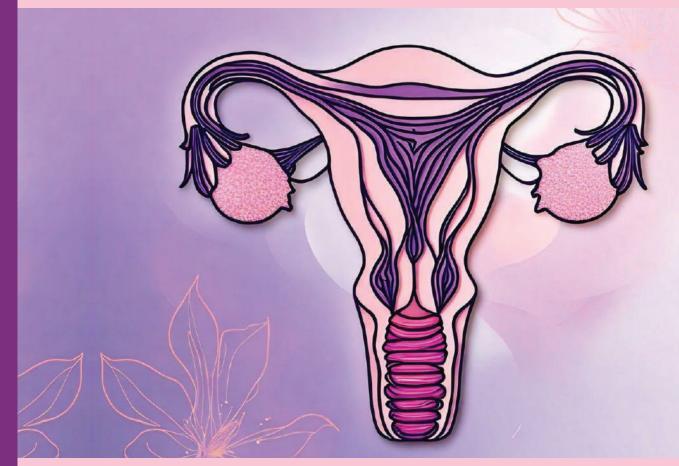




Vol.- 2 Issue- 1 | March 2025



# **MOGS** Chronicles

## A Compilation of Interesting Cases



Suvarna Khadilkar

Editor-in-Chief: Suvarna Khadilkar

Official publication of Mumbai Obstetric and Gynaecological Society for internal circulation

# **Fertility** Care Range



# **MOGS Chronicles**

Official publication of The Mumbai Obstetric and Gynaecological Society



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#### **Dear Esteemed Colleagues,**

It is with great pride that I share the second issue of MOGS Chronicles with you. Building on the successful launch of our inaugural issue, which aimed to provide a platform for sharing clinical insights and fostering mentorship, this edition truly surpasses our expectations.

We received a tremendous response for this issue, where we received an overwhelming number of case reports from our MOGS members. We have tried to accommodate as many as we could. This issue also includes a new section of an invited video article, where you will be able to view the recorded surgery.

As we envisioned with the first edition, this journal continues to serve as a valuable resource for learning and professional growth. The intriguing cases shared here offer unique perspectives

on challenging clinical scenarios, diagnostic dilemmas, and effective management strategies. We are particularly pleased to see the continued enthusiasm for medical writing among our junior colleagues. This edition brings us closer to our dream of transforming MOGS Chronicles into an indexed journal, a goal that your active participation helps us achieve.

We extend our sincere gratitude to all contributors for their diligent work, and to our reviewers and editorial team for their meticulous efforts.

Once again, Dr. Riddhi Desai, our executive editor, and the entire editorial board have demonstrated exceptional dedication. Mr. Abhinav from Incessant Nature Science Publishers has once again been instrumental in bringing this edition to fruition.

filhadellea

Prof. Suvarna Khadilkar

Editor-in-chief, MOGS Chronicles, 2024-7

President MOGS, 2024-5



#### Dear Readers,

I am delighted to present to you the second issue of our MOGS Chronicles. Looking back at our first issue, I remember the anticipation and the hope that we could create something truly valuable for our members. And now, with Issue 2 in your hands, I can confidently say that we've exceeded even our own expectations.

The response from you, our contributors, has been phenomenal! The volume of submissions we received was a delightful challenge. My role, alongside the editorial team, was to sift through this wealth of clinical experience and curate a collection that not only educates but also inspires.



In this issue, we have strived to maintain the high standards set by our inaugural edition,

ensuring that each case is presented clearly and concisely, with a focus on practical takeaways for your practice. We have also introduced a new video article segment, where you will be able to view a recorded surgery and experience the complexities and surgical principals, by clicking on the link or scanning QR code.

My heartfelt gratitude to Dr Suvarna Khadilkar for giving me the opportunity. Thank you to all the contributing authors, reviewers, Mr Abhinav and the publishing team, who have all worked seamlessly to bring this issue to life.

We value your feedback as readers. I hope you enjoy these cases as much as I liked compiling them for you.

Happy reading!

Ríddhí Desaí

Dr Riddhi Desai Executive Editor MOGS Chronicles

## ADOLESCENCE TO SENESCENCE: WELLNESS ACROSS LIFE-COURSE—CARING FOR WOMEN THROUGH THE AGES

Prof. Suvarna Khadilkar

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The theme of this year focuses on wellness of women across the life course

Women's wellness is a journey that spans a lifetime, from the vibrant years of adolescence to the golden age of senescence. Each phase of life presents unique challenges and opportunities, requiring a nuanced approach to healthcare that addresses both physical and emotional well-being.

The transition from childhood to adulthood is a critical period for women. It is during this time that girls experience significant physical, emotional, and hormonal changes. Proper nutrition, mental health support, and education about reproductive health are essential. Empowering young women with knowledge about their bodies and encouraging healthy lifestyle choices can set the foundation for a lifetime of wellness.

As women move into their twenties and thirties, they face new challenges, including career pressures, family planning, and maintaining work-life balance. Regular health screenings, access to contraception, and mental health resources are crucial. Encouraging a healthy lifestyle, including regular exercise and balanced nutrition, can help women manage stress and maintain overall well-being.

The forties and fifties bring about significant changes, including the onset of perimenopause and menopause. This phase can be physically and emotionally taxing, with symptoms such as hot flashes, mood swings, and sleep disturbances. Comprehensive healthcare that addresses hormonal changes, mental health, and preventive measures like mammograms and bone density tests is essential. Support networks and counseling can also play a vital role in helping women navigate this transitional period.

Senior years: As women enter their sixties and beyond, the focus shifts to managing chronic conditions, maintaining mobility, and ensuring a good quality of life. Regular check-ups, personalized care plans, and access to medications become increasingly important. Social connections and mental stimulation are also critical for emotional well-being. Encouraging activities that promote physical health, such as walking, yoga, and strength training, can help women maintain independence and vitality.

Holistic approach to wellness: Across all stages of life, a holistic approach to wellness is paramount. This includes not only physical health but also mental, emotional, and social well-being. Healthcare providers should strive to create a supportive environment that respects individual needs and preferences. Education, empowerment, and access to resources are key components of a comprehensive wellness strategy for women.

In conclusion, caring for women through the ages requires a lifelong commitment to wellness. By addressing the unique challenges at each stage of life, we can empower women to lead healthy, fulfilling lives from adolescence to senescence.

## **MOGS** Chronicles

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## Laparoscopic Hysterectomy in Frozen Pelvis – Utilization of Potential Spaces

Prashant Bhamare, Mrinalini Agrawal

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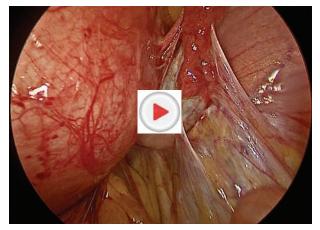
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## **Case summary**

In this video presentation, we can see the case of a 43-year-old female who presented to the outpatient department with complaints of heavy menstrual bleeding and severe dysmenorrhea for the past 6 months. She had been prescribed Tablet Dienogest 2 mg once daily, but her symptoms showed little improvement. In addition, she developed inter-menstrual spotting. Her obstetric history included two prior lower-segment cesarean sections, and she had no other history of surgical interventions. She did not report any urinary or gastrointestinal symptoms.

After a detailed discussion, surgical management was planned, and informed consent was obtained. The patient was counseled regarding the nature of the disease, its progression, and the surgical procedure, including potential complications, the possibility of recurrence, and the extent of surgery. A Total Laparoscopic Hysterectomy with Bilateral Salpingectomy was planned, with the possibility of unilateral or bilateral oophorectomy and excision of other visible lesions if required.

During the surgery, standard laparoscopic principles were followed. The anatomical structures were restored by performing



Click to view the video

adhesiolysis, beginning with the omentum, followed by the small bowel and large bowel. The pelvic retroperitoneal spaces were carefully utilized for a systematic approach to dissection. A lateral-to-medial dissection technique was employed, and the infundibulopelvic ligament was skeletonized. Pathology-based excision was carried out to ensure complete removal of diseased tissue. Nerve-sparing techniques were carefully implemented to prevent injury to the bilateral hypogastric nerves. Throughout the procedure, meticulous attention was given to maintaining adequate blood supply and preserving the integrity of vital structures. The specimen was retrieved. Before concluding the surgery, thorough irrigation was performed, and hemostasis was rechecked.

This case highlights the importance of a systematic laparoscopic approach in managing severe endometriosis with frozen pelvis, ensuring optimal surgical outcomes with minimal morbidity.

## Declaration Conflict of interest

There is no conflict of interest for any of the authors.

#### **Disclosure**

None.

#### **Patient consent**

Informed consent taken for video recording and presentation of the procedure for educational purposes.



Scan to view the video

How to cite this article: Bhamare P, Agrawal M. Laparoscopic Hysterectomy in Frozen Pelvis - Utilization of Potential Spaces. MOGS Chronicles 2025.

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## A Rare Case of Cervical Ectopic Pregnancy and its Management

#### Aayushi Jain, Vilas N. Kurude, Sonali Deshmukh

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#### Abstract

Cervical ectopic pregnancy (CEP) is an uncommon and serious condition, accounting for fewer than 1% of all pregnancies and less than 0.1% of all ectopic pregnancies. Early diagnosis and treatment are critical to avoid serious complications such as severe hemorrhage and the need for a hysterectomy. Given the rarity of the condition, even today, the most effective method of its management is under investigation. Transvaginal ultrasound and ultrasonography (USG) guided interventions have helped in the development of conservative treatment options leading to decreased mortality and morbidity of patients. Here, we report a case of a 43-year-old elderly primigravida with in vitro fertilization (IVF) conception with USG suggestive of CEP and its management.

Keywords: Cervical ectopic, Ultrasound-guided, Methotrexate, Uterine artery embolization, Ectopic pregnancy

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### Introduction

Cervical ectopic pregnancy (CEP) [Figure 1] occurs when a fertilized egg implants abnormally in the cervical canal, beneath the internal os of the cervix. It may cause vaginal bleeding, a common but non-specific symptom, and is often diagnosed through obstetric ultrasonography, which reveals the gestational sac in the cervix and an empty uterine cavity.

In the past, cervical ectopic pregnancies were typically diagnosed during surgery due to heavy bleeding during uterine curettage, with hysterectomy as the standard treatment. However, with advancements in transvaginal ultrasound and serum hCG assays, early detection has become possible. As a result, the approach to management has shifted, focusing on conservative treatment to preserve fertility for hemodynamically stable patients in the first trimester, rather than resorting to invasive procedures, such as hysterectomy.

### **Case Report**

A 43-year-old female, Primigravida, *in vitro* fertilization (IVF) conception, 6.1 weeks of gestation, referred to our hospital in view of bleeding per vaginum, which was sudden in onset and was not associated with pain in the abdomen. She was a known case of chronic hypertension and had a history of two dilatation and curettage done 18 and 6 months ago, respectively, in view of heavy menstrual bleeding with endometrial polyp.

On admission, her hemoglobin was 12.2 g/dL and her beta-human chorionic gonadotropin (BHCG) was 6661. All other investigations were within normal limits. Ultrasonography was suggestive of a single live gestation sac of 6 weeks in the cervix suggestive of CEP [Figure 2].

For confirmation, magnetic resonance imaging pelvis [Figure 3] was done which showed a  $2.4 \times 2.4$  cm heterogenous structure in the cervix, most likely fetal pole, limited to the cervix with normal size and shape of the uterus, ovaries, and fallopian tubes.

Injection methotrexate 50 mg/m<sup>2</sup> of body surface area was given intramuscularly (single dose regimen) for 48 h after which ultrasonography (USG)-guided bilateral uterine artery embolization was done which helped control the bleeding. USG-guided injection methotrexate was given in the gestational sac 48 hours after bilateral uterine artery embolization in view of live pregnancy following which serial levels of BHCG were monitored. Day 4 BHCG was 1849 and day 7 BHCG dropped to 581.

Repeat ultrasound on day 7 was done suggestive of illdefined hypoechoic lesion  $2.2 \times 2.5$  cm with minimal fluid within with no evidence of fetal pole or internal vascularity suggestive of the clot.

Ultrasound on day 28 showed a reduction in the size of the clot to  $0.9 \times 1.4$  cm. Follow-up ultrasound was suggestive of no gestational sac or fetal pole [Figure 4].

#### Discussion

Cervical pregnancy, a rare condition, is on the rise, likely due to the increased use of assisted reproductive technologies (ART) and better detection with transvaginal ultrasound. Factors that may hinder implantation in the endometrium and increase the risk of cervical pregnancy include IVF,

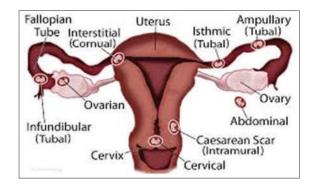


Figure 1: Locations of ectopic pregnancies



Figure 2: Ultrasound showing cervical ectopic pregnancy

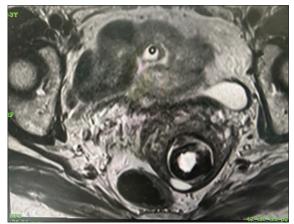


Figure 3: Magnetic resonance imaging showing cervical ectopic pregnancy



Figure 4: Post procedure ultrasound

pelvic inflammatory disease, post-surgical trauma (e.g., cesarean sections or uterine curettage), history of abortions, intrauterine devices, and uterine structural issues.

In cases of first-trimester cervical pregnancy with a stable patient and minimal bleeding, medical treatment is preferred, typically using methotrexate, mifepristone, or misoprostol. Methotrexate is the most effective, but its success decreases with high serum hCG levels, larger crown-rump length, or the presence of a fetal heartbeat. In such cases, combining systemic methotrexate with intra-amniotic injections can improve outcomes. If a heartbeat is detected, intra-amniotic potassium chloride is used for embryocide or feticide.

If medical treatment fails or is not suitable, fertilitypreserving surgical methods, such as curettage, aspiration, or hysteroscopy can be considered.<sup>[1]</sup> However, these procedures carry a high risk of significant bleeding due to the lack of smooth muscle tissue in the cervix.<sup>[2]</sup> To manage a hemorrhage, measures, such as Foley balloon tamponade, arterial ligation, and uterine artery embolization are recommended. Uterine artery embolization has been shown to be highly effective in obstetric and gynecological emergencies with minimal complications.<sup>[3]</sup>

## Conclusion

While CEP remains rare, it is crucial to maintain awareness of the condition. Early and accurate diagnosis is key for successful treatment, reducing the need for interventions that could result in severe bleeding and the potential loss of fertility. Early detection also improves the chances of preserving future fertility in affected patients.

## Declaration

#### **Conflict of Interest**

None.

#### Disclosure

None.

#### **Informed consent**

Informed consent was taken from the patient.

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## **Editor's Note**

This case report presents a successful conservative management of a cervical ectopic pregnancy, highlighting the shift towards fertility-preserving strategies. The use of methotrexate, combined with uterine artery embolization and subsequent intragestational methotrexate injection, demonstrates a multipronged approach to minimize bleeding and facilitate resolution. The case highlights the importance of early diagnosis, particularly in patients with risk factors like IVF conception and prior uterine instrumentation.

How to cite this article: Jain A, Kurude VN, Deshmukh S. A Rare Case of Cervical Ectopic Pregnancy and its Management. MOGS Chronicles 2025.

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## Navigating the Uncommon: A Case Study of Pregnancy in Lipoid Proteinosis

#### Shruti Mishra, Aditi Phulpagar, Rupali Mane

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#### Abstract

Lipoid proteinosis (LP), or Urbach-Wiethe disease, is a rare autosomal recessive genodermatosis, caused by ECM1 gene mutations, leading to hyaline-like material deposition in various tissues. This case study highlights the complexities of managing pregnancy in LP, an underreported scenario in the medical literature. A 29-year-old woman with LP presented at 29 weeks of gestation with severe pregnancy complications, including intrauterine fetal demise and thrombotic microangiopathy-related acute kidney injury. The case underscores the need for multidisciplinary care, including genetic counseling, frequent fetal monitoring, and early intervention to mitigate maternal and fetal risks. The findings suggest a possible link between LP and adverse pregnancy outcomes, necessitating further research on its systemic effects on placental function and vascular complications.

Keywords: Lipoid proteinosis, Intrauterine fetal demise, Pre-eclampsia

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## Introduction

Lipoid proteinosis (LP), or Urbach-Wiethe disease, is a rare autosomal recessive disorder caused by ECM1 gene mutations on chromosome 1q21, leading to abnormal hyaline material deposition in various tissues.<sup>[1]</sup> With fewer than 300 reported cases, pregnancy in LP remains poorly understood. Potential complications include airway obstruction due to laryngeal involvement, increased risk of perineal tears, neurological manifestations such as seizures, and possible effects on placental function.

### **Case Presentation**

A 29-year-old woman, born to consanguineous parents, second gravida, presented at 29 weeks and 1 day of gestation with a headache. An ultrasound performed earlier showed reversed end-diastolic flow in the umbilical artery, raising concerns about fetal compromise.

#### Medical and obstetric history

The patient was diagnosed with LP in 2019 following recurrent episodes of spontaneous blistering and atrophic scarring. A skin biopsy confirmed the diagnosis. She had a history of intrauterine fetal demise (IUFD) at 29 weeks in her prior pregnancy. There was no history of hypertension, diabetes, asthma, or thyroid disorders. Family history was unremarkable for similar conditions.

#### **Antenatal course**

The patient registered for antenatal care at 24 weeks and 6 days of gestation. Given her LP diagnosis, a multidisciplinary team was involved in her care.

• Ophthalmology: Examination revealed moniliform blepharosis, a characteristic LP finding [Figure 1].

- ENT: Hoarseness was noted, and laryngoscopy showed vocal cord hypertrophy with arytenoid edema. Speech therapy and gastroesophageal reflux disease prophylaxis were advised.
- Cardiology: A 2D echocardiogram showed an ejection fraction of 60% with trivial tricuspid regurgitation, deemed clinically insignificant.

#### Admission and examination

On admission, the patient had elevated blood pressure (140/100 mmHg) and significant proteinuria (+3). Obstetric examination suggested a uterus size of 24–26 weeks, and fetal heart sounds were absent. Ultrasound confirmed IUFD.

#### Management

Labor was induced due to IUFD. Magnesium sulfate was administered to prevent eclampsia. Post-delivery, the patient developed oliguria progressing to anuria. Nephrology consultation diagnosed pre-renal acute kidney injury due to thrombotic microangiopathy, a pregnancy-related complication.

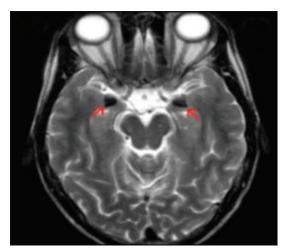
#### Investigations

- Lactate dehydrogenase: 206 U/L
- C-reactive protein: 114 mg/L
- ANA/Anti-dsDNA/ANCA: Negative
- Serum haptoglobin: <15 mg/dL (Normal range: 35–200 mg/dL)
- Anti-complement factor H assay: Normal (done to rule out hemolytic uremic syndrome from thrombotic thrombocytopenic purpura)
- Lipid profile:
  - Total cholesterol: 204 mg/dL
  - Triglycerides: 94 mg/dL

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Figure 1: Eyelid lesions (moniliform blepharosis) with a background of facial scarring



**Figure 2:** T1/T2 hypointense areas with blooming in susceptibilityweighted imaging in temporal lobes

- High-density lipoprotein: 61.9 mg/dL
- Low-density lipoprotein: 176.6 mg/dL
- Very low-density lipoprotein: 18.8 mg/dL
- Magnetic resonance imaging brain: Bilateral temporal lobe and hippocampal calcifications; no evidence of posterior reversible encephalopathy syndrome [Figure 2].

#### **Outcome**

The patient underwent plasmapheresis and hemodialysis, resulting in gradual improvement in renal function. She was discharged with strict monitoring recommendations.

### Discussion

LP presents with multisystem involvement, including dermatological, neurological, and airway manifestations.<sup>[2]</sup> The recurrence of IUFD at 29 weeks in this patient suggests a possible link between LP and adverse pregnancy outcomes.<sup>[3]</sup> Hyaline deposition might contribute to placental dysfunction, leading to fetal compromise. The development of thrombotic microangiopathy postpartum suggests an interplay between LP and hypertensive disorders in pregnancy.<sup>[4,5]</sup>

## Conclusion

Managing pregnancy in LP requires a multidisciplinary approach. Early antenatal registration, close fetal

monitoring, and screening for pre-eclampsia are crucial. Doppler studies help assess placental function, while genetic counseling provides valuable reproductive guidance.<sup>[6]</sup> Further research is needed to understand the association between LP and pregnancy complications.

## Declaration

#### **Conflict of interest**

There is no conflict of interest for any of the authors in the above case report.

#### Disclosure

None.

#### **Informed consent**

Informed consent was taken from the patient.

#### **References**

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## **Editor's Note**

This case of lipoid proteinosis (LP) during pregnancy highlights the challenges of managing rare genetic disorders in obstetrics. Multisystem involvement of LP, necessitates a multidisciplinary approach. High index of suspicion, pre-conceptional counseling and early antenatal registration are important. Strict monitoring in these cases is required as there is a potential association of placental dysfunction, and hypertensive disorders, which could lead to recurrent miscarriages.

**How to cite this article:** Mishra S, Phulpagar A, Mane R. Navigating the Uncommon: A Case Study of Pregnancy in Lipoid Proteinosis. MOGS Chronicles 2025.

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## Pump up the Progesterone? Can progesterone use Increase Meningioma Growth in Pregnancy

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#### Abstract

Meningiomas account for approximately 18% of primary intracranial tumors and are more prevalent in females. While typically benign, these tumors can exhibit accelerated growth during pregnancy, potentially due to hormonal influences. This case report discusses a 36-year-old pregnant woman presenting with new-onset generalized tonic-clonic seizures in the second trimester, subsequently diagnosed with a left frontal meningioma. Her medical history includes prolonged exposure to depot medroxyprogesterone acetate and antenatal progesterone supplementation. Following neurosurgical intervention, both maternal and fetal outcomes were favorable. This case underscores the importance of considering intracranial pathology in pregnant patients with neurological symptoms and highlights the potential role of progesterone in meningioma progression.

Keywords: Generalized tonic-clonic seizures, meningioma, neurosurgery, pregnancy, progesterone

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## Introduction

Meningiomas comprise approximately 18% of primary intracranial tumors and are twice as common in females.<sup>[1]</sup> Pregnancy can unmask previously undiagnosed intracranial tumors, with meningiomas potentially influenced by hormonal changes, particularly progesterone, leading to increased growth and symptomatic burden.<sup>[2]</sup> Recent studies have highlighted a strong association between prolonged use of potent progestogens and the development of intracranial meningiomas.<sup>[3]</sup>

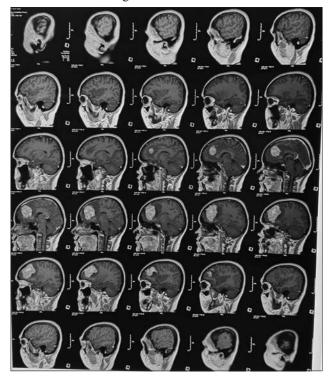


Figure 1: Sagittal section magnetic resonance imaging shows the large meningioma in the frontal lobe

This case report illustrates the possible link between prolonged progesterone exposure and meningioma growth during pregnancy.

## **Case Report**

A 36-year-old gravida 2, para 1, with a history of lowersegment cesarean section, presented at 14 weeks and 4 days of gestation with multiple episodes of generalized tonic-

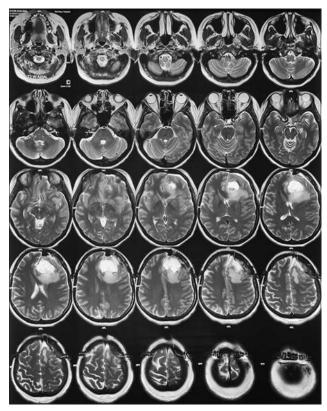


Figure 2: Transverse section magnetic resonance imaging shows meningioma

clonic seizures, each lasting 5–8 min. She reported a history of headaches preceding the seizures. Her obstetric history included a prior conception through *in vitro* fertilization resulting in cesarean delivery for fetal distress; the current pregnancy was spontaneous. She had a history of long-term depot medroxyprogesterone acetate (DMPA) contraceptive use every 3 months until 2 years prior and was receiving antenatal progesterone supplementation post-conception.

Upon stabilization with anticonvulsants, magnetic resonance imaging revealed a  $5.7 \times 4.5$  cm space-occupying lesion in the left frontal cortex, causing lateral ventricle effacement. Given the patient's neurological deterioration, a multidisciplinary team, including neurosurgery, neurology, and obstetrics, decided to proceed with surgical resection of the tumor [Figures 1 and 2].

The patient underwent a successful meningioma excision [Figure 3], with intraoperative and post-operative management tailored to maintain pregnancy viability. Postoperatively, she remained seizure-free, and subsequent prenatal assessments indicated normal fetal growth and development.

## Discussion

Meningiomas are more prevalent in females, particularly during the reproductive years, suggesting a hormonal influence on tumor growth. The expression of progesterone receptors in meningiomas has been well-documented, with studies indicating that a significant proportion of these tumors express high levels of progesterone receptors. This receptor expression may contribute to the rapid growth of meningiomas observed during pregnancy or with exogenous progesterone exposure. Recent research has identified a strong association between prolonged use of potent progestogens, such as cyproterone acetate and chlormadinone acetate, and the development of intracranial meningiomas.<sup>[4,5]</sup>

In this case, the patient's history of prolonged DMPA use and antenatal progesterone supplementation may have contributed to the accelerated growth of the meningioma during pregnancy. The decision to proceed with surgical intervention was based on the severity of her neurological symptoms and the potential

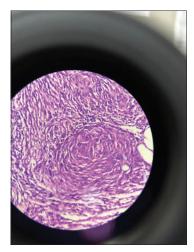


Figure 3: Microscopic histopathological appearance of excised tissue shows the characteristic whorled appearance of meningioma

risks to both maternal and fetal health. Multidisciplinary management was crucial in optimizing outcomes, balancing the need for definitive tumor treatment with the considerations of maintaining a healthy pregnancy.

## Conclusion

This case underscores the importance of considering intracranial pathology in pregnant patients presenting with new-onset neurological symptoms. It also highlights the potential role of prolonged progesterone exposure in the development and progression of meningiomas. Further research is warranted to elucidate the relationship between exogenous progesterone use and meningioma growth, which may require guidelines for the management of such cases in pregnant patients.

### **Declaration Disclosure**

None.

## **Conflicts of Interest**

None.

## **Patient Consent**

Informed consent was taken from the patient.

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## **Editor's Note**

This report emphasizes the need for further research to clarify the link between exogenous progesterone and meningioma growth. It highlights the potential impact of hormonal influences, specifically progesterone, on meningioma growth during pregnancy and the importance of considering intracranial tumors in pregnant women with new-onset neurological symptoms. Patient's history of prolonged DMPA use and antenatal progesterone supplementation raises concerns about their contribution to the symptomatic meningioma. The successful multidisciplinary management, balancing neurosurgical intervention with pregnancy preservation, demonstrates the complexity of such cases.

How to cite this article: Sukhatme S, Ranbhare V, Kania P. Pump up the Progesterone? Can progesterone use Increase Meningioma Growth in Pregnancy. MOGS Chronicles 2025.

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## A Silent Threat: Postpartum Hemorrhage Unmasking a Uterine Arteriovenous Malformation

#### Sakshi Rajesh Deshmukh, Vilas N. Kurude, Sonali Deshmukh

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#### Abstract

Uterine arteriovenous malformations (AVMs) are rare but life-threatening vascular anomalies that can cause severe postpartum hemorrhage. They are often misdiagnosed as retained products of conception (RPOC), delaying appropriate treatment. This case report describes a 27-year-old woman presented with sudden heavy vaginal bleeding on postpartum day 27 after an uncomplicated emergency cesarean section. Initial ultrasound suggested RPOC, but further imaging with magnetic resonance imaging and computed tomography angiography confirmed a uterine AVM. She underwent successful uterine artery embolization with polyvinyl alcohol particles, leading to the resolution of bleeding and preservation of fertility.

Keywords: Arteriovenous malformations, retained products of conception, secondary postpartum hemorrhage, uterine artery malformations

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## Introduction

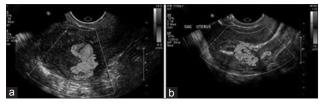
Arteriovenous malformations (AVMs) are abnormal vascular connections between arteries and veins that bypass the capillary network. Uterine AVMs, though rare, can lead to life-threatening postpartum hemorrhage (PPH). Pregnancy and the postpartum period increase the risk of AVM rupture due to hemodynamic and hormonal changes. In many cases, AVMs are misdiagnosed as retained products of conception (RPOC), leading to delays in appropriate management. We present the case of a 27-year-old woman who developed sudden-onset vaginal bleeding 27 days postpartum due to an underlying uterine AVM, successfully managed with uterine artery embolization (UAE).

#### **Case Presentation**

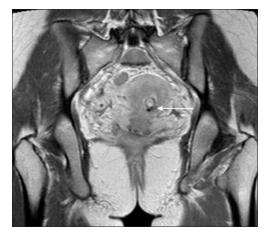
A 27-year-old woman, P1L1, with a history of an emergency lower segment cesarean section (LSCS) at term for fetal distress, presented to the emergency department on postpartum day 27 with sudden-onset vaginal bleeding. The bleeding was progressively worsening and associated with clot passage. Her pregnancy and immediate post-operative period were uneventful, and she had no history of abnormal bleeding or vascular disorders. On examination, she was pale but vitally stable. Abdominal examination revealed a soft, non-tender uterus with a well-healed LSCS scar. On per speculum examination, active bleeding was noted.

Laboratory investigations showed a hemoglobin level of 7.2 g/dL, total leukocyte count of 7,400/mm<sup>3</sup>, and platelet count of 353,000/mm<sup>3</sup>. An urgent ultrasound of the pelvis [Figure 1a and b] revealed a bulky uterus with heterogeneous hypoechoic contents measuring  $6 \times 4 \times 3$  cm, with an estimated volume of 50 cc, suggestive of grade 2 RPOC.

To stabilize her condition, an immediate transfusion of one pint of packed red blood cells was administered. Magnetic resonance imaging (MRI) of the pelvis [Figure 2] was performed, which showed low signal flow voids in the myometrium and endometrial cavity, consistent with a uterine AVM. Given the suspicion of an underlying vascular anomaly, she was referred for interventional radiology assessment.



**Figure 1:** (a and b) Bulky uterus with heterogeneous hypoechoic contents suggestive of grade 2 retained products of conception



**Figure 2:** Coronal magnetic resonance imaging pelvis T1W post-intravenous gadolinium administration showing serpiginous low signal flow voids in the myometrium and endometrial cavity, consistent with a uterine arteriovenous malformation

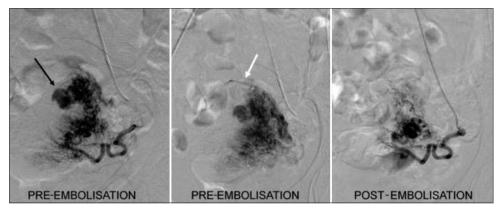


Figure 3: Angiogram of the left uterine artery showed an arteriovenous malformation (AVM) (black arrow) with an early draining vein seen at the fundus (white arrow). Post-embolization run showed complete embolization of the AVM

Computed tomography (CT) angiography confirmed abnormal vascular connections within the uterus, raising concerns for uterine AVM. She was planned for UAE. Under aseptic precautions, right femoral 5F arterial access was obtained. Superselective catheterization was performed using a Progreat microcatheter, and embolization was carried out using 250–355 micron polyvinyl alcohol particles. A post-procedural angiogram [Figure 3] demonstrated stasis of contrast in both uterine arteries, confirming successful embolization. The procedure was uneventful, and the patient was shifted to the ward for observation. She received an additional pint of packed red blood cells postoperatively.

The patient had no further vaginal bleeding following UAE, and her hemoglobin improved to 10.2 g/dL at discharge. She was discharged on post-procedure day 3 with advice for a follow-up Doppler ultrasound after 6 weeks. Her menstrual cycles resumed normally after 3 months. She was counseled regarding future pregnancy risks, including the potential recurrence of AVM and the need for close monitoring in subsequent pregnancies.

### Discussion

Uterine AVMs, though rare, should be considered in cases of unexplained secondary PPH. These vascular anomalies may be congenital or acquired, with acquired AVMs commonly resulting from uterine trauma such as cesarean sections, curettage, or other uterine surgeries. Misdiagnosis as RPOC is common, leading to unnecessary interventions and increased morbidity.<sup>[1]</sup> Doppler ultrasound is the first-line imaging modality, demonstrating high-velocity, low-resistance turbulent flow.<sup>[2]</sup> CT angiography remains the gold standard for definitive diagnosis, while MRI helps differentiate RPOC from AVM.<sup>[3]</sup> Management options include conservative monitoring in hemodynamically stable cases, UAE as a minimally invasive fertility-preserving approach, and hysterectomy in life-threatening cases where embolization fails.

## Conclusion

This case highlights the importance of considering uterine AVM as a differential diagnosis in postpartum women with unexplained recurrent heavy vaginal bleeding, especially after cesarean delivery. Early diagnosis using Doppler ultrasound and CT angiography, followed by timely intervention with UAE, can effectively control hemorrhage while preserving fertility and avoiding the need for hysterectomy.<sup>[4]</sup>

## Declaration

#### **Conflict of interest**

None.

#### Disclosure

None.

#### **Informed consent**

Informed consent was taken from the patient.

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### **Editor's Note**

This report emphasizes the need for clinicians to maintain a high index of suspicion for uterine AVM in cases of unexplained postpartum bleeding, advocating for early Doppler ultrasound and CT angiography to ensure timely and appropriate management. The misdiagnosis of AVM as retained products of conception (RPOC) highlights the importance of considering vascular anomalies in differential diagnoses. Uterine artery embolization (UAE) is a minimally invasive and fertility-sparing intervention that can be effective in such cases.

**How to cite this article:** Deshmukh SR, Kurude VN, Deshmukh S. A Silent Threat: Postpartum Hemorrhage Unmasking a Uterine Arteriovenous Malformation. MOGS Chronicles 2025.

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MOGS Chronicles | Volume 2 | Issue 1 | March 2025

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## The Ashok Anand Stitch – A Stitch in Time

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#### Abstract

Placenta previa with morbidly adherent placenta is an obstetrician's worst nightmare, which has become increasingly common. Traditional techniques such as internal iliac ligation and uterine artery embolization have limited efficacy in these cases. Most patients require obstetric hysterectomy and have increased morbidity and mortality. The Ashok Anand stitch is an innovation that has revolutionized the management of these cases with its ease, simplicity, and high efficacy.

Keywords: Morbidly adherent placenta, placenta previa, postpartum hemorrhage

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## Introduction

Obstetrics is a bloody business. Central placenta previa, especially when morbidly adherent, is an obstetrician's worst nightmare. A rise in cesarean deliveries has led to an increase in cases of placenta accreta, which results in massive blood loss and its subsequent sequelae. The Ashok Anand (AA) stitch is a simple yet effective tool to tackle these cases.<sup>[1]</sup>

## **Case Report**

A 30 year old, gravida 3, para 2 and living 2 previous 2 LSCS, by dates 34 weeks and by scan 33 weeks 6 days, was referred to our tertiary care hospital, in view of MRI suggestive of low-lying placenta with placenta percreta invading the bladder. After optimizing the patient, she was taken for an elective LSCS at term (by dates 37 weeks 4 days).

#### **Intraoperative findings**

After meticulously dissecting the bladder well below the cervix, the uterine incision was taken, and a 2.9 kg female child was delivered.

Then, the AA stitch was taken [Figures 1-4]. The needle was inserted from anterior to posterior direction, 0.5 cm above and medial to the lateral fornix into the myometrium of the cervix.



Figure 1: Tortuous vessels over the bladder and lower uterine segment

The same needle was then inserted from the posterior to anterior direction, just below the lower edge of the uterine incision, and the knot was secured.

The same steps were repeated on the other side. Bilateral uterine artery ligation was done following which the placenta was then delivered completely. 10 IU of injection oxytocin was given. The rest of the procedure and post-operative period was uneventful.

## Discussion

The lower segment and the cervix are supplied by the descending cervical artery and smaller cervical circumflex arteries. When the placenta is previa, the majority of the blood supply to the lower segment is primarily through the collaterals.<sup>[2]</sup>

The AA stitch completely obliterates these collaterals before the placental separation and, thus, devascularizes the lower segment.

Since its inception, the AA stitch has been implemented in over 300 cases (approximately 50 being morbidly

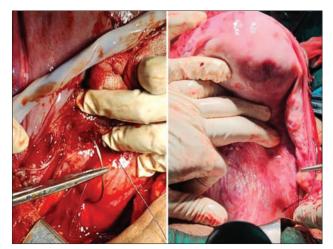


Figure 2: Entry point of Ashok Anand stitch

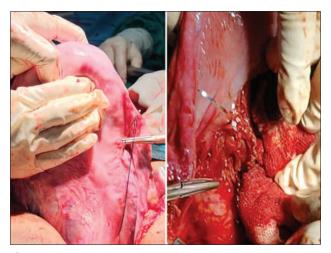


Figure 3: Exit point of Ashok Anand stitch

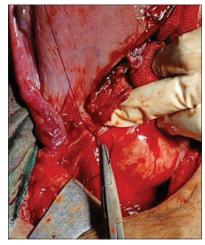


Figure 4: Ashok Anand stitch final look

adherent placenta) in which lower uterine segment bleeding was expected. With the use of the stitch, there was a significant reduction in blood loss intraoperatively and it created an almost bloodless field during the detachment of the morbidly adherent placenta. The average blood loss was found to be 350 mL even in morbidly adherent placenta previa, and there was no need for massive blood transfusion. Hysterectomy was never required in even a single case of simple placenta previa, and so far, only five cases of morbidly adherent placenta previa required an obstetric hysterectomy as the placenta could not be separated.

## Conclusion

A stitch in time saves nine. The AA stitch is a simple, quick, effective method requiring minimal surgical expertise. This lifesaving stitch alleviates the need for massive blood transfusions and obstetric hysterectomy while preserving future fertility.<sup>[3]</sup>

## **Declaration**

#### **Conflict of interest**

None.

#### Disclosure

None.

#### **Informed consent**

Informed consent was taken from the patient.

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## **Editor's Note**

Managing central placenta previa, particularly when complicated by morbid adherence, requires significant obstetric expertise. This case contributes to the growing body of evidence supporting the use of conservative surgical techniques and the importance of developing and refining effective surgical techniques to manage this challenging condition. AA stich seems to be a promising technique to prevent obstetric hysterectomies.

**How to cite this article:** Anand AR, Parasnis K. The Ashok Anand Stitch – A Stitch in Time. MOGS Chronicles 2025.

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## Fertility Preservation in Malignancy: A Report on a Rare Case of Endometrial Carcinoma in the Young

#### Gautami Thambiraj, Asmita Patil

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#### Abstract

The incidence of endometrial carcinoma in India is on a steady rise due to urbanization and changes in lifestyle. The median age of diagnosis of endometrial cancer is 61 years, with 90% of cases being diagnosed after the age of 50 years. Thus it is also known as a disease of older post-menopausal women. However, endometrial cancer rarely occurs in young women and only a small minority 2–14% in patients younger than 40 years. We report one such rare case of endometrial carcinoma in a 30-year-old patient with primary infertility and also the successful diagnosis and management.

Keywords: Endometrial carcinoma, Carcinoma in young, Abnormal uterine bleeding, Infertility, Hysteroscopy

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## Introduction

Endometrial cancer originates within the epithelial lining of the uterus. Significant risk factors associated with endometrial cancer development include those that increase long-term exposure to unopposed estrogen, for example, obesity and exogenous estrogen. They are divided into Type I and Type II tumors. Type I tumors are International Federation of Gynecology and Obstetrics (FIGO) Grade 1 endometrioid adenocarcinomas and are associated with unopposed estrogen stimulation. Type II tumors include FIGO Grade 3 endometrioid, serous, and clear cell carcinomas and are generally estrogenindependent.<sup>[1]</sup> The incidence of Type I is 60-80% overall and that of Type II is 20% overall.<sup>[2]</sup> Evaluating endometrial cancer requires understanding the indications for endometrial biopsy, different sampling techniques, and the role of imaging studies in staging and assessing metastases.<sup>[3]</sup>

### **Case Report**

A 25-year-old Indian female, nulligravida, married since 4 years, presented to the outpatient department with complaints of heavy bleeding per vaginum, associated with lower abdominal pain for 10 days. She had an insignificant past medical history and a normal menstrual history before the onset of the complaints. On physical examination, the abdomen was soft and non-tender with no apparent guarding or rigidity. On per speculum examination, a polyp of  $5 \times 4$  cm was seen emerging out of the cervical os. Per vaginally a bulky uterus of around 6 weeks size was palpable with no tenderness and bilaterally free fornixes.

The routine blood workup was consistent with clinical pallor, a low hemoglobin with other parameters within

normal limits. Ultrasound was suggestive of thickened endometrium with heterogeneous echogenicity. The patient was posted for hysteroscopic polypectomy, after a thorough written informed consent.

Intraoperatively multiple polyps were visualized in the uterine cavity [Figure 1] and hence a diagnostic and therapeutic curettage was done. The histopathology was suggestive of endometrial proliferation resembling well-differentiated endometrioid carcinoma [Figure 2]. A PET scan was done to rule out metastasis.

The patient was started on the tablet Megestrol acetate 80 mg TID for 3 months by the oncologist. Endometrial curettage was done post-medical treatment and histopathology showed decidualized inactive endometrial glands with no increase in gland-to-stroma ratio [Figure 3]. Ultrasound also confirmed an endometrial thickness of 7.5 mm with no significant abnormality. The patient is currently on fertility treatment.

#### Discussion

In young women with endometrial carcinoma, fertility-sparing treatments are often sought. Uterine preservation is typically only considered in cases of FIGO stage IA endometrial cancer and achieved with high-dose progestogen treatment, such as the use of systemic medroxyprogesterone acetate or levonorgestrel intrauterine systems. With 6–12 months of treatment, complete remission occurs in 80–90% of patients.<sup>[2]</sup> More recently, levonorgestrel-releasing intrauterine devices have been used. However, there are inherent risks involved in conservative approaches, including the risk of the treatment being ineffective, the risk of relapse, and missing a diagnosis of ovarian or lymph node involvement or synchronous ovarian cancer.<sup>[4]</sup>

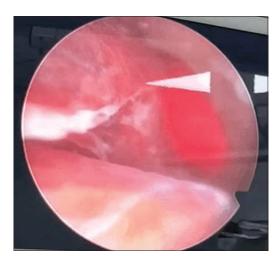


Figure 1: Hysteroscopic image of polypoid endometrium

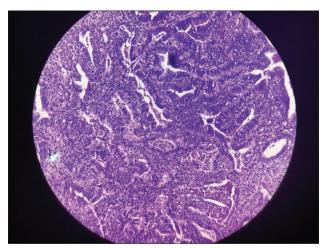


Figure 2: Well-differentiated endometrial proliferation in endometrioid carcinoma

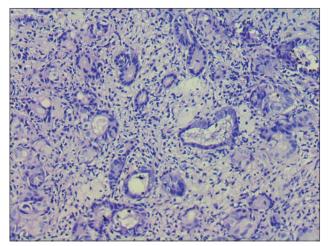


Figure 3: Endometrial glands with normal glands-to-stroma ratio post-medical treatment

## Conclusion

The low prevalence in the young population makes the diagnosis often challenging requiring a high suspicion. Fertility conservation is a major challenge while considering management options in the younger population. High remission rates with subsequent pregnancies are seen in clinical stage IA without myometrial invasion and grade 1 endometrial carcinoma of young women using oral high-dose progestins. Thus, when fertility preservation is not a concern, standard surgical staging and suitable adjuvant therapy should be the gold standard practice regardless of age. The importance of investigating abnormal uterine bleeding even in younger populations with no apparent risk factor and the role of hysteroscopy and histopathological evaluation is emphasized as a savior of the uterus and thereby fertility.

## Declaration

#### **Conflict of interest**

None.

#### Disclosure

None.

#### **Informed Consent**

Informed consent was taken from the patient.

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## **Editor's Note**

Endometrial cancer in young women presents unique challenges. This case highlights the importance of meticulously evaluating young girls with abnormal uterine bleeding and keeping a high index of suspicion. Balancing oncologic safety with the desire for future childbearing requires a multidisciplinary approach and shared decisionmaking in younger girls where fertility preservation is paramount and there can be long-term impact of these interventions on future reproductive health.

How to cite this article: Thambiraj G, Patil A. Fertility Preservation in Malignancy: A Report on a Rare Case of Endometrial Carcinoma in the Young. MOGS Chronicles 2025.

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## **Mullerian Cyst of the Vagina Presenting as Cystocele**

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#### Abstract

A Mullerian cyst is a cyst that originates from the Mullerian ducts during embryonic development. A Mullerian cyst is usually asymptomatic but can cause pressure symptoms or heaviness if they become large. We present a case of a 38 years old, P2L2, referred for cystocoele for surgery. As the cyst occupied the whole of the vaginal space, vaginal examination was difficult. Emptying the bladder did not alter the cyst size. Sonography completely delineated the cyst from the bladder. We performed complete excision of the mass along with the redundant vaginal tissue under spinal anesthesia. The pathology report confirmed a benign Mullerian cyst with mucinous and squamous epithelium.

Keywords: Mullerian cyst, Cystocoele, Gartner's cyst, Urethrocele

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## Introduction

Vaginal cysts are rare with a reported prevalence of 1 in 200.<sup>[1]</sup> Based on histopathology, congenital cysts can be of Mullerian, paramesonephric, or urothelial origin. During the replacement of the Mullerian epithelium with the squamous epithelium of the urogenital sinus, Mullerian epithelium can persist anywhere in the vaginal wall. The differential diagnosis includes Gartner duct cyst, Bartholin's cyst, inclusion cysts, pelvic organ prolapse, and urethral diverticulum.<sup>[2-4]</sup>

## **Case Report**

A 38 year old, para 2 living 2, both vaginal deliveries, was referred to us as a case of pelvic organ prolapse, a case of a non-tender mass protruding from the vagina. [Figure 1] The mass was present for 2 years. She had no significant complaints except for discomfort while walking.

On examination, the mass was reducible non-tender. Transvaginal sonography delineated the mass completely from the lower urinary tract [Figure 2].

Since ultrasonography completely delineated the mass, magnetic resonance imaging (MRI) was not advised. Under spinal anesthesia, we did a complete excision of the mass, along with the redundant vaginal mucosa. [Figure 3a and b] After saline and adrenaline infiltration, the mass could be easily peeled off from the vesical fascia.

The patient withstood the procedure well. Follow up after 2 weeks, patient had no complaints. Histopathology confirmed a Mullerian cyst.

## Discussion

Mullerian cysts are the most common (40%) type of vaginal cysts and are always benign. Malignant transformation to adenocarcinoma is very rare.<sup>[5]</sup> It should be differentiated



Figure 1: Case presenting as cystocele



Figure 2: Transvaginal sonography M: Mass, U: Uterus, B: Bladder

from Gartner's cyst (25%) which is usually along the lateral vaginal wall and <2 cm.

Before embarking on the diagnosis of Mullerian cyst more common entities presenting similarly would be the pelvic organ prolapse, cystocele, and urethral diverticulum.

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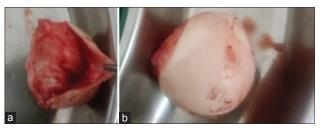


Figure 3: (a and b) specimen

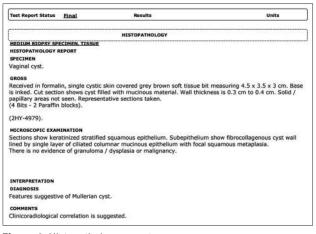


Figure 4: Histopathology report

Diagnosis to mark the boundaries of the cyst and delineate from the urinary tract.<sup>[6]</sup> Histopathology would finally confirm the diagnosis [Figure 4].

Excision of the cyst, marsupialization, but complete removal of the cyst to prevent recurrence is the gold standard for the treatment.

#### Conclusion

A correct diagnosis of vaginal cyst by clinical examination and radiological diagnosis. Complete excision only if surgical intervention is required for pressure symptoms or infection of cysts.

## **Declaration**

#### **Conflict of interest**

None.

#### Disclosure

None.

#### **Informed Consent**

Informed consent was taken from the patient

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#### **Editor's Note**

Presenting initially as pelvic organ prolapse, the case emphasizes the importance of thorough clinical and radiological evaluation to differentiate vaginal cysts from other pelvic pathologies. This case highlights the necessity of considering rare entities in differential diagnosis and the efficacy of targeted imaging and surgical intervention for symptomatic vaginal cysts.

**How to cite this article:** Shetty C, Gopal S. Mullerian Cyst of vagina Presenting as Cystocele. MOGS Chronicles 2025.

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## A Rare Case of Vulval Necrosis Following Femur Fracture Surgery

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#### Abstract

Vulval necrosis is an atypical complication following orthopedic surgeries of the lower limb, especially following femur fracture repairs and arthroscopic procedures. The accurate explanation for such a condition is often described as a result of intraoperative injury to the blood vessels supplying the vulva or post-operative ischemic necrosis due to the use of a perineal traction post. We present a rare case of vulval and perineal necrosis following a fracture of femur repair in a 20-year-old female. The patient had undergone open reduction and internal fixation of femur fracture involving intraoperative use of a perineal post and subsequently developed bilateral vulval swelling and blackish discoloration of left labia and perineal region. Such a condition can have profound psychological and functional effects. Therefore, implementing protective measures, ensuring early identification, and initiating timely management are essential to preserving vulval integrity and function.

Keywords: Vulval necrosis, Hip surgery, Traction table

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## Introduction

Vulval necrosis is an uncommon yet serious condition that can develop due to multiple factors, including trauma, infections, vascular compromise, and systemic illnesses. When it occurs as a consequence of trauma, the condition is often attributed to disruptions in blood flow, excessive pressure on the tissue, or direct injury to the vascular structures, ultimately resulting in progressive tissue damage and necrosis. While it is frequently linked to surgical procedures, obstetric injuries, and pelvic fractures, there have been rare instances where it has followed hip and lower limb orthopedic surgeries. Early diagnosis and proactive treatment, including debridement, antimicrobial therapy, and reconstructive procedures, play a crucial role in preventing further deterioration and restoring both function and esthetics. This review explores the underlying mechanisms, clinical features, and treatment approaches for vulval necrosis following trauma, highlighting the importance of a multidisciplinary strategy in achieving optimal patient outcomes.

### **Case Presentation**

A 20-year-old unmarried girl with an alleged history of road traffic accident, presented to the emergency department and was diagnosed to have multiple fractures including the facial bone fractures, left tibial shaft fracture, and left femur shaft fracture. The patient underwent multiple surgeries in multiple settings to correct the deformities. She underwent open reduction and internal fixation of femur fracture with proximal femur nailing under general anesthesia on a traction table with an approximate blood

loss of 1500 mL. She developed bilateral vulval swelling and blackish discoloration of left labia and perineal region [Figure 1] after 12 hours of surgery and was referred for advice on further management. There was no other significant medical history and no prior gynecological complaints. Radiological investigations were done to rule out pelvic trauma or perineal injuries. On examination, there was bilateral vulval swelling, more on the right side. There were  $4 \times 5$  cm blackish discoloration of the left labia and both the labia minora and left gluteal cleft. There was peeling of skin with no evidence of inflammation or features suggestive of vulval hematoma [Figure 2]. No evidence of foul-smelling, purulent discharge from the site. As there was no indication for surgical intervention, conservative management was advised. Regular dressing using magnesium and glycerine was done to reduce vulval edema. Strict perineal hygiene and limb elevation were advised. Broad-spectrum antibiotics were started. The wound swab showed commensals. The patient was started on trypsin and chymotrypsin to reduce soft-tissue edema. The edema reduced by day 7 postoperatively but the discoloration increased and the skin started separating from the base [Figure 3]. Regular dressing using povidoneiodine, Edinburgh University solution of lime, and mupirocin ointment. The wound started showing signs of granulation tissue and secondary healing by 4 weeks postsurgery [Figure 4].

### Discussion

Perineal post-related complications are uncommon but serious consequence following surgical intervention for femur fractures and other orthopedic conditions,



**Figure 1:** Image showing bilateral vulval edema and blackish discoloration of skin.



Figure 2: Image showing reduction of edema but peeling of skin



Figure 3: Image showing necrosis

often leading to significant patient morbidity. Given the limited literature available on this subject, raising awareness among orthopedic trauma surgeons is essential. This study aims to highlight these complications and encourage the exploration of alternative techniques to prevent them in future surgical procedures.<sup>[11]</sup> Perineal post-related complications, particularly pudendal nerve neuropraxia and perineal necrosis including vulval and



**Figure 4:** Image showing granulation tissue and secondary healing.

scrotal necrosis, are among the most frequently reported issues following hip arthroscopy.<sup>[2]</sup> In a prospective study involving 1,000 hip arthroscopy cases performed without a perineal post, Mei-Dan *et al.*<sup>[3]</sup> successfully employed the Trendelenburg position to create sufficient friction between the patient and the operating table, allowing for adequate limb distraction. In most cases, conservative management is effective, with post-operative assessments focused on identifying vulval edema and any associated injuries. If edema develops, it is crucial to maintain strict perineal hygiene while employing local cold compression and hygroscopic dressings to minimize swelling. Regular monitoring is essential to detect any progression toward necrosis. Should necrosis occur, antibiotic therapy should be initiated based on institutional guidelines, and surgical debridement is typically required to remove necrotic tissue and create a suitable environment for wound healing.<sup>[4]</sup>

## Conclusion

Vulval necrosis following femur fracture surgery is an exceptionally rare but serious complication that can significantly impact a patient's physical and psychological well-being. While the exact mechanism remains multifactorial, vascular compromise due to prolonged perineal pressure is the most widely accepted cause. A multidisciplinary approach is essential for managing such cases effectively. Conservative treatment, including strict perineal hygiene, edema control, broad-spectrum antibiotics, and advanced wound care, plays a critical role in preventing further deterioration. Given the limited literature on perineal post-related complications, further research is needed to explore alternative methods of patient positioning, such as postless traction techniques, to reduce the risk of perineal injuries. Orthopedic surgeons must remain vigilant about these potential complications and take necessary precautions, including proper padding and minimizing intraoperative pressure. By implementing preventive measures and ensuring prompt management, the morbidity associated with vulval necrosis can be significantly reduced, improving patient outcomes and overall surgical safety.

## Declaration

#### **Conflicts of interest**

None.

#### **Disclosure**

None.

#### **Informed consent**

Informed consent was taken from the patient.

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## **Editor's Note**

This case highlights the potential risks associated with the use of a perineal post during lower limb orthopedic procedures, emphasizing the importance of early identification and timely intervention.

**How to cite this article:** Basavananda C, Patil V, Panghate A, Aravind A, Mali K. A Rare Case of Vulval Necrosis Following Femur Fracture Surgery. MOGS Chronicles 2025.

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## Big Belly, but not Pregnant! An Interesting Case of a Young Girl with Ovarian Mass

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#### Abstract

Ovarian tumors are not easily picked up by screening and CA-125 acts as a marker, mainly for epithelial ovarian tumors. Age at presentation also correlates with the type of tumor. Here we present an interesting case of 15 years old unmarried female who came with complaints of amenorrhea for 2 months and a tense swelling in abdomen. Computed tomography done suggestive of a large multilocular cystic lesion of the left adnexal region with neoplastic etiology with gross ascites and omental thickening. An exploratory laparotomy was done. The surgical challenges and dilemmas in her management and post-operative care will be discussed here.

Keywords: Abdominal mass, granulosa cell tumor of the ovary, sex cord-stromal tumor

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## Introduction

Juvenile granulosa cell tumor (JGCT) is a rare type of ovarian sex cord-stromal tumor. Granulosa cell tumor (GCT) accounts for 5-8% of all ovarian tumors with an incidence of 0.4-1.7/100000 women and 5% of these are as JGCT. The median age at the time of its diagnosis is around 8-17 years and has a good survival rate of 97% if it is diagnosed in stage I and a 5-year survival rate of 0-22% in advanced stages and has a more aggressive course and high recurrence than the adult type GCT.<sup>[1]</sup>

## **Case Report**

A young, 15-year-old girl, came to the outpatient department of our tertiary care center, with chief complaints of amenorrhea for 3 months, abdominal fullness and swelling for 1 month, and epigastric pain for 1 week.

The patient was asymptomatic 3 months ago when she developed amenorrhea persisting 3 months. She noticed gradually increasing abdominal to the present size of a 32 week pregnant woman, within a span of just 1 month [Figure 1]. It was initially painless but she started having epigastric pain since the past 1 week on and off. There were no aggravating or relieving factors. She attained menarche at the age of 13 years and her previous cycles were regular.

The patient underwent ultrasound -guided diagnostic tapping 1 month back. Therapeutic tapping was done 15 days ago and there was a history of aspiration of 3.5 L of fluid on 3 different occasions. The fluid was aspirated and sent for GeneXpert examination which was negative for *Mycobacterium tuberculosis*. Subsequently, she underwent diagnostic laparoscopy with ovarian biopsy, intraoperative findings suggested B/L ovarian cysts and 3 L of ascitic fluid. The histopathological report revealed no tumor.

General condition was fair, on abdominal examination, the abdomen were tense, uniformly distended, diagnostic laparoscopy scars seen, umbilicus was everted, tenderness on deep palpation, and a dull note heard uniformly over the abdomen. The dilemma was whether to operate or not, but she was having breathlessness due to ascites, so we did a computed tomography (CT) scan, which was suggestive of a large multilocular cystic lesion in the left adnexal region of size  $9 \times 8 \times 8.2$  cm, left ovary not seen separately suggestive of neoplastic etiology of left ovarian origin, omental thickening and gross ascites. Tumor markers CA-125 on admission were 68.90 and Sr. LDH was 458. A medical oncologist's opinion was taken. As per advice, the patient was posted for surgery. She underwent an exploratory laparotomy with left salpingo-oophorectomy with ascitic fluid drainage with right ovarian biopsy with appendectomy and omentectomy. We could not send samples for a frozen section as the facility was not available at our institution.

Intraoperative findings [Figures 2a, b and 3] 6-7 L of straw-colored fluid was drained,  $10 \times 9 \times 8$  cm left-sided ovarian cyst removed. The procedure was uneventful. She was kept in the intensive care unit for observation for 24 h. Intraoperative drain was inserted which was removed on post-operative day 4. The patient had discharge from the wound site from post-operative day 10, which was managed conservatively with daily dressing and intravenous antibiotics, no subsequent wound gape observed, and suture removal was done on day 14 and day 16.

The provisional histopathology report was suggestive of undifferentiated high-grade carcinoma which has a poor prognosis. Following this, the oncologist's opinion was taken for starting chemotherapy/radiotherapy for this patient. However, the final histopathological report suggested a "Juvenile Granulosa Cell Tumor" which has a



Figure 1: Pre-operative image of abdomen ovarian mass

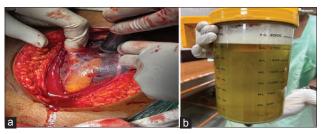


Figure 2: (a and b) intraoperative image with ovarian cyst along with massive ascites



Figure 3: Intraoperative image of ovarian mass

more favorable prognosis. Immunohistochemistry testing was advised by the oncologist, but the patient couldn't afford further investigation. The patient came for followup on day 60 post-operatively and is doing much better with no recurrence of a tense belly. They have been advised regular follow-ups and imaging.

## **Discussion**

Granulosa cells of the ovary secrete estrogen and inhibin. Excess secretion of these hormones in JGCT, presents as symptoms of precocious puberty in younger females and as menstrual irregularities and virilization in adolescents and post-pubertal girls. 80–90% of the times these tumors get detected early as the menstruation-related symptoms allow for earlier noticeable presentation. Surgical treatment included unilateral salpingo-oophorectomy without any adjuvant chemotherapy, bilateral salpingo-oophorectomy (BSO), and total abdominal hysterectomy with BSO with adjuvant BEP chemotherapy (Bleomycin, etoposide, cisplatin).<sup>[2]</sup>

## Conclusion

JGCT is a rare neoplasm with a wide morphologic spectrum and is easily confused with other tumors. By utilizing advanced imaging and proper careful pre-operative planning, we were able to not only uproot the ovarian mass but also maintain her reproductive functions by saving her uterus.

## Declaration

**Conflicts of interest** 

## None.

Disclosure

None.

#### Informed consent

Informed consent was given by the patient's father.

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## **Editor's Note**

This report illustrates the challenges of managing rare ovarian tumors in adolescents, the value of collaborative care, and the necessity for careful follow-up due to the potential for recurrence. The change from an initial report of high-grade carcinoma to the final diagnosis of JGCT demonstrates the need for accurate histopathological assessment, and the potential for misdiagnosis even with initial biopsies. The significant delay in obtaining the final diagnosis highlights the difficulty in managing these rare tumors, especially when facilities for frozen section are unavailable. The surgical approach, which preserved the uterus, shows the potential for tailored treatment in these cases, prioritizing fertility preservation.

How to cite this article: Parikh M, Bhandarkar J, Wani R. Big Belly, but not Pregnant! Young Girl with Ovarian Mass. MOGS Chronicles 2025.

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## Tailored Approaches in Infertility Treatment: A Successful Case of IVF Lite and Agonist Cycles Leading to Pregnancy

#### Ankush Raut

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#### Abstract

We present a case of a 40-year-old female, and her husband (40 years), with a 6-year history of primary infertility. Despite regular intercourse and treatments such as timed intercourse, follicular monitoring, and one cycle of intrauterine insemination (IUI), she could not conceive. Her anti-Müllerian hormone (AMH) was 0.67 ng/mL, and her husband's sperm count was <1 million/mL with occasionally motile sperm. An initial in vitro fertilization (IVF) treatment, using a flare-up protocol, resulted in four oocytes and one blastocyst embryo, but failed. Seeking further treatment, a couple came to our center and opted for an IVF lite protocol. Despite thorough pre-medication and modified stimulation, this cycle did not yield viable embryos. An agonist cycle was then initiated, incorporating careful pre-medication, lifestyle changes, optimized ovarian stimulation with a combination of recombinant follicle-stimulating hormone and recombinant luteinizing hormone, and sperm selection and processing using Zymot sperm separation technology. This cycle produced four grade 1 day 3 embryos. These were frozen, cultured, and later thawed to the blastocyst stage, resulting in two blastocysts (4AA and 3AB) for transfer using laser-assisted hatching. The embryo transfer led to a successful pregnancy which is 34 weeks 1 day at the time of writing this article. This case underscores the importance of individualized treatment and advanced reproductive technologies.

Keywords: Infertility treatment, Frozen embryo transfer, Blastocyst transfer, Agonist protocol, Double trigger

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## Introduction

Individualizing stimulation protocol and embryo transfer protocol are important in *in vitro* fertilization (IVF). In this case, women had low ovarian reserve (AMH 0.67) and male had severe oligoasthenoteratozoospermia. They had multiple cycles of IVF failure. However, the careful selection of stimulation protocol helped them to get pregnant.

## **Case Report**

A 40-year-old female was trying to conceive for 6 years. There was no significant medical, surgical, or family history. She had timed intercourse and follicular monitoring for 4 years and one unsuccessful IUI cycle 3 years back. Initial investigations revealed a normal complete blood count, non-reactive human immunodeficiency virus, hepatitis B surface antigen, hepatitis C virus, Venereal Disease Research Laboratory, blood group B positive, thyroid stimulating hormone 1.22 mIU/L, preferred roaming list 13.18 ng/mL, Vitamin D3 23.7 ng/mL, hemoglobin A1C 5.3%, liver function test/renal function tests within normal limits, and AMH 0.67 ng/mL.

Husband, 40-year-old, chronic smoker, alcoholic for 10 years. Quit smoking 1 year back. Semen analysis revealed a count of 0.8 million/mL, 5% motility. A repeat analysis after a month revealed a count of 0.8 million/mL with further decreased motility of 2%.

#### First IVF cycle

It was carried out in July 2023, flare-up protocol, Injection HMG 300, buserelin 0.5 used, increased to 450 IU till trigger day. Antagonist added from July 23<sup>rd</sup>, 2023, triggered with Ovitrelle 250 mcg and DECA 0.2 on July 26<sup>th</sup>, 2023. Yielded four oocytes, three were mature and fertilized, blastocyst-stage embryos formed. However, the frozen embryo transfer in September 2023 was unsuccessful.

#### Second IVF cycle

IVF-Lite protocol. The pre-medication prescribed was DHEA, melatonin, CoQ10, folic acid, and multivitamins. The husband was prescribed Vitamin C, Zinc, lycopene, ubiquinol, L-carnitine, astaxanthin, clomiphene citrate 25 mg, and resveratrol. Stimulation began in November 2023.

Follicular monitoring was performed [Table 1]. Oocytes yielded three oocytes, two mature, resulting in two grade 2 embryos, although they did not reach the blastocyst stage.

#### Third IVF cycle

Long agonist cycle (April 2024), leuprolide depot 3.75 mg on April 6<sup>th</sup>, 2024. ESTRADiol: 25.90 pg/mL, luteinizing hormone (LH) 0.5 mLU/mL on 2<sup>nd</sup>-day of the period [Table 2]. Ovarian stimulation was with recombinant follicle-stimulating hormone + LH225 (2:1), On the 13<sup>th</sup> day of stimulation, the right ovary had 20 mm (1), and 18 mm (2), whereas left ovary showed 20 mm (1), 18 mm (1), 17 mm (1), and 14 mm (1). Trigger May 5<sup>th</sup>, 2024 at 1 AM

Date	RO	LO	Medication
November 11, 2023	AFC: 2	AFC: 3	Tablet clomiphene citrate 150 mg once a day for 5 days
November 16, 2023	10 mm (2)	11 mm (2)	Tab. Clomiphene Citrate to continue
			INJ Newmon R 300 once a day from 16/11/2023 to 21/11/2023.
November 18, 2023	13 mm (2)	14 mm (1), 13 mm (1)	Continued
November 20, 2023	15 mm (1), 14 mm (1)	17 mm (1), 16 mm (1)	Continued
November 21, 2023	17 mm (1), 15 mm (1)	20 mm (1), 19 mm (1)	Trigger given with Injection triptorelin 0.2 and recombinant HCC 250 mcg sc on November 22, 2023, at 12.30 am

IVF: In vitro fertilization, HCG: Human chorionic gonadotropin

#### Table 2: Hormonal monitoring

		0	
Date	E2 (pg/mL)	LH (Miu/mL)	Progesterone (ng/mL)
April 30, 2024	272	0.44	
May 02, 2024	678	0.65	
May 04, 2024	1226	0.48	0.57
LH: Luteinizing hormone			

with recombinant human chorionic gonadotropin (HCG) 500 mcg. Yielding 6M2 oocytes. Sperm count: 10 million/ mL, 10% motility, 2% normal forms. Zymot + ICSI was performed. Four day 3, 8-cell grade 1 embryos were formed. These embryos were frozen.

Before embryo transfer, a blastocyst culture was performed, two embryos out of four reached the blastocyst stage, graded 4AA and 3AB. Embryo transfer was performed on July 8<sup>th</sup>, 2024 following laser-assisted hatching. Beta hCG levels confirmed a growing pregnancy, with levels of 310: July 18<sup>th</sup>, 2024, 679: July 20<sup>th</sup>, 2024, 1808: July 22<sup>nd</sup>, 2024. As of February 10, 2024, she is 34 weeks 1 day twin gestation.

#### Discussion

Pre-medication DHEA,<sup>[1]</sup> melatonin,<sup>[2]</sup> CoQ10<sup>[3]</sup> was used in the female partner, the husband's cessation of smoking,<sup>[4]</sup> lifestyle and dietary modifications in both husband and wife,<sup>[4]</sup> use of antioxidants such as Vitamin C, zinc, lycopene, ubiquinol, L-carnitine, astaxanthin, resveratrol as pre-medication in husband<sup>[5]</sup> and long agonist protocol<sup>[6]</sup> stimulation regimen, double trigger with recombinant HCG,<sup>[7]</sup> sperms selection using Zymot<sup>[8]</sup> and the decision to freeze embryos at the day 3 stage and transfer them at the blastocyst stage helped in this case.

#### Conclusion

It is very important to have individualized protocols for each and every patient in IVF.

#### Declaration Conflict of interest

None.

#### **Disclosure**

None.

#### **Informed consent**

Informed consent was taken from the patient.

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### **Editor's Note**

This case demonstrates the need for a patient-centric approach in IVF, adapting protocols to address specific challenges and improve pregnancy rates. The transition from a failed flare-up protocol to IVF-Lite and subsequently a long agonist cycle, coupled with meticulous sperm selection and embryo culture, highlights the importance of individualized treatment. The use of pre-medications, lifestyle modifications, and double triggering likely contributed to the positive outcome.

**How to cite this article:** Raut A. Tailored Approaches in Infertility Treatment: A Successful Case of IVF Lite and Agonist Cycles Leading to Pregnancy. MOGS Chronicles 2025.

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## Blurred Lines: A Case Unveiling the Diagnostic Ambiguity between Benign and Malignant Ovarian Tumors – A Surgical and Pathological Conundrum

#### Shaikh Shaima Waseem, Vilas N. Kurude, Sonali Deshmukh

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#### Abstract

The differentiation between benign and malignant ovarian tumors remains a diagnostic challenge, particularly in post-menopausal women presenting with large adnexal masses and elevated CA-125 levels. We report a case of a 61-year-old female with a history of hysterectomy who presented with progressive abdominal distension and constipation. Imaging revealed a massive multiloculated cystic ovarian mass with elevated CA-125 levels (240 U/mL), raising suspicion of malignancy. The patient underwent exploratory laparotomy with right ovarian cystectomy, omentectomy, pelvic lymphadenectomy, and total parietal peritonectomy. Intraoperatively, a 6.8 kg tumor was excised, but histopathological analysis confirmed a benign seromucinous cystadenoma. This case highlights the diagnostic ambiguity posed by ovarian tumors that mimic malignancy and emphasizes the necessity of cautious intraoperative judgment. A multidisciplinary approach, integrating radiological, biochemical, and histopathological assessments, is crucial to avoid unnecessary radical interventions.

Keywords: Ovarian tumor, CA-125, Post-menopausal, Benign cystadenoma, Ovarian malignancy, Histopathology

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## Introduction

Ovarian tumors are common in gynecological practice, with presentations ranging from asymptomatic cysts to large masses causing abdominal distension. In post-menopausal women, the risk of malignancy is higher, making accurate diagnosis crucial.<sup>[1]</sup> However, benign ovarian neoplasms can sometimes mimic malignant tumors, particularly when associated with elevated CA-125 levels. While CA-125 is a well-established marker for ovarian cancer, its elevation is not exclusive to malignancy; conditions such as endometriosis and benign cystadenomas can also lead to increased levels.<sup>[2]</sup>

This case report presents a diagnostic challenge where a post-menopausal woman with a massive ovarian tumor and elevated CA-125 was suspected of malignancy, but histopathology confirmed a benign cystadenoma. The case highlights the importance of a multidisciplinary approach to preventing overtreatment.

### **Case Presentation**

A 61-year-old female with hypertension complained of worsening abdominal bloating and constipation over 4 days. She had undergone a hysterectomy two decades earlier for an obstetric emergency.

On examination, a large, firm, solid-to-cystic mass, roughly the size of a 36-week gravid uterus, was palpable. [Figure 1] Pelvic examination revealed an adnexal mass extending into the left fornix. Laboratory investigations were mostly normal, except for a CA-125 level of 240 U/mL, raising concern for ovarian malignancy. However, other tumor markers, including beta-human chorionic gonadotropin,



**Figure 1:** 36 weeks solid cystic mass on per abdominal examination

alpha-fetoprotein, carcinoembryonic antigen, and CA 19-9, were within normal limits.

Imaging through magnetic resonance imaging revealed a multiloculated midline cystic lesion of size  $15.4 \times 21.7 \times 27$  cm, classified as ORADS-3, suggesting an ovarian neoplasm. Given these findings, an exploratory laparotomy was performed.

Intraoperatively, a 6.8 kg ovarian tumor was found, with extensive adhesions to surrounding structures. [Figures 2 and 3] The right ovary, omentum, and pelvic lymph nodes were removed. The post-operative period was largely uneventful, though the patient developed febrile episodes, wound dehiscence, and a left wrist thrombus,

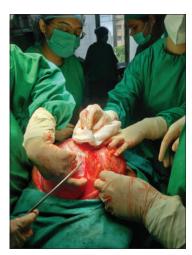


Figure 2: Intraoperative dissection of mass



Figure 3: 6.8 kg of benign mucinous cystadenoma

which were managed with antibiotics, thromboprophylaxis, and wound resuturing. Histopathological examination confirmed a benign seromucinous cystadenoma.

## **Discussion**

The differentiation between benign and malignant ovarian tumors remains complex, especially in post-menopausal women. While elevated CA-125 levels and large tumor size often raise suspicion of cancer, these factors are not definitive indicators. Studies have shown that benign ovarian cysts, endometriosis, and inflammatory conditions can also lead to elevated CA-125, highlighting the need for careful assessment.<sup>[3]</sup>

Diagnostic challenges in our case were,

- Tumor size and morphology: The ovarian mass occupied the entire abdominal cavity, strongly resembling an advanced malignancy
- Elevated CA-125: While CA-125 was significantly raised, it was not conclusive for malignancy, as benign conditions can also show similar elevations
- Imaging findings: The ORADS-3 classification indicated an intermediate risk, necessitating surgical exploration.

Despite strong clinical suspicion, histopathology ultimately confirmed a benign lesion. This underscores the importance of combining imaging, tumor markers, and histopathology for accurate diagnosis. A cautious approach helps prevent unnecessary radical surgeries while ensuring that potential malignancies are not overlooked.<sup>[4]</sup>

## Conclusion

This case highlights the challenges of diagnosing ovarian tumors in post-menopausal women. Although malignancy is often the primary concern, benign neoplasms can closely resemble cancerous growths. Elevated CA-125 and imaging findings should be interpreted cautiously, with histopathology remaining the gold standard for definitive diagnosis. A collaborative approach involving multiple specialists is essential for making informed surgical decisions and avoiding over treatment.<sup>[5]</sup>

## **Declaration**

#### **Conflict of interest**

None.

#### Disclosure

None.

#### Informed consent

Informed consent was taken from the patient.

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## **Editor's Note**

The biggest challenge in managing ovarian tumours is the diagnostic dilemma of differentiating the benign from the malignant. The need for exploratory laparotomy, despite the eventual benign diagnosis, highlights the challenges of surgical decision-making in cases of high clinical suspicion and the patient's stormy postoperative course even after surgery for benign conditions, serves as a reminder that benign ovarian tumours can mimic malignancy, necessitating careful consideration to avoid overtreatment while ensuring timely intervention for potential malignancy.

**How to cite this article:** Waseem SS, Kurude VN, Deshmukh S. Blurred Lines: A Case Unveiling the Diagnostic Ambiguity between Benign and Malignant Ovarian Tumors – A Surgical and Pathological Conundrum. MOGS Chronicles 2025.

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## When Urine Pregnancy Test is Positive, It Does Not Always Mean Pregnancy!

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#### Abstract

We present an interesting case of a 32-year-old P2L2, with 2 months of amenorrhea and a positive urine pregnancy test. Examination revealed a large pelvic mass. Her magnetic resonance imaging showed a large lobulated right ovarian mass of  $13.1 \times 6.9 \times 13.8$  cm suggestive of a right neoplastic mass with no other spread. In view of serum beta-human chorionic gonadotropin of 829, a provisional diagnosis of non-gestational choriocarcinoma was made. In view of age, desire for future fertility, and possible conservation of uterus, a decision for exploratory laparotomy with right unilateral salpingo-oophorectomy, omental biopsy, and pelvic lymph nodes were taken. The intraoperative findings were a  $13 \times 10$  cm multilobulated firm mass with no ascites, and intact capsule. The final histopathology report showed dysgerminoma. Challenges in diagnosis and issues in management will be discussed.

Keywords: Non-gestational choriocarcinoma, Salpingo-oophorectomy, Dysgerminoma

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## Introduction

Dysgerminoma is the most common (30–40%) malignant germ cell tumor. It arises from the undifferentiated form of germ cells. It is often associated with a dysgenetic gonad. Its counterpart is Seminoma in males. Human chorionic gonadotropin (hCG) assays are often positive, confusing the diagnosis with pregnancy. With age predilection for young women, 10-20% of dysgerminomas are found during pregnancy, making it one of the most common ovarian malignancies to occur during pregnancy. Imaging findings have a prominent role in early and correct identification of ovarian dysgerminoma, the most common, ovarian malignant germ cell tumor.<sup>[1]</sup> It may be associated with choriocarcinoma or endodermal sinus tumor. The clinical presentation of pelvic pain, adnexal mass, and an elevated beta hCG ( $\beta$ -hCG) more commonly points to the possibility of an ectopic pregnancy rather than an ovarian malignancy. The majority of dysgerminomas are diagnosed early, Stage IA, and respond well to conservative fertilitysparing treatment of a unilateral salpingo-oophorectomy.

### **Case Report**

A 32-year-old female, married for 8 years, multigravida with previous two full-term normal deliveries came with complaints of amenorrhea for 2 months, with urine pregnancy test positive, heaviness in abdomen since 1 month. No complaints of pain in the abdomen, bleeding or spotting per vaginum, weight loss, nausea, gastrointestinal complaints, or cardio-respiratory embarrassment. Past history was suggestive of copper T removal 1.5 months back. No significant medical or surgical history. Past menstrual cycles were irregular, longer cycles, with moderate flow, and mild dysmenorrhea. Her per abdominal examination revealed distention more on the right side, with a palpable lump of approximately 20 weeks size uterus, cystic in consistency arising from pelvis, non-tender. On vaginal examination a cystic mass was felt in the right fornix, nontender, 8-10 cm in size, mass was felt separate from the uterus, and the uterus was normal in size. There were no transmitted movements to the cervix. No nodularity was felt in the pouch of Douglas. Per rectal examination also revealed no significant findings. The differential diagnoses were adnexal mass, fibroid uterus, chronic ectopic, and rudimentary horn. Her ultrasound showed a right ovarian mass of  $12.8 \times 7.7$  cm in size. Tumor markers CA 125 were 89.80 U/ml and Beta hCG-829 IU/L. Her magnetic resonance imaging revealed a large lobulated right ovarian mass of  $13.1 \times 6.9 \times 13.8$  cm which exhibits heterogeneous hyperintense signal intensity with internal cystic areas and restricted diffusion and there is resultant indentation over the dome of the urinary bladder and posterior displacement of the uterus and left ovary suggestive of right ovarian neoplastic mass. The uterus and left ovary were normal in size, shape, and morphology [Figure 1].

She underwent an exploratory laparotomy with right ovarian mass excision, with right-sided salpingo-oophorectomy with omental biopsy and B/L lymph node dissection [Figure 2a and b]. Histopathological examination was suggestive of dysgerminoma with no omental/lymphatic spread.

## Discussion

Treatment modalities encompass surgery, chemotherapy (including standard regimens and emerging therapies),



Figure 1: Pelvic magnetic resonance imaging

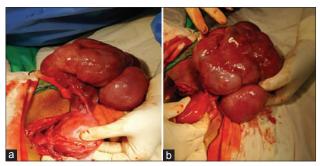


Figure 2: (a and b) Intraoperative findings of a large right ovarian mass

radiation therapy, targeted therapies, and immunotherapy. Prognosis is influenced by histological subtype, tumor stage, patient age, surgical success, response to chemotherapy, and tumor markers, whereas predictive biomarkers are continually emerging.<sup>[2]</sup> In young patients, fertility-sparing surgery (unilateral salpingo-oophorectomy + surgical staging) is opted for. If there is suspicion of involvement of the other ovary, a biopsy should be taken. It is a chemo and radio-sensitive tumor. For higher stages, adjuvant chemotherapy with BEP Regimen (bleomycin, etoposide, and cisplatin) can be given. Other regimens are VAC and POMBACE regimens. Radiotherapy is not used in young patients due to loss of fertility concerns. In older patients with a completed family, total abdominal hysterectomy + bilateral salpingo-oophorectomy + surgical staging is the method of treatment. The prognosis is very good with a 99–100% 5-year survival rate.

## Conclusion

Early diagnosis and treatment even in young women is necessary for timely treatment and improved cure rates. Dysgerminoma is a rare type of tumor which makes it difficult to diagnose due to its vague symptoms. More vigilance and management with a multi-disciplinary approach are needed for early diagnosis and better survival rates. Younger women need detailed evaluation to prevent delayed diagnosis.

## **Declaration**

#### **Conflict of interest**

None.

#### Disclosure

None.

#### **Informed consent**

Informed consent was taken from the patient.

## **References**

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## **Editor's Note**

Dysgerminoma arises from undifferentiated form of germ cells & is often associated with a dysgenetic gonad. It's hCG assays are often positive, hence leading to confusion with pregnancy. This case report of a young multigravida with a large ovarian mass initially misdiagnosed as pregnancy due to her hCG levels, which later on turned out to be a dysgerminoma highlights the need for better awareness about the condition. Imaging findings have a prominent role in early and correct identification of ovarian dysgerminoma, and this can lead to a more conservative approach in the management of the same.

How to cite this article: Bhandarkar JJ, Parikh M, Relwani H, Wani R. Urine Pregnancy Test Positive Does Not Always Mean Pregnancy! MOGS Chronicles 2025.

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