CLINICAL SPECTRUM AND MANAGEMENT OF OVARIAN TUMOURS IN YOUNG GIRLS UPTO 20 YEARS OF AGE

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Background: Ovarian tumours are one of the common malignancies all over the world affecting all age groups. This study analyses different clinical presentation and management of ovarian tumours in young girls up to 20 years. **Methods:** Patients up to 20 years of age admitted with the diagnosis of ovarian tumour were included. Data collected on a proforma. Variables studied included age, presenting symptoms, investigations, surgical findings, type of surgery, histopathology reports and follow-up. The patients with malignant ovarian tumour were followed by oncologist as well as gynaecologist. Data analysis was done on SPSS. **Results:** The mean age was 17.27±2.46 SD years. The common symptoms included abdominal mass, abdominal pain, urinary problems, menstrual irregularities and generalized malaise. All patients were operated after preliminary investigations. Patients were advised to have follow-up post-operatively after 1 month. The follow up was done by oncologist and gynaecologist. Six patients (12.5%) died and 22 (45.83%) were lost to follow up. **Conclusion:** Ovarian tumours are quite common in young girls. Majority of patients seek medical advice once the disease becomes symptomatic, complicated or advanced disease in the case of malignancy. Histopathology of the tumours revealed that epithelial cell tumour is the commonest tumour in contrast to germ cell tumour as reported by world literature.

Keywords: Ovarian tumours, Young age, Conservative surgery, Teratoma, Neoplasm

INTRODUCTION

Genital tumours are less common during the first two decades of life and constitute 5–10% of all tumours in this age group. Ovarian tumours are found to be the most common tumours.[1] Their incidence is increasing all over the world. It is the 5th most common cancer in women and the 5th leading cause of cancer deaths in women accounting for 50% of all deaths from cancers of female genital tract.[2] Surface epithelial tumours are the commonest tumours while germ cell tumours are among the commonest ovarian tumours seen in patients less than 20-years and one third of them are malignant.[3] The exact aetiology of ovarian tumour is not known. However predisposing factors include long estimated number of ovulation, prolonged attempts of ovulation, nulliparity, small family size and genetic factors.[4] Ovarian tumours are insidious in onset and usually are diagnosed at late stage. Common clinical features are abdominal pain, a lump and menstrual irregularities.[5] Early diagnosis is possible by transvaginal ultrasonography, MRI and positron emission tomography (PET).[6] Other screening tests are: tumour markers, and genetic testing, which is possible but impracticable and unreliable due to mutation in genes. Young patients with benign tumours or early malignancy such as stage IA disease are treated with conservative surgery while in extended malignancy total hysterectomy, bilateral salpingo-oophrectomy, and omentectomy is done. In advanced stages, debulking surgery with adjuvant chemotherapy is the treatment of choice. The purpose of this study was to analyse ovarian tumours in young girls and the treatment outcome in this age group in our set up.

MATERIAL AND METHODS

This descriptive study was conducted at the Department of Obstetrics and Gynaecology (Unit-II) Liaquat University Hospital Hyderabad Pakistan from January 1998 to December 2005. Patients 20-years of age and having clinical or pre-operative diagnosis of benign or malignant ovarian tumours were included in the study, while the girls with inflammatory masses and chocolate cysts were excluded from the study. Detailed history and physical examination was performed. In the history special emphasis was given to age, symptoms, duration of disease, menstrual history and family history. Patients were examined clinically regarding the size of tumour, mobility, consistency and presence of ascites if any. All the patients had baseline investigations, tumour markers and ultrasound examination. All those patients who had ovarian tumour underwent laparotomy while in apparently malignant looking tumour surgical staging was done according to International Federation of Gynaecology and Obstetrics (FIGO). During surgery the ascitic fluid/peritoneal washings were sent for cytological examination. The diagnosis was confirmed by operative findings and histopathology report. Data was collected by filling a pre-designed proforma for all the patients. Variables studied were; age, presenting symptoms, investigations, type of surgery, surgical findings, histopathology report and follow-up. Patients with malignant ovarian tumours were followed both by oncologist and gynaecologist. Those with malignant ovarian tumour were given adjuvant chemotherapy. Data was analysed using SPSS Version 11.0.

RESULTS

During this period 180 patients with ovarian tumours at different age groups were studied. Among these, 48 (26.66%), patients were in the age range between 5-20 years. The mean age was 17.27±2.46 SD years. The youngest patient was 8 years old girl admitted in surgical ward due to acute abdomen. The investigations followed by emergency laparotomy diagnosed torsion of the dermoid cyst to be the cause of acute abdomen. Unilateral salpingo oophrectomy was performed, as the ovary was necrotic.

In majority of girls, i.e., 32 (68.08%) the age of menarche was 12–14 years. Twenty-nine out of 48 patients were unmarried (Table-1). Most of the patients 44 (91.66%) presented with mass in abdomen, followed by pain in abdomen in 26 (54.16%) cases and urinary problems were presented in 16 (33.35%) cases (Figure-1), Ultrasound evidence of benign disease such as unilocular, well circumscribed ovarian cysts were seen in 29 (60.41%) cases, while features suggestive of malignancy like solid tumour, complex masses with ascites were found in 19(39.58%). Out of 48 patients, 29 (60.41%) patients had tumours markers done and only 6 (20.68%) patients had raised level of serum CA125, while other tumour markers were mostly within normal range. Rest of the patients did not agree for this investigation due to its cost especially in those having emergency laparotomy (Table-2).

All the patients had exploratory laparotomy. Simple excision of cyst was performed in 10 (20.83%) cases while 30 patients (62.5%) had unilateral salpingo oophrectomy. Debulking surgery was done in 8 (16.6%) cases due to the advanced stage of the disease (Table-3). The commonest benign tumour found was serous cyst adenoma in 17 (35.41) patients. Malignant tumours, such as serous cyst adenocarcinoma was seen in 6 (12.51) cases. The germ cell tumour was present in 14 (29.6%) patients. Among germ cell tumours dermoid cyst was the commonest tumour present in 9 (18.75%). Fourteen (29.16%) patients needed chemotherapy after surgery. Chemotherapy given was combination of Cyclophospho-mide, Adriamycin and Cisplatin (Table-4). The mortality rate in this series was 12.5%.

Table-1: Demographic details

Demographic data	Patients	%
Age group		
>5 to < 10 years	1	2.08
>11 to < 15 years	9	18.75
>16 to < 20 years	38	79.16
Age of menarche		
>10 to < 12 years	4	8.51
>12 to < 14 years	32	68.08
>14 to < 16 years	11	23.40
Marital status		
Married	19	39.58
Unmarried	29	60.41

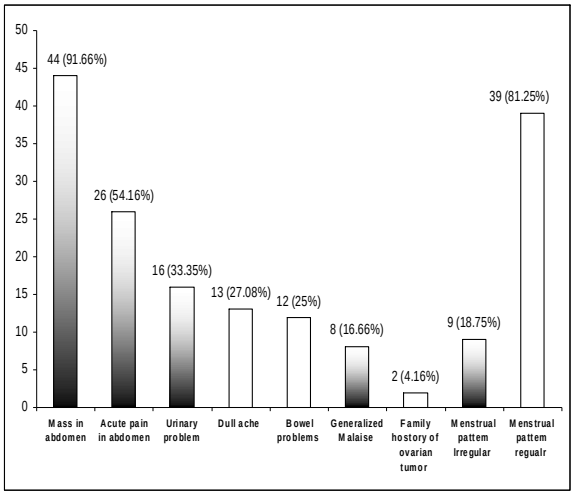

Figure-1: Clinical Presentation

Table-2: Investigations

Investigation	Characteristic		cases	%
Ultrasound examination	Benign features		29	60.41
	Malignant features		19	39.58
	Site of tumour			
	Unilateral		40	83.33
	Bilateral		8	16.66
Tumour Markers	**Report**			
	Normal	Raised		
Serum CA 125	23 (79.3%)	6 (20.68%)	29	60.41
Serum Alpha feto proteins	28 (79.3%)	1 (3.44%)	29	60.41
Carcinoma embryonic antigen	-	-	-	-
Serum βHCG	29 (100%)	-	29	60.41
Cytology Report	**Report**			
	Normal	Positive for atypical cells		
	41 (85.41%)	7 (4.58%)	48	

Table-3: Treatment modalities

Type of Treatment	Nature of Tumour					Cases	%
	Benign	Malignant					
		Stage I	Stage II	Stage III	Stage IV		
Surgery **a) Conservative surgery**							
i) Simple Excision of cyst	10	-	-	-	-	10	20.83
ii) Unilateral Salpingo oophrectomy	22 (45.83%)	8 (16.66%)	-	-	-	30	62.5
b) Debulking Surgery	-	-	-		8 (16.66%)	8	16.66
Adjuvant therapy							
Chemotherapy	-	-	-	-	-	14	29.16

Table-4: Type of tumours

Type of Tumour	No. of Patients	%
Epithelial cell tumour		
A. Benign		
a: Mucinous cyst adenoma	6	12.5
b: Serous cyst adenoma	17	35.41
B. Malignant		
a: Mucinous cyst adeno carcinoma	4	8.33
b: Serous cyst adeno carcinoma	6	12.5
c: Endometriod cell carcinoma	1	2.08
Germ cell tumour		
A. Benign		
a: Dermoid cyst	9	18.75
B. Malignant		
a: Malignant teratoma	1	2.08
b: Endodermal sinus tumour	1	2.08
c: Dysgerminomas	3	6.25

DISCUSSION

Ovarian tumour represents about 1.5% of all tumours in childhood and adolescence and about 95% of all gynaecological tumours in this age.[7] Patients with ovarian tumours in early stage are usually asymptomatic. An increased incidence of ovarian tumours in young girls is reported in this study (26.66%), contrary to the common belief. The common symptoms are abdominal mass or pain. The pain is acute when there is some complication, while dull pain is due to capsule distension.[8] Among our patients, 91.6% presented with mass in abdomen and 54.1% patients had acute pain in abdomen due to torsion of ovarian cyst. Ovarian torsion is most common in first 3 decades of life.[9–11] The ultrasound is well-established imaging technique in ovarian tumours having sensitivity of 89% and specificity of 73%.[12] Ultrasound was the main imaging tool to differentiate between malignant and benign disease. Routine use of CT, MRI and PET is not recommended.[13] Among different tumour markers done, only CA 125 was significantly elevated in 6 (20.68%) cases. CA 125 is having sensitivity of 81% and specificity of 75%.[14] Most of the tumours were unilateral 83.33% and only 16.66% were bilateral. This is consistent with the findings reported by Tuncer ZS *el al*.[15] The world literature shows that the diagnosis of ovarian tumour is based on histopathology report of biopsy specimen taken laparoscopically or by staging laparotomy.[15,16] While in our study, most of the young girls with an ovarian cyst underwent an operation because of neoplastic lesions.

The commonest tumour in first two decades are germinal and stromal tumours, while epithelial tumours are rare in childhood.[17,18] In children and adolescent with ovarian neoplasm the frequency of germ cell tumour is reported to vary from 67–85%.[19,21] While in this study the commonest tumour was epithelial cell tumour (70.83%) and germ cell tumour was the second most common tumour, i.e., in 29.16% and no case of sex cord stromal tumour was seen. This difference could be due to the type of patients referred in this hospital as majority of them came with the complications like torsion of ovarian tumours and those girls having asymptomatic ovarian tumours in this age group do not come for screening of any gynaecological problem.

A higher percentage of malignant tumours in this study is consistent with a local study by Sheikh MA.[8] In this study conservative surgery was performed in most of the cases 40 (83.33%) due to the benign nature of the disease and in malignant cases when the disease was limited to single ovary without evidence of metastasis.

Radical surgery was not done in any case. Eight patients (16.66%) who came with extensive malignant disease had debulking surgery. While world literature shows that among patients requiring ovarian surgery in young age vary from 9.6 to 82%.[22,23] This discrepancy is likely to be the result of nature of referral institution as most of the young girls with malignancies are referred to tertiary centres. The surgical treatment of mature cystic teratomas is currently debated. Laparotomy and oophrectomy or cystectomy has been the most accepted forms of treatment. However, recent literature for adult population suggests that laparoscopic excision is a safe procedure particularly when an endo-bag is used to remove the tumours from the abdomen.[24–26] There appears to be no increase in recurrence rate as compared with laparotomy. This surgical approach depends upon the laparoscopic skills of the particular surgeon.

In this study most of the patients did not have regular follow-up (45.83%) due to the facts like complete cure, poverty, illiteracy, social background, relief of symptoms, may be the reason to avoid visiting hospitals.

Whenever an ovarian mass, be it physiologic or neoplastic, benign or malignant is diagnosed in an adolescent female or pre pubertal child, every effort must be made to preserve the reproductive function in that female in order to ensure future child bearing.[27,28] In this study after surgery 29.16% patients needed chemotherapy. Data and personal observations prove high sensitivity of malignant tumours of the genitalia in puberty girls to chemotherapy, which allows the organ saving operations to be performed. The timely diagnosis of genital tumours in girls based on the well-organised children and adolescent gynaecological service can improve prognosis.[29]

CONCLUSIONS

This hospital based study shows that ovarian tumours are quite common in young girls. Most of the girls

seek medical advice once the disease become symptomatic complicated or in case of malignancy the disease is advanced enough. The histopathology of the tumours revealed that epithelial cell tumour was the commonest tumour in contrast to germ cell tumour as reported by world literature. This needs further workup in our community. Early diagnosis and treatment may help to preserve fertility and decrease mortality.

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