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Research Article

Retrospective Study of Clinical and Pathological Features of Benign Ovarian Tumors

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Abstract: The aim of the study was to assess the patient profile, risk factors and incidence of various benign ovarian neoplasms. We conducted a retrospective study analyzing the data obtained of patients admitted to Obstetrics and Gynecology Department of Bangalore Medical College and Research Institute, Vani Vilas Hospital between July 2012 to July 2014 with ovarian masses. We selected patients with documented histopathology of benign ovarian neoplasms and excluded those with suspected malignancies and those whose histopathology revealed functional cysts and malignant ovarian tumors. A total of 114 cases were obtained. 80.7% patients were in the reproductive age group. 81% women were parous and 19 % were nulliparous. The incidence of same type of benign tumor was comparable in either group, however tertoma was seen more often in nulliparous than parous women. 14% patients were in postmenopausal age group. 5.2% patients were treated for infertility, the use of contraception was uncommon however 64% were sterilized. 73.6% had breast fed their children for atleast 2 years. More than 70% ovarian masses presented with vague or no symptoms. The Risk of Malignancy Index(ROMI)was <200 in Reproductive age group was 88% and in postmenopausal age group was 67%.Benign ovarian tumors are common in reproductive age group. Even in postmenopausal age group benign tumors are of common occurrence. These tumors are largely asymptomatic and hence need proper screening technique. ROMI has a good postive predictive value in detecting benign ovarian tumors. Contrary to etiology benign tumors were found more common in nulliaparous women.
Keywords: Benign ovarian tumors, Postmenopausal, Risk of Malignancy Index (ROMI).

INTRODUCTION

The incidence of ovarian tumor amongst gynecologic admissions has been reported to vary from 1-3%. About 75% of these tumours have been found to be benign. Ovarian malignancies represent the greatest clinical challenge of all the gynaecological malignancies. During the reproductive years most of the ovarian tumours encountered are benign [1]. About 2/3 of the ovarian tumours are encountered in this group only [1]. The chance that an ovarian tumour is malignant in a patient younger than 45 years is 1 in 15.

The bimanual examination is the most practical method of screening for an adnexal mass[2]. Adjunctive diagnostic techniques like sonography, MRI, and CT may help delineate the nature of adnexal enlargement. The differenciation of the benign from malignant tumours can go wrong even with imaging modalities. CA125 along with ultrasound utilizing multivariate logistic regression analysis algorithms were useful in differenciating benign from malignant tumours[3].

The pathology of ovarian tumours is one of the most complex areas of gynaecology. This is because the ovary can give rise to a great range and variety of tumours than any other organ in the body. The tissue from which the ovarian tumour arises is often uncertain and the mode of development of the presumptive tissue is often disputed[4].

MATERIALS AND METHODS

This is a retrospective observational study.The data of all ovarian tumors operated in Vani Vilas Hospital, attached to Bangalore Medical College and Research Institute, Bangalore,between July 2012 to July 2014 were obtained and analyzed. The case records were obtained from the record section after obtaining

the histopathology reports from the Pathology department and isolating all the benign ovarian tumours. The inclusion criteria were all cases of benign ovarian tumors subjected to surgery. A total of 114 cases were obtained and were analyzed. About 16 other cases which were suspected to be benign tumors and revealed functional cysts and malignancies were excluded from the study. The data collected included age at presentation, age of menarche, parity, symptoms and clinical presentation, presence of co-morbid illnesses, risk/protective factors such as use of contraception, breastfeeding, family history, CA 125 levels, Ultrasound findings and histo-pathological report. This data was tabulated and analyzed using suitable statistical tools.

RESULTS

Out of the 114 patient profiles analyzed, 92 were in the reproductive age group. 64 patients were between 20-40years and 28 were in the perimenopausal age group. 16 patients were in the postmenopausal age. Youngest patient was 12 years old and oldest patient was 74 years old. The mean age of occurrence was 31.

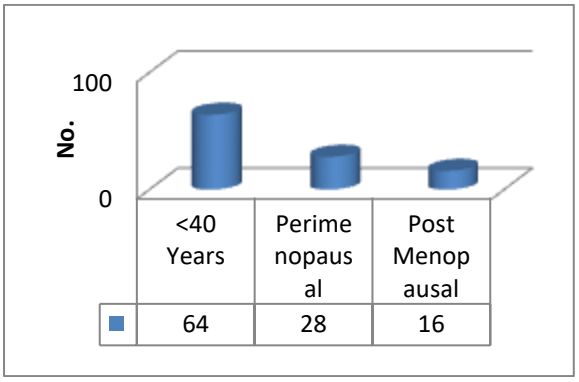

Fig. 1:Age of occurrence

Among the 19 postmenopausal patients 16 patients had benign ovarian lesion and 3 had malignant lesions. These three patients however were excluded from the study.

Fertility pattern and contraceptive usage analysis showed the following results. 5.2% Patients had been treated for infertility. 72 patients were tubectomized. None of the patients in our study had history of oral contraceptive usage.

Table 1: Risk factors

Risk Factor	Percentage
Treated for infertility	5.2
Contraception Tubectomy	64
Breast feeding	73.6

Majority of patients (81%) were parous. 19% were nulliparous.73% Patients had breast fed their children for at least two years.

Symptom analysis has been shown in the chart. About 25% patients were asymptomatic and 35% patients presented with vague abdominal discomfort. Mass abdomen was seen in 14%. A minority of patients (5%) had presented with acute abdomen due to torsion of the mass.

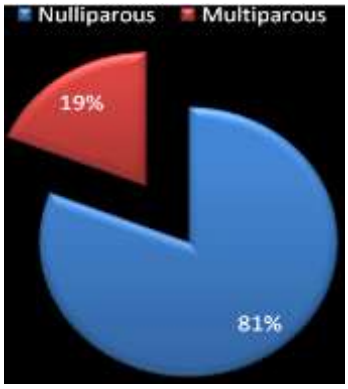

Fig. 2: Parity distribution

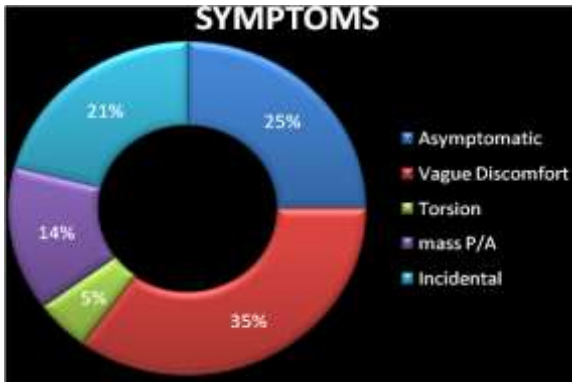

Fig. 3: Symptoms at presentation

The patients who underwent hysterectomy along with their definitive surgery for ovarian tumour which was diagnosed per operatively showed other findings also. 23(21%) patientsbelonged to this group of incidental diagnosis of ovarian tumours. Among these 23 patients in 6 patients there was leiomyoma uterus, 3 patients had adenomyosis and one patient had large hydrosalphinx.

Laterality analysis showed the following observations. Ovarian tumors were seen on the right in 52 patients and 46 patients on the left. It was found bilaterally in 16 patients.

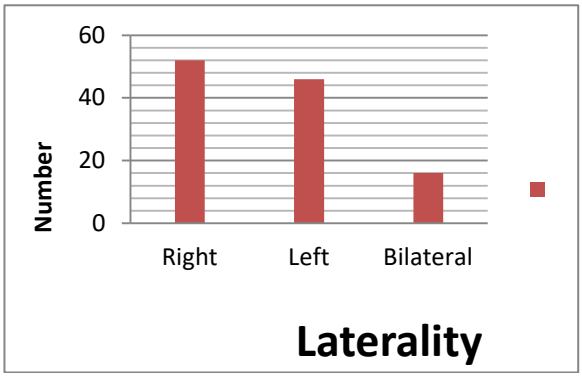

Fig. 4: Laterality of the ovarian cyst

Risk of malignancy index was calculated in all the patients. In premenopausal age group 88% had the ROMI <200 and 12% >200. In postmenopausal age ROMI in 67.2% was<200 in and >200 in 32.8%.

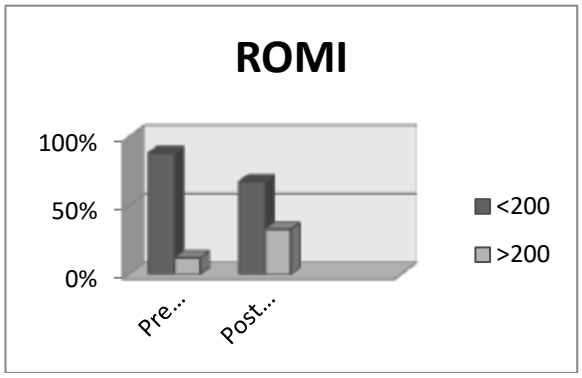

Fig. 5: Risk of Malignancy Index

Comorbid illnesses were found in 32% of patients. 15 patients had diabetes mellitus, 11 patients had chronic hypertension, 6 patients had hypothyroidism and 5 had BMI >25kg/m^2.

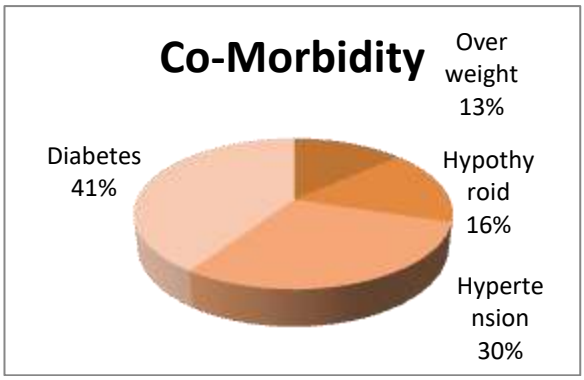

Fig. 6: Co-morbidity

Histopathogical findings revealed Serous cystadenoma in 66 (58%) cases, 14 (12.3%) cases dermoid cyst, 5 (4%) cases of cystadenofibroma. 29 (25.4%) cases revealed mucinous cystadenoma.

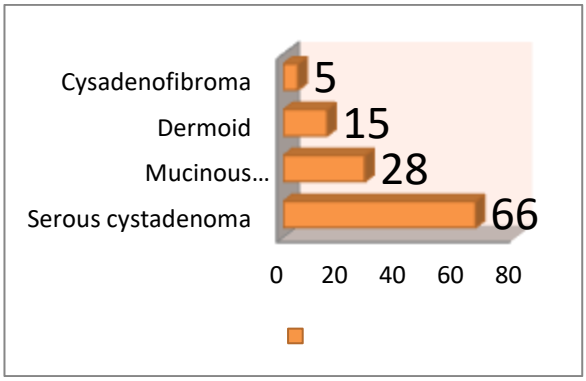

Fig. 7: HistoPathology

DISCUSSION

There is often tremendous difficulty in distinguishing benign from malignant ovarian tumors using currently available diagnostic modality[5].

Benign adnexal disorders are frequently encountered in pre- and postmenopausal patients. Incidence was found to be maximum in reproductive age group. Mean age being 31.

Ovarian cystadenomas are benign tumors with cyst walls differentiated along mullerian pathways. The majority of tumors were found to be serous cystadenoma (57.8%), 25% cases were mucinous cystadenoma.25.4% cystadenofibroma and 12.2% dermoid tumors the most frequent germ cell tumor. Similar incidences were noted in study by Giurgea NL *et al*. from 116 cases, 57 (49.1%) were benign which included 37 cases of serous tumours (64.9%) and 20cases of mucinous types (35%) [6].

Among Postmenopausal women the majority tumors were still found to be benign neoplasms. Mimoun C and associates found prevalence of benign cysts between 14 and 18% in postmenopausal women[7].

Incidence of ovarian tumors could not be calculated as the study centre is a tertiary referral centre. It was however estimated that among 2600 gynecological surgeries performed nearly 130 were for ovarian neoplasms resulting in 1 in 20 occurrences.

Nulliparity doubles the risk of ovarian cancer [8].Only 19% patients were nulliparous in the present study. Of these 5.2% had presented and had been treated for infertility.

73% patients had breast fed their children for atleast 2 years. Breastfeeding has a protective effect perhaps by prolonging amenorrhoea [9]. Breastfeeding doesn't seem to have a protective role in preventing benign ovarian lesions.

The use of OCP for 2-5years resulted in odds ratio of developing cancer as compared to never using with odds ratio 1.0[10]. In our study we did not encounter any patients who used OCP for contraception. However 63% patients had been tubectomized. Hanskinson associates found that tubal ligation and Hysterectomy have been associated with decreased risk of ovarian cancer[11].

Most women with ovarian cysts are asymptomatic and symptoms such as pain and vague pressure sensation are common[5]. In our study the tumors were largely asymptomatic, with nearly 60% patients presenting with no symptoms or vague abdominal discomfort.

In some cases the finding was incidental when it was associated with fibroid or adenomyosis. However we could not find any significant association between these lesions and the ovarian tumors.

The Risk of Malignancy index was below 200 in majority all patients with benign neoplasms, with only 12% premenopausal women showing ROMI>200 and about 32.8% in postmenopausal women. One of the studies achieved a sensitivity of 89%, specificity of 92%, PPV of 50% and NPV of 99% using RMI > 200 ($p< 0.01$) in diagnosing invasive ovarian cancer [12].

Laterality analysis did not yield any statistically significant findings. But some of the cases showed bilaterality which is not very common in benign ovarian tumours.

Most of the medical co-morbid conditions that the study found probably were a confounding finding as the incidence of diabetes mellitus, chronic hypertension, obesity could be independent entities without bearing any relation to the occurrence of ovarian tumours. Most of them were encountered in the peri and post menopausal age group and not much of significance could be attached to it except for the pre-operative and post operative management.

CONCLUSION

Benign ovarian tumours form a very important clinical entity for a gynaecologist. Differenciation between a benign and malignant tumour is many a times difficult and histopathology is the only definitive way to confirm it. But the analysis of risk factors, protective factors and risk of malignancy index calculation and some of the clinical features like bilaterality, ascitis, unilateral lower limb edema, lymphadenopathy may take the diagnosis more towards definiteness.

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