

## Incidence, Clinical Presentation and Management of Ruptured Corpus Luteum Cyst in Tribal Population in South Rajasthan

P.K. Bhatnagar\*, Kamlesh\*\*, Meetu Babel\*\*

### Abstract

Rarely, corpus luteum hemorrhage may produce a life threatening emergency or may be fatal if not diagnosed or treated. 15 cases of ruptured corpus luteum cysts in the duration of three years presented at PIMS (Pacific Institute of Medical Sciences) Umarda, Udaipur, Rajasthan. The presentation was mimicking ruptured ectopic pregnancy and in three cases (20%) the patient just passed out suddenly while at home or at market place. They were brought to the hospital in unconscious state. In other cases (80%) the presentation was less dramatic and chronic. There had been no history of amenorrhoea, nausea and vomiting. Urine pregnancy test was negative. Refractory hypotension could not be improved by intravenous therapy and were referred to gynaecologist. Ultrasonography of abdomen showed fluid and clots in pouch of Douglas and ascites. Keeping ruptured ectopic in mind laparotomy was performed which revealed haemoperitoneum. However both side fallopian tubes were intact. Ovary on one side revealed ruptured corpus luteum cyst with fresh oozing from the site of rupture. Ovary was repaired and haemostasis ensured and the patients made an uneventful recovery. To conclude ruptured corpus luteum cyst should be kept in mind while treating gynae

emergencies with haemoperitoneum and acute abdominal pain.

**Keywords:** Corpus Luteum Cyst Ruptured Corpus Luteum Cyst Hypotensive Shock Ruptured Ectopic Gestation Emergency Laparotomy Haemoperitoneum.

### Introduction

Acute pelvic pain in women of childbearing age is a common and frequent cause for admission to gynaecology ward. Early diagnosis is necessary to preserve the reproductive systems and the life of the patient in severe cases. Haemoperitoneum may occur in the context of various gynecological emergencies; in some cases it could be a complication of a ruptured hemorrhagic corpus luteum. Hemorrhage from corpus luteum is known to occur in reproductive age group women. Corpus luteum hemorrhage may occur spontaneously or often triggered by coitus, trauma, exercise, or vaginal examination [1]. The risk of hemorrhagic complications of ovulation starts on the ovulation day and extends throughout corpus luteal life span, which is 14 days without pregnancy. Its presentation is variable depending on the extent of the hemorrhage but it can be massive requiring surgical intervention and blood transfusion [2]. Clinically it closely mimics ruptured ectopic gestation.

### Material and Methods

The study has been conducted at Pacific Institute of Medical Sciences (PIMS), village Umarda, Ambua Road, Udaipur, Rajasthan. All female patients attending emergency

\*Associate Professor,  
\*\* Assistant Professor,  
Dept. of Obstetrics and  
Gynaecology, Pacific  
Institute of Medical  
Sciences, Ambua Road,  
Village Umarda, Girva,  
Udaipur Rajasthan,  
313015.

**Brig (Dr) P.K. Bhatnagar,**  
Associate Professor, Dept.  
Obst and Gynae, Pacific  
Institute of Medical  
Sciences, Ambua Road,  
Village Umarda, Girva,  
Udaipur,  
Rajasthan-313015,  
E-mail  
Pk.Bhatnagar@Yahoo.Com

with amenorrhoea, OR no amenorrhoea, bleeding per vaginum and pain abdomen were included detailed history and physical examination, pulse, BP and temp were recorded. Vaginal examination was conducted tubo ovarian mass, tenderness or movement is recorded. Investigations included blood haemoglobin, complete blood count blood grouping ABO RH, BT CT PT INR urine routine urine pregnancy test and betaHCG evels. ultrasonography by abdominal and TVS route were conducted. Suspected cases of haemoperitoneum were taken up for Laparotomy and the results were recorded. Those with confirmed ruptured ectopic pregnancy cases were excluded.

### Observations

**Table 1:** Age distribution

Age in years	No of Patients	Percentage
Less than 20	2	13.34
21- 25	7	46.66
26-30	4	26.66
31 and above	2	13.34
	15	100

*Result:* Maximum cases 11 (73.33%) were in 21 to 30 years of age.

**Table 2:** Parity

Parity	No of patients	Percentage
Nullipara	2	13.34
Para 1	4	26.66
Para 2	4	26.66
Para 3 and above	5	33.36
	15	100

*Result:* Incidence of corpus luteum rupture increases with parity.

**Table 3:** Probable causes of corpus luteum haemorrhage

Probable cause	No of Patients	Percentage
Spontaneous	8	53.34
Ovulation induction drugs	2	13.34
Anti coagulant drugs	1	6.66
Post coital	1	6.66
Associated pelvic infection	2	13.34
Associated endometriosis	1	6.66
	15	100

*Result:* In most cases 8(53.34%) exact cause cannot be determined. However use of drugs and associated disease s of ovary are contributory factors.

**Table 4:** Clinical presentation

Clinical presentation	No of patients	Percentage
Catastrophic/ shock	3	20.00
amenorrhoea	2	13.34
Uterine Bleeding	10	66.66
Pain abdomen	15	100
Peritonism	12	92.00
Lump / tubo ovarian mass	5	33.34
Positive Urine preg test/ beta HCG	0	0.00
Positive ultrasonography	12	92.00
Anaemia HB less than 8gms%	5	33.34
Right ovary	12	92.00
Left ovary	3	20.00

*Results:* all patients had pain in the abdomen. 12(92%) had features of peritonism. 10(66.66%) Had uterine bleeding. 5 (33.34%) had palpable and tender Tubo- ovarian mass. 12(92%) had positive ultrasonography suggesting haemoperitoneum or tubo-ovarian mass. 3(20%) presented with acute shock and bout of unconsciousness and required resuscitation. 5(33.34%) had HB less than 8 gm%. 12(92%) cases had right ovary involvement and 3(20%) had left ovarian lesion.

**Table 5:** Management

Treatment	No of patients	Percentage
resuscitation	3	20
Blood transfusion	7	46.66
laparotomy	15	100
Salpingo-oophorectomy	8	53.33
Conservative surgery, wedge resection, suturing, cautery	7	46.66

*Result:* All cases required laparotomy. Most cases 10(66.66%) required salpingo-oophorectomy and 5(33.34%) cases had conservative surgery and ovary and tube could be conserved. 7 (46.66%) required blood transfusion and 3(20%) required immediate active resuscitation.



**Fig. 1:** laparotomy showing intact fallopian tubes and haemoperitoneum from ruptured corpus luteum cyst.

## Discussion

Present study shows - Maximum cases 11(73.33%) were in 21 to 30 years of age and Incidence of corpus luteum rupture increases with parity. - In most cases 8(53.34%) exact cause cannot be determined. However use of drugs and associated diseases of ovary are contributory factors. All patients had pain in the abdomen. 12(92%) had features of peritonism. 10(66.66%) Had uterine bleeding. 5(33.34%) had palpable and tender Tubo-ovarian mass. 12(92%) had positive ultrasonography suggesting haemoperitoneum or tubo-ovarian mass. 3(20%) presented with acute shock and bout of unconsciousness and required resuscitation. 5 (33.34%) had HB less than 8 gm% .

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Although the incidence of ovulation bleed or corpus luteum hemorrhage in the general population is not known and is rare in healthy lady with normal INR. The incidence of corpus luteum hemorrhage in teens might be increasing possibly due to sexual intercourse [3]. It also appears that women on anticoagulation tend to suffer more severe hemorrhage [4]. In this population corpus luteum hemorrhage can be fatal in 3% to 11% of cases and may recur in nearly 25% to 31% , even when INR is still within or below the therapeutic range [5]. Spontaneous hemoperitoneum may occur in various gynecological emergencies. The most common gynecological causes of spontaneous hemoperitoneum in women of childbearing age are ectopic pregnancy and ruptured corpus luteal cyst. More uncommon causes are uterine rupture, endometriosis, and ruptured hydrosalpinx [6].

Corpus luteum is a functional cyst developing in the luteal phase of the ovarian cycle which regresses spontaneously in corpus albicans when pregnancy does not occur. Being a thin-walled vascular structure corpus luteum is prone to hemorrhage even if bleeding is usually contained inside the cyst. Corpus luteum cyst-wall rupture is a rare complication that occurs most frequently in women in their reproductive age. When bleeding occurs, hemorrhage may spread into the peritoneal cavity causing hemoperitoneum [7].

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, and mild leukocytosis. These signs and symptoms are similar to gastrointestinal tract diseases. Patients may present a wide range of clinical signs, from no signs to severe peritoneal irritation which can be confused with, for example, acute appendicitis. The evaluation of serum  $\beta$ hCG-levels is necessary to differentiate ruptured corpus luteal cyst from ruptured ectopic pregnancy, which may have a similar presentation. A persistent corpus luteum may be associated with delayed menstrual cycle. Occurrence of a corpus luteum rupture may be indicative of the presence of an intrauterine pregnancy. Therefore, a ruptured corpus luteum cyst rupture should be considered even in the presence of a positive pregnancy test. Various imaging modalities play an important role in diagnosing the ruptured corpus luteum cyst. Usually, USS is the first imaging modality due to its high sensitivity and fast and easy access. On the other hand, it can be difficult to localize the site of the disease and bleeding. Bennett in ruptured corpus luteal cyst USS 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) [8]. Free hypoechoic fluid may contain focal collections of higher echogenicity (e.g., clotted blood) in the pelvis. On CT examination, corpus luteum usually appears like a well-circumscribed unilocular adnexal lesion, rarely bilocular. The cyst walls appear slightly thickened (<3 mm) and show a characteristic inhomogeneous contrast enhancement after administration of contrast medium due to increased vascularity. The cystic content is mixed with a high attenuation component (45–100 HU) and in some cases it presents a “fluid-fluid hematocrit” level [9]. The treatment targets at preserving ovarian function as well as at eliminating the source of bleeding. Thus a conservative cystectomy or simple suturing may be sufficient to stop bleeding. It is described more from the right ovary as it is believed that the recto-sigmoid colon helps protect the left ovary from trauma or it is due to a higher intraluminal pressure on the right side because of the differences in ovarian vein architecture [10]. The accurate diagnosis depends on the clinical presentation, results of the work-up and index of suspicion. Negative pregnancy test is important to exclude ruptured ectopic pregnancy [11].

## Conclusion

Although a rare entity ruptured corpus luteum cyst may mimic ruptured ectopic gestation. In absence of

positive pregnancy test, corpus luteum haemorrhage leading to haemoperitoneum should be kept in suspected list so that major mortality or morbidity can be prevented. Treatment aims at ovarian preservation and stopping of haemorrhage followed by supportive blood transfusion and antibiotics.

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