OVARIAN TUMORS AND THEIR VARIABLE MANIFESTATIONS: BENIGN VS MALIGNANT, AN OBSERVATIONAL STUDY

Oncology

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ABSTRACT

The ovarian cancer presents with various symptoms .The aim of the study to identify the predictors of benign and malignant tumors of ovary. **Method:** a consecutive data collection of the patients done for twin center in the period of January 2016 to December 2017 with detailed inclusion and exclusion criteria of case selection. All females of age >21 with numerous symptoms like abdominal pain, distension, dysmenorrheal, urinary or gastrointestinal complaints with mass in abdomen ,CA125 and USG suggestive of ovarian tumor included while those with known ovarian cancer, asymptomatic and medically managed cases of ovarian pathology. The whole data collected and descriptive analysis done by SPSS system. **Results:** the aggressive neoplasm were seen in peri/postmenopausal women (62.5%). The abdominal discomfort in the form of pain(74.36%),belching (66.67%)were predominant in malignant.
Conclusion : The continuous vague Abdominal pain and distension in perimenopausal is a good indicator when associated with urinary or GI symptoms and requires detailed evaluation for cancer

KEYWORDS

Abdominal Pain, Benign, CA-125, Malignant, Ovarian Tumor

INTRODUCTION

The ovarian cancer is the third leading site of cancer among women, after cervix and breast cancer.   The age-adjusted incidence rates of ovarian cancer vary between 5.4 and 8.0 per 100,000 populations in different parts of the country.

AIM: To identify the best predictors of benign and malignant tumors of ovary. Method: The study carried out in two multispecialty centers of Jabalpur district from January 2016 to December 2017 .A consecutive data collected for all females attending the emergency or gynecology or surgical department with tentative diagnosis of abdominal mass on examination or in imaging/ laparotomy and finally diagnosed in histopathology as ovarian tumor .

The inclusion criteria was the above mentioned females with complaints like feeling of abdominal mass, distension, pain, belching, gradual change in weight, dysmenorrhea, urinary complaints, prolapsed of vaginal strutctres, lethargy, constipation or irritable bowel(bowel symptoms).**The exclusion criteria** was all asymptomatic females with incidental diagnosis ,medically managed cases, abdominal mass on laprotomy other than ovarian tumor in histopathology, previously operated case of ovarian tumor.

The variables included age, family history, ultrasonography finding suggestive of ovarian tumor, CA125 values, histopathological diagnosis. Preoperative estimation of ca125 levels were done in all patients. CA 125 performed on fully automated immuno assay analyzer beckman coulter access 2 by chemiluminiscence method. Normal range of CA125 was 0-35 U/L.

The USG (ultrasonography) examination done and all ovarian tumor suspected benign/malignant included. The all cases underwent laparotomy,tumor mass with added pathology removed.The tissue sent for Histopathological assessment.All samples were grossed and sectioned .The hematoxyline and eosin staining of sections were done and examined under microscope. The final outcome measures were age, symptoms of the patient,CA125, stage and histopathology of tumor.

Result:

A total of 78 ovarian tumors enrolled in the study.The age wise distribution reflected that malignancy is more common in high age >40. (Table-1)

Table 1-Age wise distribution of tumors of ovary

age wise distribution	Benign n=62	Malignant N=16
21-30	12.82	0
31-40	21.79	12.5
41-50	26.92	25
>51	17.95	62.5

TABLE -2 the frequency of symptoms in both group and comparison with previous study

Symptoms	Tayyiba Wasim et al benign	present study benign	Tayyiba Wasim et al malignant	present study malignant
Abdominal distension	28.3%	5.13%	60	**69.23**
Abdominal mass	15%	12.82%	40	46.92
Abdominal pain	66.3%	**89.74%**	76.7	**74.36**
Dysmenorrrhea	-	23.08%	-	7.69
Nauea /vomiting	30%	35.90%	60	**73.08**
Dyspnea	15%	20.51%	43.3	48.72
Belching	-	42.31%	-	**66.67**
Irritable bowel	-	**43.59**%	-	41.03
Constipation	26.3%	38.46%	-	41.03
Decrease apetite	-	7.69%	-	16.67
Increased urinary frequency	21.3%	0.00	20	28.21
Weight loss	-	0.00	70	70.51
Lower limb swelling	-	0.00	-	7.69

The frequent symptoms of abdominal pain(89.74%)in benign and 74.36 (malignant) was observed. The pelvic symptoms like irritable bowel (41.03%) urinary frequency (28.21%), lower limb swelling (7.69%) was present in malignant group. The belching (66.67%) was more frequent in malignant group.

The benign group has mostly pain associated with nausa/vomiting (35.9%),dysmenorrheal(23.08%) and irritable bowel symptoms.

The serouscystadenoma (48.39%), serousadenocarcinoma(56.25%) and mucinous adenocarcnoma carcinoma(25%) were very high.

Figure 1: Upper one-malignant large ovary in post menopausal women with twisted pedicle(serousadenocarcinoma stage1)

Lower one-Large mature teratoma in perimenopausal women

Courtesy :Shalby hospital ,from study population.Permissin taken from patient.
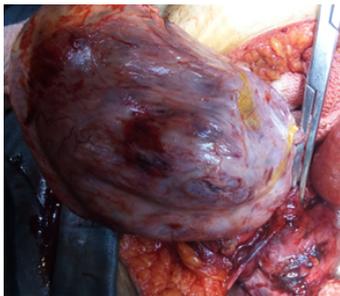
DISCUSSION
The challenging part of ovarian cancer is its diagnosis by symptoms because of its variation

Two third of ovarian tumors occur in women of reproductive age group [3] .The benign pathology is more common in this group as compare to malignancy. There were large number of benign tumors 79.49% Vs 20.51% malignant found which was almost comparable with previous studies 83.9% benign Vs 16.1%malignant Jha et al,56.9% Vs 11.3 by Maheshwari et al, 72% benign Vs 28% malignant according wasim T et al, 78.70% were benign Vs21.29% malignant [2,4,5,6]

Koonings et al described that the risk of an ovarian neoplasm was malignant increased 12 folds from ages 20-29 and 60-69 in their study.The overall risk of ovarian neoplasm was malignant 13% in premenopausal and 45% in postmenopausal women. These all studies reflect that with advancement of age probability of malignancy increases.

In the benign group 61.5% appear before 40 Year of age. While in, Malignant 62.5% cases seen in >40 year. The results were significant to understand that Malignancy is more in peri menopausal and post menopausal as compare to young similar to Jha et al.[2]

The symptoms of the benign tumors were predominantly abdominal pain (70%) either due to hemorrhage or twist of tumor or some other unidentifiable factors. There were other complaints like belching 42.51%, irritable bowel 43.59%. The studies say in benign group due to the increased tumor size, ascites, endometriomas and complications of ovarian cyst are the factors for pain.

In malignant ovaries the predominant symptoms were abdominal pain(74.36%)abdominal distension (69.23%) feeling of abdominal mass (46.92%) followed by gastrointestinal symptoms belching (66.67%) predominantly. There are studies which suggests, malignancy as most of the time noticed by abdominal symptoms (55.1%) and pain (76%) only.[5,8]

In PLCO trial, initial stage results compared the Trans vaginal ultrasonography finding and ca125 values and found the both with low sensitivity for prediction of ovarian cancer.[9] The further results are awaited.

The clinical examination reveals most of the findings and evaluates the diagnosis. Since there is no standard scoring system for symptoms or clinical examination, one can go for evaluation by investigations only.

Here we compared our data by CA125 and ultrasonographic findings. The elevated CA 125 levels does not indicate ovarian malignancy and do not differentiate between benign and malignant pelvic masses but definitely it helps to reflect the histological grading.[10] The higher the grade more the high levels of Marker will be detected.

The CA 125 was found to be good predictor in malignant cases, [11] particularly for serous cystadenocarcinoma (mean 464U/L) followed by mucinous cyst adeno carcinoma (mean182u/l).The benign pathology serous cyst adenoma (mean 112 U/L) .The serum levels of CA 125 is also associated with histological grade. Screening identified both early- and late-stage neoplasm, and the predictive value of both tests was relatively low.

The ultrasonography used the Timmerman *et al*.defined simple ultrasound rules for ovarian tumor characterization, with five features of benignity and five of malignancy. [13]

Table 3-USG Criteria for differentiation in malignant and benign

MALIGNANT	BENIGN
Irregular solid tumor (M1	unilocular ovarian cyst (B1
presence of ascites (M2);	presence of solid components smaller than 7 mm in diameter (B2)
presence of at least four papillary projections (M3);	presence of acoustic shadows (B3)
irregular multilocular solid tumor with a maximum diameter of 100 mm or more (M4);	multilocular tumor with smooth walls and maximum diameter measuring less than 100 mm (B4);
High Doppler flow (color score 4) (M5).	no detectable blood flow on Doppler examination (color score 1) (B5)

Benign= If one or more B features present and M features absent Malignant =. If one or more M features present+absent B features, non -classifiable =both B features and M features were present or none of the features was present, We used differentiation criteria and labeled the tumor accordingly and followed further in histopathology.After final reporting from histopathology only the benign and malignant grouping done. No borderline tumor taken in the criteria.

In grossing benign tumors were encapsulated with few of them showing solid along with cystic components.Matuire teratoma showed hair,and bony tissue.Malignant tumors showed areas of hemorrhage and necrosis along with solid cystic areas Among gorss and microscopic final histopathological patterns the commonest tumors were epithelial ovarian tumors followed by germ cell tumors. The most common benign tumor was serous cyst adenoma (48.39%),then mature cystic teratoma(35.48%). Other tumors encountered were mucinous cystadenoma (12.9%),fibroma (1.61%) and thecoma (1.61%). [14]

Among the series of carcinoma the half of the carcinomas was serous cystadenocarcinoma 9(56.25%) only. The mucinouscystadenoc arcinoma 25 % cases in comparison to 13.5% Zubair M et al [15] ,Yolk sac tumors 12.5 in comparison to 9.2 . Clear cell carcinomas represent approximately 5% of ovarian carcinomas, but no case of clear cell carcinoma and Brenner tumors cases. Brenner represent about 2–3% of ovarian tumors and are rarely malignant.[6]

CONCLUSION
The single predictor for early diagnosis of Cancer ovary is difficult to define due to large variation of presentation of the symptoms. The continuous vague Abdominal pain and distension in perimenopausal is a good indicator and gravity increases if it is seen with other Gastrointestinal symptoms like belching, pressure symptoms. The help of tumor marker and imaging ensures the diagnosis. Hence this triple approach (symptoms +ultrasonography+CA125) should be included in screening program in routine health and checkups of women suspected with ovarian malignancy.

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