



## Germ cell tumor of ovary - a case report

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### Introduction

Germ Cell Tumors account for 1% of all malignant ovarian tumors and mostly present in the younger age group (median age 18 years). We report a case of Yolk Sac Tumor in a 39-year-old woman.

### Case report

A 39-year-old woman was admitted on 23rd November 2002 with a lump in the lower abdomen, of 4 years duration. It was gradually increasing in size with a rapid increase in the last 6 months. Her menstrual cycle was regular with a scanty flow lasting two days. She had four full term normal deliveries. The last delivery was 17 years ago. She was fairly built and nourished but anemic. Her vital parameters were stable. On abdominal examination, there was a mobile, firm, non-tender mass of 20 x 15 cm, arising from the pelvis and occupying the whole lower abdomen. No ascites, On vaginal examination the cervix was firm and the uterus was anteverted, anteflexed, normal sized, firm, and mobile. An irregular mass of 20 x 15 cm was felt in the left fornix. The right fornix was free. Her Hb was 8g/dL and all other hematological investigations were normal. Ultrasonography showed an enlarged, distorted uterus of 20x12 cm. size with multiple hypoechoic and an echogenic tumor, distorting the endometrium suggesting multiple fibroids in the uterus. A provisional diagnosis of fibroid uterus was made and patient was taken for laparotomy on 27th November 2002. At

laparotomy the whole of the peritoneal cavity was full of fleshy mass arising from the left ovary, which could not be identified separately, and was adherent to the pelvic peritoneum, gut and omentum. Right adnexa was normal. Uterus was normal in size and shape. Blunt dissection and debulking of the mass was done along with total abdominal hysterectomy with bilateral salpingo-oophorectomy and omentectomy. There was massive hemorrhage which was controlled by hemostatic sutures. One unit of blood was transfused preoperatively, four intraoperatively and one on the second post-operative day. Patient made an uneventful recovery.

Gross examination of the specimen revealed an 8x5x4 cm sized uterus with normal shape a healthy cervix. The right tube and ovary were normal. The left ovary measured 15x15 cm and an irregularly enlarged fleshy mass protruded through its surface. The left tube was embedded in the mass. On cut section the endometrium was hyperplastic and left ovary showed a solid ovarian mass. Histopathology revealed a yolk sac tumor of the ovary with secondary deposits on the surface of both the tubes and on the right ovary. The uterus and cervix were unremarkable and the omentum was normal.

Serum alpha-fetoprotein (SAFP) was raised to 246 ng/mL. She was given seven cycles of POMBACE regime of chemotherapy starting on 15<sup>th</sup> December, 2002. During chemotherapy, her hemogram, liver and renal functions were monitored. Chemotherapy was postponed a few times for a few days due to low counts. Three units of blood was transfused during chemotherapy. Her follow up was done clinically, biochemically(SAFP), and radiologically (USG/CT scan). The patient was given chemotherapy for 12 weeks (till No. 2003) after biochemical remission (June 2003). CT scan in August 2003 showed no residual disease. She is under

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**Table 1. Details of Chemotherapy and follow-up.**

Chemotherapy - POMBACE regime

Patient's weight - 45 kg. Surface area – 1.35 m<sup>2</sup>

Date	Chemotherapy		S. AFP Level ng.ml
15.12.2002	POMB	CisPlatinum 150mg Oncovin 1.25 m Methotrexate 375 mg Bleomycin 15 mg	3.12.2002 - 246
13.12.2002	POMB		
20.1.2003	ACE	Actinomycin D 0.5mg Cyclophosphamide 600mg Etoposide 125 mg	30.1.2003 - >300
1.3.2003	POMB		
25.3.2003	ACE		20.4.2003 - 24.10
23.4.2003	POMB		2.6.2003 - 4.8 remission
7.6.2003	ACE	USG	3.6.2003 pelvis clear
14.7.2003	OMB		
30.8.2003	ACE	CT scan	11.10.2003 pelvis clear
13.10.2003	OMB		11.11.2003 - 6.9 23.3.2004 - 3.0 11.8.2004 - 4.0
11.11.2003	ACE	USG	11.8.2004 pelvis clear

regular follow up and her S.AFP levels continue to be within normal limits (Table 1).

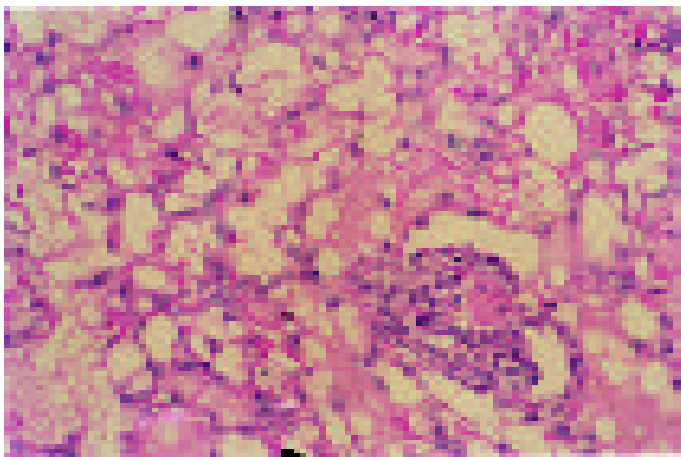


Fig 1. Microphotograph of Yolk Sac Tumor of Ovary showing reticular pattern and hyaline globules. H and E Stain

## Discussion

There have been major advances in the management of malignant ovarian germ cells tumors in recent years. They

are rare tumors and constitute 1-5% of all ovarian tumors<sup>1</sup>. Yolk sac tumor is the third most common malignant ovarian tumor. Most patients are in the younger age group. The median age is 18 years. About 1/3 of the patients are premenarchal at the time of initial presentation<sup>2,3</sup>. Initial management of these patients is laparotomy with removal of the tumor bulk. Staging is done at this time. A second look laparotomy may be planned at the end of chemotherapy<sup>2</sup>. Yolk sac tumor is totally radioresistant<sup>3</sup>. Most patients with widespread metastatic disease can now be treated with modern chemotherapy<sup>1</sup>. Serial estimation of S.AFP provides an accurate method of monitoring the response to treatment<sup>1,2</sup> and in detecting early relapse. VAC chemotherapy was able to control small volumes of tumor but results with large volume metastasis were poor<sup>2</sup>. A 2-year survival rate with this regime was 60-70%<sup>2</sup>. An alternating schedule of chemotherapy POMBACE was developed for patients with large tumor mass. This is continued till biochemical, clinical and radiological remission has been maintained for 12 weeks. Patients are restaged with CT scan and USG, and if there is a major mass lesion left at the end of chemotherapy, second look surgery and excision of the mass may be done<sup>2</sup>. Further, additional chemotherapy may be given to stabilize their remission<sup>1</sup>. Alternating less toxic courses

of ACE between those containing platinum (POMB) makes this regime psychologically easier for patients to tolerate. It avoids the myelosuppression associated with vinblastine and pulmonary toxicity from bleomycin occur, when they are given in the higher dose and schedule used in BVP regime<sup>1</sup>. There is no evidence of any long term side effects in patients treated with POMBACE regime <sup>1,2</sup>. Patients with high serum tumor markers have poorer prognosis. Failure of previous treatment, particularly radiotherapy and/or chemotherapy, severely compromises the chances of obtaining a stable remission since drug resistance can be rapidly induced in the tumor and need to be eliminated quickly<sup>1</sup>. The rarity of ovarian germ cell tumors and the complexity of their management, together with the experience that is needed to get the optimum

results with currently available chemotherapy, make it imperative that these patients are referred to centres with special experience in their management <sup>2</sup>.

#### References

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