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Assessment of ovarian tumors with respect to clinicopathological aspects in Indian population

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Abstract
The ovarian tumors manifest a wide spectrum of clinical, morphological, and histological features. Their complex nature, unpredictable behavior, and prognosis and varying therapeutic strategies necessitate an accurate diagnosis.
The study was planned in the Department of Pathology on the patients referred from Department of Gynecology and in IGIMS Patna. The data from the 50 patients were collected and presented as below between January 2016 to December 2016. The approval of the institutional ethic committee had been taken before the study. All the patients were informed consent. The aim and the objective of the study are conveyed to all patients.
Inclusion Criteria: Patients presented with suspicious ovarian tumors detected clinically or by ultrasound examination. Patients with ovarian tumors and scheduled for surgery.
It is concluded from this study that the tumors originating from surface epithelium are the commonest variant. Majority of them were benign. The ovarian tumors manifest a wide range of clinical, morphological and histological features. Histopathological study remains the gold standard for the proper classification and management of ovarian neoplasm.

Keywords: ovarian tumours, histopathology, epithelial, germ cell, benign, borderline, malignant, serous etc.

Introduction

Ovarian tumors, or ovarian neoplasms, are tumors arising from the ovary. They can be benign or malignant (ovarian cancer). Generally ovarian tumours are more prevalent in the upper socioeconomic groups, and account for approximately two-thirds of cancers in the 40-65 age group. The incidence of ovarian tumour starts increasing in the third decade, and progressively increases to peak in the seventh decade. The different subtypes of ovarian neoplasms are more prevalent in different age groups.

- Ovarian germ cell tumours usually affect young women (mean age of presentation is 19 years) with an incidence of 20 per million at 18 years (age of peak presentation).
- Sex cord-stromal tumours, meanwhile, usually present in the 4th and 5th decades and
- Ovarian epithelial tumours are usually found in post-menopausal women (mean presentation age is 56 years). The median age for ovarian adenocarinoma is 60-65 years.

There is no racial predisposition to ovarian sex cord-stromal tumours or ovarian germ cell tumours. However there is a racial predisposition for ovarian epithelial tumours with higher risks for Caucasians and lower risks for black women. Clear cell adenocarcinoma, a subtype of ovarian epithelial tumours, is more prevalent in Japanese than in Western women.

In ovarian cyst is a fluid-filled sac within the ovary. Often they cause no symptoms. Occasionally they may produce bloating, lower abdominal pain, or lower back pain. The majority of cysts are harmless. If the cyst either breaks open or causes twisting of the ovary, it may cause severe pain. This may result in vomiting or feeling faint. Most ovarian cysts are related to ovulation, being either follicular cysts or corpus luteum cysts. Other types include cysts due to endometriosis, dermoid cysts, and cystadenomas. Many small cysts occur in both ovaries in polycystic ovarian syndrome. Pelvic inflammatory disease may also result in cysts. Rarely, cysts may be a form of ovarian cancer. Diagnosis is undertaken by pelvic examination with an ultrasound or other testing used to gather further details [1].

Often, cysts are simply observed over time. If they cause pain, medications such as paracetamol (acetaminophen) or ibuprofen may be used. Hormonal birth control may be used to prevent further cysts in those who are frequently affected. However, evidence does not support birth control as a treatment of current cysts [2]. If they do not go away after several months, get larger, look unusual, or cause pain, they may be removed by surgery [1].

Most women of reproductive age develop small cysts each month. Large cysts that cause problems occur in about 8% of women before menopause [1]. Ovarian cysts are present in about 16% of women after menopause and if present are more likely to be cancer [1, 3].

Some or all of the following symptoms may be present,

though it is possible not to experience any symptoms [4].

- Abdominal pain. Dull aching pain within the abdomen or pelvis, especially during intercourse.
- Uterine bleeding. Pain during or shortly after beginning or end of menstrual period; irregular periods, or abnormal uterine bleeding or spotting.
- Fullness, heaviness, pressure, swelling, or bloating in the abdomen.
- When a cyst ruptures from the ovary, there may be sudden and sharp pain in the lower abdomen on one side.
- Change in frequency or ease of urination (such as inability to fully empty the bladder), or difficulty with bowel movements due to pressure on adjacent pelvic anatomy.
- Constitutional symptoms such as fatigue, headaches
- Nausea or vomiting
- Weight gain

Ovarian cysts are usually diagnosed by ultrasound, CT scan, or MRI, and correlated with clinical presentation and endocrinologic tests as appropriate.

Ovarian tumours are generally difficult to detect until they are advanced in stage or size, as the symptoms are vague and manifest over time. The principal symptoms include: fatigue, shortness of breath, increased abdominal girth, weight loss, non-productive cough, bloating, and amenorrhea for premenopausal women and menstrual irregularity. Most ovarian neoplasms cause symptoms by exerting pressure on contiguous structures, resulting in increased urinary frequency, pelvic discomfort and constipation. Abdominal swelling results from enlargement of the tumour. Upper abdominal metastases or ascites cause nausea, heartburn, bloating, weight loss and anorexia. Irregular vaginal bleeding can be observed. Shortness of breath is a symptom of patients with ascites or hydrothorax. Some tumours, including subtypes of sex cord-stromal tumours, produce excess oestrogen which results in isosexual precocious puberty, postmenopausal bleeding, menorrhagia, menometrorrhagia, amenorrhea, endometrial hyperplasia/cancer or fibrocystic breast disease. Some subtypes of sex-cord stromal tumours produce androgens which causes virilization [5].

The treatment and prognosis of ovarian neoplasms is based upon accurate surgical staging and a thorough pathological evaluation. Few organs show a variety of tumor types as diverse as the ovary. For this reason, the differential diagnosis of ovarian tumors by the surgical pathologist remains a challenging task. Nevertheless, over the past few years, great advances in the knowledge about ovarian tumors and their molecular genetics and histopathologic features have occurred and, accordingly, new therapeutic modalities have been established [6].

Aims and Objectives

The objectives of the present study are

1. To classify the ovarian neoplasms as per the World Health Organization (WHO) classification,
2. To study the histological subtypes of ovarian neoplasms,
3. To study the distribution of ovarian neoplasms,
4. To study the age distributions of various tumors

Methodology

The study was planned in the Department of Pathology on the patients referred from Department of Gynecology and in IGIMS, Patna. The data from the 50 patients were collected and presented as below. The approval of the institutional ethic committee had been taken before the study. All the patients were informed consent. The aim and the objective of the study are conveyed to all patients.

Inclusion Criteria: Patients presented with suspicious ovarian tumors detected clinically or by ultrasound examination. Patients with ovarian tumors and scheduled for surgery.

Exclusion Criteria: patients with ovarian tumors managed conservatively were excluded.

The data were collected on a pro forma, which consists of the relevant information about age, clinical presentation, size of tumor, bilaterally, provisional diagnosis, operative findings, and histopathological analysis. Specimens without the complete information were excluded from the study.

Result & Discussion

The data from the 50 patients reported to the hospital were collected and presented as below. The table 1 shows the Benign and Malignant Masses on Histopathology in Pre & Post-menopausal patients.

Table 1: Distribution of age parity and duration of symptoms

	Benign	Malignant	Total
Age Groups:			
Premenarchal	0	2	2
Reproductive	26	17	43
Postmenopausal	2	3	5
Parity			
Nulliparous	11	6	17
Multiparous	17	16	33
Duration of Symptoms			
Less than 1 month	14	12	26
1 to 6 months	12	07	19
More than 6 months	2	3	5

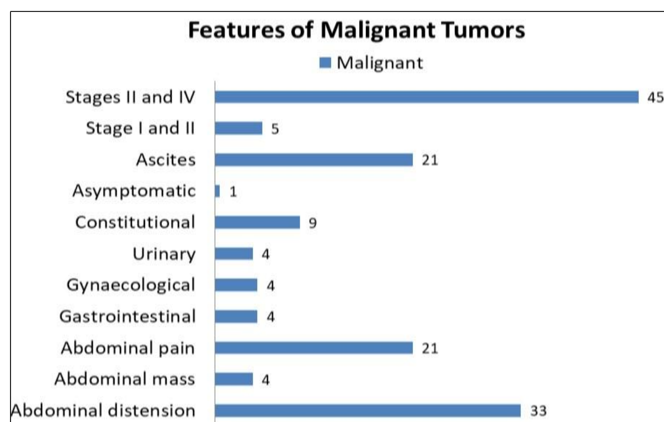

Fig 1: Features of Malignant Tumors

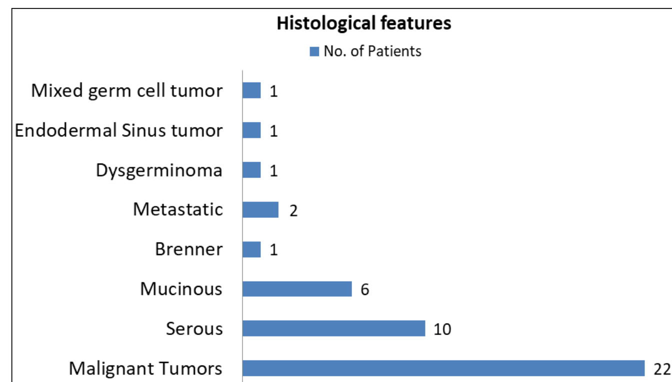

Fig 2: Histological features

Various studies on malignant ovarian tumors are found in literatures. Scully *et al.* [7] described about two third of ovarian tumors in reproductive age group and less than 5% in children. Odukogbe *et al.* [8] reported that 19% of ovarian tumors were among nulliparas and 47.6% among grand multipars. Saeed *et al.* [9] found no correlation with parity in malignant ovarian tumors. Population bases studies are required to find the association of parity with Ovarian cancer. Chan *et al.* [10] found abdominal pain, distension and mass as common presentations in malignant tumor. Only 10% of malignant tumors were asymptomatic in their study. Dorigo *et al.* [11] described menstrual abnormalities in 15% of cases. Shen Gunther and Mannel [12] found ascites in 42% cases. Among malignant tumors, ascites were present in 17% in early stages and in 89% in advanced stages. Goff *et al.* [13] found 70% & ovarian cancer stages III and IV at the time of diagnosis.

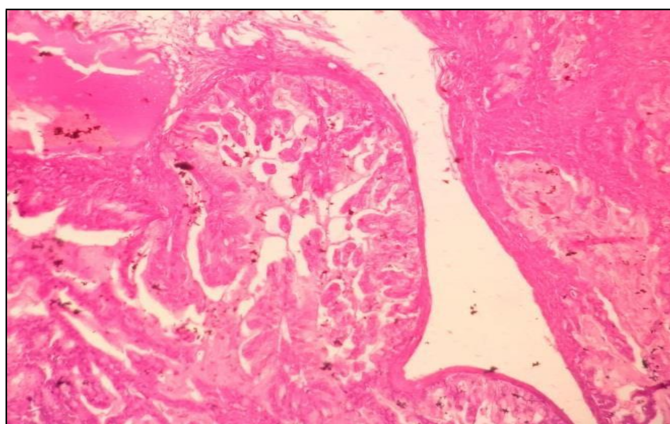

Fig 3: Showing microscopic features of mucinous cystadenocarcinoma ovary

The present study found incidence of malignant tumors similar to those found by Di Bonito *et al* and Ahmed *et al.*

The ovarian tumors manifest a complex wide spectrum of clinical and pathological features. Correlation of age, clinical features, gross, various histological patterns, and categorizing according to the WHO classification help in early and accurate diagnosis as well as prognosis of ovarian tumors. Although histopathological study is still the gold standard in diagnosing most of the primary ovarian tumors, may be supplemented by the newer techniques such as immunohistochemistry, morphometric analysis, and flow cytometric analysis of ploidy status, to resolve the difficult, dilemmatic cases and also to predict the prognosis.

Conclusion

It is concluded from this study that the tumors originating from surface epithelium are the commonest variant. Majority of them were benign. The ovarian tumors manifest a wide range of clinical, morphological and histological features. Histopathological study remains the gold standard for the proper classification and management of ovarian neoplasm.

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