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Immature Teratoma of the Ovary and Pregnancy

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Abstract
Background: *Germ cell tumors are derived from primordial germ cells of the ovary. Immature teratoma is the second most common germ cell malignancy.[1] About 50% of pure immature teratomas of the ovary occur in women between ages 10-20 yrs and they rarely occur in pregnancy. The occurrence of ovarian tumors in pregnancy is a rare event with an incidence of 1:10,000 to 1:50,000 .Hence this case has been chosen in view of rarity and successful outcome.*
Case Report*: 22yrs oldprimigravida at 15W 3D came with pain abdomen since 4 days .Clinically Per abdomen mass palpable upto 20-22 weeks size , firm to cystic in consistency with tenderness in the umbilical region and left iliac fossa . Vaginal examination revealed fornicealfullness.MRI abdomen and pelvis done .Emergency laparotomy with left partialsalphingectomy with left oophorectomy.*
Conclusion: *Malignant ovarian immature teratomas should be considered in differential diagnosis of adnexal masses detected in pregnancies. chemotherapy improves prognosis especially if extra ovarian spread exists. Grade 2-3 should be encouraged for chemotherapy. However,gestational age at diagnosis, stage of the disease, patient's willingness to continue the pregnancy and fetal risks secondary to maternal treatments need to consider on patient basis.*

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I. Introduction

Germ cell tumors are derived from primordial germ cells of the ovary. Immature teratoma is the second most common germ cell malignancy[1]. About 50% of pure immature teratomas of the ovary occur in women between ages 10-20 yrs and they rarely occur in pregnancy. The occurrence of ovarian tumours in pregnancy is a rare event with an incidence of 1:10,000 to 1:50,000 . Hence this case has been chosen in view of rarity and successful outcome. This rare immature teratoma of ovary seen in a 22yr old primigravida presented with pain abdomen at 15weeks 3days is described in detail about the line of management.

II. Case Report

22yrs old primi,unbooked, spontaneous conception, at 15 weeks 3 days.Complaints of lower abdominal pain and abdominal distension for past 4 days.LMP :23.6.14 EDD:30.3.15
FIRST TRIMESTER:Spontaneous conception.Urine pregnancy test done at 50 days of amenorrhea and confirmed. Dating scan done and corresponding.T.folic acid taken. No history of vomiting /fever/drug intake/ radiation exposure/spotting pv /pain abdomen
SECOND TRIMESTER: Complained of abdominal pain and distension for past 4 days. Inj.TT not taken.Iron and Calcium taken
PAST MEDICAL HISTORY: Not a known case of diabetic/hypertensive/ tubeculosis/bronchial asthma/ epilepsy or cardiac disorder
Past Surgical History: Nil
Menstrual History: Menarche At The Age Of 12yrs. Rmc 3/30 Days
Marital History: Since 4 1/2 Months , Ncm
Obstetric History: Primi
Family History: Not Significant
Examination:
Vitals: STABLE
CVS: S1S2 +
RS: NVBS
P/A: mass palpable upto 26-28 weeks size, firm to cystic in consistency, tenderness present over umbilicus and left iliac region.
P/V :cervix pointed upwards,posteriorfornices fullness present,noforniceal tenderness, os

closed
P/R: rectal mucosa free

II.1laboratory Investigations:
Hemoglobin: 8.4gms/dl
CA 125: 96.81U/ML
ALPHA FETOPROTEIN: 1551.6ng/m
CEA: 2.09ng/dl
Beta HCG:25717mIU/ml
Serum LDH: 470U/L
Inhibin A:119.8pg/ml

Ii.2ultrasound Abdomen And Pelvis

1. Large heterogenous lesion
2. 19x10x8 cms seen superior to the funds extending into the bilateral flanks
3. Areas of cystic degeneration noted
4. Mild vascularity noted
5. No free fluid in the abdomen. Right ovary could not be visualised

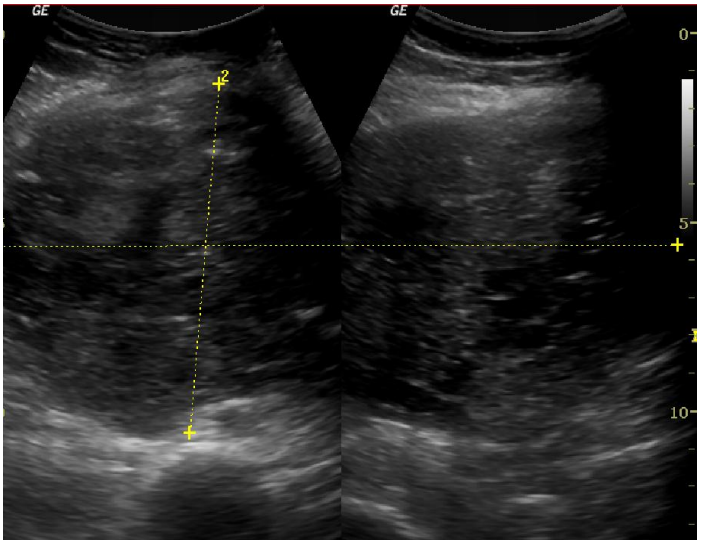

FIG:1 Ii.3 Mri Abdomen And Pelvis

well defined mass lesion seen in central abdomen left more than right, measuring 16.5x12.5x8.3cms in size.minimal free fluid in the abdomen. solid , cystic and hemorrhagic areas seen within the lesions. The lesion is seen superior to uterus and indents the fundus. pedicle appears stretched and twisted. The bowel loops are displaced laterally by the mass. possibility of twisted left ovarian mass

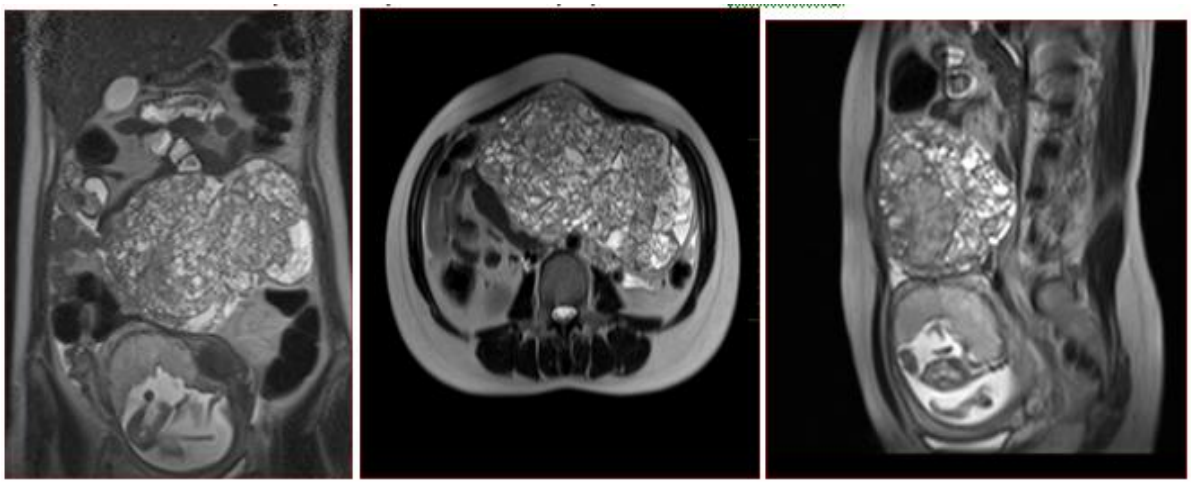

FIG:2 Ii.4 Treatment

one unit packed cell transfused pre-operatively.Surgical oncologist opinion obtained and patient was taken up for emergency laparotomy at 16 weeks of gestational age.Procedure done: emergency laparotomy proceeded with left partial salpingectomy with left oophorectomy.Midline vertical incision

II.5 INTRAOPERATIVE FINDINGS

Uterus 26-28 weeks size, left sided solid ovarian lobulated mass of size 18x20cms noted.
Torsion once around the pedicle.
Right sided normal ovary.
Dense adhesions noted between the mass and omentum and between mass and anterior abdominal wall same dissected.
Ovarian mass sent for frozen section: Benign teratoma, further sections to be assessed and final report will be given later
Proceeded with left partial salpingectomy and left oophorectomy
Peritoneal cavity palpated throughout and was found to be normal.Abdomen palpated for metastatic disease under the guidance of surgical oncologist.

II.6 HISTOPATHOLOGY:

GROSS:

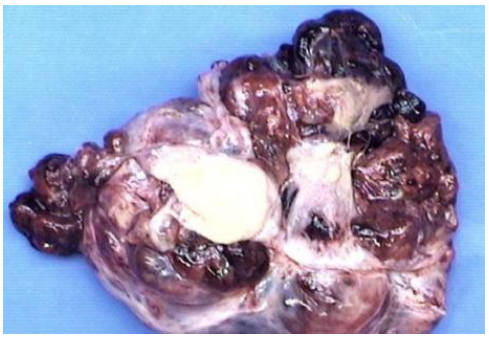

FIG: 3

Predominantly mature elements (90%) with focal immature neural elements.Peritoneal fluid has no malignancy.

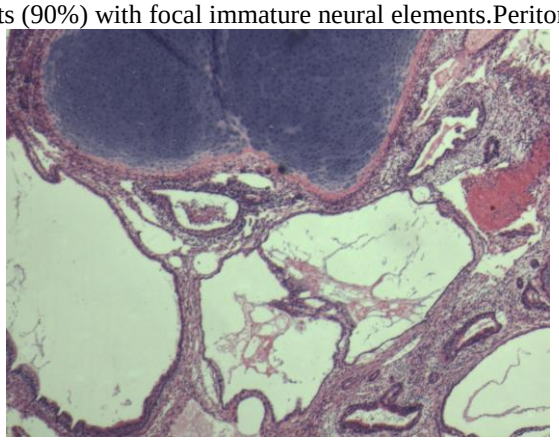

FIG:4

10% FOCAL IMMATURE NEURAL ELEMENTS.Confirmed by IHC - positive for vimentin&synaptophysin.

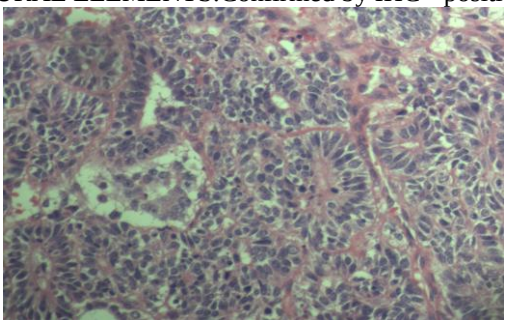

FIG:5

Final impression: Stage T1a NX cM0 Immature teratoma WHO grade 2 , margins free of tumour.

II.7 POST OPERATIVE

Pregnancy was not affected during or after surgery.

Tumour markers repeated after discussing with medical oncologist

INVESTIGATIONS	PRE OP	POST OP	NORMAL
CEA	2.09ng/dl	<0.5	<2.5ng/dl
BETA HCG	25717mIU/ml	11296mIU/ml	13-16 weeks LMP 13,300 – 254,000 mIU/ml

II.8 POST OP CHEMOTHERAPY:

After discussing the risks and benefits of initiating chemotherapy during pregnancy with the patient and her husband.

she received 5 cycles of chemotherapy with interval of 3 weeks.

Inj.Etoposide 170mg in 500ml NS over 2hrs IV day 1- day 3,

Inj.Bleomycin 30Units IV bolus for given on day 1 ,

Inj.Carboplatin 450mg in 500 ml of 5% dextrose over 2 hrs IV given on day1.

II.9 DELIVERY:

Patient came for regular antenatal check up. anomaly scan done and anomalies ruled out. Growth scan done found to be satisfactory.

At 37weeks 5 days patient got admitted in early labour, spontaneously progressed and delivered by spontaneous vaginal delivery with episiotomy .

Delivered BOY, 8/10 9/10, 2.395kg, 17.3.15 at 11am

Both baby and mother are doing well. baby was on artificial feeds.

II.10 POST NATAL PERIOD

Post delivery within 1 month, sixth cycle of chemotherapy given.

As tumour was chemoresponsive, lab and imaging revealed no evidence of tumour recurrence. Hence definitive staging deferred by oncologist and patient is under surveillance. The patient did not have any evidence of recurrence of ovarian cancer for 1.5 years. Her infant did not have any evidence of minor or major malformations, and showed normal neurological development during 1.5 years of follow-up.

III. Discussion

Immature teratomas of the ovary are malignant germ cell tumours of the ovary, a class of uncommon and aggressive tumours that appear more frequent among young women or adolescent girls.Pregnancy complicated by an immature teratoma is very rare with -

Reported incidence of 0.07%.They are frequently unilateral, associated with Ascites , and generally curable if diagnosed at an early stage .

Most ovarian cancers associated with pregnancy were detected by ultrasonography (USG).[2,3,4]

The main presenting symptom was adnexal mass followed by abdominal or pelvic pain mostly diagnosed by routine ultrasonography and also with elevated serum AFP (alpha- fetoprotein) levels. Unilateral salpingooopherectomy with preservation of the contralateral ovary and uterus are appropriate for treatment of most cases. If metastatic disease is encountered during surgery, cytoreductive surgery is recommended.Second look laparotomy for germ cell tumors is controversial; if inadequate staging was present at the first operation, second look surgery or CT should be considered .[5,6]

Germ cell tumors are very chemo sensitive. Patients with stage 1a, grade 1 tumors have excellent prognosis, do not require adjuvant treatment and postoperative observation is recommended.Chemotherapy recommended when extra-ovarian disease exists. The role of adjuvant chemotherapy for patients with stage 1, grade 2 or 3 tumor is controversial. BEP is the most commonly used combination, every 3 weeks for 3 or 4 courses .[7]

Highly immature teratomas detected during pregnancy deserve special attention.

Therefore, the principle of surgery in both pregnant and non-pregnant patients is resection of as much as tumor as is feasible and safe.

There is now a general consensus that a vertical midline incision with unilateral salpingo oophorectomy, peritoneal washing and careful inspection of the abdominal cavity is appropriate, preserving the potential for later fertility . The poor prognosis of malignant germ cell tumors treated by surgery alone indicates a need for adjunctive chemotherapy .

The risk of major malformation during the first trimester of pregnancy is 10% for single agent chemotherapy and 25% for combination chemotherapy . Therefore, the second trimester seems safer for chemotherapy.

The BEP protocol has been recommended for the treatment of immature teratomas .

The BEP treatment has been associated with ventriculomegaly, transient neonatal neutropenia and bilateral sensorineural hearing loss [8,9]

IV. Conclusion

Malignant ovarian mass should be considered in differential diagnosis of adnexal masses detected during pregnancy. Fertility-sparing surgery with or without chemotherapy during or after pregnancy are a therapeutic option.

Chemotherapy improves prognosis, especially if extra ovarian spread exists.

However, gestational age at diagnosis, stage of the disease, patient's willingness to keep the pregnancy, and fetal risks secondary to maternal treatments need to consider on a patient basis.

THREE GOLDEN CRITERIAS:

1. RARITY
2. ALWAYS WAIT FOR THE FINALS
3. HEALTHY BABY

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