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Case Report

Recurrent ovarian dysgerminoma in pregnancy: a rare case of successful maternal and fetal outcome

Sneha B. Tinwani*, Sarika S. Thakare

Department of Obstetrics and Gynecology, Government Medical College, Nagpur, Maharashtra, India

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***Correspondence:**
Dr. Sneha B. Tinwani,
E-mail: snehatinwani@gmail.com

ABSTRACT

Dysgerminoma is a rare malignant ovarian germ cell tumor that typically affects women younger than age 30 and is highly sensitive to chemotherapy. Its occurrence during pregnancy is uncommon and recurrence during an ongoing pregnancy is extremely rare. We report the case of a 24 years old gravida 3 para 2 woman, previously diagnosed with left ovarian dysgerminoma, who presented at 27 weeks of gestation with a recurrent left adnexal mass and splenomegaly. Imaging revealed a large, multilobulated, vascularized pelvic-abdominal mass displacing the gravid uterus, with laboratory results showing elevated tumor markers. After multidisciplinary evaluation, the pregnancy was managed conservatively until 34 weeks, when increasing maternal symptoms necessitated emergency caesarean section with staging laparotomy. A healthy infant was delivered and the mass was completely excised along with total abdominal hysterectomy and right salpingo-oophorectomy. Histopathological examination confirmed recurrent dysgerminoma and the patient was subsequently started on platinum-based chemotherapy. This case highlights the importance of individualized, multidisciplinary care and timely intervention in achieving favourable maternal and fetal outcomes in pregnancies complicated by recurrent ovarian malignancy.

Keywords: Dysgerminoma in pregnancy, Germ cell tumor, Fetomaternal compromise, Recurrence

INTRODUCTION

Malignant ovarian germ cell tumors (MOGCTs) typically present as large, unilateral solid ovarian masses, particularly in women younger than age 30.[1] These tumors are highly sensitive to chemotherapy. MOGCTs are classified as either dysgerminomas or non-dysgerminomas. Dysgerminomas are the most common subtype and are bilateral in approximately 15% of cases. The non-dysgerminoma group includes yolk sac tumors, immature teratomas, embryonal tumors, choriocarcinomas and mixed germ cell tumors. Patients may present with an abdominal mass or acute abdominal pain, often resulting from intratumoral hemorrhage or ovarian torsion. Dysgerminomas account for 0.9% to 2% of all malignant ovarian tumors and 33% to 37% of all MOGCTs.[2] Approximately 90% are diagnosed in women under 30. Common tumor markers include lactate dehydrogenase (LDH), beta-human chorionic gonadotropin and alpha-fetoprotein (AFP), with LDH being the most relevant for dysgerminomas. Recurrence rate for dysgerminomas can range from 18% to 52%.[3] These tumors may spread by direct invasion and through lymphatic or hematogenous routes. Unlike many other ovarian malignancies, dysgerminomas primarily affect women of reproductive age. Therefore, fertility preservation and the management of concurrent pregnancy remain important but complex considerations. This case report describes the diagnosis and successful management of a recurrent ovarian dysgerminoma in a pregnant woman.

CASE REPORT

A 24 years old woman, gravida 3 para 2, with two previous lower segment caesarean sections (LSCS), presented to the emergency department with a seven-month history of amenorrhea. She had been referred from a peripheral primary health center due to a suspected neoplastic

abdominal mass and splenomegaly. Her obstetric history included a first LSCS five years earlier for non-progression of labor, resulting in the delivery of a male infant who died on the first day of life due to milk aspiration syndrome. The second LSCS, performed four years earlier for scar tenderness and abdominal mass, resulted in the birth of a healthy male infant. During that surgery, a mass arising from the left adnexa was excised and sent for histopathological evaluation, which confirmed a diagnosis of ovarian dysgerminoma. The patient was discharged after the procedure but was subsequently lost to follow-up.

The current pregnancy was spontaneous. On abdominal examination, the uterus was consistent with 26 to 28 weeks of gestation and deviated to the right. A firm mass was palpable to the left of the uterus, extending into the left lumbar region. Mild splenomegaly was also noted. Ultrasound revealed a single live intrauterine fetus corresponding to 27 weeks of gestation, with an estimated fetal weight of 1,121 g. A large, multiloculated intraperitoneal lesion measuring 16.7×10.8×13.5 cm was identified in the left hypochondriac and lumbar regions. The lesion demonstrated internal vascularity and displaced the uterus to the right while maintaining fat planes with adjacent structures. Magnetic resonance imaging (MRI) was recommended for further evaluation.

MRI confirmed a gravid uterus with a single live fetus. A well-defined, multilobulated, solid soft-tissue mass measuring 12.2×13.7×14.7 cm (transverse×anteroposterior×craniocaudal) was noted in the left lumbar region, extending from the superior endplate of T11 to the midbody of L4 vertebrae (Figure 1). The right ovary was visualized in the right iliac fossa and appeared normal, whereas the left ovary was not identified. The mass maintained fat planes with the jejunal loops anterosuperiorly, the anterior abdominal wall anterolaterally and the gravid uterus medially (Figure 2). Posteriorly, the lesion was related to the anterior surface of the left kidney, left ureter and left paravertebral muscles, with preserved fat planes. No lymphadenopathy was observed. The spleen measured 14.5 cm, consistent with mild splenomegaly and mild ascites was present.

Laboratory investigations revealed a haemoglobin level of 10.1 g/dl (reference range: 12-16 g/dl), a white blood cell count of 5,320/mm³ (reference range: 4,500-11,000/mm³) and a platelet count of 175,000/mm³ (reference range: 150,000-450,000/mm³). Liver and renal function tests and serum electrolyte levels were within reference ranges. Tumor marker levels were as follows: cancer antigen 125 (CA-125), 51.3 U/ml (reference range: 0-35 U/ml); AFP, 129 ng/ml (0-9.5 ng/ml); and LDH, 1200 U/l (230-460 U/l). A provisional diagnosis of a 27 weeks gestation pregnancy in a woman with a history of two LSCSs and a recurrent left adnexal mass was made. A multidisciplinary team elected to continue the pregnancy under close monitoring. The patient was admitted for observation and corticosteroids were administered at 32 weeks of gestation to promote fetal lung maturity. Serial ultrasound examinations showed appropriate fetal growth.

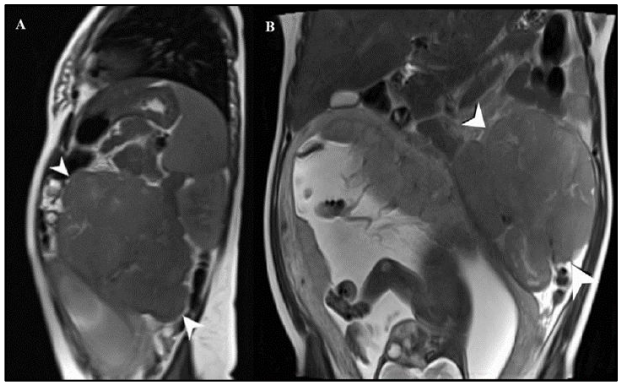

Figure 1: MRI scan done at 28 weeks of gestation showing solid soft tissue lesion. The arrows point to the solid soft-tissue lesion. (A) Sagittal MRI view showing a well-defined, multilobulated, solid soft tissue lesion. (B) Coronal MRI view of the lesion displacing the gravid uterus to the right. Abbreviation: MRI, magnetic resonance imaging.

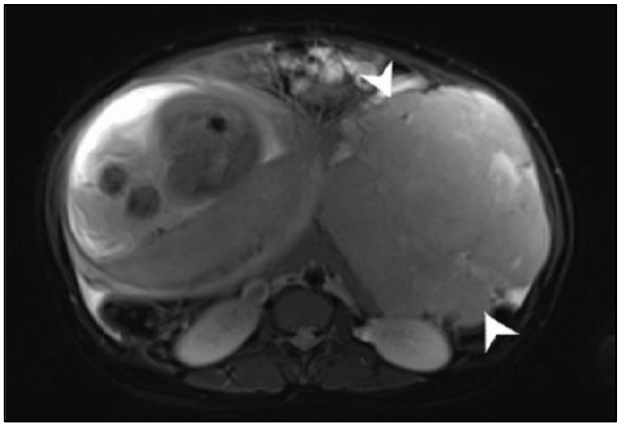

Figure 2: Transverse MRI view demonstrating the soft-tissue lesion in the left lumbar region (indicated by arrows). Abbreviation: MRI.

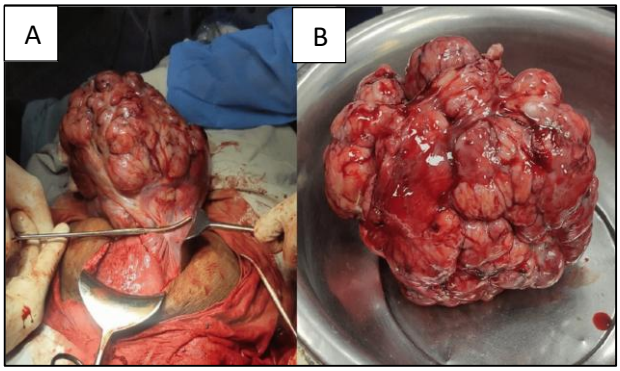

Figure 3: Macroscopic view of solid soft-tissue lesion. (A) Intraoperative image showing the excised ovarian mass. (B) Gross specimen of the ovarian mass, showing a multilobulated external surface.

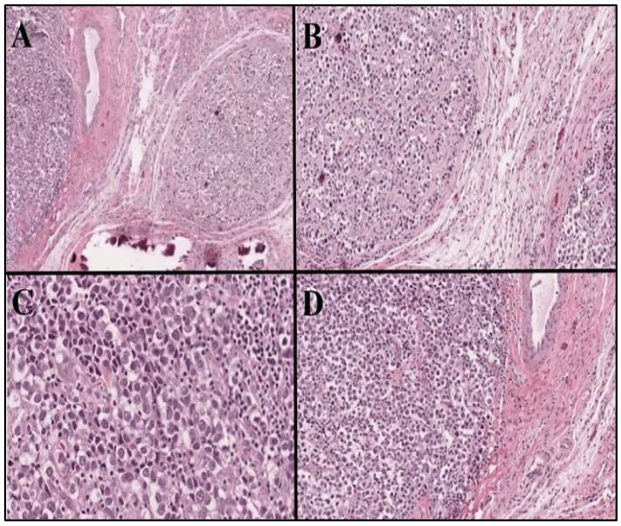

Figure 4: Solid soft-tissue mass histopathology. (A) Microscopic view of tumor cells arranged in a lobular pattern separated by fibrous septa. (B) Microscopic view showing lymphocytic infiltration. (C) High-power microscopic view of large, polygonal tumor cells with clear cytoplasm and prominent nucleoli. (D) Fibrous septa with lymphocytic infiltration within.

At 34 weeks of gestation, the patient reported increasing abdominal distension, discomfort, tachypnea and tachycardia. An emergency cesarean section combined with staging laparotomy was performed via vertical midline incision.[4] Ascitic fluid was collected for cytological analysis. A female infant weighing 1,900 g was delivered. Hemostatic sutures were placed on the uterus.

A large, solid, lobulated mass measuring approximately 20×15×10 cm arising from the left adnexa was identified and carefully excised with no evidence of metastasis (Figure 3). A total abdominal hysterectomy and right salpingo-oophorectomy were performed. The uterus, right ovary and right fallopian tube were sent for histopathological evaluation. The patient received two units of packed red blood cells intraoperatively. The procedure was completed without complications and the patient was transferred to the recovery room.

Gross examination of the excised ovarian mass revealed a multilobulated external surface and a weight of 2,100 g. The mass measured 20×15×10 cm and had a Gray-white, soft and hemorrhagic cut surface (Figure 3). Microscopic examination showed tumor cells arranged in lobules separated by fibrous septa infiltrated with lymphocytes. The tumor cells were large and polygonal with clear, eosinophilic cytoplasm and round to oval nuclei containing prominent nucleoli. Numerous mitotic figures were observed (Figure 4). Cytological analysis of the ascitic fluid revealed lymphocytes and mesothelial cells in a proteinaceous background.

Histopathological findings confirmed the diagnosis of malignant ovarian germ cell tumor-dysgerminoma. The uterus, cervix, right fallopian tube and right ovary were histologically unremarkable. Postoperative computed tomography showed no evidence of mediastinal, hilar or abdominal lymphadenopathy and no residual ascites. On postoperative day 10, tumor marker levels had decreased to within reference ranges. The final diagnosis was recurrent stage IA ovarian dysgerminoma in a para 3 woman. She was discharged on postoperative day 15 with a healthy newborn and is currently under follow-up with the radiation oncology department. She is receiving platinum-based chemotherapy with cisplatin, bleomycin and etoposide.[5]

DISCUSSION

Dysgerminoma occurring during pregnancy is extremely rare and its recurrence during an ongoing pregnancy is even more uncommon.[6] Ovarian tumors are often asymptomatic and typically come to clinical attention only after reaching a large size or causing complications. In the present case, the dysgerminoma was diagnosed due to a disproportionate increase in abdominal girth associated with the growing ovarian mass during pregnancy. Managing ovarian cancer in pregnancy is complex because it involves three interdependent considerations: the mother, the fetus and the malignancy. These elements must be addressed simultaneously. Pregnancy increases the risk of tumor-related complications such as torsion, incarceration, rupture and hemorrhage. In some cases, these complications can lead to fetal demise.[7]

In women with dysgerminoma presenting with stage I disease, the contralateral ovary may also be involved.[8] For patients with a unilateral tumor confined to the ovary without capsular invasion or rupture, fertility sparing surgery-typically unilateral salpingo-oophorectomy-is an effective treatment option.[9] No chemotherapy is required for stage 1A tumors unless recurrence occurs.[10] Treatment for stage 1B is bilateral salpingo-oophrectomy with or without total abdominal hysterectomy followed by cycles of bleomycin, etoposide and platinum chemotherapy.[11] Dysgerminomas are highly sensitive to platinum-based chemotherapy. However, when antineoplastic agents are administered during the first trimester, they may pose risks to the fetus, including teratogenicity, mutagenicity, intrauterine growth restriction or fetal death.[12]

Treatment for stage II, III and IV is complete resection followed by 4 cycles of bleomycin, etoposide and platinum chemotherapy.[13] Patients with bulky residual disease require additional cycles. If pregnancy is desired, in general, abdominal surgery should be undertaken in the second trimester because the risk of miscarriage is decreased and the size of uterus still allows a certain degree of access.[14] The recurrence rates have been reported more in the incompletely staged or unstaged patients, yet these tumors are highly chemosensitive and prognosis is excellent. Follow-up should be done every 3-4 monthly for 3 years, then 6 monthly for next 2 years and then yearly up to 10 years.

CONCLUSION

Managing malignancy during pregnancy is particularly challenging in women from remote areas who may lack education and access to antenatal care. In this case, the increasing size of the ovarian mass during gestation affected both maternal and fetal health. Optimal outcomes require proper obstetric management, including regular monitoring with a gravidogram, nutritional support and serial fetal growth assessments. Care in a well-equipped tertiary center and a multidisciplinary approach were essential in achieving a favorable maternal and neonatal outcome.

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