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IMMATURE TERATOMA : A RARE REPRESENTATION OF OVARIAN MALIGNANCY IN ADOLESCENT FEMALE

Obstetrics & Gynaecology

Dr. Varsha Sankhala — Resident, Obstetrics and Gynecology Department, SMS Medical College, Jaipur.

Dr. Mohan Lal Meena* — Senior Professor, Obstetrics and Gynecology Department, SMS Medical College, Jaipur. *Corresponding Author

Dr. Pawan Kumar — Senior Resident, Department of General Surgery, JLN Medical College, Ajmer.

Dr. Aakanksha Siwach — Resident Obstetrics and Gynecology Department, SMS Medical College, Jaipur.

ABSTRACT

Immature teratoma is defined as teratoma containing variable amount of immature embryonal type (generally) neuroectodermal tissue. A 13 year old presented to gynecological OPD with complaint of stretching sensations and slight pain abdomen associated with a rapidly growing abdominal mass since last 2 months. She had no other particular complaint. On per abdominal examination found a lump 20x16 cm in size extending from xiphisternum to pubic symphysis, tense, non tender solid and with smooth surface. Right sided cystectomy with oopherectomy was done after complete examination, investigation along with the consent.

KEYWORDS

immature embryonal neuroectodermal tissue, ovarian tumor.

INTRODUCTION:

Teratomas are tumours commonly composed of multiple cell types derived from one or more of the three embryonic germ layers : ectoderm, endoderm, mesoderm. According to WHO, immature teratoma is defined as teratoma containing variable amount of immature embryonal type (generally) neuroectodermal tissue. [1]

The pure immature teratoma accounts for fewer than 1% of all ovarian cancers but it is the second most common germ cell malignancy and accounts for 10% to 20% of all ovarian malignancy seen in women younger than 20 years.[2]

Here we report a case of ovarian immature teratoma in a 13 year old female which is a rare presentation of this tumour.

Case Report:

A 13 year old presented to gynecological OPD with complaint of stretching sensations and slight pain abdomen associated with a rapidly growing abdominal mass since last 2 months. There was no history of anorexia, bowel and bladder dysfunction, or any gastrointestinal symptom. She had not attained menarche till date. The past surgical and medical history was insignificant. Family history was insignificant. She had not been sexually active. Thorough general and physical examination was done. The vital signs were stable and she was afebrile. On per abdominal examination found a lump 20x16 cm in size extending from xiphisternum to pubic symphysis, tense, non tender solid and with smooth surface. There was no guarding or rebound tenderness. Lump was mobile from side to side and above below. The lower margin of the tumor can be reached above pubic symphysis.

The investigation showed raised serum LDH (737 U/L), raised serum alpha-fetoprotein (696 ng/ml) raised CA-125 (117.6 U/ml) with CEA (3.6 ng/ml) and serum beta HCG (< 1.2 Mau/ml). USG showed a right side ovarian mass of size >20x15cm with large cystic lesions with calcific foci, solid components and internal echoes extending from pelvis to epigastrium displacing bowel loops and abdominal organs, right ovary was not visualized separately and the left ovary was normal, suggestive of right sided mature teratoma. There was evidence of free fluid in pouch of Douglas on ultrasonography. MRI showed a large abdominopelvic cystic mass of size 16x13x22cm with predominantly internal fluid intensity with internal heterogenous areas showing calcification and fat components likely suggestive of complex dermoid cyst likely dermoid.

After proper consent patient was posted for exploratory laprotomy. A vertical paramedian incision of approx 15 cm was given, upon entering the abdomen an ovarian mass of size 18x14x10cm found. The capsule was smooth and without excrescences, although there were areas of the cortex that were pasty yellow, compared to the pearly white capsule of the typical dermoid. Omentum was adherent on surface of ovary, plication was done for separation, careful abdominal exploration revealed no seeding, metastasis, or ascites. There was no evidence of torsion of the adnexa.

The decision for right sided cystectomy with oopherectomy was taken and samples saved in formalin and sent for HPE while the ipsilateral fallopian tube was preserved and contralateral tubes and ovary were left untouched. Samples from pouch of Douglas and peritoneal washing was obtained and sent for HPE. The patient was stable throughout the procedure. Post operative period was uneventful.

Histopathology report : The final histopathology report showed a right ovary mass 18x14x10 cm external surface smooth, capsule intact, cystic with multiple solid areas of 2-4 cm in sizes. Microscopy: immature teratoma of high grade and peritoneal cytology negative for malignancy. TNM stage pT1a Nx Mx.

She was referred to oncologist for further management and for chemotherapy where she received BEP regimen in 3 cycles and follow up was done by CT scan of thorax.

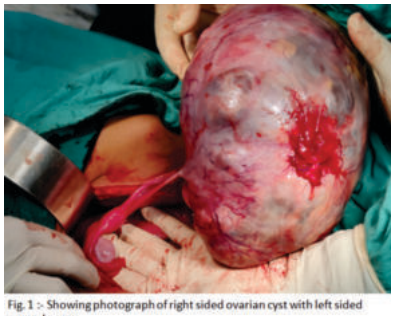

Fig. 1 :- Showing photograph of right sided ovarian cyst with left sided normal ovary.

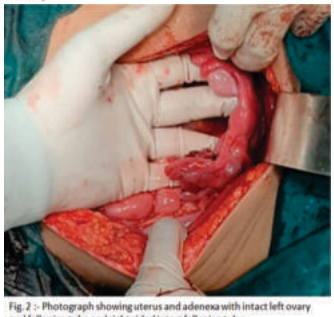

Fig. 2 :- Photograph showing uterus and adenexa with intact left ovary and fallopian tube and right sided intact fallopian tube.

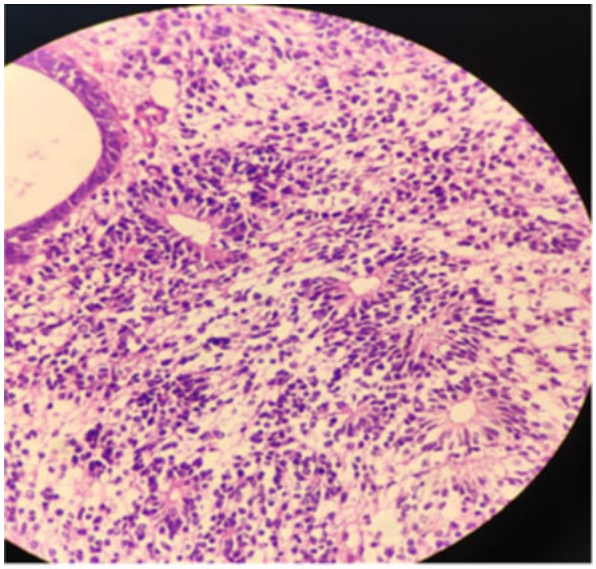

Fig. 3 :- HNE – Microphotograph showing immature neural tubules. (H&E X 100x)

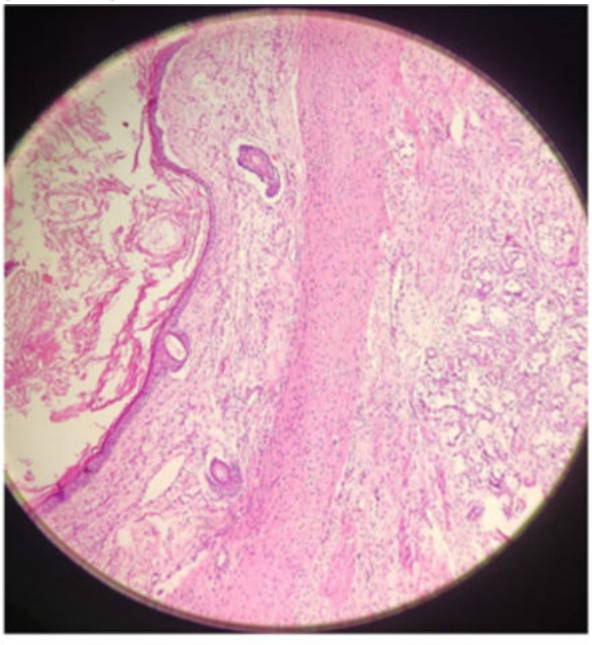

Fig. 4 :- HNE – Microphotograph showing cyst lined by stratified squamous epithelium filled with keratin and hair follicles. (H&E X 40x)

DISCUSSION:

Ovarian neoplasms rarely occur in children and adolescents with an estimated annual rate of 2.6 cases per 100,000 girls per year.[3] Tumor size, presence of tumor markers, and imaging characteristics have been identified as potential risk factors for malignancy in this age group.[4] In addition, patients with a malignancy have been described as typically presenting with an asymptomatic unilateral palpable abdominal mass, rather than acute pelvic pain.

Table 1. Percent Survival by Grade and Stage[5]

Grade	Stage I	Stage II	Stage III	All
1	100	50	50	82
2	70	50	0	62
3	33	0	50	30

Table 2. Grading Scheme for Immature Teratomas[6]

Grade 0	Contains only mature elements
Grade 1	The amount of immature neuroepithelium present on any one slide occupied up to one low-power (×40) microscopic field but did not exceed one low-power field.
Grade 2	Immature neuroepithelium present on any one slide occupied more than one low-power field but did not exceed three low-power microscopic fields.
Grade 3	Immature neuroepithelium present on any one slide exceeded three low-power microscopic fields.

The semiquantification of immature neuroepithelium correlate with the survival in immature teratoma and is the basis for grading of these tumors.

The tumor is classified in grade 1,2 ,3. The grade 2 and grade 3 are clubbed together because they follow same treatment guidelines. Hence the most common is 2 tier classification into high grade and low grade classification.

The diagnosis is made by tumor markers and MRI. The MRI also forms the basis for identification, size determination and knowing extent of disease. The x ray abdomen and ultrasonography are useful for determination of calcification foci. The most frequent site for dissemination of tumor is peritoneum and hence a thorough examination of peritoneum and collection of peritoneal fluid and peritoneal washings for cytological examination and evidence of malignant cells is essential. The least common site is retroperitoneal lymph nodes. The blood borne mets travel to lungs, liver and brain. The extensive debulking of tumour improves response to surgery. Our case was a grade 1 A high grade tumour and hence patient is started on adjuvant therapy with BEP. In cases with ascites BEP is given irrespective of stage of tumour. In macroscopic residual disease 4 cycles of BEP are given.

CONCLUSION :

The most important prognostic factor is grade. Response to the treatment depends on the stage of disease and extent of tumor at initiation of treatment. The 5 year survival rate for all immature teratoma is 70-80%. However, in stage 1 the survival rate is as high as 90-95%.

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