and Gynaecology, ESI, PGIMS, Basaidarapur, New Delhi, India

*Corresponding author: Dr. Suman Kumari

Abstract: The corpus luteum is a temporary hormone secreting remnant formed after rupture of a mature ovarian follicle to release an ovum. Sometimes, it may fill with blood or other fluids, forming a cyst and rupture in rare cases to cause hemoperitoneum which can be life threatening. We have discussed here two cases of patients presenting with acute pain abdomen which were due to hemoperitoneum resulting from ruptured corpus luteum cyst. **CASE 1:** A 25 year old nulligravida woman undergoing infertility workup at a private hospital came to ESI, gynae casualty with complaint of acute pain abdomen. Her UPT (Urine Pregnancy test) was negative and LMP (last menstrual period) 19 days back. She was misdiagnosed as a case of acute PID (pelvic inflammatory disease) and kept for observation but after few hours, she was taken for laprotomy suspecting could be ectopic pregnancy because her vitals deteriorated and repeat TVS (transvaginal sonography) showed increase in free fluid in pelvis. Laprotomy findings revealed it to be a case of ruptured corpus luteal cyst with hemoperitoneum. **CASE 2:** Another 35 year old lady, P3L3 with history of MVR (mitral valve replacement) one year back, on anticoagulants, came with complaint of acute pain abdomen for one day. Her TVS showed bulky ovary with mild free fluid in the pelvis. Her coagulation profile was deranged. Her UPT was negative and she had LMP 16 days back. Provisional diagnosis of ruptured corpus luteal cyst with mild hemoperitoneum was made. She was managed conservatively with transfusion of blood and fresh frozen plasma. Both the scenarios highlight that ruptured corpus luteum cyst should be kept in differential diagnosis of acute abdomen in women of reproductive age group, patients on anticoagulation therapy or with some coagulation disorders especially in secretory phase.

Keywords: Hemoperitoneum, Corpus luteal cyst, UPT (urine pregnancy test), PID (pelvic inflammatory disease), MVR (mitral valve replacement), TVS (transvaginal sonography)

Date of Submission: 25-01-2019

Date of acceptance: 08-02-2019

I. Introduction

The corpus luteum is a temporary hormone secreting remnant formed after rupture of a mature ovarian follicle to release an ovum. Its main function is to secrete progesterone to maintain early pregnancy till placenta is developed by 8-10 weeks. If fertilization does not occur, the corpus luteum involutes to corpus albicans, shrinks and stops producing hormone resulting in menstruation. Abdominal pain caused by a ruptured corpus luteum cyst is a common complaint in a woman of childbearing age. The complaints are usually self-limited to pain. Only in rare cases, they can lead to massive hemoperitoneum requiring surgical management. So prompt and appropriate evaluation of acute abdomen is always a priority because of the potential need for emergency surgery.

Various differential diagnoses including non-gynecological causes should also be kept in mind while assessing a case of acute pain abdomen because it can be difficult to distinguish gynecological from gastrointestinal and urinary tract emergencies because of overlapping symptoms and signs. Here we are discussing two cases of ruptured corpus luteal cyst resulting in hemoperitoneum which presented as acute pain abdomen in gynae casualty of ESI hospital.

II. Case Presentation:

CASE 1: A 25 year old nulligravida woman came to ESI, gynae casualty with history of acute pain abdomen since 6-8 hour. She presented on 19th day of her menstrual cycle and her UPT was negative. She was undergoing infertility workup at a private hospital with HSG (hysterosalpingography) done on Day 10 of current cycle. A baseline scan done before HSG, showed right adnexal complex cyst of 4x3cm. Her vitals were stable with pulse rate of 98bpm and blood pressure of 100/60mmHg. Her abdomen was soft and non-tender. On per-speculum examination-cervix and vagina was healthy. On per-vaginal examination, uterus was of normal size, anteverted with fornix tenderness present. Emergency TVS (transvaginal scan) showed mild free fluid in pelvis with right adnexal mass of 4.5x 3cm. Her emergency reports were: Hb-11gm/dl, TLC-leucocytosis,

LFT&KFT were within normal limit, beta hCG<0.1mIU, coagulation profile was normal. A Provisional diagnosis of Acute PID was made and started on iv antibiotics with close watch for vitals and kept prepared for laprotomy in case her hemodynamic status deteriorated. After six hours of observation, her vitals deteriorated and her abdomen became tense and tender. Repeat TVS showed increased free fluid in pelvic cavity. The patient was taken for emergency laparotomy suspecting it could be ectopic pregnancy. The intraoperative findings were: hemoperitoneum of around 500cc with ruptured corpus luteal cyst of right ovary (Figure 1). Right ovarian cystectomy with ovarian reconstruction was done. Tissue was sent for histopathological examination and showed ovarian tissue with areas of hemorrhage.



Figure 1: Intraoperative picture showing right ruptured corpus luteal cyst

Case 2: A 35 year old lady, presented with pelvic pain for one day in ESI, gynaecology. She was P3L3, with her LMP 16 days back and her previous menstrual cycles were regular. Her UPT was negative. She had undergone MVR one year back and was on anticoagulant warfarin 2.5 mg once daily. On examination, her pulse rate was 96/min and blood pressure 100/70 mm of Hg, pallor was mild. Abdomen was soft, non-tender. Per-speculum examination was normal. On Per-vaginum examination-uterus was normal size with mild fornix tenderness. TVS showed mild free fluid in pelvis with bulky ovary and reported the possibility of ectopic pregnancy. Her Laboratory reports were: Hb- 8 gm %, TLC&DLC-normal, LFT&KFT-normal, Serum electrolyte-normal, beta hCG<0.1mIU. Coagulation profile was deranged (International Normalised Ratio (INR) = 6.5). Based on above reports, provisional diagnosis of ruptured corpus luteal cyst leading to hemoperitoneum due to coagulation abnormality was made and conservative management was planned with close monitoring of vitals. Tablet warfarin was stopped and 6 units fresh frozen plasma was transfused followed by 2 units of whole blood. She remained stable during observation period and there was no evidence of ongoing intraperitoneal haemorrhage. Her haemoglobin build up after blood transfusion. On the fourth day, as per advice of cardiac surgeon anticoagulant therapy was reintroduced at a lower dose to prevent any cardiac thromboembolic episode. She was observed for 10 days in the hospital and discharged in a fit condition.

III. Discussion:

Ovarian cysts occur commonly in menstruating women of 18-35 years and are commonly identified by ultrasound. There are two types of functional ovarian cysts - follicular cysts and corpus luteum cysts. The most common gynecological causes of spontaneous hemoperitoneum in women of childbearing age are ectopic pregnancy and ruptured corpus luteal cyst. Other rare causes are uterine rupture, endometriosis and ruptured hydroyoosalpinx¹. Patients with coagulation disorders are more prone to corpus luteal haemorrhage.

The diagnosis of ruptured corpus luteal cyst is based on a high historical suspicion (the patient generally is in the luteal phase of the ovarian cycle), clinical features and laboratory tests. The latter often show anemia, raised CRP (C reactive protein) and mild leukocytosis. The evaluation of serum β hCG-levels is necessary to differentiate ruptured corpus luteal cyst from ruptured ectopic pregnancy, which may have a similar presentation^{2, 3}. A persistent corpus luteum may be associated with delayed menstrual cycle. Presence of a ruptured corpus luteal cyst may be indicative of the presence of an intrauterine pregnancy. Therefore, a ruptured corpus luteum should be considered even in the presence of a positive pregnancy test⁴.

Usually, Ultrasonography (USG) is the imaging modality of choice due to its high sensitivity and fast and easy access. USG may reveal a complex cyst, with a rim of increased echogenicity surrounding the cystic component in the adnexal area, associated with free hypoechoic fluid in the peritoneal cavity (hemoperitoneum). Free hypoechoic fluid may contain focal collections of higher echogenicity (e.g., clotted blood) in the pelvis^{5, 2}. Doppler ultrasound may demonstrate the vascularized wall^{2, 6}.

Previously the treatment of corpus luteal cyst hemorrhage was exclusively surgical but now a days, it can be managed conservatively. In either case, the treatment targets at preserving ovarian function as well as at eliminating the source of bleeding⁷. Conservative approach is the first choice treatment when the patient is

hemodynamically stable (systolic BP > 90mmHg) with constant hemoglobin values over 4–6 hours of monitoring 8. In case of unstable vital signs, the patient undergoes surgical treatment. The first minimal invasive approach is Laparoscopy that can eventually be converted to laprotomy in case of failure or of unstable vital signs 8,9,10.

Review of literature shows rupture of right corpus luteum cyst is more common because of differences in ovarian venous architecture that causes higher intraluminal pressure on right side and left ovary is protected because of cushioning effect of rectosigmoid colon¹¹. Payne JH et al reported of 3 patients who presented with hemoperitoneum in association with factor 7 deficiency, factor 10 deficiency and cholesterolemia¹². They concluded that conservative management with blood products and factor concentrate support was successful in avoiding surgery in 3 of the 5 episodes of bleeding. Chao W et al reported a similar case of hemoperitoneum in a 17 years old girl with aplastic anaemia treated with surgery and treatment of blood disease¹³. Cetinkaya SE et al reported a case of 24 years old woman with congenital afibrinogenemia with recurrent massive intraperitoneal haemorrhage due to ovulation¹⁴. Exploratory laparotomy was done for the first bleeding episode and subsequent episode was managed by fresh frozen plasma with blood transfusion. Hallatt et al. described the first large series of patients with corpus luteum hemorrhage and hemoperitoneum¹⁵.

IV. Conclusion

Ruptured corpus luteum cyst should be kept in differential diagnosis of acute pain abdomen in women of reproductive age group especially in secretory phase. Timely diagnosis and appropriate management can save patient life. Hemoperitoneum due to ruptured corpus luteum may be confused with ectopic pregnancy due to similar clinical presentation and sonography picture, but may be ruled out due to normal β HCG. In some patients, spontaneous hemoperitoneum may be due to anticoagulation therapy or coagulation disorders. If there is any altered coagulation profile, supportive treatment with transfusion of blood and fresh frozen plasma may be sufficient without any need for surgery.

References

- [1]. Coulier B, Malbecq S, Brinon PE, et al. MDCT diagnosis of ruptured tubal pregnancy with massive hemoperitoneum. *Emerg Radiol*. 2008; 15(3):179–182.
- [2]. A. Potter and C. Chandrasekhar, “US and CT evaluation of acute pelvic pain of gynecologic origin in nonpregnant premenopausal patients,” *Radiographics*. 2008;28(6):1645– 59.
- [3]. O.Roche, N.Chavan, J.Aquilina, and A.Rockall, “Radiological appearances of gynaecological emergencies,” *Insights into Imaging*. 2012;3(3):265–75.
- [4]. Y. Kaakaji, H. V. Nghiem, C. Nodell, and T. C. Winter, “Sonography of obstetric and gynecologic emergencies: part II, gynecologic emergencies,” *American Journal of Roentgenology*. 2000;174(3):651–56.
- [5]. A.Takeda, K.Sakai, T.Mitsui, and H.Nakamura, “Management of ruptured corpus luteum cyst of pregnancy occurring in a 15-year-old girl by laparoscopic surgery with intraoperative autologous blood transfusion,” *Journal of Pediatric and Adolescent Gynecology*. 2007;20(2):97–100.
- [6]. A. Potter and C. Chandrasekhar, “US and CT evaluation of acute pelvic pain of gynecologic origin in nonpregnant premenopausal patients,” *Radiographics*. 2008;28(6):1645– 59.
- [7]. L. Valentin, “Use of morphology to characterize and manage common adnexal masses,” *Best Practice & Research Clinical Obstetrics & Gynaecology*. 2004;18(1):71–89.
- [8]. N.Gupta, V.Dadhwal, D.Deka, S.K.Jain, and S.Mittal, “Corpus luteum hemorrhage: rare complication of congenital and acquired coagulation abnormalities,” *The Journal of Obstetrics and Gynaecology Research*. 2007;33(3):376–80.
- [9]. J. H. Kim, S. M. Lee, J. H. Lee et al., “Successful conservative management of ruptured ovarian cysts with hemoperitoneum in healthy women,” *PLoS ONE*. 2014;9(3):e91171
- [10]. [9] A. Takeda, S. Manabe, S. Hosono, and H. Nakamura, “Laparoscopic surgery in 12 cases of adnexal disease occurring in girls aged 15 years or younger,” *The Journal of Minimally Invasive Gynecology*. 2005;12(3):234–40.
- [11]. S.-W. Teng, J.-Y. Tseng, C.-K. Chang, C.-T. Li, Y.-J. Chen, and P.-H. Wang, “Comparison of laparoscopy and laparotomy in managing hemodynamically stable patients with ruptured corpus luteum with hemoperitoneum,” *The Journal of the American Association of Gynecologic Laparoscopists*. 2003;10(4):474–77.
- [12]. Tang LC, Cho HK, Chan SY. Dextroreponderance of corpus luteum rupture. A clinical study. *J Reprod Med*. 1985;30(10):764–768.
- [13]. Payne JH, Maclean RM, Hampton KK, Baxter AJ, Makris M. Haemoperitoneum associated with ovulation in women with bleeding disorders: the case for conservative management and the role of the contraceptive pill. *Haemophilia*. 2007;13(1):93–7.
- [14]. Sun WC, Li W, Chen QH, Tong JY. Corpus luteum haemorrhage a patient with aplastic anaemia. *Obstet Gynecol Res*. 2013;39(1):399–401.
- [15]. Cetinkaya SE, Pabuccu EG, Ozmen B, Dokmeci F. Recurrent massive hemoperitoneum due to ovulation as a clinical sign in congenital afibrinogenemia. *Acta Obstet Gynecol Scand*. 2011; 1:90(2):192–4.
- [16]. Hallatt JG, Steele CH, Snyder M (1984) Ruptured corpus luteum with hemoperitoneum: a study of 173 surgical cases. *Am J Obstet Gynecol*. 1984;149(1): 5–9

Suman Kumari. “Different Clinical Presentation Of Corpus Luteal cyst Haemorrhage: Case Report.” *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, vol. 18, no. 2, 2019, pp06–08.