RETROSPECTIVE STUDY OF OVARIAN TUMORS AND TUMOR LIKE LESIONS

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ABSTRACT

Objective: To find frequency of various Neoplastic and non-neoplastic lesion of the ovaries and to analyze its clinical presentation.

Method: This study was conducted from first July 2007 to 30th June 2010 in Gynae unit B of DHQ Mardan. All the cases of ovarian Tumours which were initially recruited after ultrasonography and were later confirmed by open surgery were included in the study. Patients record files were used for collection of relevant data including detailed history, examination, investigations and operative findings. All the specimens were sent for histopathology diagnosis to histopathology section lady reading hospital and a copy of report was attached in patients record files.

Result: Out of 7574 Gynanocological admission 191 cases (2.5%) of ovarian Tumours were detected. Non neo-plastic lesion were more common 98 (51.31%) than neoplastic lesion 93 (48.69%). Among the neoplastic lesion 69.89% were benign while 30% were malignant, serous cystadenoma were the commonest benign Tumours (35.48%) followed by mucinous cystadenoma (21.50%). Serous cyst adenocarcinoma (10.75%) was the commonest malignant Tumour followed by mucinous cystadenomcarcinoma (8.6%). Average age at presentation was 57 years for malignant ephithelial Tumours, 40 years for gonadal stromal Tumours and 22.5 % for germ cell Tumours. There was significant difference in the mean age for benign and malignant ovarian tumours(34 versus 52 p=0.0001)

Conclusion: Epithelial ovarian Tumours are the commonest Tumours followed by Germ cell Tumours. Age has strong correlation with the histological type of the Tumour. Grade, histological type and age of the patient are important prognostic factors. Ultrasound assessment of risk of malignancy favours better patient management. Menstrual irregularities, mass and pain abdomen were the commonest clinical presentations.

Keywords: Ovarian Tumours, Ovarian neoplasm, Ovarian non-neoplastic lesion.

INTRODUCTION

Ovarian masses constitute the 4th most common gynaecologic cause for hospital admissions¹. Benign ovarian Tumours are common among women of reproductive age (90%)². Ovarian cancer is the 4th most common Gynaecologic malignancy in United Kingdom representing 5% of all cancer in women³. No age is exempt from this Tumour. Germ cell Tumours are common in young age and epithelial ovarian Tumours are common in older age group². Diagnosis of ovarian Tumours is often late and no ideal screening method is available. Hence this study was done to determine the local spectrum of ovarian pathology and to identify clinical features and ultrasound characteristics that assist patient management and help define ovarian pathology.

There is no reliable means of early detection except for genetic screening in high risk individuals⁴. Study of early stage disease is mandatory for understanding the molecular pathogenesis of ovarian cancer and detection of precursor lesions before it progress into ovarian cancer⁵.

PATIENT AND METHODS

This is a descriptive study of all the cases of ovarian Tumours admitted to Gynae unit B from First July 2007 to 30th June 2010. It includes both benign and malignant tumours. All the patients included in the study were initially diagnosed on ultrasound and the findings were further

confirmed by laparotomy. All those patients who were either treated conservatively or they had abdominopelvic mass of other than ovarian origin or had tumour metastatic to ovary were excluded from the study. Health Organization classification of ovarian Tumours was used for classifying the Tumours⁶. All relevant data including detailed history, examination, investigations and operative findings, were collected from patients record files. All the specimens were sent to histopathology section of lady reading hospital for reporting. The acquired data was analysed using descriptive statistics to find frequency of various Tumour types and its clinical presentation.

Figure No.1. Relative Frequency of Ovarian Tumours and tumour like lesions

RESULT

Among total No of 7574 Gynaecological admission, over the study period, 191 cases of ovarian Tumours were collected. Non neoplastic lesions 98 (51.3%) were more common than neoplastic lesions 93 (48.89%). The commonest non neoplastic lesions diagnosed were enlarged multicystic ovaries 29 (29.59%) followed by endometriotic cysts 18 (18.36%) followed by follicular cysts 12 (12.24%). Neoplastic Tumours included benign Tumours 65 (69.89%) and malignant Tumours 28 (30%). The commonest cell types were epithelial ovarian Tumours 72 (77.4%) followed by germ cell Tumours 16 (17.2%) followed by sex cord stromal Tumours 5 (5.37%). Epithelial ovarian Tumours included both benign 53 (56.98%) and malignant 19 (20.43%). Among

the epithelial Tumours, serous cystadenoma were 33 (35.48%) and its malignant counterpart serous cystadenocarcinoma were 10 (10.75%). Mucinous Tumours were second most common epithelial ovarian Tumours accounting for 28 cases (30%) with 20 benign mucinous cysts (21.50%) and 08 cases of mucinous cystadenocarcinoma (8.6%). One case of endometrioid carcinoma was diagnosed (1.07%). Germ cell Tumours included mature teratoma 12 (12.9%), dysgerminoma 2 (2.15%) and malignant teratoma 2 (2.15%).

Age range was between 15 and 70 years. Median age for benign ovarian Tumours at the time of presentation was 34 years; for malignant epithelial tumours 57; for germ cell Tumours 22.6 years and 40 years for sex cord stromal Tumours. Benign Tumours were common in all age groups but malignant ovarian Tumours were common above age 50 years.

Regarding marital status 9.94% were un-married, 13.6% nulliparous, 5.2% were pregnant, 7.8% were primipara and 64% had more than one parity.

Relationship of age of menarche was not possible because most of the patient being illiterate couldn't recall exactly the age of menarche. Similarly menstrual disorder were the most common symptoms (61.78%) so the association of early or late menopause couldn't be found. Most of the patient presented with more than one symptom. 15% were asymptomatic while pain hypogastrium was the 2nd most common complaint (50.78%) followed by mass hypogastrium (26%). The commonest complication of ovarian Tumours was torsion (16.6%).

Figure No. 2. Prevalence of Benign Ovarian tumours

Table:1: Prevalence of Malignant Ovarian Tumours

S.No.	Type of Tumour	Number of cases	%age
1. SCAC	Serous cystadenocarcinoma	10	10.75
2. MCAC	Mucinous cystadenocarcinoma	8	8.6
3. SCST	Sex cord stromal Tumours	5	5.37
4. Dy	Dysgerminoma	2	2.15
5. MT	Malignant teratoma	2	2.15
6. EC	Endometrioid carcinoma	1	1.075

Table No.2: Prevalence of Various Non-Neoplastic lesions

S.No	Type of Tumours	Number of cases	%age
1.	Enlarge multicystic ovaries	29(29.59 %)	29.59
2.	Endometriotic cyst	18	18.3
3.	Follicular cysts	12	12.24
4.	Benign cysts of undetermined origin	9	9.18
5.	Enlarged polycystic ovaries	9	9.18
6.	Tuboovarian mass with acute/chronic non- specific inflammation	7	7.14
7.	Haemorrhagic cyst	3	3.06
8.	Luteal cysts	3	3.06

Table No.3: Age in relation to the type of Neoplastic lesion

Type of Tumour	Age Range	Median
Serous cystadenoma	20-50	36
Serous cystadenocarcinoma	55-65	59.5
Mucinous cystadenoma	30-58	38
Mucinous cystadenocarcinoma	52-63	54.5
Endometrioid tumours	63	63
Sex cord stromal tumours	35-48	40
cystic teratoma	20-25	22.6
Malignant teratoma	45-55	50
Dysgerminoma	25-35	30

Table No.4: Age in relation to the type of Non-Neoplastic ovarian lesion

Type of Tumour	Age range	Median age
Enlarged multicystic ovaries	25-40	35
Endometriotic cysts	25-40	37
Follicular cysts	15-45	28
Benign cysts of undetermined origin	28-46	34
Enlarged polycystic ovaries	25-40	35
Tubo ov.mass with ac on chronic inflammation	23-38	34
Haemorrhagic cysts	25-33	26
Luteal cyst	20-35	21
Ov.mass with stroma filled with eosinophilic material	35-44	39
Tuberculous oophoritis & peritonitis	30-49	33

Table No. 5 Parity in relation to the type of various Ovarian Lesions

Parity	NON-NEOPLASTIC	NEOPLASTIC	
		Benign	Malignant
Un-married	4	6	9
Infertility	10	11	4
Pregnant	7	3	--
Parity<2	7	6	2
3-5	40	29	7
>5	28	13	6
Total	98	65	28

Table No.6: Correlation of ultrasound findings with histopathology report

Histopatholgy Report	No.	Ultrasound Report
c.luteum cyst	3	Simple unilocular cyst
Enlarged multicystic ovaries	29	Increased ovarian vol with multiple small hypoechoic areas irregularly scattered in ov.substance
Endometriotic cysts	18	Diffuse low level echoes throughout the substance of the cyst
Follicular cyst	12	Simple hypo-echoic cyst with absent internal nodules,septa,debris
Haemorrhagic cyst	3	Hyper-echoic fibrinous strands in the cystic mass
Terratoma	14	Diffuse echogenic debris floating in the cyst fluid,dermoid plug or nodule in the cyst.(calcified elements)
Polycystic ovaries	9	Multiple tiny follicles uniformly scattered along rim of ovaries
Benign epithelial tumours	53	enechoic multilocular cystic mass with or without echogenic foci.
Malignant epithelial tumours	19	Multilocular complex cystic and solid mass with papillary growths in some of the loculli,with ascites=15 Without ascites=4
Sex cord stromal tumours	5	Complex mass with both cystic & solid components

Table No.7: Clinical Presentation in relation to the type of various ovarian lesions

Symptom	NON-NEOPLASTIC	NEOPLASTIC	
		Benign	Malig-Nant
Asymptomatic	20	9	--
Pain abdomen	50	35	12
Nausea vomiting	10	10	3
Mass hypogas- trium	17	15	18
Abdominal enlargement	3	6	14
Menstrual irregularities	55	40	23
Constipation	10	15	5
Loss of appetizer	25	15	5

DISCUSSION

In this study 69.89% Tumours were benign while 30% were malignant. The prevalence of malignancy is similar to that given by Koonings.⁷ In our study mean age for benign ovarian Tumours was 34 years and for ovarian malignancy was 52 years and this difference is statistically significant (p value=0.0001). Age variation for different tumour types in this study is comparable to study by Chakraborti⁸. There is clear age relationship to the types of ovarian Tumours which is similar to the other studies^{7,11}.

Table No.8: Comparison of mean age of the patients with benign and malignant tumours.

Malignancy status	No of patient	Median age of the pt
Benign	65	34
Malignant	28	52

P value=0.0001(<0.05)

Ovarian Tumours can be a symptomatic, diagnosed incidentally on ultrasound (15%) or can present with mass hypogastrium, distension abdomen, pain hypogastrium pressure effects and menstrual disturbances etc. In this study the commonest symptom was menstrual irregularities (61.78%) followed by pain abdomen (50.78%) and mass abdomen (26%) which comply with the retrospective analysis by Jamal¹⁰.

Ultrasonography is a major breakthrough in the diagnosis of asymptomatic tumours but its value in the detection of early stage ovarian cancer in high risk women is uncertain¹². National Institute of Health has recommended transvaginal sonography as preferred means of diagnosis,¹¹ but the preference of CT scan/MRI over ultrasonogram in the assessment of extra pelvic disease prior to chemotherapy is there^{12,2}. Furthermore the role of ultrasound for assessment of risk by use of certain parameters like bilaterality, ascites, presence of solid areas in cyst and metastasis was confirmed by this study. The use of above ultrasound findings in relation to the

age of the patient helped in better pre-operative patient preparation and patient counseling. Although ultrasound helped in detection of tumour but for diagnosis, tissue histopathology is imperative.

Owing to difference of cells origin, ovarian Tumours presents with diverse clinical behaviours, histogenesis and malignant potential. This morphological diversity poses many challenges in proper diagnosis.

Histological examination is essential for diagnosis but for specific diagnosis some times in addition to routine evaluation of stained slides, immunohistochemical staining is also required. Among histological types non-neoplastic lesions were more common (51.31%) while neoplastic Tumours were 48.69% which is in accordance with the findings by Gupta¹³.

Neoplastic Tumours result from growth and multiplication of cells while non-neoplastic Tumours develop from either tissue odema, inflammation, infection, degeneration or extension of normal physiologic process like follicular cyst, luteal cyst.¹⁴ In this study extension of normal physiologic process like follicular cyst, luteal cyst¹⁴. In this study enlarged multicystic ovaries (29.59%) was the commonest non-neoplastic Tumour followed by endometriotic cyst 18.3% and follicular cyst 12.24%. In the neoplastic group epithelial ovarian Tumours were most common, 2nd most common group was germ cell Tumours in which 12.9% were benign and 4.30% were malignant. The 3rd most common type was sex cord stromal Tumours. These prevalence figures are in accordance with those given by Koonings Pilli^{7,9}.

The role of environmental pollution, smoke and urbanization couldn't be confirmed as equal number of patients belong to both rural and urban areas. Family history of breast and ovarian cancer is a strong risk factor for ovarian cancer as it may indicate presence of inherited germline mutations in either BRCA 1 or BRCA 2¹⁵. In this study relationship to family history & blood group could not be confirmed which may be due to small study

size. In addition to histological pattern the degree of differentiation depicting the grade of the tumour is an important prognostic factor. Grade is actually the measure of tissue anaplasia. The five years survival rate in ovarian cancers is still between 30-40% and the figures are even worse with poorly differentiated Tumours.

CONCLUSION

Epithelial ovarian tumours are the commonest tumour type followed by germ cell tumours. Histological type of ovarian Tumours strongly correlate with the age of the patient. Menstrual irregularities, mass and pain abdomen were the commonest clinical presentations. Ovarian malignancy is silent killer. Patient is asymptomatic until the disease is quite advanced. An effective and ideal screening method for prompt detection of disease is required to improve the prognosis but till that time arrives, detection of high risk cases by estimating the risk of malignancy by using certain ultrasound parameters in relation to the age of the patient is important. A policy of conservative treatment in selective cases needs further evaluation by randomize trials.

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