

Life-Threatening Haemoperitoneum from a Simple Ovarian Cyst

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Abstract

Ovarian enlargement of non-neoplastic origin is due to the accumulation of fluid in the functional unit. Follicular cysts are the most common physiological functional ovarian cysts. Definitive diagnosis is often difficult to establish as the clinical symptoms may be similar to acute appendicitis, acute cholecystitis, ovarian torsion or ectopic pregnancy. Spontaneous hemoperitoneum secondary to follicular cysts are rare but may be life-threatening.

The case: The following case study is of a 20 year old female who presented to the emergency ward with severe right lower abdominal pain. On pelvic ultrasound a thick-walled cystic space occupying lesion (SOL) of size 70mm x 56mm was noted in the right side with peripheral vascularity and peripheral tiny follicles. Mild to moderate ascites was also seen. An emergency laparotomy was performed. The histopathology of the ovarian cyst was reported as follicular cyst with no evidence of malignancy.

Conclusion: This case study emphasizes the optimal management of ruptured ovarian cyst and the elimination of differential diagnoses.

Keywords: Ovarian cyst, hemoperitoneum, laparotomy

Introduction

Benign non-neoplastic lesions of the ovary may be Follicular cysts, Corpus luteum cyst, Theca lutein and granulosa lutein cysts, Polycystic ovarian syndrome or Endometrial cyst (chocolate cyst). Follicular cysts are usually multiple and small as seen in cases of cystic glandular hyperplasia of the endometrium or in association of fibroid. Hyperestrinism is a probable cause. However, an isolated cyst may be formed in an unruptured Graafian follicle, which may be enlarged but usually not exceeding 5 cm. The cyst is lined by typical granulosa cells without lutein cells or the cells may be flattened due to pressure. [1]

In a study by Kim JH et al. [2] 80.8% women diagnosed with ruptured ovarian cyst with hemoperitoneum were managed conservatively and 19.2% of the patients required a surgical intervention. The relatively low rate of surgical intervention is due to: 1) Recent advances in imaging modalities such as CT could allow for the diagnosis of a different cause of a surgical abdomen and the avoidance of surgical intervention. [3] Gynaecological events that may have a similar clinical presentation to an ovarian cyst include ectopic pregnancy, pelvic inflammatory disease and a tubo-ovarian abscess. Non-gynaecological events include appendicitis or an appendix abscess, diverticulitis, intestinal obstruction or urinary tract infection or ureteric calculi. [3]

2) According to Bottomley [3], surgical intervention is only considered in cases of “1. Hemodynamic compromise, 2. Diagnostic uncertainty or likelihood of torsion, 3. No relief of symptoms within 48 hours of presentation, 4. Increasing hemoperitoneum on ultrasound or a falling haemoglobin concentration”

Case Report

A 20 year-old nullipara female presented to the emergency ward with sudden onset of severe right lower abdominal pain from 8-12 hours before admission on the fifth day of the menstrual cycle. Pain was exacerbated on movement. An abdominal examination revealed tenderness in the suprapubic region and right iliac fossa on superficial palpation. Patient presented with a history of prolonged menstrual cycle with periods of amenorrhoea for which she had been prescribed norethisterone tablets.

An abdominal ultrasound revealed a thick walled cystic SOL of size 70mm x 56mm in the pelvis centrally and in the right side with peripheral stromal vascularity and peripherally located tiny follicles. Mild to moderate ascites also noted. On further investigation by MRI of whole abdomen the right ovary appeared enlarged (8.6cm x 8cm in size) with a large cystic component inside. The wall is thick and edematous without any obvious hemorrhagic component, internal septation or solid element inside.

On examination, her general condition was fair, revealed a compos-mentis. The vital sign was stable, with decreased blood pressure 100/60 mmHg. Pulse 112 times per minute and normal temperature was noted. Her weight was 45 kg, height 157 cm in BMI was 18.26 kg/m². The results of the laboratory blood test showed haemoglobin level of 10.3 g/dL, white blood cell count of 18300/ cu.mm and platelet count of 269000/ cu.mm.

An emergency laparotomy was performed. Hemoperitoneum was seen due to ruptured right ovarian cyst. Polycystic changes were also observed in the left ovary. Right ovarian cystectomy was performed.

At laparoscopy, 1.5 L of blood and clots were drained. The haemorrhage was successfully stopped by diathermy. Haemodynamic status was stabilised and the abdomen was closed in layers. There was no evidence of endometriosis as underlying pathology.

Patient had a drop in haematocrit for which she was transfused 2 units of blood, after which she remained stable. She was prescribed antibiotics (pipo- piperacillin+tazobactam and metronidazole) due to raised white cell count on admission and spiking temperatures. The white cell count was almost normal at discharge. There were no postoperative complications and the patient was discharged on day 2. The histopathology of the ovarian cyst was reported as follicular cyst with no evidence of malignancy.

Discussion

Idiopathic spontaneous hemoperitoneum is a rare cause of acute abdominal pain but it may be life-threatening. Therefore, the underlying cause needs to be identified and treated accordingly. Spontaneous hemoperitoneum presents with acute abdominal pain radiating to the back or shoulder tip, nausea/vomiting, bloating/distension, pain intensely exacerbated by movement, decreased urine output, cold peripheries and decreased consciousness.

Massive hemoperitoneum may lead to symptoms of hypovolemic shock. [4]

The aetiology of spontaneous haemorrhage is as follows: [5]

- 1. Gynaecological causes:** *Rupture of ovarian cyst* is the most common cause of spontaneous hemoperitoneum in young females. Most cases do not require surgical intervention. [3] Other causes may include *ectopic pregnancies* and *endometriosis*. Sonography can detect fluid in the peritoneum but we cannot determine if it is blood.
- 2. Hepatic causes:** This is due to the rupture of previously undetected liver lesions which may be malignant (such as *hepatocellular carcinoma* which presents in patients with underlying cirrhosis or viral hepatitis) or benign (*larger adenomas*)

3. **Splenic causes:** Splenic rupture due to *blunt abdominal trauma*. It is most commonly associated with splenic infection such as *cytomegalovirus*, *malaria* and *Epstein-Barr virus* or splenic infiltration such as in *lymphoma* or *leukaemia*.
4. **Vascular causes:** Causes of arterial hemoperitoneum include *aneurysm*, *pseudoaneurysm* or *mycotic aneurysm with rupture*. Causes of venous peritoneum include *varices*. Rupture of utero-ovarian vessels during late stages of *pregnancy* or due to increased intra-abdominal pressure during *labour* may also occur.
5. **Coagulopathic causes:** Patients who are anticoagulated, those under haemodialysis treatment or those who have deficiency of clotting factors due to liver damage or congenital abnormalities such as haemophilia. [5]

The onset of pain helps to differentiate ovarian cyst rupture from torsion as many women are able to identify when the pain started in case of rupture as opposed to torsion where the pain has a “waxing and waning onset”. [3]

A urinary pregnancy test must be performed in women of reproductive age presenting with acute abdominal pain. Full blood count, urea and electrolytes should be taken. White blood count may be raised in torsion but also with appendicitis or pelvic abscess. Transvaginal or transabdominal ultrasounds should be performed at time of presentation. [3]

Conclusion

This case report highlights the management of spontaneous hemorrhage due to ruptured ovarian cyst and elimination of differential diagnoses. Management is normally conservative. Rupture of cyst may be associated with free peritoneal fluid as a diagnostic finding on ultrasound.

Conflict of Interest

None

Consent of the patient

Obtained from the patient, to circulate this information and patient was also assured of the confidentiality of the same.

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References

1. Dutta, D. C. Dutta's Textbook of Gynecology. 10th ed., Jaypee Brothers Medical Publishers, 2022.
2. Kim, Jee Hyun et al. “Successful conservative management of ruptured ovarian cysts with hemoperitoneum in healthy women.” PloS one vol. 9,3 e91171. 7 Mar. 2014, doi:10.1371/journal.pone.0091171

3. Bottomley, Cecilia, and Tom Bourne. "Diagnosis and management of ovarian cyst accidents." Best practice & research. Clinical obstetrics & gynaecology vol. 23,5 (2009): 711-24. doi:10.1016/j.bpobgyn.2009.02.001
4. Lucey, Brian C et al. "Spontaneous hemoperitoneum: causes and significance." Current problems in diagnostic radiology vol. 34,5 (2005): 182-95. doi:10.1067/j.cpradiol.2005.06.001
5. Nyhsen, Christiane, and Syed Umair Mahmood. "Life-threatening haemoperitoneum secondary to rupture of simple ovarian cyst." BMJ case reports vol. 2014 bcr2014205061. 25 Nov. 2014, doi:10.1136/bcr-2014-205061