ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

SUCCESSFUL MANAGEMENT OF OVARIAN ADENOCARCINOMA IN AN IVF PREGNANCY - A RARE CASE REPORT

KEY WORDS:

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ABSTRACT

The development of a gynecologic cancer during pregnancy is a very rare event, affecting 4 to 8 pregnancies in 100,000. The frequency of concomitant adnexal tumors in pregnancy is reported to be 0.150- 5.7 %, while ovarian cancer complicates 1 in 15000 -32000 pregnancies, being the second most common gynaecological cancer during pregnancy following cervical cancer. However, there is increasing incidence of ovarian cancer compared to cervical due to factors such as cervical cancer vaccination and increasing use of ART and increasing maternal age. The diagnosis and management of ovarian cancer during pregnancy remains unclear due to very rare occurences and scanty data available. We report a case of 32 year female with very large ovarian adenocarcinoma diagnosed during third trimester of pregnancy during routine antenatal scans, treated by neoadjuvant chemotherapy followed by elective caesarean section , cytoreductive surgery and HIPEC . **HIGHLIGHTS :** The association of ovarian malignancy with pregnancy is rare.The timing of delivery in patients depends on stage and gestational age.The therapeutic approach should focus on a multidisciplinary team integrating gynecological oncology ,neonatology services.

INTRODUCTION :

Ovarian cancer is the second most frequent gynecological cancer complicating pregnancy {1,2}. With the use of routine ultrasound examination in every patient , the incidence of abdominal masses diagnosed during pregnancy has increased and is estimated to be 2-10 % of all pregnancies {1,2,3}. Most common adnexal mass associated during pregnancy is a functional cyst. Majority of the benign masses are dermoid cyst , serous cystadenomas , rarely endometriomas, hydrosalpinx, leiomyomas may be diagnosed.{4}

Only 3-6 % of all ovarian cysts associated with pregnancy are malignant. {2} Malignant germ cell tumours are the most common ovarian malignancies during pregnancy ,while epithelial cancers are reported less frequently and are of low malignant potential. {1,2,5} Incidence of epithelial ovarian cancer is 1:12000- 1:50000 of all pregnancies {1}. The rare occurrence and scant data prompted the reporting of the present case.

CASE DESCRIPTION :

A 34 year old PRIMIGRAVIDA with IVF conception was referred to the Department of Obstetrics and Gynecology of Bombay hospital institute of medical sciences at 30 weeks of gestation with dull aching abdominal pain and inability of perceive the fetal movements well since few weeks. She also had a loss of appetite and loss of weight during this pregnancy .

On abdominal examination - there was an exaggerated fundal height and a huge abdominopelvic mass , round, non ballotable ,with ill defined edges . Fetal poles were not felt separately . Pelvic ultrasound examination, performed on admission , demonstrated a large complex heterogenous mass of 20*11*11cms with cystic component in the right pelvis with a single live intrauterine gestation ~26 weeks with AFI of 8cms { mild oligohydromnios with fetal growth restriction } figure 1 . Pelvic Magnetic resonance imaging { MRI} revealed a gravid uterus of 7 months with a large complex multiloculated cyst in right pelvis region 22*11*12cms . Mild to Moderate ascites and few enlarged retroperitoneal lymph nodes, morphologically and structurally suspicious of malignancy {figure 2 } . The serum tumour marker CA125 – 5375 U/ML .LDH- 497 MU/ML.

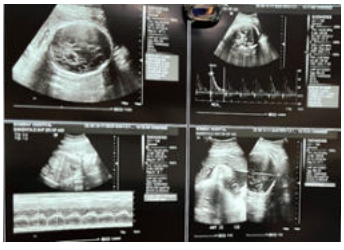

Figure 1

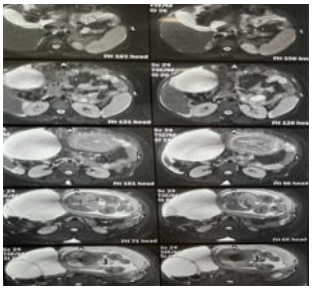

Figure 2

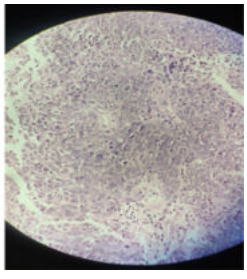

Figure 3

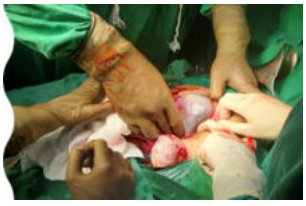

Figure 4

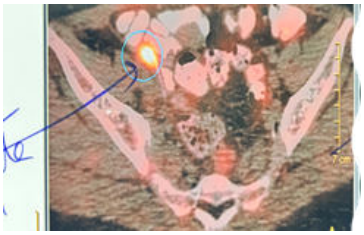

Figure 5

USG guided right ovarian mass biopsy done which confirmed the diagnosis of adenocarcinoma of ovary {figure 3 } . A multidisciplinary team of oncologist and neonatologist were involved . 6 cycles of neoadjuvant chemotherapy were given to the mother with carboplatin and paclitaxel . Patient was weekly monitored for fetal well being , which showed significant improvement in AFI and expected fetal weight . A weekly blood test which included complete haemogram , liver function test and renal function test were also being done . Prophylactic antenatal corticosteroids cover was given to the mother at 30 weeks .

An elective caesarean section with a pfannenstiel incision was done at 36 weeks and a healthy female baby of 2.3 kgs delivered . Evidence of right ovarian fluid filled cyst of ~ 10*8*11 cms removed in TOTO {figure 4 } . Evidence of enlarged left ovary which was also removed in toto and sent for histopathological examination. Patient was stable post op and allowed to breast feed for a month. The histopathological findings confirmed bilateral ovarian masses with adenocarcinoma . The oncological team suggested adjuvant chemotherapy with carboplatin and paclitaxel, and were restarted one month post surgery for 3 cycles . A PET CT SCAN showed small soft tissue FDG uptake ~2cms with no obvious omental thickening {figure 5 } .CA125 – 8 U/ml.

Cytoreductive surgery { hysterectomy with omentectomy} with HIPEC {hyperthermic intraperitoneal chemotherapy } with cisplatin 64mg was done for the patient 3 months post caesarean section { figure 6,7 }. She has undergone 9 cycles of adjuvant chemotherapy post surgery . CT scan shows no reccurence or identifiable lesion at one yearly followup.

The patient gives informed consent regarding the publication of case details and associated images.

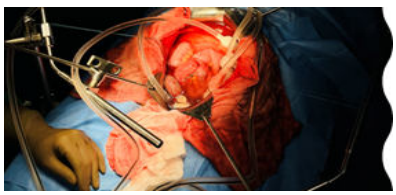

Figure 6

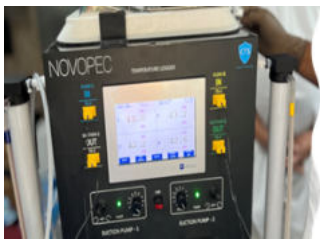

Figure 7

DISCUSSION :

The incidence of adnexal masses diagnosed during early pregnancy is 1-4% , and majority are of ovarian origin {7,8} . Approximately 2-6 % of ovarian tumours associated with pregnancy are malignant {6,8} . Ovarian tumours are more frequently reported in Primigravidas , and the majority are diagnosed at an early stage { < 1c according to International Federation Of Obstetrics And Gynecology staging guidelines } by ultrasound {4,5,6,8,9,10 }. Due to its high sensitivity and specificity for characterizing the morphology of abdominal masses , an ultrasound examination is the optimum diagnostic tool {7,11}. The malignant nature of ovarian tumours is indicated by several sonographic characteristics such as size, solid component or complex appearance , internal septations, irregular borders, increased vascularity and low resistance to blood flow. Ultrasound examinations are not capable of differentiating between benign and low malignant potential tumours, therefore , further imaging examinations are necessary . MRI examination may be safely performed during the second and third trimesters ; furthermore they may also reveal potential extraovarian spread {1,11}.

The high levels of tumour markers are helpful in differentiating between benign and malignant tumours. CA125 is secreted by 80-90 % of EOCs {3}, but in pregnancy the tumour markers may be normally elevated, or may indicate other complications, such as hemolysis / elevated liver enzymes / low platelet count {HELLP syndrome } , preeclampsia or miscarriage {11}. The elevation of inhibin , human chorionic gonadotropin and a-fetoprotein may indicate germ cell or sex cord stromal ovarian tumours. {3,4}
The management of malignant tumours associated with pregnancy represents a challenge , as both fetal and maternal well being must be taken into consideration .{12} . Surgical resection is indicated in case of ovarian tumours during pregnancy that are sized > 7cms , suggestive of malignancy and are associated with clinical symptoms . The majority of the patient with advanced stage disease require chemotherapy , which should be avoided in the first trimester {6,13}.

We report a rare case of epithelial ovarian cancer during pregnancy to highlight the effect of the intervention in particular the chemotherapy on pregnancy outcome {14} .The use of multi-agent chemotherapy during pregnancy has become widespread. The management of early-stage ovarian carcinoma diagnosed during pregnancy should be started without delay. With regard to the chemotherapy administration during pregnancy European Society of Medical Oncology (ESMO) guidelines recommended the following: the decision to administer chemotherapy should follow the same guidelines as in non-pregnant patients. In practice, it is possible to administer chemotherapy from 14 weeks gestational age onwards with specific attention to prenatal care. The current standard regimen for adjuvant chemotherapy to treat epithelial ovarian carcinoma is the combined use of carboplatin and paclitaxel {14} Patients receiving carboplatin during the second trimester have been reported with no serious effect on the fetus {15,16}.

CONCLUSION :

In conclusion the findings from this case concluded that prognosis and quality of the patient's life should be a priority, chemotherapy during the second trimester seems to be safe however, potential risks of this interventions still has to be considered.

Abbreviations :

EOC- epithelial ovarian cancer
ART- assisted reproductive technology.
HIPEC – hyperthermic intraperitoneal chemotherapy
IVF- invitro fertilization.

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