



Ovarian germ cell tumor : a 3 years study

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OBJECTIVE(S) : To study the various types of ovarian germ cell tumors (OGCT), their clinical presentation and management.

METHOD(S) : Eleven patients of ovarian germ cell tumors admitted during the period of 1st October 2000 to 30th September 2003 were clinically studied along with their sonography, laparotomy findings and histopathology.

RESULTS : Teratomas were observed in 63.63% (n=7) of cases, followed by malignant germ cell tumors in 27% (n=3) and special tumor i.e. struma ovarii in 9.0% of cases. These tumors occurred in patients aged 13 to 50 years, the peak incidence being at 18-30 years.

CONCLUSION(S) : Ovarian germ cell tumors are rare and mostly seen in young women. Timely surgery and chemotherapy in malignant tumors save the life of the women.

Key words : ovarian germ cell tumors, dermoid cyst, malignant germ cell tumors, staging laparotomy.

Introduction

Ovarian germ cell tumors are uncommon tumors occurring predominately in children and young women. Malignant germ cell tumors, account for 2-5% of all ovarian malignancies. They are rapidly growing and may attain a very large size, and are highly responsive to timely treatment. In young patients, surgery should be conservative even in the presence of extra-ovarian disease as these tumors are often curable with chemotherapy. Dermoid cyst is more common in young women but occasionally can be encountered at the extremes of ages.

Material and Methods

Eighty-one patients of ovarian tumors were admitted in our gynecology ward from 1st October 2000 to 30th September 2003. There were 11 cases of ovarian germ cell tumors during this period. Their histories, physical findings, investigations including hematological profile, x-ray chest, abdominal and

pelvic sonography, and pathological reports were scrutinized with the analysis of age, parity and nature of the tumor. All patients had laparotomy and staging laparotomy was carried out for malignant tumors. Further management was decided according to the histopathology report.

Results

Out of the 81 ovarian tumors, 11 (13.58%) were diagnosed as germ cell tumors. The age of patients with germ cell tumors varied from 13 to 50 years with the mean of 29 years. Six (54.54%) of the patients were para 3 or above while 3 (27.3%) were nulliparous.

Benign cystic teratoma was observed in 63.63% of the cases followed by malignant germ cell tumors in 27.27%. One case (9.09%) struma ovarii was seen.

Management of benign ovarian teratoma

Three cases of twisted ovarian cyst had emergency laparotomy, and cut section of the tumors revealed dermoid cysts. Two cases above 40 years of age underwent total abdominal hysterectomy with bilateral salpingo-hysterectomy (TAH and BSO). Five cases had unilateral salpingo-oophorectomy. There was a single case of struma ovarii. She was a 50 year old, postmenopausal woman who had

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Table 1 : Management of benign ovarian teratoma

Case No.	Age (yrs)	Parity	Diagnosis	Management	HPE
1	45	P ₄	Twisted ovarian tumor	TAH with BSO (one twist)	Dermoid cyst Tubes, Endocervix., Ectocervix., normal histology
2	30	P ₄	Ovarian cyst	USO	Dermoid.
3	18	P ₀	Twisted ovarian tumor	USO (3 twists)	Dermoid. Chronic salpingitis
4	30	P ₃	Ovarian tumor	USO	Dermoid. Normal tubal histology
5	22	P ₁	Twisted ovarian tumor	USO (2 twists)	Dermoid.
6	35	P ₃	Ovarian tumor	USO	Dermoid.
7	40	P ₃	Ovarian tumor	TAH with BSO	Dermoid Endometrial-hyperplasia Myometial denomyosis.
8	50	P ₈	Ovarian tumor Abdominal pain	TAH with BSO	Struma ovarii. Endometrium –Normal Ecto- and Endocervix – normal histology.

TAH = Total abdominal hysterectomy, BSO = Bilateral salpingo-oophorectomy,
USO = Unilateral salpingo-oophorectomy

Table 2 : Management of malignant ovarian germ cell tumors

Case No.	Age (year)	Parity	Presentation & diagnosis	Management	HPE
1	18	P ₀	Pain with rapidly increasing abdominal mass. Fever. MOT.	Laparotomy with USO (Rt) with omental biopsy. Chemotherapy completed.	Dysgerminoma. Secondary deposits in omentum.
2	22	P ₂	Amenorrhoea. 5 months Pain with rapidly growing abdominal mass. G3 with MOT.	Laparotomy with hysterotomy followed by TAH with BSO with Omental biopsy . Lost to follow up.	Dysgerminoma. Deposits in omentum and para-aortic lymph node
3	13	P ₀	Pain in abdomen with rapidly growing abdominal mass. Urinary retention. Fever . MOT.	Laparotomy with USO with Omental biopsy . Lost to follow up .	Immature teratoma . No deposits in omentum..

TAH = Total abdominal hysterectomy, BSO = Bilateral salpingo-oophorectomy,
USO = Unilateral salpingo-oophorectomy, MOT = Malignant ovarian tumor.

come with abdominal pain. On examination, pelvic mass was discovered without any signs of twisting. Dilatation and curettage showed scanty endometrium. On laparotomy there was right sided ovarian tumor for which TAH and BSO was performed. The contralateral ovary showed normal histology (Table 1).

Management of malignant ovarian germ cell tumors (Table 2).

Case 1 : An 18 year young girl came with a very large, rapidly growing ovarian tumor which was noticed 15 days back. At laparotomy the tumor was seen extending upto right hyochondriac region. Therefore ipsilateral salpingo-oophorectomy with omental biopsy was performed. Histopathology revealed dysgerminoma. She has completed 6 cycles of chemotherapy and is doing well.

Case 2 : A gravida 2, para 1 came with amenorrhea of 5 months and abdominal distension. She was vary cachexic. At laparotomy, she had 18-20 weeks of pregnancy and right sided huge ovarian mass filling the abdomen. Hysterotomy was performed first and then removal of the tumor tried. But the uterus was obstructing removal of the tumor in toto. Therefore hysterectomy was performed and only thereafter the tumor could be removed. Omental biopsy was taken and para-aortic lymph node removed. Histopathology revealed dysgerminoma with deposits in the omentum and the lymph node. She was advised postoperative chemotherapy but is lost to follow up.

Case 3: A 13 year old girl came with rapidly growing abdominal mass, difficulty in micturation and fever. She underwent staging laparotomy with left sided salpingo-oophorectomy and omental biopsy. Histopathological examination showed immature teratoma (Grade -I), with no malignant deposits in the omentum. She is lost to follow up.

Discussion

The ovarian germ cell tumors (OGCT) as a group comprise 11 to 16.88% of all ovarian tumors¹⁻³. The reported frequency of benign cystic teratoma varies from 45.83% to 61.54 of all OGCT, followed by malignant germ cell tumors and struma ovarii seen in 3.37 to 23% and 1.43 to 15.4% respectively¹⁻³.

In the present study, germ cell tumors were observed in 13.58% of patients having ovarian tumors. Benign cystic teratoma was found in 63.63%, malignant tumors in 27.27% and struma ovarii in 9.09% of all germ cell tumors.

All the three patients of malignant germ cell tumor were between 13 and 22 years of age. Of the eight cases of dermoid tumor, including one of struma ovarii, all but two or 75% were aged 30 years or more.

Pain associated with abdominal mass was the commonest symptom in 7 (63.63%, 7/11) of the patients, while 36.4% (4/11) complained of pelvic mass.

Of the eight cases of dermoid cyst, including one of struma ovarii, four had pain in abdomen of acute onset, and underwent emergency laparotomy; only three of them had torsion of the pedicle. One patient had menstrual disturbances and underwent TAH with BSO and showed adenomyosis and endometrial hyperplasia on histopathology.

All the three patients of malignant germ cell tumor came with pain and rapidly growing abdominal mass. One patient had 18-20 weeks of pregnancy. The duration of symptoms varied from 8 to 15 days with a median of 9 days. One case of dysgerminoma had regular follow up and completed post-operative chemotherapy. The other two cases of malignant germ cell tumor were lost to follow up.

Initial treatment approach for a patient suspected of having malignant OGCT is surgery for diagnosis, staging and further management. It is very important to have pre-operative tumor markers, so that the response to the chemotherapy can be monitored. In young patients, surgery should be conservative even in the presence of extra - ovarian disease as these tumors are often curable with chemotherapy.

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