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Case Report on Adnexal Masses in Pregnancy

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Abstract: ***Introduction: USG is easily available and accessible modality of investigating early pregnancy, its widespread use has led to the detection of incidental adnexal masses more frequently. The majority of ovarian cysts in pregnancy resolve spontaneously. Ovarian cancer is rare in women of child being age. Most of the ovarian masses diagnosed appear to be borderline with a low malignant potential and are complex on USG. Materials & Methods: Here we report about a patient 29 years old female primigravida with 8+2 weeks gestation age. Her antenatal USG showed a large mildly thick walled cystic ovarian mass with features more inclined towards malignancy. MRI showed the same result. The CA-125 levels were > 5000 raising strong suspicion of malignancy. Result: The patient was managed at our institute and her pregnancy continued till term to be delivered vaginally. Conclusion: There are no clear guidelines for management of adnexal masses in pregnancy .Complication like torsion, rupture and imaging findings suggestive of malignancy require surgical intervention in any trimester which is in the best interest of both mother and growing fetus.***

Keywords: Adnexal masses pregnancy, Borderline ovarian tumor, Serous Cystadenoma

1. Introduction

The diagnosis of Adnexal mass during pregnancy has become increasingly common with the advent of routine obstetrical USG. The majority of Adnexal masses are discovered incidentally during routine prenatal USG performed for obstetrical indications.

The reported incidence of Adnexal masses in pregnancy ranges from 1 in 81 to 1 in 8000 pregnancies. These cysts may be asymptomatic and may be coincidently found or until their size increases the abdominal girth. Pain due to rupture, hemorrhage into the cyst, infection, venous congestion or torsion may be of sudden onset or of a more chronic nature.

Ultrasonography (USG) both Trans abdominal sonogrpahy (TAS) and Trans vaginal sonography (TVS) is of paramount importance in evaluating a pelvic mass. It is particularly important when the mass is not well defined or when pelvic examination is limited by discomfort.

The majority of Adnexal masses are ovarian in origin, but can be also due to paratubal cysts, chronic fallopian tube disease (hydrosalpinx) and fibroids that appear to be extrauterine. Fibroids that are pedunculated or located in the broad ligament are sometimes seen as separate from the uterus and thus are reported as adnexal masses. Nearly all ovarian masses detected in pregnancy are benign, but the overall reported incidence of ovarian cancer in pregnant women varies from 0.004–0.04%. Most of the ovarian masses diagnosed appear to be borderline with a low malignant potential and are complex on a ultrasound assessment. Malignant tumours vary in size but 75% of them are larger than 5 cm in diameter and most of these have solid, as well as cystic, elements on ultrasound examination.

2. Case Report

A 29 years old female primigravida with 8+2 weeks of gestation presented in gynaecology OPD with chief complaints of spotting per vaginum since 1 week and abdominal distention. There was no pain in lower abdomen, bladder or bowel complaints. Her previous menstrual cycles were normal. There was no significant past, personal or surgical history. On examination she was conscious and coherent. Her vitals were stable; she was a febrile to touch. Abdominal examination revealed uterine size corresponding to 26 weeks size. Her antenatal USG done outside showed a large mildly thick walled cystic area of 15.5 x 9.9 x 14.8 cm mass superior to uterus reaching superiorly almost up to epigastrium region with multiple lobular papillary projections S/o right ovarian cystadenoma. The CA-125 done in outside hospital exceeded 5000 IU which all the more raised suspicion of malignancy.

MRI (Fig -1) showed a large cystic mass lesion superior to uterus measuring approx. 8.7 cm x 15.2cm x16.1 (AP X TD X HT). The content of the cystic lesion appear hyperintense on T2 weighted images while hypointense on T1 sequences. The cystic mass was predominately on the right side of midline and was suggestive of Complex large ovarian mass lesion in midline superior to uterus with small cystic lesion inferior to large cystic lesion along with a gravid uterus. The upper abdomen was unremarkable.

The case was discussed with oncosurgeon and decision for exploratory laparatomy in view of suspected features of malignancy in USG and MRI was taken. Preoperative investigation comprising of CBC, BG, viral markers, tumour markers like CA-125, LDH, AFP, CEA, RFT, LFT were done. Diagnostic laparoscopy followed by exploratory laparotomy was done after taking due consent from patient and relatives.

On laparoscopy a large 15 x 10 cm cystic mass was seen with smooth wall and engorged veins on surface. Mass

appeared to be arising from left ovary, left ovary could not be visualized separately. Due to large size of the mass bilateral tubes could not be visualized. Uterus appeared 8-10 weeks size. It was decided to perform an exploratory laparotomy. Abdomen was opened in layers by pfannensteil incision; cystic fluid aspirated and sent for examination which on microscopy revealed neutrophilic rich fluid. (Fig-2) Approx 1.5 ml of straw colored cystic fluid was suctioned out. Left salpingoopherectomy was done by ligating left infundibulopelvic ligament. The mass was sent for frozen section examination. Right ovary and tube appeared normal in size and shape. Frozen section reported borderline malignant papillary serous cystadenoma.

Borderline tumors are important and special entity between benign and malignant tumors of ovary .The criteria for the diagnosis of Borderline tumors are mainly histopathological –a) epithelial proliferation with papillary formation and pseudo stratification b) Nuclear atypia and increase mitotic activity c) Absence of true stromal invasion i.e without tissue destruction. d) Detached cell clusters. Because of less malignant potential of tumor staging laparotomy in our index case was modified by a) resecting the visible tumor b) omental biopsy taken instead of total omentectomy c) with no resection of lymph nodes , clinically uninvolved tissues like uterus or other ovary. The oncosurgeon too was consulted and decision was to go for conservative surgery with an attempt to continue the pregnancy after counseling proper counseling of the attendants. Abdomen was closed in layers.

She was given uterine relaxants, tocolytics, and injecaible antibiotics for 48 hours. A repeat USG was done before discharge which showed a single viable intrauterine pregnancy of around 8 +5 weeks period of gestation age. Patient was discharged on 3rd postoperative day.

Her pregnancy continued to be monitored on OPD basis. She was regularly followed up in antenatal check up. Serial Ca-125 levels were done at monthly interval showed decreasing trends, till it was normal by 5 months period of gestation. Her NT Scan and double markers came to be normal. Anomaly scan at 20 weeks too showed normal growing fetus. Her color Doppler and biophysical profile at 8 months scan was normal .Thus her whole antenatal periods were uneventful. At 38+6 weeks period of gestation she came with labour pains with good bishops score and delivered a full term child of 3.4kg weight vaginally.

3. Discussion

Frequency of ovarian masses being co-existent with pregnancy is 1:1000[(1)] and among these frequencies of being malignant is approx 1:15000 to 1:32000 pregnancies.[(2)] Most common ovarian masses encountered during pregnancy are functional cysts of ovary. The other ovarian masses in order are being cystic teratomas, serous cyst adenomas, paraovarian cyst, mucinous cystadenomas and endometriomas.[(3)] The mucinous cystadenomas are one of the benign epithelial ovarian tumours which tend to be unilateral and multilocular with smooth surface and contain mucinous fluid.[(3)] They comprise of 12-15% of all ovarian tumours. Around 75% of all mucinous tumours are benign, while 10% are borderline and 15% are invasive carcinomas. The benign mucinous tumours are most common in the 3rd 5th decades of life and may be 20-30 cm in size. [(4)]

Ovarian cysts are the most commonly encountered masses in pregnancy. Corpus luteum cysts constitute 13%-17% of cystic masses in pregnancy. The corpus luteum forms after ovulation and persists for 8-9 weeks during pregnancy.[(5,6,7)] It produces progesterone or until the placenta takes over. Failure of resolution of corpus luteum at the end of 9 weeks leads to the development of cysts. Cysts containing clotted blood (hemorrhage cysts) can also be seen in pregnancy. Follicular cysts are the most common functional cysts, which occur under the influence of hormonal changes in pregnancy. They represent a follicle that failed to ovulate and regress spontaneously. Endometrioma also known as chocolate cyst can also be present in the adnexa of pregnant patients.[(8)]

Management of ovarian cysts depends on the size of cysts. Most of the cysts having diameter of < 6 cm and which have benign looking picture on USG can be managed conservatively and careful follow up can be done as most of then resolve spontaneously over time. Cysts which measure more than 10 cm are generally resected due to fear of complications like torsion, rupture and increased chances of malignancy. These days due to advent of modern techniques like MRI, TVS with Doppler, high resolution USG, conservative management has become easy. [(9)]

Management of ovarian cysts can also be done according to period of gestation. Most common ovarian cysts encountered during pregnancy are corpus luteal cysts. They usually resolve upto 12-16 wk so follow up can be done till then. There is an additional advantage of waiting 16 wks as by this time implantation of pregnancy is more secure and there are less chances of abortion. Persisting ovarian cysts beyond this gestation are managed by cystectomy or ovariotomy as indicated till 28 weeks. Beyond this gestation risk of preterm labor is there if surgical option is considered.

The ovarian tumors arise from surface, celomic or germinal epithelium, germ cells, sex cords and ovarian stroma [10]. The surface epithelial tumors are classified on the basis of following parameters: cell type- Serous, mucinous and endometroid, pattern of growth- solid, cystic or surface, amount of fibrous tissue and cellular atypia with invasiveness – benign, borderline and malignant forms[11]. In our index case grossly, the tumor showed congested outer surface. Cut surface showed a unilocular cyst with viscid material and papillary growth. Areas of hemorrhage and necrosis were not seen. The microscopic picture revealed cuboidal to columnar cells lining the cyst wall and papillae, at places the serous epithelium was multilayered (Fig 3). The nuclear atypia was mild to moderate however invasion in stroma was not seen. (Fig 4) A diagnosis of borderline papillary serous cystadenoma was made on histopathology.

It is pertinent to note that the borderline ovarian tumors are diagnosed purely on the basis on primary tumor morphology irrespective of presence or absence of peritoneal invasion , lymph node metastasis or lung metastasis[12,13].The peritoneal washings on cytology did not show presence of malignant cells. (Fig 2)

Emergency laparotomy is taken up whenever complication such as torsion, rupture, hemorrhage, necrosis or features of malignancy, whatever may be the period of gestation.[14]

Masses that are discovered in the first trimester in asymptomatic patients should be evaluated by USG looking for features of malignancy. If there is suspicion of malignancy, surgical intervention is carried out, preferably in the 2nd triemester (16-20 weeks) to avoid the risks of miscarriage and performed earlier or preterm delivery if performed later.

If USG fails, to demonstrate malignant features observations with reevaluation in next fetal anatomy (18-22 weeks) of gestation age is deemed reasonable. MRI, is preferable whenever adequate evaluation of mass is not possible by USG. In masses discovered in 2nd trimester, a similar management plan can be applied with reevaluation in the 32-36 weeks of gestation. Finally masses discovered in 3rd trimester with no evidence of malignancy can be managed at the time of LSCS (if an obstetric indication of LSCS is present) or 6 weeks after delivery. [15]

In our case as the patient presented with a huge mass palpable per abdominal more in favor of malignancy on USG and MRI so she had to be operated in early 1st trimester.

4. Conclusion

The recent advances in routine imaging during pregnancy have led to an increased rate of detection of such masses. We recommend that the evaluation of pregnant patients abdominal USG along TVS (in later stages of pregnancy). In cases where additional imaging is needed MRI is the modality of choice due to absence of fetal radiation risk and larger scanning area and improved definition of tissue planes and their composition. Asymptomatic simple cysts < 6 cm in diameter, are generally benign and can be managed conservatively with closed follow ups. Indications for prompt surgical interventions include the presence of complication and like torsion, rupture and imaging findings suggestive of malignancy. The best surgical outcome is usually observed during the second trimester.

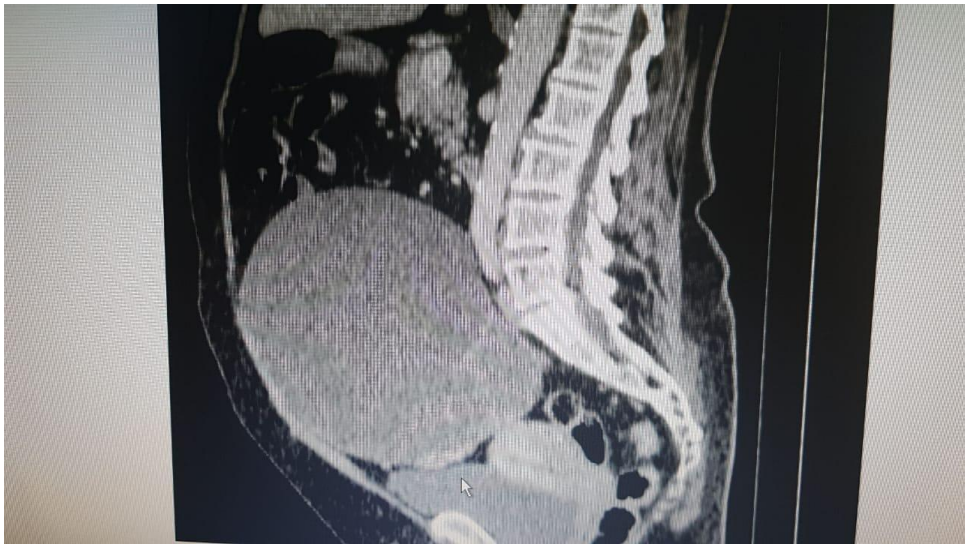

Figure 1: MRI Scan

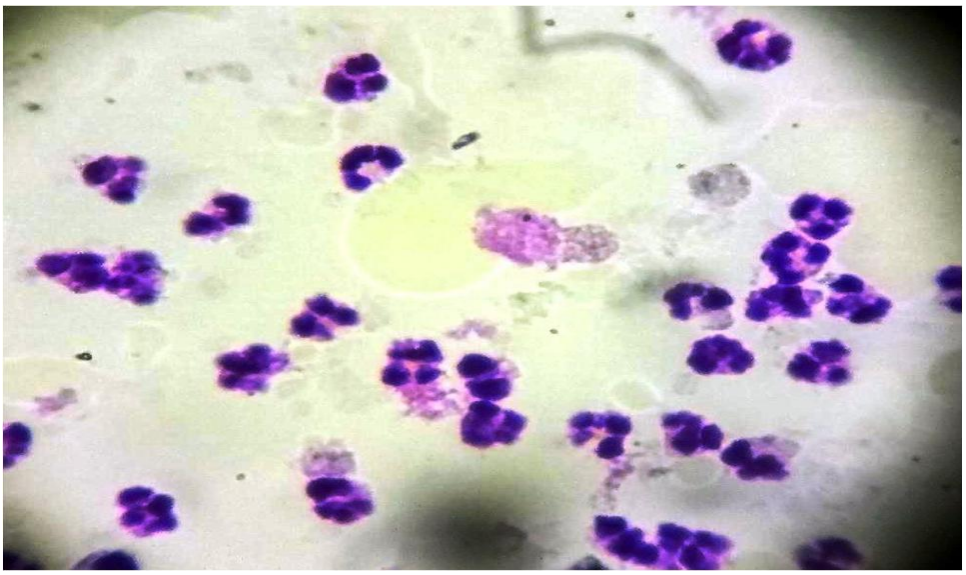

Figure 2: Peritoneal washings showing neutrophils (Geimsa , 400 x)

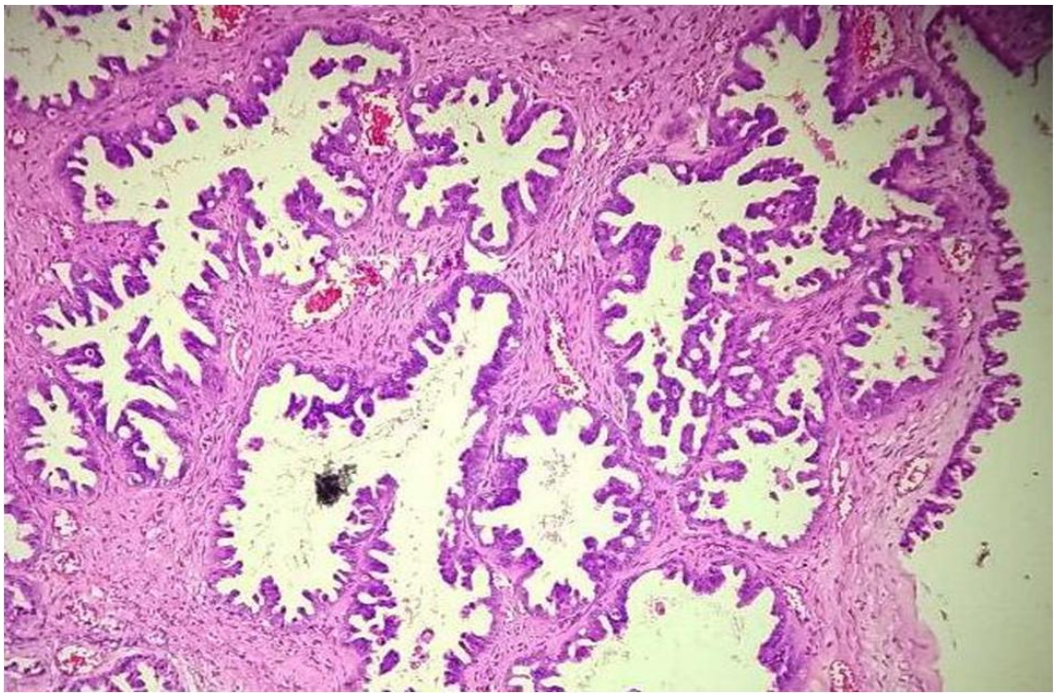

Figure 3: Serous Cystadenoma Borderline (H & E, 100 X)

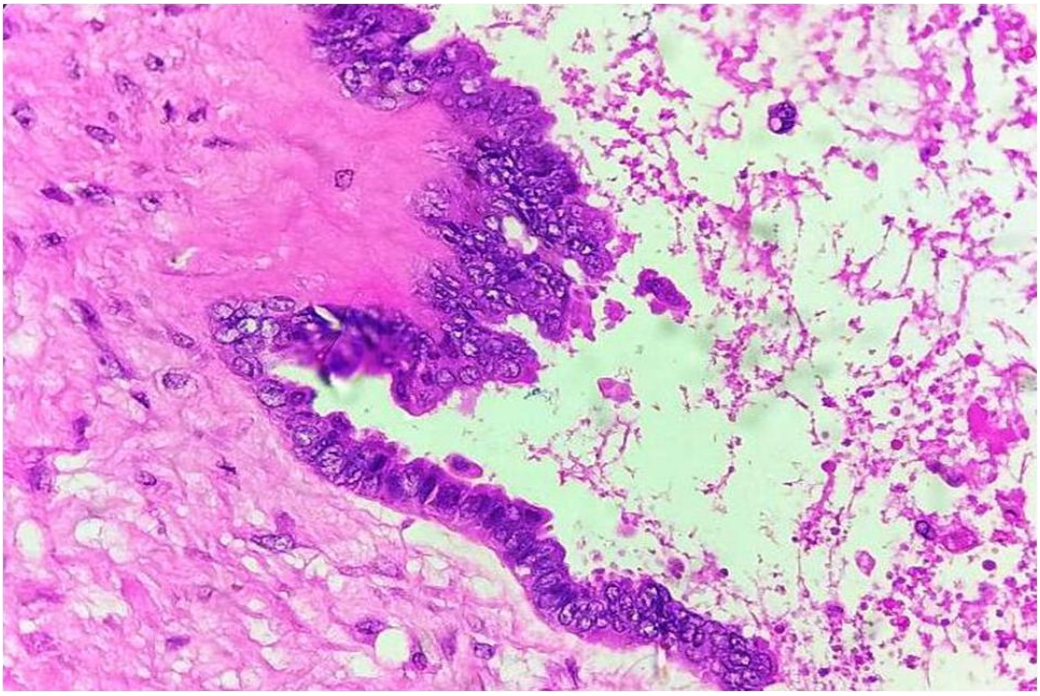

Figure 4: Serous Cystadenoma Borderline (H & E, 400 X)

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