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CASE SERIES

Corpus luteum haemorrhage in patients on oral anticoagulants in a tertiary care centre North Karnataka: a case series

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ABSTRACT

Ruptured corpus luteal cyst with hemoperitoneum in patients on anticoagulants for medical condition is a life threatening situation. Management depends on the presentation and hemodynamic stability of the patient. In this case series 5 cases presented with complaints of acute pain abdomen and distention with hemoperitoneum with deranged coagulation profile between day 16 – day 25 of their menstrual cycles. Emergency laparotomy was performed after resuscitation with blood and blood products. Relaparotomy was done in 2 cases for recurrence of complaints. Discharged was given with normalized coagulation profile and on adjusted dose of anticoagulants.

Keywords: Anticoagulants, corpus luteum, hemoperitoneum.

Ovulation and corpus luteal formation is a physiological process. Ovulation represents a slow extrusion of the oocyte through a bleb like opening called stigma in the follicle. After ovulation, the remaining follicular shell is transformed into the primary regulator of the luteal phase: the corpus luteum. The basement membrane of the corpus luteum degenerates to allow proliferating blood vessels to invade the granulosa – luteal cells in response to secretion of angiogenic factors such as vascular endothelial growth factors. Haemorrhage into the central cavity of the corpus luteum is seen normally. Corpus luteal cyst rupture may occur anytime from the day of ovulation up to two weeks (normal life span of corpus luteum is two weeks). This in a healthy woman in her reproductive period may go unnoticed, or may lead to haemoperitoneum, which may or may not require much of medical or surgical attention depending on the presentation. But, women who are on anticoagulants for prosthetic heart valves, are at a higher risk for massive haemorrhage from ruptured corpus luteal cyst which may be life threatening or even fatal[1]. Clinical presentations may be similar to that of a ruptured ectopic pregnancy. Adequate awareness and great suspicion is required to diagnose and treat appropriately. Here we are presenting a series of women on anticoagulants for prosthetic heart valves presenting with ruptured corpus luteal cyst.

Materials and methods

This is a retrospective analysis conducted over a period of 2 years, between January 2018 to December 2020. Data of all the women who had reported to our inpatients department during that period were searched and analysed. The ones presented with haemoperitoneum secondary to have corpus luteal cyst rupture and rupture ectopic were narrowed down. From this data the women who were on anticoagulants were selected for the series. Each episode of presentation to the hospital were taken from the records and noted down. Over 2 years of retrospective analysis, 52 patients presented with haemoperitoneum, the diagnosis was narrowed down to 10 of corpus luteal cyst rupture (8 on

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anticoagulants) and 42 cases of ruptured ectopic.

Results

Table 1: Clinical presentations, investigations, the management protocols and the findings

Case no.	Age / parity	Clinical presentation	Menstrual history	Cardiac lesion and anticoagulants	Blood parameters	Resuscitative measures	Intraoperative findings/ procedure
1-A	26 yrs Nulligravida	Complaints of pain abdomen and spotting per vagina since 2 days. Came in shock.	Regular, day 19 of her cycle	Mitral valve and tricuspid valve replacement for RHD. Since 5 yrs on warfarin 7mg/10mg/10mg.	Hb-4.9 gm/dl, Platelet -2.66 lakhs/ cumm, INR -9.0	Crystalloids 2 units rush given, 2 units PRBC, 3units FFP transfused.	Haemoperitoneum of two and half litres. Right ovary ruptured corpus luteal cyst – right ovariotomy done
1-B	27yrs Nulligravida	Complaints of pain abdomen and vomiting since a day.	Regular day 23 of cycle	Mitral valve and tricuspid valve replacement for RHD. Since 6 years warfarin 7mg/10mg/10mg.	Hb – 7.2 gm/dl, Platelets1.7lakhs/ cumm, INR – 5.6	2 units crystalloids, 4 units FFP, 2 units PRBC transfused	Haemoperitoneum of 1 litre Ruptured left corpus luteal cyst – left ovariotomy done
1-C	27 yrs nulligravida	Post op day 40 of laparotomy, Abdominal distention and breathlessness.	-	On warfarin	Hb- 4 g/dl INR- 9	3 units PRBC 4 units FFP 2 units crystalloids	Surgical site bled, secondary haemorrhage,.Haemostasis achieved by ligation and electrocoagulation
2-A	24 yrs Nulligravida	Complaints of pain abdomen since 3 days	Regular, day 17 of cycle	Mitral valve replacement for RHD. Since 1 ½ yrs on Tab. Acitrom 2mg	Hb-7.2 gm/dl, Platelets 2.3 lakhs/cumm INR -4.46	2 units crystalloids, 1 units PRBC, 4 units FFP transfused.	Haemoperitoneum of 1 litre. Ruptured left corpus luteal cyst with left tube been tortuous and edematous – left salpingo-ovariotomy
2-B	24yrs Nulligravida	Complaints of pain abdomen since a day	Regular, day 16 of cycle	Mitral valve replacement for RHD. Since 1 ½ yrs on tab. Acitrom 2mg	Hb – 6.6 gm/dl, Platelets 3.8lakhs/ cumm, INR-3.8.	2 units crystalloids, 1 units PRBC, 4 units FFP	Hemoperitoneum of 1 litre Right ruptured corpus luteal cyst-right salpingo-ovariotomy
2-C	24 yrs nulligravida	Presented in shock	-	-	-	-	Died
3	30yrs Para 1 living 1	Complaints of pain abdomen since 2 days	Regular, day 21 of cycle	Mitral valve replacement. Since 4yrs on tab. Acitrom 2 mg	Hb -5.1gm/dl, Platelets – 3.37 lakhs/cumm, INR – 3.97	2 units crystalloids 1 units PRBC 4 units FFP transfused	Haemoperitoneum of 1.5 litres. Ruptured right corpus luteal cyst – right salpingo - ovariotomy
4	43yrs Para 2 living 2	Complaints of pain abdomen since a week and spotting per vagina since 4 days	Regular, day 16 of cycle	Mitral valve replacement. Since 3 yrs on tab. Acitrom 2mg	Hb -3.8 gm/dl INR – 13.8	2 units of PRBC 5 units of FFP	Haemoperitoneum of 1.5 litres. Total abdominal hysterectomy with bilateral salpingo-ovariotomy

In this series we had 4 patients in reproductive age group who were on anticoagulants for prosthetic heart valves for an average of one and half to 5 years (table 1). We found no significant difference on the side of ovary involved. We have seen recurrence of these events in two individuals for over 3 times in a year, which turned fatal in one patient. In this series 1-A and 1-B are the same individual who presented with complaints of pain abdomen and her first visit (1-A) she came in shock and was resuscitated, and underwent emergency laparotomy (right ovariotomy), patient was discharged on post op day 12 with continuation of tab. Warfarin 7.5mg/10mg/10mg with her INR on discharge being 1.60. One year later she presented (1-B) with complaints of pain abdomen and vomiting and her USG findings was suspected ruptured ovarian cyst with haemoperitoneum, so underwent emergency laparotomy with left ovariotomy (figure 1) and discharged on post op day 9, with her INR been 1.3 at the time of discharge . One month later, she again presented with pain abdomen and distension of abdomen. USG showed massive haemoperitoneum and exploratory laparotomy revealed haemoperitoneum of one and half litres due to surgical site bleed, haemostasis was achieved. On postoperative day 17 discharged with INR -1.5 and on tab. Warfarin 7.5mg/10mg/10mg, she is under follow up.

2-A, patient presented with complaints of pain abdomen and UPT (urine pregnancy test) was negative. An USG was done which showed suspected ruptured haemorrhagic ovarian cyst with haemoperitoneum and so patient underwent emergency laparotomy with left oavarian cystectomy. Patient was discharged on postoperative day 13 and was continued with tab. Acitrom 2mg, and her INR at the time of discharge being 1.79. One and half month later, she (2-B) came with complaints of pain abdomen and USG showed right adnexal complex cyst with haemoperitoneum for which patient underwent right salphingo-ovariotomy, patient discharged on postoperative day 14 with her INR at the time of discharge being 1.32. Two months later patient came in shock and she could not be revived back. Both of these women were offered hormonal contraceptives but they refused the same as they were nulliparous and were keen on conception.

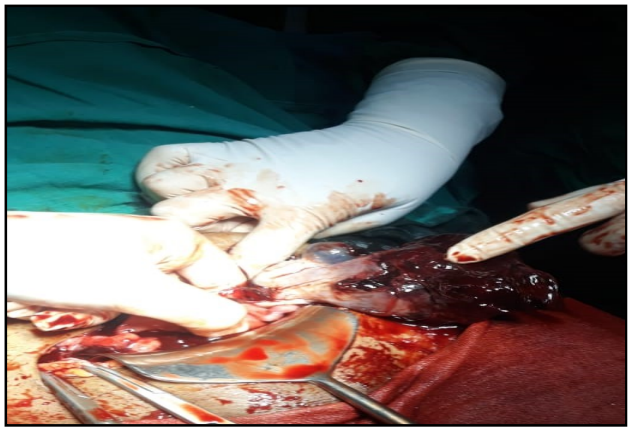

Figure 1: Ruptured ovarian cyst with haemoperitoneum

As one of the patients was over 43 years and had completed the family they opted for bilateral oophorectomy over hormonal suppression of ovulation. All of these women were restarted on anticoagulants after discussion with the cardiologist and were sent back home with normalized coagulation profile.

Discussion

Corpus luteal cyst rupture can have varied presentation. In reproductive age group, women presenting with haemoperitoneum we need to suspect between ectopic pregnancy and corpus luteal cyst rupture as the most common diagnosis and appropriate management to be done as it is a life threatening condition. It can be fatal in 3-11% as reported by Ho WK et al [2] and may recur in nearly 25-31% patients [3-5]. All the patients in our study underwent surgical management as they had presented in shock. Most of the patients in our study presented between 16-21 days of cycle that is the secretory phase, as compared to the 14-35 day of cycle in study by V Sivanesaratnam et al [6].

These women need multidisciplinary management involving cardiologist, gynaecologist and anesthetist for a better outcome. These patients need a proper evaluation and management with blood and blood products like platelets and FFPs to stabilize the deranged coagulation profile, and restarting of anticoagulants with adequate and well stabilized INR values post procedures. Newer anticoagulants with lesser side effects can be considered.

These women can be offered a choice of hormonal contraceptives to suppress ovulation and prevent these advert events. As there is always a debate on the thrombogenic effects of hormonal supplements, low dose hormones or progesterone only components are considered safer in these situations to be considered for ovulation suppression [7]. The desire to fulfill a family can be completed by offering a choice of adoption.

Conclusion

A female of reproductive age group on anticoagulants presenting with pelvic pain with haemoperitoneum, we should have high suspicion of possibility of a corpus luteum rupture, as ruptured ectopic pregnancy can have similar clinical presentation. Surgical intervention becomes the mode of treatment in a haemodynamically unstable state. Recurrences can be prevented by long term ovulation suppression. Main concerns as to when to conserve or surgically intervene and restart the anticoagulants effectively, still remains a dilemma.

Conflict of interest: None. **Disclaimer:** Nil.

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