International Journal of Reproduction, Contraception, Obstetrics and Gynecology
*Seelam RR et al. Int J Reprod Contracept Obstet Gynecol. 2025 May;14(5):1660-1664*
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20251263

**Case Report**

# Ruptured endometrioma mimicking ovarian malignancy: a case report and literature review

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**Received:** 18 March 2025
**Accepted:** 08 April 2025

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## ABSTRACT

In current practice endometriosis is a rising concern, involving all age groups and relatively less prevalent in perimenopausal age groups. It has a variety of presenting symptoms in perimenopausal age group including severe dysmenorrhoea, dyspareunia, infertility, chronic pelvic pain, abdominopelvic mass, acute abdomen with peritonitis and non-specific symptoms like gastritis, diarrhoea, rectal bleeding. High index of suspicion should be there to diagnose a ruptured endometrioma in a perimenopausal female with adnexal mass, peritonitis features and rising serum CA-125 and CA19.9 levels. Here we present a case of ruptured endometrioma mimicking ovarian malignancy in a perimenopausal female.

**Keywords:** Endometrioma, Ruptured endometrioma, Ovarian malignancy

## INTRODUCTION

Endometriosis seen in 10% of the reproductive age group (15-49 years) females. Approximately 17 to 44% of women diagnosed will experience an endometrioma. Around 28% of these women will have bilateral endometriomas.[1] The symptoms can be varied including severe dysmenorrhea, dyspareunia, chronic pelvic pain, dyschezia, dysuria and abdominopelvic mass in case of large endometrioma and other nonspecific symptoms markedly affecting the quality of life. Rupture of endometrioma creating hemoperitoneum is rare and affects less than 3% of endometriomas when size grows more than 6 cm.[2] Diagnosis of rupture endometrioma in perimenopausal females with peritonitis features usually overrides by malignancy suspicion because of associated elevated CA125, CA19.9 levels and late age presentation. These situations necessitate emergency surgical exploration for definitive management. Management options included cystectomy, oophorectomy-unilateral or bilateral or total abdominal hysterectomy with bilateral salpingo-oophorectomy along with excision of endometriotic spots according to age of the patient. Here, we present a case of ruptured endometrioma in a perimenopausal female with markedly elevated tumour markers (CA 125 and CA19.9) and radiological findings suspicious of ruptured malignancy.

## CASE REPORT

A 51-year-old nulligravida, known case of hypertension, class I obesity and history of cerebral stroke on aspirin visited an outpatient clinic with c/o continuous dull aching pain in lower abdomen associated with abdominal distension for 5 months. On physical examination a 10×10 cm mobile abdominopelvic cystic mass was palpable. While the patient was being evaluated for the AP mass, she presented in emergency after 1 month with acute abdominal pain associated with vomiting and abdominal distension for the past 4-5 days. On examination her general condition was E4V5M6 with moderate pallor and pulse rate-110/min, BP-108/70 mmHg. Abdomen has soft distension with generalized tenderness and no guarding or rigidity. A vague abdominopelvic cystic mass 8×10 cm

was palpated in the right iliac fossa. On per-speculum examination, no abnormality was noted. On per-vaginal examination cervix anterior, uterus normal size, in right fornix a firm to cystic tender mass felt approx.10×10 cm in size and left fornix free. No nodularity felt in per-rectal examination.

Patient was stabilised, aspirin discontinued and injectable antibiotics started. Blood investigations showed Hb-8 gm%, WBC-20,150, with raised tumour markers-CA-125 levels (2200 mIU/ml) and CA 19.9 (323U/ml), rest investigations were normal. Ultrasound pelvis was done, suggestive of ruptured hematosalpinx with hemoperitoneum and complex right adnexal cyst approx. 15×8 cm. CE-MRI abdomen and pelvis (Figure 1) demonstrated a 13×10 cm right adnexal cystic mass with coarse internal echoes and peripheral vascularity along with large septate fluid collection in pelvis around cyst with mesenteric nodularity and omental thickening. Differential diagnosis of ruptured hematosalpinx/ruptured ovarian malignancy with peritoneal carcinomatosis was made.

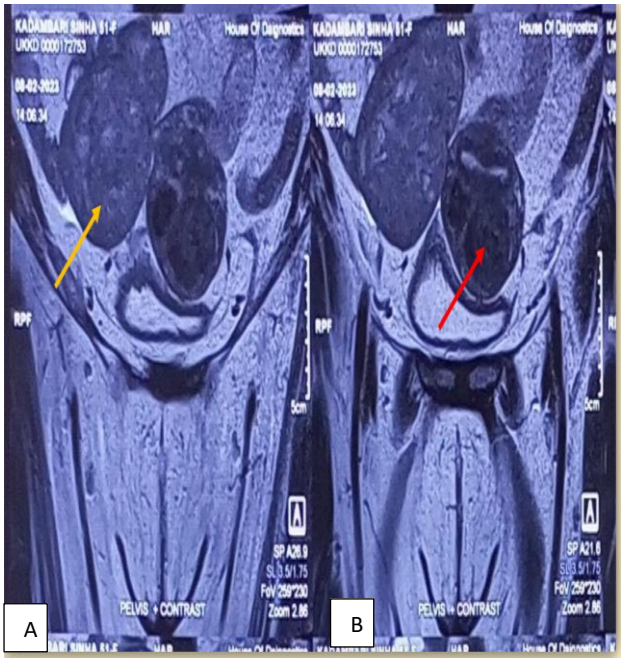


**Figure 1 (A and B): MRI of 15×8 cm right adnexal complex cyst (left arrow) with heterogenous fluid collected in pelvis (red arrow).**

Patient underwent emergency laparotomy in view of ruptured malignant ovarian mass/hematosalpinx with hemoperitoneum. Intra-operatively, 800 cc hemoperitoneum (Figure 2) with altered dark-brown coloured fluid drained. On right side, bilocular endometriotic cyst with one locule ruptured and another one intact measuring 10×8 cm was present in ovary adhered to POD with 200cc organised blood clots (Figure 3) around cyst wall with inter bowel and omental adhesions and endometriotic spots seen in pelvic side walls. Uterus, left ovary and fallopian tube were normal.

**Figure 2: Intra operative picture of old hemoperitoneum as altered dark brown colour fluid.**

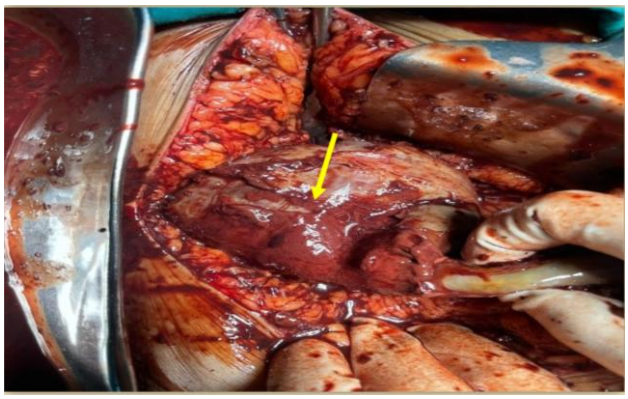

**Figure 3: Intraoperative picture of organised blood clots (arrow) over cyst wall.**

After considering her age, risk factors (age, obesity, hypertension, tumour markers, imaging) and no facility of frozen section in emergency, total abdominal hysterectomy with B/L salpingo-oophorectomy (Figure 4) was performed. Postoperative period was uneventful and patient discharged in stable condition. Histopathological examination showed right ovarian cyst wall with foci of endometriosis along with dilated tube and old hemorrhage suggestive of an associated hematosalpinx, uterus, cervix, left ovary and fallopian tube histologically unremarkable.

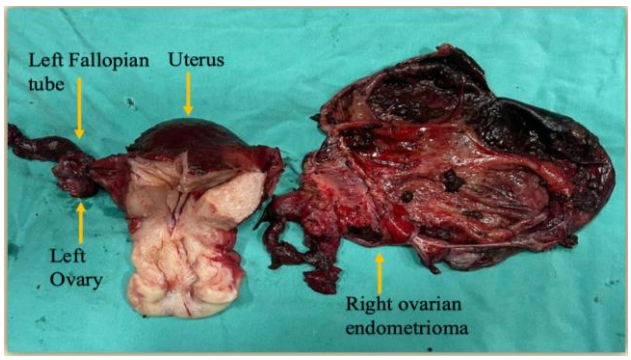


**Figure 4: Cut specimen of uterus with right ovarian endometrioma, left ovary and bilateral fallopian tubes.**

## DISCUSSION

Endometrioma is most commonly seen in the reproductive age group population. The peak incidence is greater in women between 25 and 29 years old and lowest in women over 44 years old.[3] Typical symptomatology of disease includes dyspareunia, dysmenorrhea, dysuria, dyschezia, rectal bleeding, mass per abdomen and infertility. Non-specific symptoms like diarrhoea, constipation, abdominal pain, and bloating could mimic irritable bowel syndrome in perimenopausal females. Pain is usually characterized as chronic, cyclic, progressive and exacerbating over time. In turn their presentation as endometrioma or its spontaneous rupture is relatively rare in the perimenopausal age group. On examination patients can have abdominopelvic mass with peritonitis features like tenderness, with or without guarding, rigidity and ascites. Our patient presented with acute abdominal pain, vomiting and abdominal distension similar to previously published reports.[4,5] Elevated levels of tumour markers raise suspicion of malignancy in this age group. There is a diagnostic dilemma in perimenopausal patients with falsely elevated CA 125 levels, who are not previously diagnosed with endometriosis. In patients with ruptured endometrioma the falsely elevated CA125 might be due to peritonitis which produces reactive peritoneal fluid. Similar to other case reports imaging findings usually reveals complex adnexal mass with ascites or hemoperitoneum and omental nodularity because of endometriosis over omentum. For diagnosis, initial TVUS followed by CT/MRI pelvis can be done to identify type of lesions and malignancy features can be differentiated.

Management options for endometriosis are based on the patient's factors like clinical symptomatology, extent of the disease spread, desire for fertility and suspicion of malignancy intraoperatively. In patients with endometriosis lifetime risk of ovarian, thyroid, breast cancer is increased. Ovarian cancer risk rises from 1.4% to about 2.5%.[6] Risk-reducing salpingo-oophorectomy might benefit patients at increased risk. In our case as the patient was perimenopausal with high risk factors (infertility, obesity and hypertension), total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed.

Intraoperatively ruptured endometrioma with hemoperitoneum was observed in maximum reported cases with rarely pyoperitoneum due to rupture of infected cyst reported by Evelina et al.[2] Literature review on ruptured endometrioma are shown in Table 1.

**Table 1: Details of previously published similar cases.**

| Authors | Study | Age group (in years) | Symptom | Investigations | Intraoperative findings | Management |
|---|---|---|---|---|---|---|
| **Evangelinakis et al[7]** | 7 years retrospective study to delineate the association between hemoperitoneum and endometriosis | Average age 28.5 (22-44) | Acute abdominal pain, signs of CVS shock, abdominal distension worsening at the onset of menses, nausea and vomiting. | Diagnosed endometriotic cysts in preoperative period | Rupture was identified in all patients presented with hemoperitoneum (2.22%). Around 68.8% the ruptured cyst was located in the left ovary and 31.2% in the right ovary. | Cystectomy/ oophorectomy |
| **Evelina et al[2]** | Case report | 49 | Severe generalised lower abdominal pain and fever | CT scan-ascites and B/L multiloculated cystic tubo-ovarian masses with thickened peritoneum | 100 ml pus drained through the abdominal cavity, ruptured B/L tubo-ovarian masses with obliterated POD and parametrium. | Bilateral salpingo oophorectomy and abdominal lavage HPE- infected endometriotic cyst |
| **Young et al[8]** | Case report | 32 | Sharp abdominal pain, weight loss over the last 6 months, abdominal distension. | CT scan-13 cm complex abdominopelvic mass with ascites and omental nodularity CA 125-4663 U/ml | Left ovary replaced by endometrioma adhered to the lateral pelvic wall, with rupture in the cyst wall. Endometriotic deposits over omentum. | Modified-radical hysterectomy with B/L salpingo-oophorectomy, omentectomy and peritoneal biopsies. HPE- endometriosis |

Continued.

| Authors | Study | Age group (in years) | Symptom | Investigations | Intraoperative findings | Management |
|---|---|---|---|---|---|---|
| **Foote et al[5]** | Case report | 26 | Nausea, upper abdominal pain, heavy menstrual bleeding and progressive abdominal distension | CT scan-ascites, large multilobulated mass arising from right pelvis measuring 16 cm, CA-125-3714 U/ml, CEA-<0.5 ng/ml | Large volume brown fluid noted in peritoneal cavity, B/L cystic masses in both ovaries along with rupture in right side | Bilateral salpingo oophorectomy and omentectomy HPE-endometriosis |
| **Present case report** | Case report | 51 | Acute abdominal pain, vomiting and abdominal distension | MRI-13×10 cm right adnexal cystic mass with coarse internal echoes and peripheral vascularity with large septated fluid collection in pelvis around uterus with mesenteric nodularity and omental thickening CA-125 levels (2200 mIU/ml) CA 19.9 (323U/ml) | 800 cc hemo-peritoneum with altered brown coloured fluid drained. Bilocular endometriotic cyst with 1 locule ruptured and another intact measuring 10×8 cm present in right ovary adhered to POD with 200 cc organised blood clots in pelvis with inter bowel and omental adhesions and endometriotic spots seen in pelvic side walls | Total-abdominal hysterectomy and bilateral salpingo-oophorectomy HPE-endometriosis |

## CONCLUSION

Spontaneous rupture of endometrioma is rare in perimenopausal age group patients and can present with non-specific symptoms. Falsely elevated tumour markers arise suspicion of ovarian malignancy, hence a high index of suspicion should be there in diagnosing the case. Management should be individualised according to the patient characteristics and intraoperative clinical diagnosis. If feasible, the frozen section can be used as an intraoperative diagnostic aid.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: Not required*

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**Cite this article as:** Seelam RR, Varun N, Meena J, Kumari R, Dadhwal V. Ruptured endometrioma mimicking ovarian malignancy: a case report and literature review. Int J Reprod Contracept Obstet Gynecol 2025;14:1660-4.