

Dysgerminoma – Arare Ovarian Tumour - Case Report

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Abstract: *Dysgerminoma, germ cell tumors (GCTs) are rare, comprising approximately 20% of all ovarian tumors, both benign and malignant occurring at extremes of age groups. Approximately 3-5% of ovarian GCTs are malignant.[1] In fact, dysgerminomas make up two thirds of all malignant ovarian neoplasms in women younger than 20 years. Moreover, once diagnosed, dysgerminomas respond highly to the prescribed treatments, rescuing patients from infertility and early mortality[1].Extraovarian tumor spread of dysgerminomas often involves the retroperitoneal and pelvic lymph nodes; these tumors are highly susceptible to radiotherapy[2]. In addition, hematogenous spread may occur; common sites of involvement are the lungs, liver, and bone[3].***Details of the case:-**A 17 yrs old, unmarried girl , came to our institute on 21/4/15 with chief complaints of pain abdomen, left side, since 1 year, associatiedwith history of feeling of lump in abdomen which was increasing in size since then.Not associated with nausea, vomiting, or menstrual complaints ,or urinary or bowel complaints. After thoroughly investigating the patient, primary cytoreductivesurgery i.estaging laparotomy with left salpingophorectomy with infracolicomentectomywith peritoneal biopsy was done on 29/4/2015. The patient was discharged on 9/5/2015 and was asked to come for follow up for chemotherapy. She received 3 cycles of chemotherapy and is clinically fine.

I. Introduction

The 3 major types of ovarian tumors being epithelial, sex cord, and germ cell. Epithelial cell tumors represent the majority of all ovarian neoplasms (82%). Conversely, germ cell tumors (GCTs) are rare, comprising approximately 20% of all ovarian tumors. Approximately 3-5% of ovarian GCTs are malignant. The most common GCT is the dysgerminoma, which accounts for approximately 2% of all ovarian cancers. All dysgerminomas are considered malignant, but only one third of dysgerminomas behave aggressively.[4] Although rare, dysgerminomas are important irrespective of incidence because they most commonly affect women of reproductive age (ie, < 30 y). In fact, dysgerminomas make up two thirds of all malignant ovarian neoplasms in women younger than 20 years of age. Moreover, once they are diagnosed, dysgerminomas respond well to treatment, potentially avoiding complications like infertility and early mortality.[1]

II. The Case Under Discussion

A 17 yrs old, moderately built and moderately nourished, unmarried young girl, came to our institute on 21/4/15 and was admitted under gynaecology department of MMIMSR, Mullana, Ambala, with chief complaints of pain abdomen, left side, since 1 year,mild in intensitywith no aggreivating or relieving factor, associated with history of feeling of lump in abdomen which was increasing in size since then, with early satiety, with vague abdominal complaints (eg, dyspepsia, digestive disturbances.Not associated with nausea, vomiting, or menstrual complaints ,or urinary complaints.

On admission, patient's general condition was fair, BP-114/76mm of Hg, PR- 114/min, RR- 22/min. Patient was calm, conscious and cooperative and well oriented to time, place and person .On clinical examination:-abdomen was soft, bowel sounds were present, no organomegaly. A firm irregularly contoured mass arising from pelvis approximately 24 weeks size of uterus, non-tender, mobile from side to side, superficial structures like skin not adherent to the mass, with irregularities more on left margin , right border feels smoother. Right iliac fossa felt a little free, left iliac fossa was full. Tumour seems to arise from the left adnexa. No superficial veins visible. No scar , no sinus, normal hernia sites. She had her menarche at 13 yrs of age, her LMP was on 13/4/15, cycles were of 3-4 days/28+-2 days, regular, average flow. She had history of ?malaria?typhoid approx. 8 months back for which she took treatment (no medical papers were available with the patient). Rest she had no significant medical or surgical history. No family history of any type of malignancy.

Patient was investigated.ABO Rh- O positive, Hb-11.5 gm%, BT-2.10 CT-6.15, PCV- 32.9%, Platelet count- 2lakh, TLC- 2500/cumm, DLC-P64L30E06M00B00, ESR-20mm/1st hour, MCH- 21pg, MCV-65um3 MCHC-21G/dl. RFT- urea- 19mg/dl, creatinine-0.80mg/dl, sodium-141mEq/l, potassium -4.5mEq/L, chloride106 mmol/L. LFT- bilirubin (total)-0.44mg/dl, bilirubin (direct)- 0.10mg/dl, SGOT – 95IU/L , SGPT- 32 IU/L,

ALP-315 IU/L. LDH-238.3IU/L betaHCG-33.7mIU/ml, alpha feto protein- 50.9ng/ml, CA-125- 46.7U/ml, HIV, VDRL, HCV, HBsAg-all were non reactive.USG showed- a large mass seen in pelvis measuring 15X19 cms ?arisingfrom left adnexa and reaching upto epigastrium .Uterus and left ovary were normal. ? malignant ovarian mass.X-Ray chest PAView-was normal.

Patient was taken up for primary cytoreductivesurgery and exploratory laparotomy with left salpingoophorectomywith partial(infra colic)omentectomy with peritoneal biopsy was done on 29/4/2015. Intra- op findings were-(1)Left ovarian tumour mass approximately20x20 cms ?malignant / dysgerminoma taken out. (2) Surgical spill of cyst approximately 1x1 cmsoccured.(3) liver surface and under surface of diaphragm was found normal. No Lymph node enlargement seen.(4) peritoneal washings and sample sent for histopathology.



Figure 1 posterior surface of tumour mass with multiloculatedappearance with part of left fallopian tube.



Figure 2 anterior surface of the tumour mass.



Figure 3 omentectomy specimen.



Figure 4 cut section of the tumour mass

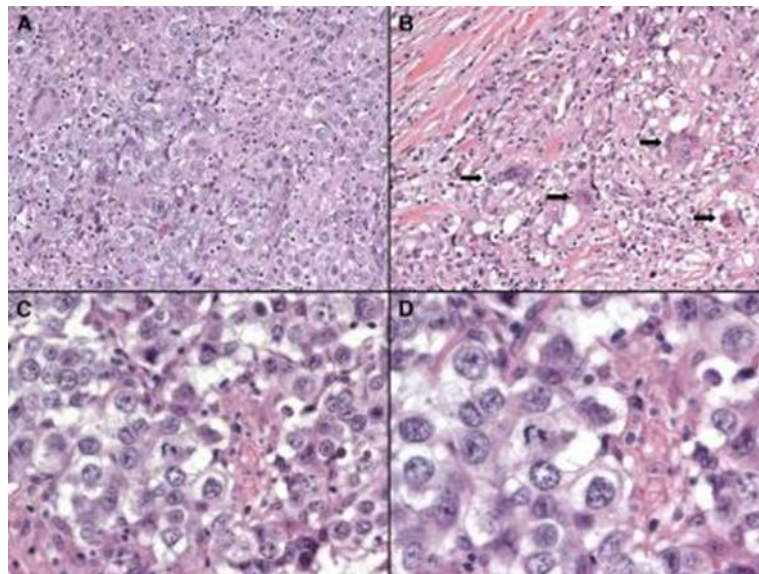


Figure 5 Ovarian dysgerminoma histology showing syncytiotrophoblast like giant cells.(A) and (B): Hematoxylin-eosin, x200. (C) Hematoxylin-eosin, x400. (D) Hematoxylin-eosin, x600.

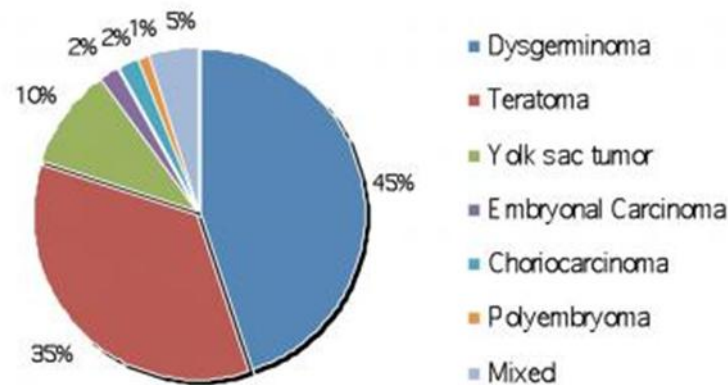
The patient recovered well post operatively with triple antibiotics cover, catheter was removed on post operative day-2. On post operative day-9, sutures were removed and the patient was discharged under satisfactory condition and asked to come for follow-up as advised.

Histopathology report showed-1. Dysgerminoma of left ovary. 2. Omentum shows well defined epitheloid cell granulomas with giant cells. ZN stain using 20% H₂SO₄ did not reveal any acid fast bacilli. 3. Peritoneal washings free from tumour. 4. fallopian tube free from tumour. **HPE diagnosis- Pt1nXmX.**

After HPE confirmation of dysgerminoma, patient was given adjuvant chemotherapy –BEP regime(3 cycles) in follow-up.

III. Discussion

A dysgerminoma is a tumor of the ovary that is composed of primitive, undifferentiated germ cells . Germ cell tumors arise from primordial germ cells of the ovary and the testis. Of these ovarian lesions, 97% are benign proliferations (i.e. mature teratomas); the remaining 3% are malignant .Germ cell tumors arise from primordial germ cells of the ovary and the testis; Though , pathogenesis of the ovarian germ cell tumors is unknown. Of the ovarian lesions, 97% are benign proliferations (ie, mature teratomas; the remaining 3% are malignant.[2]. The most commonly occurring GCT is the dysgerminoma, which accounts for approximately 2% of all ovarian cancers. Dysgerminomas are the most common malignant germ cell tumor occurring in the ovary , and these lesions are most commonly found in adolescents and young adults; in fact, approximately 60% of cases are diagnosed in patients younger than 20 years.[3]These tumors usually present as a unilateral mass and can occur during pregnancy.



These tumors can have rapid growth and predispose to rupture and torsion with associated acute change in symptoms in approximately 5-10% of patients. One should always get a pregnancy test done. This test should be mandatory in all woman of reproductive age, even at the extremes of reproductive age, who presents with abdomino-pelvic symptoms. LAB EVALUATION –elevation in LDH, although it is not elevated in all the cases. Occasionally, dysgerminomas may become infiltrated with syncytiotrophoblastic giant cells, which produce beta-hCG. Elevations in AFP are even less common. However, preoperative evaluation of all of these markers is suggested in patients with suspected ovarian GCTs/dysgerminomas. In addition, serum inhibin levels can be done in this age group. Though inhibin B seems to be more sensitive and has a greater elevation in GCTs, inhibin A can also be elevated with inhibin B or, more rarely, without elevation of inhibin B, as sex cord stromal tumors are also in the differential for women with pelvic masses in this age group who present. [1]

Traditionally, patients undergoing surgery for ovarian cancer often undergo a mechanical and/or antibiotic bowel preparation before surgery.

According to current American College of Obstetricians and Gynecologists (ACOG) recommendations, second-look laparotomies are not considered the standard of care for dysgerminomas. However, second-look surgery should be considered for patients with persistent elevation in tumor markers, especially if abnormal findings on posttreatment imaging are associated with.[5]

Adjuvant chemotherapy regimens:-

The 4 regimens for **chemotherapy are as follows:** (1) BEP, which is the preferred regimen; (2) methotrexate, actinomycin D, and chlorambucil (MAC); (3) cisplatin, vincristine, and bleomycin (PVB); and (4) vincristine, actinomycin D, and cyclophosphamide (VAC). Although the efficiency of each protocol has been analyzed, the BEP protocol has been favored in recent years owing to high cure rates with a favorable toxicity profile.[1]

BEP protocol (generally preferred)

The protocol is as follows[6] :

Bleomycin - Maximum 30 U IV per week for 9 weeks; dose at 20 U/m² Etoposide (ie, VP-16) - 100 mg/m² on days 1-5 q3wk for 3 courses; reduced 20% for granulocytic fever or previous radiotherapy Cisplatin - 20 mg/m² on days 1-5 q3wk for 3 courses.

Follow-up with a medical oncologist and/or radiation oncologist is dictated by the stage and extent of disease.

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