

A Hospital-Based Study to Assess the Findings of Ultrasonography in Patients with Ovarian Tumour: An Observational Study

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Received: 11-07-2023 Revised: 19-08-2023 / Accepted: 21-09-2023

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Conflict of interest: Nil

Abstract

Aim: The aim of the present study was to assess the findings of ultrasonography in patients with ovarian tumour.

Material & Methods: A prospective study carried out on 100 patients of ovarian tumours referred to radiology department at a tertiary health care centre. Sociodemographic data, clinical history and clinical examination findings were taken from OBGY department records. Ultrasonography findings were noted. Data analysed with appropriate statistical tests.

Results: In present study, most of the patients (35%) with ovarian tumour were in the age group 51 year old and above, followed by age group of 41-50 years (28%). Mean age of the patient was 45.35±3.4 years. In our study, most common symptom was abdominal pain 94 (94%) followed by abdominal mass 65 (65%). Backache was seen 32 (32%) patients. pressure symptoms were seen in 20 (20%) patients. Pressure symptoms included increased frequency of micturation, retention of urine and GI symptoms like constipation. Majority of the patients 34 (34%) were having cystic + solid consistency followed by cystic consistency 32 (32%). Solid consistency on ultrasonography was seen in 30 (30%). Liver metastasis was seen in 4 (4%) patients. In present study, based on ultrasonography findings most of the benign ovarian tumours were having cystic consistency. Most of the malignant tumour was having both cystic and solid consistency. 4 patients with malignant ovarian tumour had liver metastasis. Association between tumour type and ultrasonography finding was found to be significant ($p < 0.001$).

Conclusion: On ultrasonography benign ovarian tumours are having cystic consistency and malignant tumours were having cystic+ solid consistency.

Keywords: Benign, Malignant tumors, Ovary, Ultrasonography

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Introduction

Ovary is a main organ of reproduction but its tumour is always notorious Ovarian cancer is one of the leading cancers in Indian women. Ovarian tumours are complex tumours which are diagnosed very late due to asymptomatic initially. [1] The pathology of ovarian tumour is one of the most complex areas of gynaecology, because the ovaries give rise to greater range and variety of tumours than does any other organ. [2] In India, ovarian cancer is the third leading site of cancer among women after cervix and breast cancer. [3] A female's risk at birth of having ovarian tumour sometime in her life is 6-7%, of having ovarian cancer is almost 1.5% and dying from ovarian cancer is 1%. The age adjusted incidence rates of ovarian cancer vary between 5.4 and 8.0 per 100,000 population in different parts of the country. [4]

Ovarian tumour arises in any age group and can be classified based on cells of their origin into epithelial, sex cord stromal, germ cell and metastatic types. A number of non-neoplastic and neoplastic lesion occur within the ovaries. They can present from the neonatal age to post-menopausal age. Benign ovarian cysts are the commonest constituting about 90% of ovarian tumours. Most commonly observed tumour is epithelial tumors counting about 85% to 90% of all ovarian malignancies. Histologic subtypes in epithelial ovarian cancer include serous, mucinous, endometrioid, clear cell, and undifferentiated tumors. The major risk factor is the family history. Other associated risk factors are excess body weight, Height, Cigarette smoking and Physical inactivity. [5,6] Ovarian tumours are generally difficult to detect until they are of advanced stage or large in size. Ovarian malignancies are diagnosed late, because of non-specific symptoms

initially like discomfort, bloating back pain or urinary symptoms or mainly asymptomatic. [7] Symptoms appear in later stage of malignancy. Most ovarian tumors cannot be distinguished confidently on the basis of their clinical or gross characteristics alone. [8]

Dilemma of differentiating a benign from a malignant tumour always exists by clinical examination. Imaging by USG though helps to locate origin size, consistency of tumour but diagnosis of malignancy in ovarian tumour by USG, CA125, MRI and other method is difficult. [1] Ultrasonography is a relatively simple and non-invasive diagnostic method that provides clinicians with useful information relevant for determining the optimal management strategy for a given patient. Previous studies observed that Ultrasonography can accurately characterize about 90% of adnexal masses and the reported sensitivity and specificity of US for detecting ovarian malignancies is 88%-96% and 90%- 96%, respectively. [9-11] Ultrasound is important for early detection of ovarian tumours and it can be a guide for further management. Hence, Present study was conducted to study the ultrasonographic features of ovarian tumours.

Material & Methods

An observational study including 100 patients attending OPD of OBGY department and referred to Department of Radio-Diagnosis, Katihar Medical College and Hospital, Katihar, Bihar, India for ultrasonography during study period of 12 months. Patients having solid ovarian mass and suspected of having ovarian tumour were enrolled in the study. Study was approved by ethical committee of the institute. A valid written consent was taken from the patients after explaining study to them.

Inclusion Criteria:

1. All patients with solid ovarian mass detected clinically.
2. All patients with cystic ovarian lesions more than 6 cms.

Exclusion Criteria:

1. Ovarian cyst less than 6 cms with clear cysts.
2. Patients not willing to participate in the study.

Methodology

All the patients admitted in the obstetrics and gynaecology department with ovarian tumour and referred to radiology department were studied. Data collected with pretested questionnaire. Data regarding sociodemographic data, clinical history and clinical examination were taken from records of OBGY department. All patients underwent ultrasonography of abdomen and pelvis. Ultrasound findings of the ovarian tumours were based on following features: 1. Bilateral lesion 2. Cystic mass 3. Evidence of solid areas 4. Cystic and solid masses 5. Evidence of metastasis. Data regarding histopathology of the tumour collected from department of OBGY. Ultrasound examination included size, shape, echogenicity of the ovarian lesion in sagittal and transverse planes, Wall thickness, locularity of the lesion and calcification. Histopathological follow up of all cases taken for correlating the ultrasonography.

Statistical Analysis

Statistical analysis will be carried out with the help of SPSS (version 20) for Windows package (SPSS Science, Chicago, IL, USA).

Results

Table 1: Demographic data

Age groups in years	N	%
21-30	15	15
31-40	22	22
41-50	28	28
>51	35	35

In present study, most of the patients (35%) with ovarian tumour were in the age group 51-year-old and above, followed by age group of 41-50 years (28%). Mean age of the patient was 45.35±3.4 years.

Table 2: Distribution of patients of ovarian tumour according to symptoms

Symptoms	N	%
Abdominal Pain	94	94
Abdominal Mass	65	65
Backache	32	32
Pressure Symptoms	20	20

In our study, most common symptom was abdominal pain 94 (94%) followed by abdominal mass 65 (65%). Backache was seen 32 (32%) patients. pressure symptoms were seen in 20 (20%) patients. Pressure symptoms included increased frequency of micturation, retention of urine and GI symptoms like constipation.

Table 3: Distribution of patients of ovarian tumour according to USG findings

USG Finding	Cases	Percentage
Cystic	32	32
Solid	30	30
Cystic+ Solid	34	34
Liver Metastasis	4	4
Total	100	100

Majority of the patients 34 (34%) were having cystic + solid consistency followed by cystic consistency 32 (32%). Solid consistency on ultrasonography was seen in 30 (30%). Liver metastasis was seen in 4 (4%) patients.

Table 4: Types of Tumours According to Ultrasonography Finding in patients with ovarian tumour

	Cystic	Solid	Cystic + Solid	LiverMetastasis	
Benign	32	24	14	-	70
Malignant	-	6	20	4	30

In present study, based on ultrasonography findings most of the benign ovarian tumours were having cystic consistency. Most of the malignant tumour was having both cystic and solid consistency. 4 patients with malignant ovarian tumour had liver metastasis. Association between tumour type and ultrasonography finding was found to be significant ($p < 0.001$).

Discussion

The pathology of ovarian tumour is one of the most complex areas of gynaecology, because the ovaries give rise to greater range and variety of tumours than does any other organ. A female's risk at birth of having ovarian tumour sometime in her life is 6-7%, of having ovarian cancer is almost 1.5% and dying from ovarian cancer is 1%. [12] A number of non-neoplastic and neoplastic lesion occur within the ovaries. They can present from the neonatal age to post menopausal age. Most are functional in nature and fade away with minimal treatment. However, ovarian cyst can herald an underlying malignant process. When cyst are large, persistent, or painful, surgery may be required. [13,14] Benign ovarian cysts are the commonest constituting about 90% of ovarian tumours. Ovarian tumours are generally difficult to detect until they are of advanced stage or large in size. Ultrasonography is a relatively simple and non-invasive diagnostic method that provides clinicians with useful information relevant for determining the optimal management strategy for a given patient.

In present study, most of the patients (35%) with ovarian tumour were in the age group 51 year old and above, followed by age group of 41-50 years (28%). Mean age of the patient was 45.35 ± 3.4 years. Similarly Khurana and Satia found 50 mean age of the patients was 37 years. [15] In our study, most common symptom was abdominal pain 94 (94%) followed by abdominal mass 65 (65%). Backache was seen 32 (32%) patients. pressure symptoms were seen in 20 (20%) patients. Pressure symptoms included increased frequency of micturation, retention of urine and GI symptoms

like constipation. It is comparable to studies by Sumaira et al [16] (70.59%), Tarek Ramadan Abbas et al [17] (66.66%), Kanthikar et al [18] (29.33%). Majority of the patients 34 (34%) were having cystic + solid consistency followed by cystic consistency 32 (32%). Solid consistency on ultrasonography was seen in 30 (30%). Liver metastasis was seen in 4 (4%) patients. Present study was comparable with Prabhakar et al [19] Mishra et al [20] and Kanthikar et al [18] where benign tumours were having cystic consistency while malignant tumours were cystic and solid.

In present study, based on ultrasonography findings most of the benign ovarian tumours were having cystic consistency. Most of the malignant tumour was having both cystic and solid consistency. 4 patients with malignant ovarian tumour had liver metastasis. Association between tumour type and ultrasonography finding was found to be significant ($p < 0.001$). benign ovarian tumors more often present in women of reproductive age group. Combination symptoms along with constitutional symptoms were present in all malignant patients which contradicts few other studies which report 7-15% of ovarian cancer patients are asymptomatic, when diagnosed. [21,22]

Conclusion

On ultrasonography benign ovarian tumours are having cystic consistency and malignant tumours were having cystic+ solid consistency.

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