

Original Research

Assessment of cases of rupture corpus luteum- A clinical study

Ritu Saxena¹, Anjana Agarwal²

^{1,2}Associate professor, Department of Gynaecology and Obstetrics, Hind Institute of medical sciences Safedabad Barabanki UP

ABSTRACT:

Background: Corpus luteum cyst is a functional cyst which is formed in the second phase of ovarian cycle. The present study was conducted to assess the cases of ruptured corpus luteum in females. **Materials & Methods:** The present study was conducted in the department of Gynaecology & Obstetrics. It comprised of 56 cases of ruptured corpus luteum. USG was performed in all cases. **Results:** Patients with <20 years were 12, 20-30 years were 38 and 31-40 years were 6. The difference was significant (P< 0.05). 30 were nulliparas and 26 were multiparas. < 14 days, pregnancy test was negative in 10 cases, between 15-28 days were 34 negative cases and between 29-60 days were 12 negative cases and 2 positive cases, >60 days had 3 positive cases and 15-28 days had 1 positive case. **Conclusion:** Authors found that ruptured corpus luteum is now common findings in women. USG may be useful in these cases. **Key words:** Corpus luteum, Multiparas, USG.

Received: 11 April, 2019

Revised: 26 April, 2019

Accepted: 27 April, 2019

Corresponding Author: Dr. Anjana Agarwal, Associate professor, Department of Gynaecology and Obstetrics, Hind Institute of medical sciences Safedabad Barabanki UP

This article may be cited as: Saxena R, Agarwal A. Assessment of cases of rupture corpus luteum- A clinical study. J Adv Med Dent Res 2019;7(5):144-147.

INTRODUCTION

A ruptured functional ovarian cyst is a frequent cause of acute pelvic pain in women of reproductive age.¹ The disease course varies from no symptoms or signs to severe peritoneal irritations and even life-threatening shock. Therefore, even though ovarian cyst rupture is a type of physiologic event and is self-limiting with conservative management, it occasionally requires surgical intervention when accompanied by hemodynamic instability, severe persistent pain, diagnostic uncertainty, or large amount of hemoperitoneum.² Although any functional ovarian cyst can present as a hemorrhage or rupture, the increased vascularity of the ovary in the luteal phase may increase the risk of rupture and bleeding of the corpus luteal cyst. Although several previous studies have reported a rate of surgery for ruptured corpus luteal cysts with hemoperitoneum as high as 80%.³

Corpus luteum cyst is a functional cyst which is formed in the second phase of ovarian cycle. The natural history typically includes regression in the absence of pregnancy or

regression after the first trimester of pregnancy and maturation of placenta.⁴ It is highly vascular structure and occasionally a subject of rupture. Blood loss is usually self-limited, but rarely can lead to massive hemoperitoneum and even death. Due to variable clinical presentation and sonographic appearance, the potential for misdiagnosis is high.⁵ The present study was conducted to assess the cases of ruptured corpus luteum in females.

MATERIALS & METHODS

The present study was conducted in the department of Gynaecology & Obstetrics. It comprised of 56 cases of ruptured corpus luteum. All patients were informed regarding the study and written consent was obtained. Ethical clearance was taken from institutional ethical committee.

General information such as name, age, gender etc. was recorded. A thorough clinical examination was performed in all patients. All underwent ultrasonography (USG). Parity, nausea, vomiting and day of menstrual cycle was

recorded. Urine pregnancy test was performed. Results thus obtained were subjected to statistical analysis using chi-

square test. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Age (years)	Number	P value
<20	12	0.01
20-30	38	
31-40	6	

Table I shows that patients with <20 years were 12, 20-30 years were 38 and 31-40 years were 6. The difference was significant (P< 0.05).

Graph I Distribution of patients

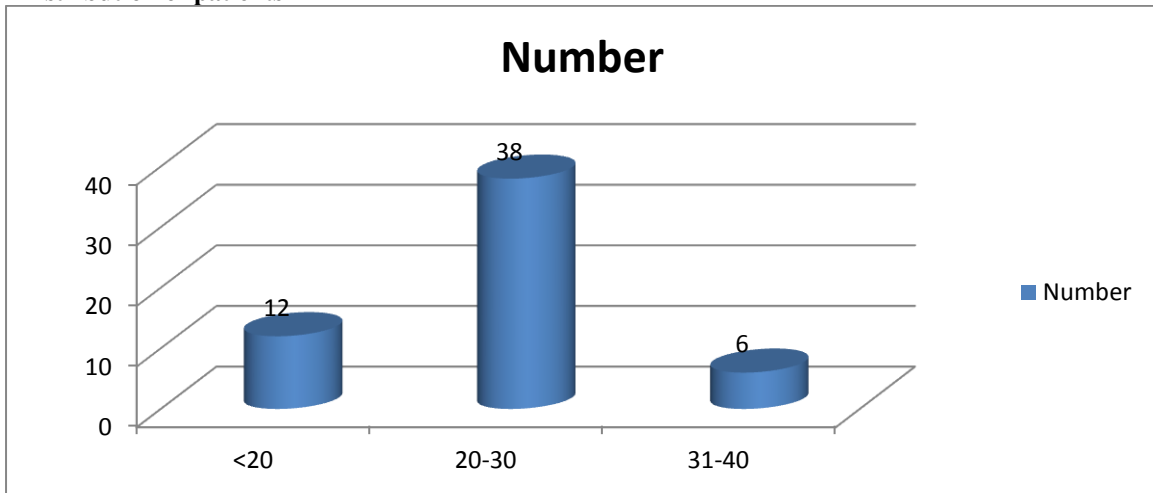


Table II Parity of patients

Parity	Number	P value
Nulliparas	30	0.51
Multiparas	26	

Table II, graph II shows that 30 were nulliparas and 26 were mutiparas.

Graph II Parity of patients

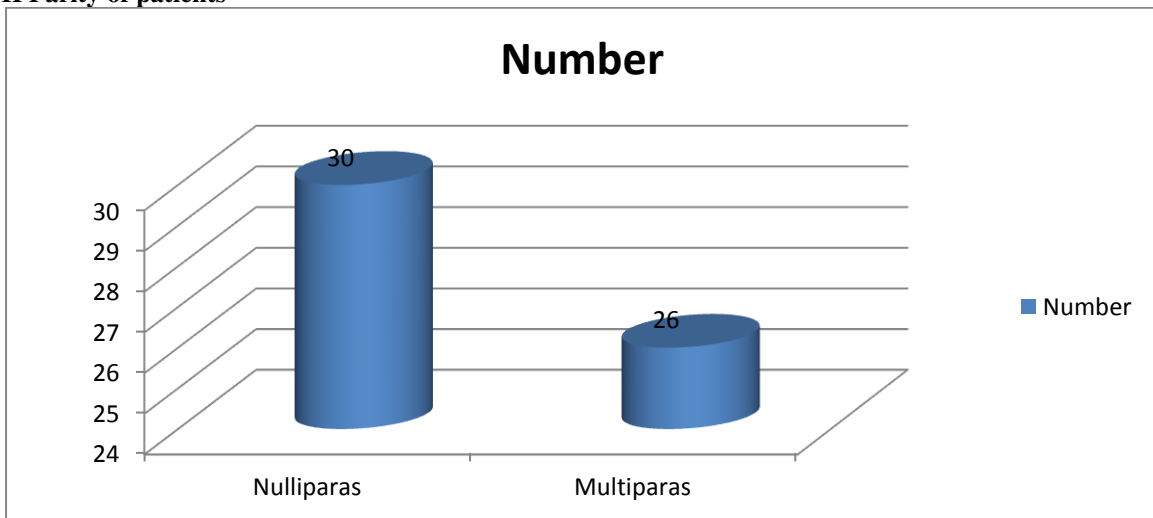
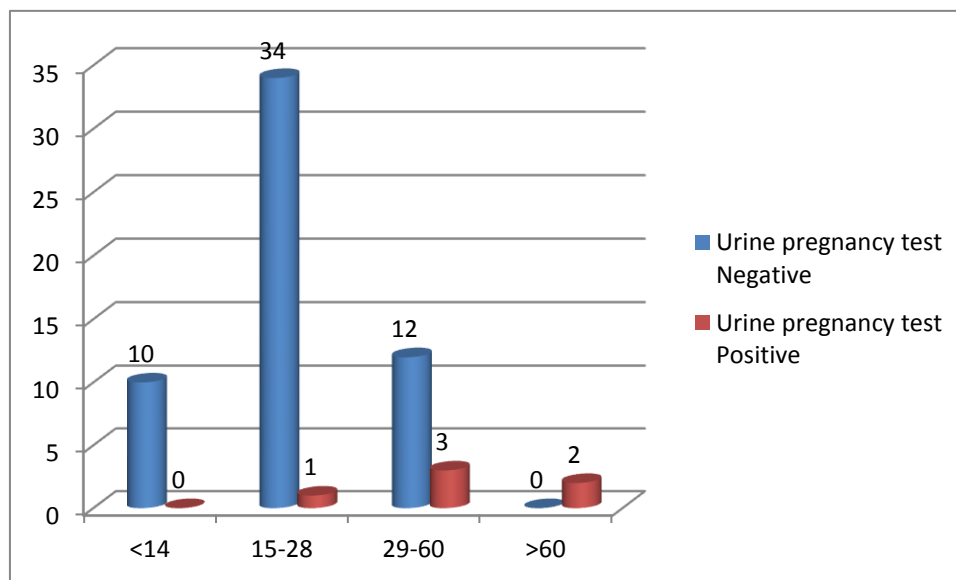


Table III Menstrual cycle and pregnancy test

Days from last menstrual period	Urine pregnancy test	
	Negative	Positive
<14	10	0
15-28	34	1
29-60	12	3
>60	0	2

Table III, graph III shows that in < 14 days, pregnancy test was negative in 10 cases, between 15-28 days were 34 negative cases and between 29-60 days were 12 negative cases and 2 positive cases, >60 days had 3 positive cases and 15-28 days had 1 positive case.

Graph III Menstrual cycle and pregnancy test



DISCUSSION

Corpus luteum cysts are thin-walled, functional vascular structures, and most of them are predisposed to rupture. The etiology for cyst rupture is not known, although it has been suggested that the increased vascularity of the ovary in the luteal phase and pregnancy may predispose to rupture of a corpus luteal cyst.⁶ Operative findings of ruptured corpus luteal cysts often reveal that the rupture involved the arteriole of the ovary, which produces active bleeding with resultant hemoperitoneum. Therefore, active bleeding detected on a CT scan is suggestive of ruptured corpus luteal cyst. However, the positive active bleeding of a corpus luteal cyst rupture on CT and its relationship with surgical treatment have not been described previously.⁷ The present study was conducted to assess the cases of ruptured corpus luteum in females.

In present study, patients with <20 years were 12, 20-30 years were 38 and 31-40 years were 6. Yoffe et al⁸ evaluated the determinant pretreatment CT findings that can predict surgical intervention for patients suffering from corpus luteal cyst rupture with hemoperitoneum. The analysis of CT findings included cyst size, cyst shape,

sentinel clot sign, ring of fire sign, hemoperitoneum depth, active bleeding in portal phase and attenuation of hemoperitoneum. Comparative analysis revealed that the presence of active bleeding and the hemoperitoneum depth were significantly different between the surgery and conservative management groups and were confirmed as significant CT findings for predicting surgery, with adjusted odds ratio (ORs) of 3.773 and 1.318, respectively. On the receiver-operating characteristic curve analysis for hemoperitoneum depth, the optimal cut-off value was 5.8 cm with 73.7% sensitivity and 58.6% specificity. In cases with a hemoperitoneum depth > 5.8 cm and concurrent active bleeding, the OR for surgery increased to 5.786.

We found that 30 were nulliparas and 26 were multiparas. In < 14 days, pregnancy test was negative in 10 cases, between 15-28 days were 34 negative cases and between 29-60 days were 12 negative cases and 2 positive cases, >60 days had 3 positive cases and 15-28 days had 1 positive case.

The distinction between normal early pregnancy and early pregnancy complications can be quite challenging. Visualization of a gestational sac within the uterus is the

earliest sonographic confirmation of an intrauterine pregnancy. Prior to this, thickening of the endometrium or intradecidual sign might be recognized, but these can not be taken as reliable indicators of pregnancy. Thickening of the endometrium can be seen in the late luteal phase of the menstrual cycle, in the very early intrauterine pregnancy, in ectopic pregnancy or in association with early pregnancy resolution.⁹

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 β 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.¹⁰

CONCLUSION

Authors found that ruptured corpus luteum is now common findings in women. USG may be useful in these cases.

REFERENCES

1. Hoffman R, Brenner B. Corpus luteum hemorrhage in women with bleeding disorders. *Womens Health (Lond Engl)* 2009; 5: 91-95.
2. Tang LC, Cho HK, Chan SY, Wong VC. Dextroreponderance of corpus luteum rupture. A clinical study. *J Reprod Med* 1985; 30: 764-768.
3. Hallatt JG, Steele CH, Jr, Snyder M. Ruptured corpus luteum with hemoperitoneum: a study of 173 surgical cases. *Am J Obstet Gynecol* 1984; 149: 5-9.
4. Raziel A, Ron-El R, Pansky M, et al. Current management of ruptured corpus luteum. *Eur J Obstet Gynecol Reprod Biol* 1993; 50: 77-81.
5. Wang, 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: 93-97.
6. Jamal A, Mesdaghinia S. Ruptured corpus luteum cysts and anticoagulant therapy. *Int J Gynaecol Obstet* 2002; 76: 319-320.
7. Jeffrey RB, Laing FC. Echogenic clot: a useful sign of pelvic hemoperitoneum. *Radiology* 1982; 145: 139-141.
8. Yoffe N, Bronshtein M, Brandes J, Blumenfeld Z. Hemorrhagic ovarian cyst detection by transvaginal sonography: the great imitator. *Gynecol Endocrinol* 1991; 5: 123-129.
9. Bjerke BS, Kliwer MA, Paulson EK. Ovarian cyst rupture causing hemoperitoneum: imaging features and the potential for misdiagnosis. *Abdom Imaging* 1999; 24: 304-308.

10. Hallat, Pulkkinen MO, Ruttner B, Sauvage JP, Wiest WG. The significance of the human corpus luteum in pregnancy maintenance. I. Preliminary studies. *Am J Obstet Gynecol* 1972; 112: 1061-1067.