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Dr. Vinu Choudhary
Assistant Professor, Churu Medical College, Churu, Rajasthan, India

Dr. Surendra Bisu
Senior Resident, S.P. Medical College, Bikaner, Rajasthan, India

Correspondence
Dr. Surendra Bisu
Senior Resident, S.P. Medical College, Bikaner, Rajasthan, India

A cross - sectional study depicting histopathological features of ovarian tumours at a tertiary hospital: An insight into basics

Dr. Vinu Choudhary and Dr. Surendra Bisu

Abstract
Introduction: Ovarian tumors that present in the reproductive age group are mostly benign while about 30% in the postmenopausal age group are malignant. 1 They present themselves in various clinical forms and surprisingly many a time as vague, non-gynaecological complaints Influence of menarche, menopause, nulliparity, mean age of presentation and type of tumour needs to be identified. This will help develop a analysis for clinicopathological features of ovarian tumour.
Material and Methods: This was a prospective observational study at a tertiary care hospital which included 112 patients satisfying the inclusion criteria. Incidence of ovarian tumour and clinicopathological features of ovarian tumours was studied.
Statistical analysis: Percentage distribution of clinical and pathological features of ovarian tumours was studied.
Result- The incidence of ovarian tumours from 1 January 2017 to 31 December 2018 was found to be 8.9% of all gynaecological admissions. 14 patients had malignant lesions on HPR. The commonest benign lesion was serous cystadenoma, the commonest malignant lesion being papillary adenocarcinoma.
Conclusion: Thus, it is concluded that on morphological grounds, tumours originating from surface epithelium are the commonest variant and various modalities will help in early detection of malignant lesions of ovary thereby, reducing the mortality rates. Differentiation of a benign tumor from a malignant one is important for determining management and prognosis; hence further similar studies are warranted.

Keywords: Ovarian tumour, benign ovarian tumour, malignant ovarian tumour, borderline ovarian tumour, sensitivity, specificity

Introduction
Ovarian tumours frequently present as adnexal masses and are frequent reasons for referral to Gynaecologist [1, 2]. Ovarian tumors that present in the reproductive age group are mostly benign while about 30% in the postmenopausal age group are malignant. They present themselves in various clinical forms and surprisingly many a time as vague, non-gynaecological complaints. Ninety percent of adnexal masses are detected by pelvic ultrasound. This provides the clinician information about the origin of the adnexal mass. Further, details of the tumor like its complexity, its vascularity and consistency are made out on ultrasound imaging. The definitive diagnosis of the tumor however is by histopathological study.
The influence of mean age of presentation, parity, menopause, type of tumour needs to be studied [3]. This will help develop a analysis for clinicopathological features of ovarian tumour. This encouraged us to conduct the present study.
Benign ovarian cysts are the commonest constituting about 90% of ovarian tumours [4]. Gynecologists receive the major load due to ovarian lesion not only because of anatomical location but also since these tumours may remain unnoticed for long period of time [57].
Amongst benign tumours, 60% of them are epithelial in origin. Among benign epithelial tumour, serous cystadenoma are most common (30%), occurring most commonly in reproductive age group [5, 6]. They are bilateral in 10% of cases. Benign or mature cystic teratoma is the most common germ cell tumour, filled with thick sebaceous material. They account for 40% of all ovarian tumours.
Mostly benign ovarian tumours are asymptomatic. If symptomatic present with dull aching pain, may be acute severe pain in torsion, rupture, haemorrhage, infection [7, 8]. They may present with menstrual disturbances in hormone secreting tumour like granulosa cell tumour.

Ovarian cancer is the leading cause of death in women with female genital cancers in developing countries. A women's lifetime risk has been estimated to be about 1 in 55, which represents an increase from the 1970 [9, 10]. Ovarian cancer is the fifth most common cause of cancer death in women. It is the third most common Gynaecological malignancy among women in western world, hence is the most lethal. Epithelial ovarian cancer is the eight most common cancer in women, and uterine (corpus and endometrial) is fourth. The ovaries are the ninth most common site of cancer in women.

The increased risk of ovarian surface epithelial tumours (SET) is linked to the use of hormone replacement therapy, use of tobacco and a family history of breast and ovarian cancers [11].

So, to know the histopathological findings of ovarian tumour the present study was planned.

Material and method

Information was gathered from patients with ovarian tumours during interview regarding clinicopathological features of ovarian tumours which iccluded demographic features, menstrual and reproductive history, clinical features, pathological features. Investigations like USG, tumour markers, CT/ MRI were performed. After the enrolment demographic data, reproductive, obstetric history were obtained. These findings were recorded on a pre designed proforma.

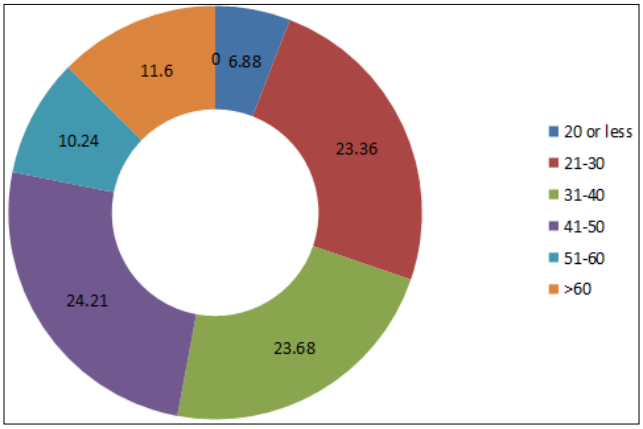
All patients admitted with ovarian tumour which fulfilled the inclusion criteria i.e. All patients with our ovarian tumour attending OPD and admitted with the same. All patients given neoadjuvant chemotherapy were also included.

Exclusion criteria included Ovarian metastasis from any other malignancy and Recurrence of ovarian tumour. Women fulfilling the selection criteria were explained about the nature of study and a written informed consent was obtained prior to enrolment.

The percentage distribution of clinical features and pathologic features of ovarian tumours was found. Categorical outcomes were summarized as rates and numerical outcomes as mean.

Results

A total of 119 cases were studied from 1 January 2014 to 31 August 2015. The data obtained was coded and entered into masterchart. The incidence of ovarian tumours was 5.9% of all Gynaecological admissions.

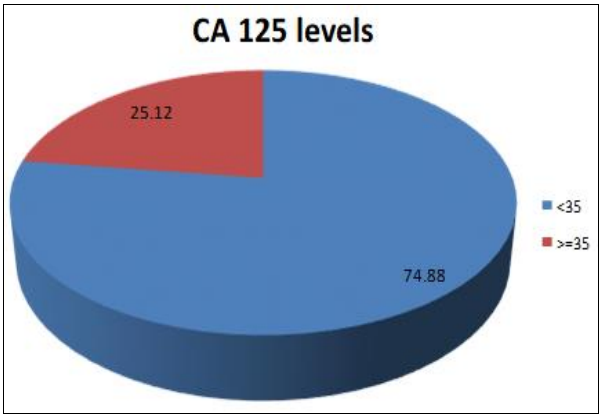


Graph 1: Age Distribution

The mean age of the study population was 40.60 yrs.

In the present study 88.19% of women were multiparous while 10.08% were primiparous while 6.72% of women were nulligravida.

In the present study 78.35 % of women were pre menopausal while only 22.64% of women were post menopausal.



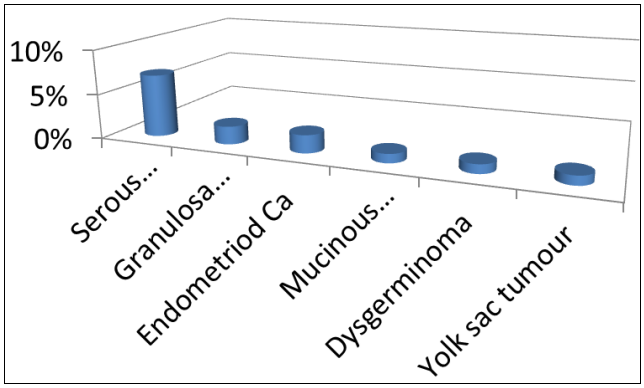
Graph 2: CA 125 Level

In the present study, commonest malignant lesion was found to be serous papillary adenocarcinoma 50% (07).

In the present study, the commonest benign lesion was found to be serous cystadenoma 35.63% (31).

Table 1: Malignant ovarian tumours

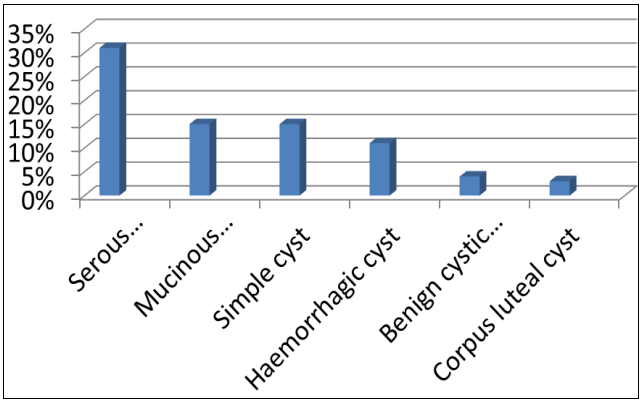
Malignant	Number
Granulosa tumour	01
Serous cystadenocarcinoma	02
Endometrioid carcinoma	03
Papillary adenocarcinoma	05
Mucinous papillary cystadenocarcinoma	01
Dysgerminoma	01
Yolk sac tumour	01



Graph 3: Malignant ovarian tumours

Table 2: Benign ovarian tumour

Benign	Number
Mucinous cystadenoma	10
Papillary mucinous cystadenoma	05
Serous cyst	14
Simple cyst	13
Serous cystadenoma	19
Papillary serous cystadenoma	01
Fibroma	03
Haemorrhagic cyst	09
Corpus luteal cyst	03
Paraovarian cyst	02
Benign cystic lesion	04
Follicular cyst	02
Benign cystic teratoma	03
Total	87



Graph 4: Benign ovarian tumours

In the present study amongst the total 23 women who had menopausal status only 4 women had shown malignant lesions on histopathological examination, while 19 of the women had benign lesions on histopathological examination.

In this study, 70 women who had CA 125 levels were compared with the histopathological reports, amongst 10 women who had malignant lesion on histopathological examination 07 women had CA 125 >= 35IU/ml while 03 women had CA 125 < 35IU/ml. Amongst 60 women who had benign lesions on histopathological examination CA 125 >= 35 IU/ml was found in 09 women only while rest 51 women had CA 125 < 35 IU/ml.

In the study it was found that amongst 68 women, in whom ovarian crescent sign was studied 1 women had presence of ovarian crescent sign was found to have malignant lesion on HPR. Amongst 09 women who had malignant lesion on HPR, ovarian crescent sign was absent in 08 women while it was present in 01 woman only. This is in agreement with the literature which states that ovarian crescent sign is usually absent in malignant lesion. Amongst 59 women who had benign lesion on histopathological report, ovarian crescent sign was present in 39 women and was absent in 20 women.

Discussion

Ovarian tumors show histological heterogeneity. The WHO classification of ovarian tumors is based on the tissue of origin - epithelial, germ cell tumors, sex cord stromal tumors. It is globally seen that, surface epithelial tumors are the most common ones [12, 13].

A pelvic mass is one of the most frequent indications for referral to Gynaecologists. Diagnosis of ovarian tumours can be difficult due to variety of pathological conditions that can affect the ovaries and present with similar clinical manifestations. Knowledge of morphology and age specific characteristics can help refine the diagnosis [14, 15].

Our hospital is a tertiary care hospital where patients are referred from the adjoining and far flung areas. A variety of Gynaecological diseases including malignancies are frequently seen. Thus, the present study was aimed to know the incidence and to study the clinicopathological features of ovarian tumours.

In this study of 119 women, the commonest age group was 41 to 50 years (25.21%) followed by 21 to 30 years (24.36%). The mean age was found to be 40.60 years. These results were in agreement with the findings in literature stating that, the ovarian tumours can occur at any age but their peak incidence is in the reproductive age group [16].

However, it was interesting to note very low frequency of early menarche, late menopause [17], nulliparity and advanced age at first child birth [18]. Most of the women were multiparous and most of them had lactated in the present study.

In the present study of 119 patients, 92.43% women presented with pain abdomen, 29.41% presented with vaginal bleeding while only 12.60% had urinary complaints. Amongst signs 86.55% of women had bulky uterus while only 8.40% of women had ascites.

With regard to obstetric history, most (83.19%) of the women reported were multiparous while only 6.72% were nulligravida. The serum CA 125 levels were <35 IU/ml in 77.14% while in 22.85% of women had serum CA 125 >=35 IU/ml. According to a study it was found that CA 125 cannot adequately be characterized as a screening test due to the presence of overall low incidence of ovarian cancer in general population and the risk of false positive result.

In the present study, the commonest benign lesion was found to be serous cystadenoma 18.39% out of the total 87 patients who had histopathological report showing benign lesions. The commonest malignant lesion was found to be papillary adenocarcinoma 28.57%

The data available from this study can help us in recognizing the pattern of ovarian tumours prevalent. Whether malignant tumours arise de novo or the benign tumour transforms into malignant is the subject of ongoing research and debate. Therefore, based on the results of this study it is evident that early diagnosis is crucial to help in decreasing morbidity and mortality among these patients. The high mortality rate of ovarian cancer is due to its late detection, thus earning itself the term "Silent Killer" [19].

Differentiation of a benign tumor from a malignant one is important for determining management and prognosis; hence further similar studies are warranted [20].

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