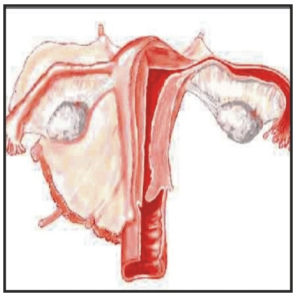
ORIGINAL PROF-920

OVARIAN TUMOURS



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ABSTRACT... h.kokab@hotmail.com **Objectives:** To correlate preoperative diagnosis with operative findings regarding the type of ovarian tumours. **Material and Methods: Setting:** Gynaecology Unit-I, Nishtar Hospital, Multan. Sample size: 50 patients. **Duration:** One year from October 2001 to October 2002. Study **Design:** A prospective analytical study. **Results:** Most common age group in benign tumours was 20-40 years. 50% of patients with malignant tumours were between 30-50 years. Out of 50 patients, 33.3% benign tumours were in unmarried girls. Only 5% of cancers were in nullipara, while 80% of patients had two or more children. Most common presenting symptom was abdominal/pelvic pain. Abdominal distension was present in 75% of malignant cases. Pressure effects, metastatic symptoms and general symptoms were more frequently seen in malignant than benign cases. On ultrasonography, benign tumours were cystic in 83.3% of patients and 46% of these cystic tumours had either internal septations or echoes. 85% of malignant tumours were either solid or mixed. Ascites was detected in 60% of cancers. Abdominal ascites was found in 75% of malignant cases intra-operatively. Irregular tumours and those with surface adhesions were more likely to be malignant. The accuracy of preoperative diagnosis was found to be 84%, 5 cases initially considered malignant were later on found to be benign, while 3 cases diagnosed as benign preoperatively proved malignant. Out of 50 cases, 46 (92%) cases were diagnosed as epithelial cell tumour on histopathology, while 4 cases (8%) were germ cell tumours. **Conclusion:** It was concluded that identification of risk factors, detailed enquiry of the presenting symptoms and proper clinical examination of the tumour provide important information about the type of ovarian tumour. Ultrasonography is the best preoperative technique available to differentiate benign from malignant ovarian tumours.

Key words: Correlation of preoperative diagnosis with operative findings in ovarian tumours.

INTRODUCTION

Ovarian tumours are 4th most prevalent cause of hospital admission[1]. About 90% of ovarian tumours are benign and occur mostly in younger women between the age of

20-45 years[2]. The malignant tumours are common in older women. The incidence of ovarian cancer increases with age and peaks in 7th – 8th decade of life[3]. The life time risk of developing ovarian cancer is 1.4%[1].

Ovarian cancer is 5th most common cancer in female[3]. and 4th most common cancer among women in Lahore[4]. Ovarian malignancy accounts for 25% of gynaecological cancers and more important 50% of all deaths from cancers of female genital tract[5]. About 5-10% of all ovarian carcinoma are hereditary and have an autosomal dominant mode of genetic transmission. The ovaries are composed of surface epithetical cells, germ cells, sex cord stromal cells and stroma, so tumours of various histopathologies can arise from this organ.

All ovarian tumours represent great clinical challenges because of lack of symptoms until they are well advanced. Indeed, many are discovered on routine gynecological examination. Usually the symptoms are those induced mechanically by the size of tumours. These tumours can present with pelvic or abdominal pain, abdominal distension, and feeling of a lump in the abdomen, menstrual disturbances, pressure effects, hormonal or metastatic symptoms. Large ovarian tumours can present with acute abdomen due to some complication. Abdominal and pelvic examinations can reveal the presence of mass and its characteristics. Hard fixed mass specially in the presence of ascites in highly suggestive of malignancy. Epithelial ovarian carcinoma is seen in women with a lower mean number of pregnancies, in nullipara and in women with history of infertility. More than 66% of patients present with advanced disease[6].

Prediction of ovarian malignancy can be made by ultrasonographic findings and patient's age in the scenario of clinically suspected mass[7]. Malignant tumours characteristically coexist more frequently with the following ultrasonographic traits i.e. thick capsule of diversified thickness, with irregular outlines, solid or partly solid, partly cystic, non-homogenous internal echogenicity and multilocular character[8].

Surgery is important modality in the management of ovarian cancer. It is used for diagnosis, staging, primary treatment, evaluation of disease status and palliation. Intra-operative differentiation of benign and malignant tumours can be made by certain characteristics of tumours like consistency, unilateral or bilateral, presence of adhesions, capsule intact or not, areas of hemorrhage or necrosis and papillary excrescencies. Abdomen and pelvis are carefully explored for staging of malignant tumours. It is assumed that careful clinical evaluation and ultrasound can diagnose the ovarian tumours and risk of malignancy as well.

PURPOSE OF STUDY

To correlate preoperative diagnosis with operative findings regarding the type of ovarian tumours.

MATERIAL AND METHOD

Fifty patients presenting with ovarian tumours at Gynae Unit I Nishtar Medical College Multan from Oct 2001 to Oct 2002 were included in this study.

Data collection technique

Clinical data of patients as age, parity, socio-economic status and presenting complaints was obtained. A thorough general physical examination and systemic examination, especially abdominal examination was performed. Rectal examination was done if required clinically. All the patients were subjected to ultrasonographic assessment of the ovarian tumour by using trans-abdominal ultrasound. The following characteristics of the tumour were noted i.e. size, unilateral or bilateral, internal echoes or loculations, solid, cystic or mixed echogenicity. Preoperative work up was done for laparotomy. Midline incision was made. Ascitic fluid or peritoneal washing were sent for analysis. Abdomen and pelvis were inspected for the extent of the disease and staging. Features of the ovarian tumour i.e. size. Shape, unilateral or bilateral, consistency, surface adhesion, prominent vessels and capsule ruptured or not were noted. Surgical staging was done according to the guidelines of FIGO system in malignant tumours. The operative management of the patients was individualized depending upon the age, parity and nature of the lesion. At the end of the study, the data was analyzed to

establish the correlation between preoperative diagnosis and operative findings of ovarian tumours.

Table-I. Age Distribution

Age Group (years)	No. of benign cases	% Age	No. of malignant cases	% Age
01-20	05	16.6	02	10.0
21-30	12	40.0	02	10.0
31-40	10	33.3	05	25.0
41-50	02	06.6	05	25.0
51-60	-	-	03	15.0
61-70	01	03.3	02	10.0
> 70--0105.0				
Total	30	100	20	100.0

RESULTS

Most common age group in benign tumours was 20-40 years. 50% of patients with malignant tumours were between 30-50 years as shown in Table-I. Out of 50 patients, 33.3% of benign tumours were in unmarried girls. Only 5% of cancers were in nullipara, while 80% of patients have two or more children (Table II). Most common presenting symptom was abdominal/pelvic pain. Abdominal distension was present in 75% of malignant cases. Pressure effects, metastatic symptoms and general symptoms were more frequently seen in malignant than in benign cases (Table III). On ultrasonography, benign tumours were cystic in 83.3% of patients and 46% of these cystic tumours have either internal septations or echoes. 85% of malignant tumours were either solid or mixed. Ascites was detected in 60% of cancers (Table IV).

Table-II. Parity Distribution

Parity	No. of benign cases	% Age	No. of malignant cases	% Age
Un married	10	33.3	03	15.0
Nulliparous	02	06.7	01	5.0
1-5	11	36.7	11	55.0
> 5	07	23.3	05	25.0
Total	30	100	20	100

Table-III. Presentation

Symptoms	Benign (n=30)	% Age	Malignant(n=20)	% Age
Abdominal/ pelvic pain	26	86.0	14	70.0
Abdominal/ pelvic mass	09	30.0	10	50.0
Abdominal distension	02	06.6	15	75.0
Menstrual complaints	09	30.0	04	20.0
Infertility	01	03.3	01	05.0
Pressure effects	02	06.6	08	40.0
Metastatic symptoms	-	-	05	50.0
General symptoms	01	03.3	06	30.0

Abdominal ascites was present in 75% of malignant cases on opening the peritoneal cavity. Irregular tumours and those with surface adhesions were more likely to be malignant as given in (Table V).

Table-IV. Ultrasonographic Findings				
Findings	**Benign (n=30)**	**% Age**	**Malignant (n=20)**	**% Age**
Size 1-5 cm	02	06.6	-	-
05-10 cm	14	46.0	04	20.0
10-15 cm	07	23.0	06	30.0
> 15 cm	07	23.0	10	50.0
Bilateral	08	26.0	05	25.0
Cystic	25	83.3	03	15.0
Solid	-	-	12	60.0
Mixed	05	16.6	05	25.0
Internal septations	09	30.0	01	05.0
Internal echoes	05	16.6	02	10.0
Ascites	-	-	12	60.0
Enlarged lymph nodes	-	-	03	15.0
Visceral involvement	-	-	01	05.0
Pressure effects	01	03.0	03	15.0

Table-V. Operative findings				
Findings	**No of benign cases**	**%age**	**No of malignant cases**	**%age**
Ascotes	-	-	15	75.00%
Mass size 1-5 cm	2	6.6%	-	-
05-10cm	14	46%	4	40%
1015cm	7	23%	6	30%
>15cm	7	23%	10	50%
Bilateral	8	26%	5	25%
Cystic	25	83.3%	3	15%
Solid	-	-	12	60%
Mixed	5	16.6%	5	25%
Smooth surface	28	93%	5	25%
Irregular	2	6.6%	5	25%
Surface adhesions	3	10%	5	25%

Complicated cyst	11	36.6%	1	5%
LN involvement	-	-	3	15%
Visceral involvement	-	-	1	5%

The accuracy of preoperative diagnosis was found to be 84%, 5 cases initially considered malignant were later on found to be benign, while 3 cases diagnosed as benign preoperatively proved malignant (Table VI). Out of 50 cases, 46 (92%) cases were diagnosed as epithelial cell tumour on histopathology, while 4 cases (8%) were germ cell tumours (Table VII).

Table-VI. Diagnosis

Diagnosis	No of Benign cases	No of Malignant cases
Preoperative findings	28	22
Operative diagnosis	30	20
Histopathology	30	20

Table-VII. Diagnosis

Diagnosis	No of Benign cases	No of Malignant cases
Epithelial tumours	28	18
Germ cell tumours	2	2
Sex cord stromal tumours	-	-

DISCUSSION

Benign ovarian cysts are the commonest cystic adnexal masses[9]. Functional ovarian cysts are commonest adnexal masses found in young age[10]. There is considerable worldwide variation in the incidence of ovarian cancer. Ovarian cancer is unfortunately being increasingly encountered in Pakistan. Accurate figures for Pakistan are not available. According to one short duration multi member study on the frequency of malignant tumours supported by Pakistan Medical Research Council in 1973, the standardized incidence rate of ovarian malignancy at JPMC was found to be 3.37%[11].

Benign ovarian tumours occur in a wide range of age but are mostly seen in young age group. In this study 90% patients of benign ovarian tumours were less than 40 years of age. The incidence of ovarian cancer increases with age with a sharp increase in the incidence in women over the age of 70 years. So ovarian cancer is predominantly a disease of postmenopausal age group. Ovarian cancer occur at an earlier age in our population as compared to the Western World[12]. Average age of Pakistani women is 57 years and few women are over the age of 70 years. In present study 50% cases of ovarian cancers were between 30-50 years of age, while 30% of cases were over the age of 50 years. This is similar to a study in which most common age group for malignant tumour was between 21-50 years[5].

Available evidence from meta analysis of various control studies show that parity has a protective effect on the development of ovarian cancer. Compared with control, patients who develop ovarian cancer are more frequently nulliparous, have their first pregnancy at a later age and have smaller families. The international variation in the incidence of ovarian cancer may be related to this factor. Ovarian cancer is less common in poor countries where birth control is rarely practiced and pregnancy at early age and a large family are common, than in the richer countries. Similar results were reported by Monagham and colleagues[13]. In present study, 80% of patients and ovarian cancers have two or more children and 25% have more than 5 children.

The presenting symptoms in most of patients were abdominal pain, mass abdomen and distension. Abdominal pain and mass were equally frequent in both benign and malignant tumours. Abdominal distension was found in 6% of benign while 75% of malignant ovarian tumours. Symptoms due to pressure effects and

metastasis were relatively more common in malignant than benign ovarian tumours. The characteristics of abdominal mass on examination help to differentiate between benign and malignant tumours. Malignant tumours were solid or mixed consistency with irregular margins. Presence of ascites was an important sign in malignant tumours.

In a study, the common presenting complaints were abdominal pain (59%), abdominal distension (31%) and menstrual irregularities (16.6%) in malignant ovarian tumours[14].

Aura et al[15] reported that because of vague and non-specific symptoms, patients mostly present with advanced ovarian cancer. Standing subcommittee on cancer of the Standing Medical Advisory Committee (SMAC) reported the same[16]. Nejit reported that two thirds of patients present with the disease has already metastasized[17].

Many ovarian tumours are discovered during routine examinations for such purpose as family planning, cervical cytology or insurance. Various techniques for early detection of ovarian tumour have been explored. Non-invasiveness and easy availability of ultrasonography makes this a technique of choice for detection and characterization of ovarian tumour. 86.6% efficacy of abdominal ultrasound was reported in preoperative evaluation and in differentiating benign from malignant tumours[18].Wu et al in China retrospective study concluded that the diagnostic accuracy of ultrasonography in detecting benign and malignant tumours was 90.90%[19].

In present study the diagnostic accuracy of ultrasound in detecting benign and malignant tumours was 84%, the diagnosis was confirmed by laparotomy and histopathology. Masses showing solid components and septation were considered as malignant on ultrasonography but histopathology showed that 30% of tumours with solid components were benign. It was found that this appearance was due to the presence of mucinous material adherent to the cyst wall. In haemorrhagic cyst, complexed appearance was due to the presence of organized blood.

Treatment of the ovarian tumour depends upon the intra-operative findings, staging, gross features of the tumour, unilateral or bilateral, presence of ascites, pelvic and parental peritoneal seedings, lymph nodes and visceral involvement. Most of the patients with benign tumours were treated by cystectomy, oophorectomy and salpingoophorectomy according to the degree of involvement of ovaries and fallopian tubes. Primary debulking surgery remains the gold standard in the treatment of ovarian cancer. Optimal debulking surgery can be performed in about 50% of patients[20]. In more experienced oncology centres, the percentage is increased to 85% but sometimes at the cost of an increased morbidity and sometimes mortality[21].

Correlating the preoperative diagnosis with operative findings, it was found that 5 cases initially considered to be malignant due to mixed consistency of lesion on examination and ultrasonography were later on found more likely to be benign on laparotomy and confirmed on histopathology. 3 cases were initially diagnosed as benign due to cystic nature of tumours were found to be malignant on laparotomy due to irregular surface and adhesions with the surrounding structures, confirmed on histopathology. So the accuracy of preoperative diagnosis was found to be 84%.

CONCLUSION

This small study of 50 patients of ovarian tumours represents the importance of clinical assessment and ultrasonography for detection of ovarian tumours and risk of malignancy. Proper preoperative diagnosis can help in early detection of ovarian cancer and referral of the patients to the tertiary care centre where experienced surgeons and oncologists are available.

Better health care system with good diagnostic facilities will help in early detection of ovarian malignancy when prognosis is still good.

It was concluded that identification of risk factors, detailed enquiry of the presenting symptoms and proper

clinical examination of the tumour provide important information about the type of ovarian tumour. Ultrasonography is the best preoperative technique available to differentiate benign from malignant ovarian tumours.

REFERENCES

1. Anderson MC, Lamber HE, Rustin GFS, Soutter WP. **Carcinoma of the ovary and fallopian tube.** Show Textbook of Gynaecology. 2nd ed. 1997; 627.

2. Scully RE. Atlas of tumour pathology: **Tumours of the ovary and maldeveloped gonads.** Washington DC. Armed Forces Institute of Pathology. 1979: 30.

3. Averette HE, Hoskin W, Nguyen HN, Biokeg HN. Fless HC. Chemiel JS. **National survey of ovarian cancer 1, a patient case evaluation of American College of Surgeons.** Cancer 1993; 71: 1629-38.

4. Tariq P. **Prevalence of cancer in different hospitals of Lahore.** The Cancer Research 1992; 2: 6-13.

5. Malik M, Aziz F. **Malignant ovarian tumours. A study of 75 patients.** Pak J Obstet Gynaecol 1999; 12: 83-86.

6. Parker SL, Tong T, Bolden S, Wingo PA. **Cancer statistics 1996.** Cancer J Clin 1996; 65: 5-27.

7. Twickler DM, Forte TB, Sautos RR, Mclnitre D, Harris P, Scott d. **The ovarian tumour index predicts risk for malignancy.** Cancer 1999; 86(11): 2280-90.

8. Pietrzau P, Powolny M, Szafranko K, Burucki W. **The use of ultrasonographic studies in the early detection of ovarian tumours.** Ginekol Pol 1998; 69: 288-93.

9. Young R, Carlos A, William P, Hoskins J. **Cancer of ovary. In: Cancer principles and practice of oncology.** 4th ed. New York. JB Lippincott. 1993; 1226-62.

10. Squirest BC, Tong T. **Cancer statistics.** Cancer J Clin 1993; 4: 7-26.1993.

11. Jafarey NA, Zaidi SHM. **Cancer in Pakistan.** J P M A 1987; 37: 178-83.

12. Lynch HT, Conway T, Lynch J. **Hereditary ovarian cancer. In:** sharp F, Mason WP, Leake RE. **Ovarian cancer. Biological and therapeutic challenges.** Cambridge. Chapman and Hall Medical. 1970: 719.

13. Monaghan JM. **Malignant disease of the ovary.** Dewhurst's textbook of Obstetrics and Gynaecology for postgraduates edited by D. Keith, Edmons 1999.

14. Wingo PA, Tong T, Bolden S. **Cancer statistics 1995.** Cancer J Clin 1995; 45: 8-30.

15. Aur JC, Hoesg K and Kolstand. **Ovarian neoplasm.** Danforth textbook of obstetrics and gynaecology. 7th ed. 1994; 9992-93.

16. **Standing subcommittee on cancer of the Standing Medical Advisory Committee.** Management of ovarian cancer, current clinical practices. 1991. Report of a working group Scot JS.

17. Neijt JP. Ten Bokkil, Huinink WW, Van der Burg MEL. **Long term survival in ovarian cancer.** Eur J Cancer 1991; 27: 1367-72.

18. Rober WK. **Magnetic resonance imaging of ovarian tumours. In:** The year book of RCOG. 1994; 18: 195-204.

19. Wu ZY, Zhang GY, DU ZB. **Diagnosis of ovarian tumour by sonography.** Chung Hua, Fu Chan, Ko Tsa, Chih 1994; 29(2): 100-102.

20. Hoskin WJ, Bundy BN, Thipen T. **The influence of cytoreductive surgery on progressive free interval and survival in epithelial ovarian cancer.** Obstet Gynaecol 1992.

21. Vergot I, Wever IW, Jalma W. **Neoadjuvant chemotherapy or primary debulking surgery in advanced ovarian carcinoma: a retrospective analysis of 285 patients.** Gynaecol Oncol 1998; 71: 413-16.