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Mature Ovarian Teratoma During Pregnancy: A Rare Case Report

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ABSTRACT

Background: *Ovarian teratomas are the most common germ cell tumors during pregnancy, with an incidence of approximately 1 in 1000 pregnancies. While most remain asymptomatic, complications such as torsion, rupture, and malignant transformation can occur, necessitating surgical intervention. Management during pregnancy requires careful consideration of maternal safety and fetal well-being.*

Case Presentation: *A 23-year-old woman, gravida 4 para 2 living 2 abortion 1, at 8 weeks gestation presented with acute onset lower abdominal pain and vomiting of 3 days duration. Ultrasonography revealed a 7.2×6×5 cm left ovarian dermoid cyst with a single viable intrauterine pregnancy. Due to symptomatic presentation and risk of complications, diagnostic laparoscopy with left ovarian cystectomy was performed. Histopathological examination confirmed mature cystic teratoma. Post-operative recovery was uneventful with stable fetal cardiac activity. The patient was discharged on postoperative day 3 and successfully continued her pregnancy to term, delivering vaginally without complications.*

Conclusion: *Symptomatic ovarian teratomas during early pregnancy can be safely managed with laparoscopic cystectomy while preserving both the pregnancy and ovarian function. Early surgical intervention in symptomatic cases prevents serious complications and allows successful pregnancy outcomes.*

Keywords: *Ovarian teratoma; Dermoid cyst; Pregnancy complications; Laparoscopy; First trimester surgery*

I. INTRODUCTION

Ovarian teratomas, also known as dermoid cysts, are germ cell tumors containing well-differentiated tissues derived from two or three embryonic layers (ectoderm, mesoderm, and endoderm).[1] They represent 20-25% of all ovarian neoplasms and are the most common ovarian tumors encountered during pregnancy, with an estimated incidence of 1 in 1000 to 1 in 10,000 pregnancies.[2] The term "teratoma" originates from the Greek word "teras," meaning monster, reflecting the diverse tissue composition including hair, teeth, sebaceous material, and occasionally bone or cartilage.[3]

Mature cystic teratomas are typically benign, but their occurrence during pregnancy presents unique clinical challenges. The gravid uterus limits the space available for ovarian mobility, increasing the risk of complications such as torsion (estimated at 3-11%), rupture (1-4%), obstructed labor, and rarely, malignant transformation (1-2%).[4] These complications may result in acute abdominal pain, requiring differentiation from other obstetric and non-obstetric causes including appendicitis, ectopic pregnancy, placental abruption, and urinary tract pathology.[5]

Diagnosis relies primarily on ultrasonography, which demonstrates characteristic hyperechoic areas with posterior acoustic shadowing. Magnetic resonance imaging (MRI) provides superior soft tissue contrast and can be safely performed during pregnancy, particularly when ultrasonographic findings are inconclusive.[6] Management depends on multiple factors including gestational age, cyst size, symptoms, and risk of

complications. While small asymptomatic teratomas may be managed conservatively with close surveillance, symptomatic cases or those with high torsion risk typically require surgical intervention.[7]

II. CASE PRESENTATION

A 23-year-old woman, gravida 4 para 2 living 2 abortion 1, presented to the gynecology department with a three-month history of amenorrhea and acute onset of lower abdominal pain for 3 days, associated with multiple episodes of vomiting. The pain was sudden in onset, severe in intensity, localized to the left lower quadrant with radiation to the left flank, and was not relieved by analgesics. She had no history of fever, urinary symptoms, or vaginal bleeding. Her obstetric history revealed two previous normal vaginal deliveries and one spontaneous abortion. She had no significant past medical or surgical history.

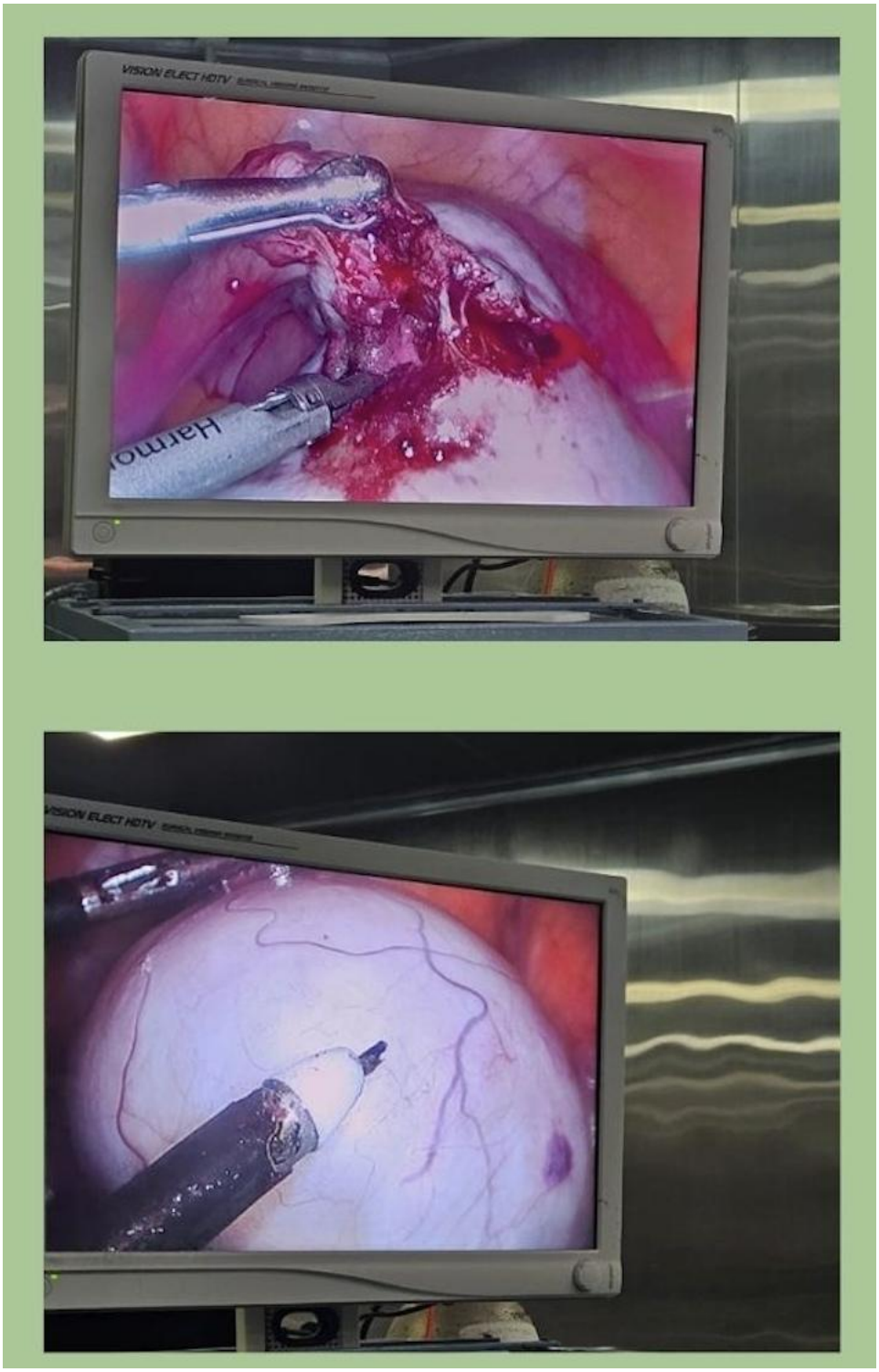
On general physical examination, the patient appeared uncomfortable but hemodynamically stable with normal vital signs. Systemic examination was unremarkable. Per abdominal examination revealed left lower quadrant tenderness on deep palpation with guarding and rebound tenderness. No masses were palpable due to guarding.

Laboratory investigations showed hemoglobin of 11.5 g/dL and total leukocyte count of 22,000/µL with neutrophilic predominance, suggesting an acute inflammatory process. Transabdominal ultrasonography was performed immediately and revealed a single live intrauterine pregnancy corresponding to 8 weeks 2 days gestation with fetal heart rate of 148 beats per minute. Additionally, a bulky left ovary was identified with a central fat-echogenic area containing few cystic spaces with peripheral ovarian stroma, measuring 7.2×6×5 cm with no internal vascularity, highly suggestive of a dermoid cyst. Per speculum and per vaginal examination were deferred in view of acute presentation and early pregnancy.

Given the acute symptomatic presentation, size of the cyst, risk of torsion, and ongoing pregnancy, a multidisciplinary decision was made to proceed with surgical intervention. After informed consent and pre-operative optimization, the patient underwent diagnostic laparoscopy under general anesthesia. Intraoperatively, a left-sided ovarian cyst measuring approximately 5×6×5 cm was identified with normal ovarian stroma. The cyst appeared benign without features of torsion or rupture. The right ovary, both fallopian tubes, and uterus appeared normal for gestational age. Left ovarian cystectomy was performed meticulously, preserving the normal ovarian tissue. The specimen was sent for frozen section examination, which reported it as mature teratoma of the left ovary with no evidence of malignancy.

Post-operatively, fetal heart rate was monitored and found to be stable. The patient received appropriate analgesia, antiemetics, and prophylactic antibiotics. She recovered well without any surgical or obstetric complications. Progesterone supplementation was continued. She was discharged on postoperative day 3 with advice for regular antenatal checkups. Final histopathology confirmed the diagnosis of mature cystic teratoma.

The patient continued her pregnancy uneventfully with regular antenatal follow-up and delivered vaginally at term without any complications, with a healthy neonate.



Per speculum and per vaginal examination was deffered. She underwent diagnostic laproscopy proceded with left ovarian cystectomy (Figure 1) and left side ovarian cyst of 5*6*5cms with normal ovarian stroma with gravid tres seen and left ovarian cystectomy specimen was sent for frozen section and was reported to be mature teratoma of left ovary.

Patient was discharged on post operative day 3 and adviced for regular antenatal checks up. Patient sucessfully continued her pregnancy and delivered vaginally without any complications.

III. DISCUSSION

Ovarian masses are detected in approximately 1-4% of pregnancies, with mature cystic teratomas being among the most common.[8] The present case demonstrates successful laparoscopic management of a symptomatic ovarian teratoma during the first trimester, highlighting several important clinical considerations.

The differential diagnosis of acute abdominal pain in early pregnancy is broad and challenging. In this case, the combination of acute left lower quadrant pain, leukocytosis, and ultrasonographic findings of a dermoid cyst raised suspicion of either impending torsion or acute inflammation of the cyst. Ovarian torsion complicates approximately 8% of pregnancies with ovarian masses and is more common with dermoid cysts due to their tendency to be pedunculated.[9] The sudden onset and severity of pain in our patient warranted urgent intervention to prevent potential torsion and its sequelae, including ovarian necrosis, infection, and pregnancy loss.

Timing of surgical intervention for ovarian masses during pregnancy remains debatable. Traditionally, the second trimester (weeks 14-20) has been considered optimal, as organogenesis is complete and the risk of preterm labor is lower compared to the third trimester.[10] However, recent evidence supports the safety of first-trimester laparoscopic surgery when clinically indicated.[11] Caspi et al. reported that conservative management may be appropriate for asymptomatic dermoid cysts smaller than 6 cm, but surgical intervention should be considered for symptomatic cases regardless of gestational age.[12] Our patient presented at 8 weeks gestation with acute symptoms, making conservative management inadvisable due to the high risk of complications.

Laparoscopic surgery during pregnancy offers several advantages over laparotomy, including reduced postoperative pain, shorter hospital stay, faster recovery, and improved cosmetic outcomes.[13] Concerns regarding pneumoperitoneum-induced reduction in uteroplacental blood flow and fetal acidosis have been addressed through the use of lower insufflation pressures (10-12 mmHg), CO_2 as the insufflation gas, and left lateral tilt positioning.[14] Fetal monitoring before and after surgery is essential to ensure fetal well-being. In this case, stable fetal cardiac activity both intra-operatively and post-operatively confirmed the safety of the procedure.

The goal of surgery in reproductive-age women is fertility preservation through ovarian cystectomy rather than oophorectomy. Frozen section examination during surgery is valuable to exclude malignancy, which occurs in approximately 1-2% of dermoid cysts, with risk increasing with maternal age.[15] Immature teratomas are rare but more likely to occur in younger patients and require oncological management. In our case, frozen section confirmed mature teratoma, allowing conservative surgical approach.

Histologically, mature cystic teratomas contain various tissue types including skin, hair follicles, sebaceous glands, teeth, bone, cartilage, and occasionally thyroid or neural tissue.[16] The diagnosis is usually evident on gross and microscopic examination. Postoperative progesterone supplementation is often recommended after first-trimester surgery to support the corpus luteum, although evidence for its necessity beyond 8-10 weeks is limited.[17]

The successful continuation of pregnancy and vaginal delivery in this case underscores the importance of appropriate timing and technique in surgical management. Long-term follow-up is recommended as recurrence of dermoid cysts can occur in 3-4% of cases, and the contralateral ovary may develop similar pathology in 10-15% of patients.[18]

IV. CONCLUSION

This case demonstrates that symptomatic ovarian teratomas during early pregnancy can be safely managed with laparoscopic ovarian cystectomy. Early surgical intervention in symptomatic cases prevents serious complications such as torsion, rupture, or obstructed labor while preserving both the pregnancy and ovarian function. Laparoscopic approach offers excellent outcomes with minimal impact on pregnancy when performed by experienced surgeons with appropriate precautions. Multidisciplinary coordination, careful patient selection, and meticulous surgical technique are essential for optimal maternal and fetal outcomes.

DECLARATIONS

Patient Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying images.
Conflict of Interest: The authors declare no conflict of interest.
Ethical Approval: Ethical approval was not required for this case report as per institutional guidelines.
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REFERENCES

[1]. Koonings PP, Campbell K, Mishell DR Jr, Grimes DA. Relative frequency of primary ovarian neoplasms: a 10-year review. Obstet Gynecol. 1989;74(6):921-926.

[2]. Zanetta G, Mariani E, Lissoni A, et al. A prospective study of the role of ultrasound in the management of adnexal masses in pregnancy. BJOG. 2003;110(6):578-583. doi:10.1046/j.1471-0528.2003.02939.x

[3]. Comerci JT Jr, Licciardi F, Bergh PA, Gregori C, Breen JL. Mature cystic teratoma: a clinicopathologic evaluation of 517 cases and review of the literature. Obstet Gynecol. 1994;84(1):22-28.

[4]. Hoover K, Jenkins TR. Evaluation and management of adnexal mass in pregnancy. Am J Obstet Gynecol. 2011;205(2):97-102. doi:10.1016/j.ajog.2011.01.050

[5]. Ayhan A, Bukulmez O, Genc C, Karamursel BS, Ayhan A. Mature cystic teratomas of the ovary: case series from one institution over 34 years. Eur J Obstet Gynecol Reprod Biol. 2000;88(2):153-157. doi:10.1016/s0301-2115(99)00141-4

[6]. Murakami T, Amano Y, Shimizu T, et al. MR imaging of dermoid cysts of the ovary and sonography: the role of MRI in differential diagnosis. AJR Am J Roentgenol. 1998;171(1):79-83. doi:10.2214/ajr.171.1.9648766

[7]. Caspi B, Levi R, Appelman Z, Rabinerson D, Goldchmit C, Hagay Z. Conservative management of ovarian cystic teratoma during pregnancy and labor. Am J Obstet Gynecol. 2000;182(3):503-505. doi:10.1016/s0002-9378(00)70218-6

[8]. Schmeler KM, Mayo-Smith WW, Peipert JF, Weitzen S, Manuel MD, Gordinier ME. Adnexal masses in pregnancy: surgery compared with observation. Obstet Gynecol. 2005;105(5 Pt 1):1098-1103. doi:10.1097/01.AOG.0000157465.99639.e5

[9]. Tan KH, Chen KC, Wang TL, Chong CF. Ovarian cyst torsion in pregnancy: a case report. Emerg Med J. 2010;27:879-880. doi:10.1136/emj.2008.063883

[10]. Boughizal MA, Hamdi K, Chelli H, et al. Management of adnexal masses in pregnant women. J Gynecol Obstet Biol Reprod (Paris). 2008;37(1):37-45. doi:10.1016/j.jgyn.2007.05.005

[11]. Reedy MB, Källén B, Kuehl TJ. Laparoscopy during pregnancy: a study of five fetal outcome parameters with use of the Swedish Health Registry. Am J Obstet Gynecol. 1997;177(3):673-679. doi:10.1016/s0002-9378(97)70163-7

[12]. Caspi B, Levi R, Appelman Z, Rabinerson D, Goldman G, Hagay Z. Conservative management of ovarian cystic teratoma during pregnancy and labor. Am J Obstet Gynecol. 2000;182(3):503-505. doi:10.1016/s0002-9378(00)70218-6

[13]. Mathevet P, Nessah K, Dargent D, Mellier G. Laparoscopic management of adnexal masses in pregnancy: a case series. Eur J Obstet Gynecol Reprod Biol. 2003;108(2):217-222. doi:10.1016/s0301-2115(02)00450-8

[14]. Society of American Gastrointestinal and Endoscopic Surgeons (SAGES). Guidelines for laparoscopic surgery during pregnancy. Surg Endosc. 2017;31(10):3767-3782. doi:10.1007/s00464-017-5637-3

[15]. Bouzoubaâ W, Jayi S, Alaoui FZ, Chaara H, Melhouf MA. Immature teratoma of the ovary: About a case. Pan Afr Med J. 2011;10:33. PMID: 22187621

[16]. Comerci JT Jr, Licciardi F, Bergh PA, Gregori C, Breen JL. Mature cystic teratoma: a clinicopathologic evaluation of 517 cases and review of the literature. Obstet Gynecol. 1994;84(1):22-28.

[17]. ACOG Practice Bulletin No. 191: Tubal Ectopic Pregnancy. Obstet Gynecol. 2018;131(2):e91-e103. doi:10.1097/AOG.0000000000002464

[18]. Cramer SF, Parmley T. Recurrence of mature cystic teratomas: histopathologic and statistical analysis of 24 cases. Am J Obstet Gynecol. 1976;124(5):517-523. doi:10.1016/0002-9378(76)90070-2