Oman Medical Journal (2011) Vol. 26, No. 3: 198-200
DOI 10. 5001/omj.2011.48

# Dysgerminoma with Pregnancy and Viable Baby: A Case Report

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Received: 29 Jan 2011 / Accepted: 11 Mar 2011


## Abstract

Dysgerminomas are the most common of primitive germ cell tumors of the ovary, accounting for 1-5% of all ovarian malignancies. The reproductive age group females are most commonly affected, thereby causing problems in conception and if pregnancy occurs, it leads to feto-maternal compromise. It is extremely rare to have a successful natural pregnancy, with viable child birth with a coexisting dysgerminoma, without any assisted reproductive interventions. We hereby report a case of successful spontaneous natural pregnancy in a primi gravida, associated with dysgerminoma, with no feto-maternal compromise.

**Keywords:** Dysgerminoma; Natural pregnancy; Viable birth.

## Introduction

Dysgerminomas are germ cell tumors of ovaries with excellent prognosis after surgery and/or chemotherapy.[1,2] The challenge, however, lies in the fact that dysgerminomas, unlike other tumors of the ovary affect females in the reproductive age group, thus preservation of fertility even after treatment is uncertain; and if a concurrent pregnancy has occurred, then should it be allowed to progress? Ultrasound guided fine needle aspiration cytology for ovarian masses is employed as an initial diagnostic procedure as it is simple, safe, less painful and with fewer complications. But the usefulness of fine needle aspiration cytology is in typing and determining metastatic status of other abdominal/pelvic organs and fluid. This aspect has therapeutic implications and is thus crucial to planning the proper management of the patient.[3] We present a case where the patient had no pre-delivery intervention for the treatment or control of the ovarian tumor and underwent therapeutic surgery for dysgerminoma, only when a viable child birth was possible.

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## Case Report

A 22 year old female primi gravida, married for two years, presented in the ward with 32 weeks amenorrhoea and right infra-umbilical abdominal swelling without any history of prior medical checkup. There was no history of any menstrual irregularity or any contraceptive intake in the patient before the pregnancy. Also, there was no history of any bowel changes, weight loss or family history of any gynecological malignancy. Local examination showed ascites and a right abdominal mass, of 20 cm x 25 cm in size was felt separate from the uterus and tubes. Ultrasonographic examination revealed a pregnancy of 32 weeks, with remarkable ascites in the peritoneal cavity, along with a right sided well differentiated heterogeneous mass of 20 cm x 20 cm in size, with no definite origin, but with a thick vesicular pedicle seen feeding the mass. Left-sided adnexal structures showed no pathology. No enlarged periaortic or retroperitoneal lymph nodes were appreciated and the omentum was unremarkable. Ultrasound guided fine needle cytology of the mass was performed. Peritoneal fluid present was drained and sent for cytological study.

In view of a viable foetus, elective surgery was planned immediately. Laparotomy with Low Section Caesarean Section was carried out. An enlarged right ovary with bosselated outer surface and intact capsule was noted. No abnormality was observed in any other intra-abdominal organ. A per-operative diagnosis of pregnancy with concurrent ovarian tumor (Stage 1a) was made. Right salpingo-oopherectomy was performed and a live male baby, appropriate for gestational age was delivered. The patient subsequently underwent chemotherapy with bleomycin, etoposide and platinum (BEP x 6 cycles). She is currently free of disease at 2 years post-treatment with a healthy baby.

## Pathological findings

**Gross:** A large ovarian mass of 35 cm x 25 cm in size with bosselated outer surface. Cut section showed a solid firm homogenous tan colored mass along with foci of hemorrhage and necrosis (Fig. 1). The ovarian capsule was intact with unremarkable adhered to the fallopian tube.

**Microscopic examination:** Ultra sonographically, guided fine needle aspiration cytology of the mass revealed dyscohesive clusters of large tumor cells with granular chromatin with prominent nucleoli and moderate eosinophilic cytoplasm admixed with

lymphocytes. No malignant cells were present in the peritoneal fluid examined.

Tissue sections of the mass showed well defined nests of tumor cells, separated by fibrous strands containing lymphocytes. The individual tumor cells were uniform having a large nucleus, granular cytoplasm and prominent nucleoli. The cytoplasm was moderate in amount with fine granularity and distinct cell outline with areas of hemorrhage and necrosis, (Fig. 2). Microscopically, the fallopian tube was normal. A final histopathological diagnosis of ovarian dysgerminoma (stage 1a) was made.

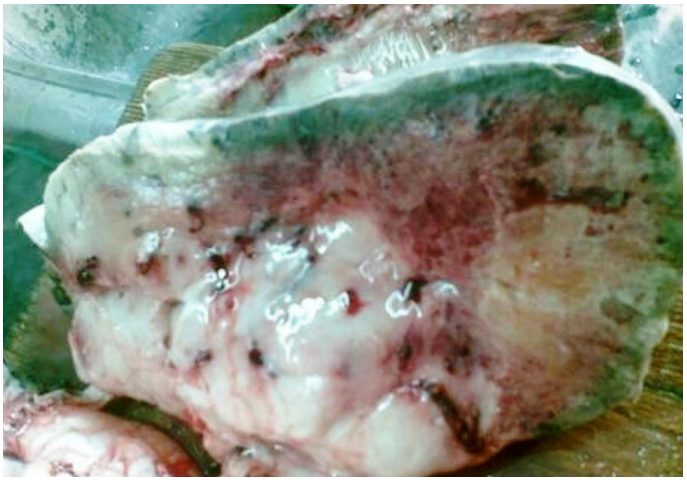

**Figure 1**: Grossly cut section shows solid, firm, homogenous tan colored growth with foci of hemorrhage and necrosis.

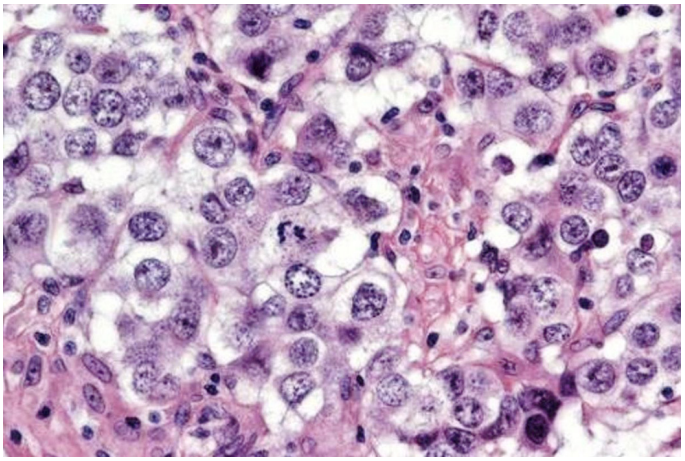

**Figure 2**: Tissue section shows well defined nests of large uniform tumor cells with granular nuclear chromatin, prominent nucleoli and finely granular cytoplasm separated by fibrous strands containing lymphocytes, Hematoxylin & Eosin x 40.

## Discussion

Dysgerminomas account for 1-5% of all ovarian malignancies in the first two decades of life.[4,5] Approximately 80% of cases are reported in less than 30 years of age (mean: 21 years), a finding consistent with our case.[1,2]

Several cases of pregnancies after treatment of dysgerminomas with various modalities including surgery and chemotherapy, have been reported previously.[6,7] Gershenson has reported that natural conception is possible in case of germ cell tumors of the ovary, a finding similar to our case.[8] Hirota et al. in their study reported the frequency of ovarian tumor associated with pregnancy ranges from 1:80 to 1:2200 deliveries.[9] While Ueda and Veki reported a single case (0.9%) of dysgerminoma in their study on 106 cases of ovarian tumor surgically resected during pregnancy.[10] But natural course of pregnancy in cases of dysgerminoma is extremely difficult, due to large sizes of the tumors, irregular menstruation, and collection of fluid aa well as tubal adhesions.

Ovarian tumors generally remain asymptomatic, until they are discovered due to their large size or related complications.[7] In the current case, dysgerminoma was diagnosed due to disproportionate enlargement of the abdomen because of ascitic fluid in the pregnant lady. Ultrasound guided fine needle cytology of the mass aided us in our initial diagnosis. In this regard, fine needle aspiration cytology is considered to be a simple, safe, less painful and results in fewer complications. It usually does not require general anaesthesia or hospitalization and is a reliable technique with possibility to reach an accurate diagnosis for most patients within 24 hours. But the usefulness of fine needle aspiration cytology is in typing and determining metastatic status of other abdominal/pelvic organs and fluid. This aspect has therapeutic implications and is thus crucial to planning the proper management of the patient.[3] The patient in this report deserves attention as she conceived naturally, without any assisted reproductive technique and spontaneous delivery was possible with a coexisting dysgerminoma.

Quirk and Natarajan have reported that approximately 75% of women with a dysgerminoma present with clinical stage Ia disease, a finding similar to our case.[4] Dysgerminoma disease staged Ia (ie, confined within the capsule of only one ovary) is best treated with simple unilateral salpingo-oophorectomy and residual microscopic disease is extinguished readily with chemotherapy, to which these cells are highly responsive.[11]

The best outcome for both mother and child depends on early diagnosis and excision of the ovarian lesion while it is still intact. The pathologic type and extent of ovarian carcinoma seem to be the most important determining factors in the maternal prognosis. Several authors have stated that once the existence of ovarian malignancy is suspected, immediate laparotomy is indicated regardless of the stage of gestation.[12-14] But Jubb, supports a more conservative approach in younger pregnant patients, especially if the ovarian lesion is intact or is of the pseudomucinous type.[15] There still remain unsolved problems concerning conservative management before and after termination for early-stage ovarian malignancy associated with pregnancy. When we encounter FIGO stage-Ib or higher ovarian malignancies in the second trimester and the patient strongly wishes to continue with the pregnancy, very serious problems arise as to whether conservative surgery and chemotherapy should be performed in the gravid woman or not. Antineoplastic agents can be mutagenic or teratogenic, or

cause fetal growth retardation or fetal death when used in the first trimester.[16] However, Kim and Park, have documented the use of chemotherapeutic agents during the second trimester and delivery of a normal infant.[17]

Patterson et al. in their review of the close surveillance policy for stage I female germ cell tumors of the ovary, stated that five-year survival rate for Stage Ia dysgerminomas is over 95%.[18] Our patient is on constant follow up with complete physical examination and CT scan at 6 monthly intervals and is currently free of disease at 2 years post treatment.

## Conclusion

The long-term outcome of patients with pure ovarian dysgerminoma is excellent. Patients can be treated with fertility-sparing surgery and can expect good reproductive outcomes. A dysgerminoma confined to a single ovary, with ascites, although large may not metastasize or seed the peritoneal cavity/fluid or other pelvic/abdominal organs and a natural course of pregnancy with viable child birth may still be possible.

## Acknowledgements

The authors reported no conflict of interest and no funding was received for this work.

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