

## Successful pregnancy outcome after fertility preservation surgery in embryonal cancer of ovary – a case report

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**Abstract:** An adolescent girl at 13 years old presented with large heterogenous mass in the abdomen. Ultrasonography and CT scan reported it to be of ovarian origin with solid, cystic and necrotic areas. Laparotomy was followed by oophorectomy of one side and preservation of ovary on the contralateral side, thinking of the future fertility. Biopsy proved the mass to be an embryonal cancer of ovary, which needed six cycles of chemotherapy with bleomycine, vincristine and cisplatin. After five and half years of treatment the girl conceived spontaneously and which ends into a successful pregnancy outcome later. So fertility preservation surgery followed by chemotherapy may be considered as standard care of treatment in embryonal carcinoma of ovary in young girls, who want to retain fertility.

**Keywords:** Fertility Preservation Surgery, Embryonal Cancer of Ovary, Chemotherapy

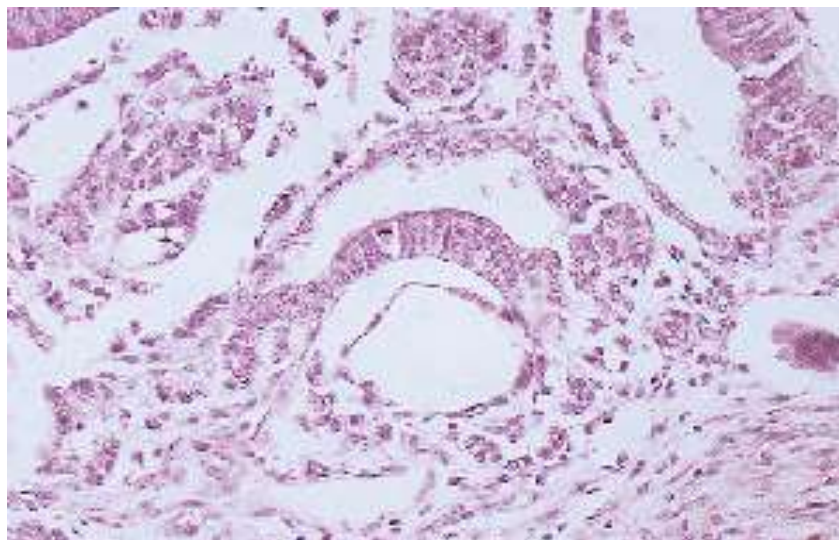
### INTRODUCTION:

Malignant ovarian germ cell tumors account for 2-5% of all ovarian cancers and among them embryonal cell cancer is rare [1]. Indications for fertility preserving surgeries in ovarian cancer patients depend on age of the patient, histology of tumor, family history, obstetric history and above all her own desire to retain fertility [2]. 90% of germ cell tumors occur below 40 years of the age, out of them majority is unilateral and they are all good chemo sensitive [1, 2]. So for these cancers fertility sparing surgeries and chemo therapy are better option of treatment. Here we report successful pregnancy after unilateral oophorectomy and chemotherapy in a girl with embryonal carcinoma of ovary.

### CASE REPORT

A 13 year old girl with chief complains of mass abdomen and heavy bleeding during periods had been admitted to gynecology ward, IPGME&R. She was 150 cm tall, weighing 40kg. General condition was good. Her menstrual history revealed menarche at 12 years and menorrhagia for two months. Her complete hemogram, renal and liver function tests, coagulation profile were within normal limit. Ultrasonography and C T scan showed presence of a large heterogeneous mass in abdomen with solid and cystic areas arising from right para vertebral gutter up to pelvic brim resulting right sided hydronephrosis. On laparotomy a right sided large ovarian mass measuring 15 × 12 × 20cm with solid, cystic and necrosed areas was found. Uterus and contra lateral ovary were normal. Para aortic lymph

node was enlarged. So considering her age, early surgical staging of carcinoma and unilateral ovarian involvement fertility preservation approach was considered. Right sided oophorectomy, para aortic lymph node dissection and small gut resection were done. Other abdominal organs were normal on palpation. Histopathology examination and immunohistochemistry revealed embryonal cell cancer of ovary, a metastatic para aortic lymph node. Presence of trophoblastic tissue was also there, which was evidenced by raised serum beta HCG (32000IU/l). She received five cycles of chemotherapy with injection bleomycine 15 unit/m<sup>2</sup> vincristine 1mg/m<sup>2</sup> and cisplatin 20mg/m<sup>2</sup>. The interval between each course was 21 days. A total of six cycles of chemotherapy were given. After one month of laparotomy she resumed regular menstrual cycle with normal flow. Regular follow up was carried out with tumor marker and ultrasonography. Five years after chemotherapy the woman got married. Within one year she conceived spontaneously. Pregnancy was confirmed by positive urine pregnancy test as well as a dating ultrasound scan showing eight weeks gestational sac. The girl went through regular antenatal checkups. Congenital malformation excluded at 20 weeks of gestation by level III ultrasonography. She was admitted for safe confinement at 38 weeks of gestation. On her expected date of delivery induction of labor was done with oxytocin. She delivered a male baby weighing 1990gm with good APGAR score vaginally. On her third and sixth month follow up with her baby she was absolutely healthy.



**Fig-1: Section Showing – Embryonal Carcinoma of Ovary (Magnification 100 X)**

## DISCUSSION

Embryonal cancer of ovary is a rare variety of germ cell tumor and always found as component of germ cell tumor, rarely found in pure form [3]. Our case was associated with elevated beta HCG. The mean age of diagnosis is 14 years. These patients may present with precocious puberty or uterine bleeding as embryonal cell cancer can produce estrogen [3]. Malignant germ cell tumors are almost always unilateral, except dysgerminoma which is bilateral in 15% cases [4]. This 13-year-old girl was having menorrhagia and only right-sided ovarian tumor. In young individuals with unilateral presentation of carcinoma of ovary, fertility preservation is an important issue. Fertility conservation surgery followed by chemotherapy is the currently accepted treatment option [3, 5]. Bleomycin, cisplatin, etoposide are the standard chemotherapy agents [6, 5]. Because of the rapid growth of tumor, these should be started shortly after surgery (1 week to 10 days) [6]. It has been seen that cisplatin is a good chemosensitive agent for embryonal cancer and not known to affect gonadal function [1, 5, 6]. Combined chemotherapy can cause ovarian failure and premature menopause [4, 5]. Our patient had resumed her normal menstrual cycle shortly after chemotherapy and conceived spontaneously. Gerhenson *et al.* had stated that most patients with malignant germ cell tumors may be treated with fertility preserving surgery and chemotherapy because cure rates approach 100% for those with early stage disease and 75% for patients with advanced stage disease, so opportunity for future child bearing is excellent [4]. Tangir *et al.* had studied 106 malignant ovarian germ cell tumor patients and suggest fertility preserving surgery followed by chemotherapy may not impede normal reproductive and menstrual function in these women and till date children born to these patients have not experienced an increased risk for congenital malformations or developmental abnormalities [5].

## CONCLUSION:

Fertility preservation surgery and appropriate chemotherapy should be treatment of choice for young girls suffering from embryonal cancer. Patients with this disease and their families should be reassured about high chance of retaining their fertility and to have normal children after fertility preservation surgery and combination chemotherapy.

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