Gynaecology

STUDY OF CLINICAL, SONOLOGICAL AND HISTOPATHOLOGICAL CORRELATION OF ADNEXAL MASSES -A PROSPECTIVE STUDY

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ABSTRACT **AIM & OBJECTIVES :** 1. To study the epidemiology of adnexal masses and the relationship between age, symptoms, ultrasound findings, size and histological type of adnexal masses.
2. The purpose of the study was to quantify, categorise and illustrate discrepancies between pre-operative radiologic, surgical and pathologic diagnosis.
3. To assess the potential impact of discrepancies on clinical cases.
MATERIALS & METHODS :
STUDY DESIGN: Prospective cohort study
STUDY PERIOD: December 2018 to November 2019
PLACE OF STUDY: Department of obstetrics and gynecology, govt Thiruvarur medical college , Thiruvarur.
SAMPLE SIZE: 100 patients
INCLUSION CRITERIA
1. women of all age groups
2. All cases with clinical diagnosis of adnexal masses .
3. Patients with complete medical, sonological and histopathology records.
EXCLUSION CRITERIA
1. Patients with incomplete medical records.
2. Patients who do not get admitted.
3. Pregnancy with adnexal masses.
4. non-gynecological causes of adnexal masses.
5. Patients who do not get operated.
6. Patients who did not have histopathology records.
RESULTS: Among the admissions to the gynecology ward, the number of cases of adnexal masses with surgical intervention were 100 with an incidence of 5.26%. The incidence of ovarian mass was 93% of which 80% were neoplastic , 20% were non – neoplastic . the of malignancy was 9.5%.
CONCLUSION : Histopathology being the gold standard, in our study showed benign pathology in majority of cases (76 cases). Malignancy in 8 cases. The rest showing changes suggestive of hemorrhage, torsion, hydrosalpinx, and tubo-ovarian mass. There is an excellent agreement between ultrasound and histopathology diagnosis in diagnosing adnexal masses with kappa value 0.99. In our study, most common histopathology type was serous type 38%, followed by mucinous cystadenoma 16% and dermoid cysts 10 cases.

KEYWORDS : Adnexa, Ultrasound, Post-Menopause, Ovarian Mass, Histopathology

INTRODUCTION

Adnexal masses is a common clinical presentation in gynecologic practice. It can be gynecologic or non-gynecologic origin. Adnexal masses can vary from benign masses like functional cysts to malignant masses like ovarian cancer. Differential diagnosis of adnexal masses is complex. It includes functional cysts, benign & malignant ovarian tumors, paraovarian cysts, hydrosalpinx,tubo-ovarian abscess,ectopic pregnancies, broad ligament fibroid, tubal malignancy,fimbrial cysts,pelvic kidney, sigmoid colon or colon distended with gases or feces and pregnancy in bicornuate uterus. Most common causes for adnexal masses in pre-menopausal women are corpus luteal cysts and follicular cysts. In postmenopausal women, adnexal masses may be caused by fibroids, cancer, fibromas, diverticular abscess.

Adnexal masses pose both a diagnostic and management challenge. The differential diagnosis is often difficult. The nature of adnexal masses needs to be ascertained as whether it is benign or malignant. The patient should get appropriate treatment for the condition. The benign nature of the mass is determined through imaging. This will not only save the patient from unnecessary surgery. The malignant masses need to be identified as early as possible. It is such that the patient gets appropriate treatment.

Adnexal masses are usually identified through clinical examination or ultrasound examination of pelvis. The symptoms such as pressure, pain, dysmenorrhea, infertility or uterine bleeding caused by mass or is detected incidentally.

The evaluation of adnexal masses include thorough history ,clinical examination ,imaging studies like ultrasound, CT or MRI and tumor markers . Ultrasound can diagnose the possible origin of mass whether uterine or adnexal and delineate features of malignancy. So ultrasound examination is the standard diagnostic test for evaluation of adnexal masses. Transvaginal ultrasound with colour Doppler gives better results, for assessing endometrial thickness, ovarian morphology and vascularity. Final diagnosis of adnexal masses is only reached at laparotomy or laproscopy. It is followed by histopathological examination of the resected specimen. Histopathology is taken as gold standard for the evaluation of benign and malignant adnexal masses. The objectives of this study were to study the diverse clinical spectrum of gynecologic adnexal masses during the study period.

MATERIALS AND METHODS

This is a prospective cohort study. Study period from december 2018 to november 2019 in the Department of obstetrics and gynecology, government Thiruvarur medical college hospital, Thiruvarur with Sample size of 100 pts.

The patients admitted to gynecology department with the

diagnosis of adnexal masses were analysed.

Data for all the patients were recorded in terms of age at the time of surgery, presenting complaints , detailed history of pain and onset of duration of mass, menstrual complaints, cyst size on ultrasound, tumor marker CA125, surgical procedure, pre-operative findings and definitive histopathology. Data were entered into Microsoft excel database and analysed.
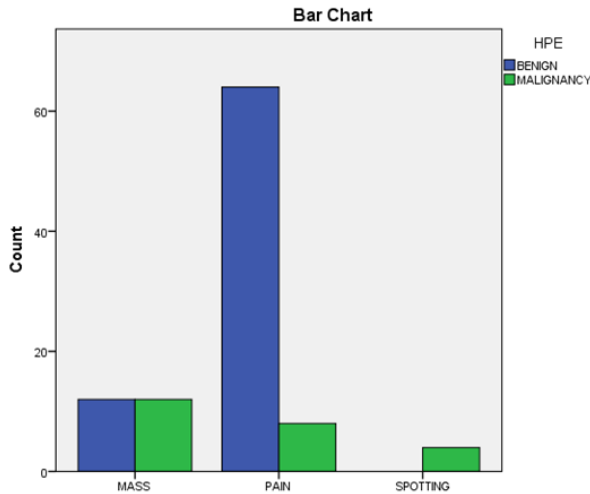
The diagram illustrates that pain is the most common symptom with benign (n= 64) with 84.2% ,and malignancy (n=8) with 33.3%. The next most common symptom is mass (n=24), with benign (n=12) with 15.8% and malignancy (n=12) with 50%.

ADNEXAL MASSES Vs USG score
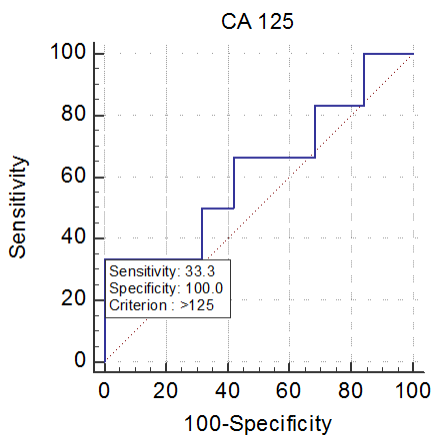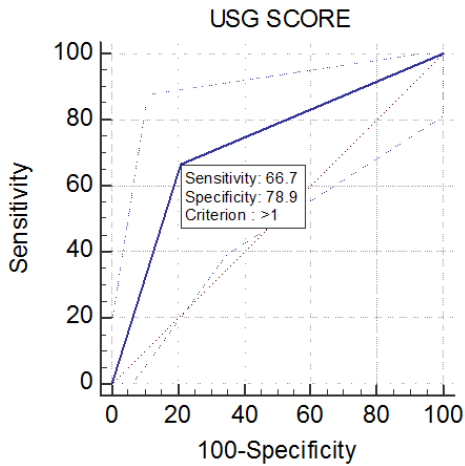
RESULTS

Among the admissions to the gynecology ward, the number of cases of adnexal masses with surgical intervention were 100 with an incidence of 5.26%. The incidence of ovarian mass was 93% of which 80% were neoplastic , 20% were non – neoplastic ,the of malignancy was 9.5%.

The patient ages ranged from 20 to 80 years with the mean age of presentation of adnexal masses being 38.26 years. There was a highly significant differences among tumor types regarding menstrual status of the patients. Most belong to post-menopausal women.

The most common complaint was abdominal pain (72), followed by mass abdomen(24). Remaining other patients had multiple symptoms. Constitutional symptoms were seen among malignant patients. 60 patients were clinically diagnosed to be benign tumors. 16 patients were found to be clinically malignant.

Sonographically, 60 cases were diagnosed to be benign, 16 malignant with sensitivity 66.7% and specificity 78.9%. on colour Doppler sonography, all the malignant tumors showed neo-vascularisation. Some of the benign tumors also showed color signals. This difference was statistically significant by the test of proportion (p < 0.001).

On laprotomy, 78 cases were found to be benign of which 76 cases were of ovarian origin, 2 broad ligament fibroid, 8 cases were malignant ovarian tumors. Malignant tumors were subjected to staging.

Histopathology being the gold standard, in our study showed benign pathology in majority of cases (76 cases). Malignancy in 8 cases. The rest showing changes suggestive of hemorrhage, torsion, hydrosalpinx, and tubo-ovarian mass. There is an excellent agreement between ultrasound and histopathology diagnosis in diagnosing adnexal masses with kappa value 0.99. in our study, most common histopathology type was serous type 38%, followed by mucinous cystadenoma 16% and dermoid cysts 10 cases.

DISCUSSION

Ovarian cancers carries the worst prognosis among all gynecological cancers. It is mainly due to lack of effective screening methods which is used for early detection of the diseases. Therefore accurate pre-operative prediction of the benign or malignant nature of an adnexal mass is essential for proper management. In this study the incidence of adnexal masses undergoing surgical intervention was 5.2% of which 93% was ovarian in origin. Among the ovarian neoplasms 90.46% were benign, 9.54% were found to be malignant. These findings were comparable with Sharadha et al., Narula et al and jha and karki study.

The higher percentage of malignant ovarian tumors in post-menopausal women in this study is similar to other studies. Mean age of malignant tumors was 45 years in our study. It is similar to other studies done by Mondal et al., and wasim et al., The above age of incidence is found to be lesser than that is seen in the literature. This study confirms the characteristics of malignant ovarian tumors more common in post-menopausal women. In this study the patients in the reproductive age group more often have benign lesions.

None of our cancer patients were asymptomatic while few other studies have reported 7-15% of ovarian cancer to be asymptomatic. Targeting women with specific symptoms, the possibility of development of a symptom index by a study from USA.

Although sensitivity of clinical examination is somewhat

better in distinguishing malignant form benign adnexal masses the results should be interpreted with caution. Bimanual examination does not appear to be a sensitive test in detecting the presence of adnexal masses.it appears to have limited ability to discriminate benign from malignant adnexal masses.

Sonography (transvaginal and transabdominal) is also sensitive method to detect ovarian cancer. Our study showed that abdominal sonography has a sensitivity of 66.7% and specificity of 78.9% with an accuracy more for predicting ovarian cancer.This is similar to studies by Wasim et al., topuz et a., and Pourissa et al.,

Colour Doppler increases the diagnostic accuracy of plain sonography with good accuracy in identifying malignancy with cut-off values of 0.4 and 1 for RI and PI respectively. Although ultrasound is the primary diagnostic modality for ovarian imaging , there are numerous false-positive and false-negative findings.

Serum CA 125 is a valuable parameter for both monitoring and diagnosis of epithelial carcinoma. The overall sensitivity of CA 125 Screening benign from malignant adnexal masses ranges from 30 to 40% and specificity of 100% . Since most of the clinical conditions with elevated CA125 occur in pre-menopausal women , epithelial ovarian cancers occur in post-menopausal women.

The sensitivity and specificity of an elevated CA125 in pelvic mass is higher after menopause. Sensitivity in our study is lesser compared to high level of specificity in our study. This is similar to the study Hemeda et al.,

A study conducted by Donald Brown et al., concluded that pelvic ultrasonography remains the imaging modality most frequently used to detect and characterize adnexal masses. Although evaluation is often aimed at distinguishing benign from malignant masses , the majority of adnexal masses are benign . about 90% of adnexal masses can be adequately characterized with USG alone.

A study conducted by mukund joshi et al concluded that the use of gray –scale ultrasound morphology to characterize a pelvic mass may also be called " pattern recognition " . subjective evaluation of ovarian mass based on pattern can achieve sensitivity of 88% to 100% and specificity 62% to 96%.

Van calster and others have mentioned that pattern recognition was superior to CA125 for discrimination between benign and malignant ovarian mass.

Gadducci et al., reported that mucinous tumors expressed CA125 less than non-mucinous type type. The low levels of CA125 in mucinous borderline tumor and stage 1 malignant tumor can explain the false- negative results.

United kingdom collaborative trial of ovarian cancer (UKCTOCS) has done a prospective cohort study in 2012. They enrolled 48,053 post-menopausal women and estimate the risk of primary epithelial ovarian cancer(EOC) and slow growing borderline or type 1 and aggressive type 2 EOC with adnexal abnormalities on ultrasound. Ultrasound was used as a screening module to detect abnormal adnexal mass followed questionnaires. Study concluded that asymptomatic women , who had ultrasound detected adnexal abnormalities have an 1 in 22 risk for EOC. Despite the higher prevalence of type 2 EOC, the risk of borderline or type 1 cancer in women with ultrasound abnormalities seems to be higher than does the risk of type 2 cancer. This has important implications for patients with incidental adnexal findings as well as for any future ultrasound based screening.

To reduce the diagnostic dialemma between benign and malignant ovarian mass, a formula based scoring system known as risk of malignancy index (RMI) was introduced by Jacobs et al.

CONCLUSION

Patients in menopause, especially people at older age groups, high BMI should be immediately be referred to a tertiary level institution, where appropriate surgery could be performed.

Patient data,clinical examination, ultrasound parameters and laboratory parameters were all found to be good discriminating factors among malignant, benign and borderline tumors.

Asymptomatic small well-characterized adnexal masses may be observed with regular pelvic examinations and radiologic evaluations. All adnexal masses that are asymptomatic or having characteristics of malignancy should be considered for surgical evaluation.

Most adnexal masses require little more than the normal annual gynecologic examination for follow up as they rarely recur. On the other hand, women found to have a malignancy require additional therapy, such as chemotherapy or radiation therapy. Their follow up care should include frequent reexaminations to determine diseases status. Most adnexal masses are benign. outcome and prognosis are very good.

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