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Successful Conservative Management of Massive Hemoperitoneum in Patients on Anticoagulation with Ruptured Hemorrhagic Ovarian Cyst: A Report of Two Cases and Review of Literature

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ABSTRACT

Management of hemoperitoneum due to ruptured ovarian cyst in patients on anticoagulation is a dilemma. Low threshold of surgery intervention may increase the risk of some events operatively. There is a trend for less invasive treatment in highly selected patients. We present two cases of massive hemoperitoneum due to ruptured ovarian cyst that were on anticoagulation. Successful conservative management was done in both of them and one patient, due to refractory abdominal pain, required interventional radiologic drainage, instead of surgery approach with good outcome. Ovulation suppression was started in both of them with regular uneventful follow up heretofore. Less invasive management is preferred in carefully selected patients of hemoperitoneum in women on anticoagulation. Ovulation suppression to avoid recurrence must be emphasized.

Keywords: Hemoperitoneum, Anticoagulation, Ovarian Cysts, Anticoagulant

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Introduction

During the women's reproductive years, the cyclic ovarian function produces follicular growth and resorption that result in ovulation, but some problems in physiologic process are related to functional adnexal cyst such as follicular or corpus luteum cysts. These masses may undergo acute hemoperitoneum due to ruptured cysts, and it's common not only in patients with coagulopathy but also in healthy women.

In hemorrhagic cyst and hemoperitoneum, ultrasound evaluation may show more complexity given the presence of blood and fibrin stranding and with various radiological appearances due to stage of clot evolution with time **(1-4)**.

Blood loss in hemoperitoneum may be excessive and life-threatening especially in patients on anticoagulant therapy. Deciding for this kind of hemoperitoneum management in this high risk population on anticoagulation with increased risk of thromboembolic events is challenging. Due to high Interventional Normalized Ratio (INR) in these patients, intraoperatively bleeding may increase emergency surgery complications. Moreover, reversal of anticoagulation to control ongoing hemorrhage and for safe surgery may increase thromboembolism events. Choosing of conservative management or surgical intervention depends on the patient's vital signs stability.

We present, in this study, two cases of hemoperitoneum due to ovarian ruptured cyst that were on anticoagulation with warfarin in the field of heart disease. Both of them had a successful conservative management and one of them, in attention to severe

abdominal discomfort, required intervention radiologic drainage.

Ovulation suppression with progesterone to prevent relapses, was done for both patients.

Case Presentation

Case 1

A 51- year-old woman, gravida 3, para 2 with weakness and acute abdominal pain with no menstrual complaint was referred to our hospital.

Her previous history included Diabetes Mellitus (DM) and Mitral Valve Stenosis (MS) and Atrial Fibrillation (AF) that had undergone percutaneous trans mitral commissurotomy eight years back. She was on anticoagulant therapy with warfarin five mg per day and other drug history, Digoxin, Spironolactone, Lasix, Bisoprolol and Glibenclamide.

On clinical examination, she had a pallor, a pulse rate of 120- 130 /Min, a blood pressure of 100/60 mm/Hg. There was abdominal distension with moderate disseminated tenderness. On bimanual examination, fullness in Cul-de-sac and tenderness was revealed.

Laboratory investigation revealed a negative HCG, hemoglobin value of six mg/dl, white blood cell count of 15000/mm^3 with 83% neutrophils, platelet count of 195000, an INR of four, and normal tumor marker.

She had an atrial fibrillation rhythm and mild mitral stenosis and regurgitation on echocardiography.

Ultrasound showed a right ovarian cyst sized 4×6 cm with heterogenic echogenicity along with free fluid of around 2000 cc suggestive of a hemoperitoneum.

She was undertaken with conservative management with strict vital sign monitoring. Consultation with a cardiologist was done.

Warfarin was withheld and four units of Fresh Frozen Plasma (FFP) and four units of packed cell to correct her anemia were transfused. Due to persistent abdominal pain and tense distention, she underwent drain placement as a decompressive method by an interventional radiologist, instead of open laparotomy.

Two liters of hemorrhagic fluid was drained and she achieved clinically abdominal pain improvement. After one week she had a hemoglobin value of 11.6 mg/dl, white blood cell count of 9500, INR of 1.8 and an MRI report of small free fluid with 7×12 cm heterogeneous signal mass in favor of hemorrhagic cyst.

The therapeutic dose of low molecular weight heparin (LMWH) that had been started on the third day was replaced by warfarin based on cardiologist opinion. She was discharged in good health and after one week of warfarin therapy, the drain tube was removed without complication. She was prescribed GnRH agonist (Decapeptyl) for ovulation suppression. On regular follow-up, after three months, ultrasound showed complete remission of ovarian cyst.

Case 2

A 24- year-old unmarried girl with a prosthetic pulmonary valve on anticoagulant therapy was admitted to our emergency department with abdominal pain and sonography-based large amount of abdominal free fluid with heterogeneous mass in pelvic in favor of adnexal hemorrhagic cyst. She had undergone valve replacement 14 years ago with a previous history of Tetralogy of Fallot (TF) cardiac anomaly, and she was on warfarin, Digoxin and Captopril. Open ovarian cystectomy surgery was done five months ago and due to irregular menses, she was on cyclic Dydrogesterone only for three months. On examination, she had a pulse rate of 88/min, a blood pressure of 100/60 mm/Hg and pallor. There was tenderness in the lower abdomen.

Her hemoglobin was 4.2 mg/dl, total leukocyte count of 4000/mm^3 with 72% neutrophils, platelet count of 195000, and INR of 4, PT:30 and normal tumor marker. On computed tomography scan (CT), had reported a large amount of abdominal free fluid with heterogenic collection that is noted hematoma in the pelvic suggestive of hemoperitoneum due to ruptured hemorrhagic ovarian cyst.

She was undertaken on conservative management and cardiologist consultation was performed, warfarin was withheld and was transfused three units of FFP and four units of packed cell. Serial bedside ultrasonography showed significant resolution of hemoperitoneum and pelvic collection, and she was discharged with improved symptoms and hemoglobin of 11 mg/dl, INR: 2.4 on warfarin therapy, she was prescribed cyclical medroxyprogesterone 10 mg/day for irregular menses and ovulation suppression. In one year. Regular follow-up, she was uneventful.

Discussion

Hemoperitoneum due to ruptured hemorrhagic ovarian cyst, in reproductive age women, can be self-limited by spontaneous resolution or a potentially life-threatening massive hemorrhage, especially in patients on anticoagulation. Nowadays, the accuracy of gynecological hemoperitoneum diagnosis, with developed, radiologic imaging techniques has been increased, however stage of clot evolution can make a variety of radiologic appearances **(3, 4)**. Resolution of hemorrhagic ovarian cyst can be considered by ultrasound in 6-8 weeks **(5)**.

Etiology of hemorrhage, associated with ruptured ovarian cyst, include trauma and anticoagulation therapy **(6, 7)**.

In women on anticoagulation, the risk of hemorrhage is high; however, it can occur even below therapeutic range of INR **(4, 8)**.

It seems previous approach in management of hemoperitoneum regarding the ruptured ovarian cyst, based on surgery, is not acceptable overall because of probable self-limiting entity **(7-9)**. Even severe pain and large amount of hemoperitoneum in radiologic imaging is not enough indication for surgery modality. Management of hemoperitoneum is a dilemma, especially for anticoagulation patients. It can be managed with a conservative approach, in hemodynamically stable patients.

In anticoagulation patients, low threshold of surgery intervention may increase risk of rebleeding intraoperatively, while, reversal of anticoagulant along with FFP transfusion to control ongoing hemorrhage for surgery, may precipitate thromboembolism events **(4, 10)**.

So, in high-risk group with massive hemoperitoneum, consultation with a cardiologist can be considered for conservative management with strict vital sign monitoring, and carefully primary resuscitation. IF deterioration of vital signs, in primary sustained resuscitation was not happened and hemoglobin values were not decreased over 4–6 hours (mg/dl) of tight monitoring, conservative management can be continued by controlling of hemoglobin, INR and radiologic imaging work up of active bleeding regression. It is recommended that in patients with refractory painful abdominal distension regardless of stable medical condition, instead of laparotomy or laparoscopy, we provide percutaneous catheter drainage guided management by an interventional radiologist **(11, 12)**. That does not require high risk anesthesia due to anticoagulant patients **(13)**. Consequently, only severe pain, should not be considered for operative intervention **(7)**. Spontaneous resolution of non-inflammatory hemoperitoneum in a conservative approach, over 6-8 weeks **(5)** is not associated with intra-abdominal adhesions **(11)**. Recurrence rate of gynecologic bleeding events, on anticoagulation reproductive age women are high, so it is recommended that ovulation suppression must be started to avoid this disaster in this kind of high risk group by effective and safe drugs such as GnRH agonist and preferably progesterone- only oral pill like desogestrel **(4, 14)**.

Conclusion

Nowadays, there is a trend for less invasive treatment to manage hemoperitoneum in selected patients on anticoagulant, with stability of vital signs in sustained medical therapy.

In refractory painful abdominal distension, we preferred radiologic interventional drainage guided management instead of surgery intervention.

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Informed consent

Written informed consent was obtained from the patients.

Ethics committee approval

This study was approved by the ethics committee of Urmia University Medical Sciences.

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Conflict of Interest

There is no conflict of interest.

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