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A RETROSPECTIVE STUDY OF OVARIAN TUMOURS AMONG PATIENTS ADMITTED IN A TERTIARY CARE HOSPITAL

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Ovarian tumours are a group of neoplasms affecting the ovary and have diverse spectrum of features according to particular tumour entity. Cystic lesions of ovary may be non-neoplastic (physiological) or neoplastic (pathological). Pelvic Ultrasonography is commonly used to detect and distinguish between benign and malignant masses and combined clinical and ultrasonography has increased sensitivity and specificity for diagnosis of tumours. Histopathological examination is the gold standard for distinguishing between benign and malignant tumours. RMI helps in preliminary evaluation of all ovarian masses and assist in reducing mortality and morbidity of patients with ovarian carcinoma. **Objective:** To evaluate the ovarian masses according to frequency, age wise distribution and correlate clinical and radiological findings with histopathological diagnosis and to correlate RMI score with histopathological diagnosis. **Materials and Methods:** It is a retrospective study conducted at Dr. PSIMS & RF from December 2021 to December 2022 and includes 50 cases of ovarian lesions who underwent surgery. Clinical, radiological findings were collected and RMI score was calculated and correlated with Histopathological analysis. Results : Out of 50 cases, 27 cases were Non- neoplastic lesions and 23 cases were neoplastic. Among 23 Neoplastic lesions, 21 were benign tumours, 2 were Malignant tumours. Maximum number of ovarian masses were reported at 41-50 years (11 non- neoplastic lesions and 8 benign ovarian tumours) followed by 31-40 years of age. The most common non- neoplastic lesion was corpus luteal cyst (32%) and Serous cystadenoma was the commonest benign lesion (30%). The most common presenting complaint was abdominal pain (54%) followed by menstrual disturbances (20%). Combined use of clinical and USG has similar sensitivity as RMI score in differentiating benign and malignant lesions. **Conclusion:** Histopathological diagnosis plays a major role in diagnosis and sub categorization of ovarian lesions, thereby aiding better clinical outcome. Calculation of RMI is the best method and the most reliable tool for defining subsequent diagnostic, management and therapeutic strategies for benign and malignant ovarian masses.

KEYWORDS

Ovarian tumours, USG findings, RMI score, Histopathological analysis.

INTRODUCTION

Ovarian tumours are a group of neoplasms affecting the ovary and have diverse spectrum of features according to particular tumour entity. Their proper recognition and classification are important to allow appropriate therapy. Cystic lesions of ovary may be non-neoplastic (physiological) or neoplastic (pathological). Physiological or functional cyst is defined as size more than 3 cm but less than 7cm.[1] Neoplasms include benign, low malignant potential/ borderline and malignant subtypes. Ovarian tumours that present in the reproductive age group are mostly benign while about 30% in the postmenopausal age group are malignant.[2]

Ovarian tumours are subdivided into 5 main categories according to WHO – 1) Surface Epithelial tumours which accounts for 75% of all ovarian tumours, and 90-95% of ovarian malignancies. 2)Germ cell (15%) 3) Sex cord stromal tumours (10%) 4) Metastasis (5%) and 5) Miscellaneous.[3]

It is important to triage adnexal masses so that the malignant cases and those suspicious of malignancy may be referred to a oncology centre which is required for appropriate surgical staging and ensuring improved overall survival of patients.[4]

Most of the ovarian tumours have similar clinical, radiological and morphological presentation. The diverse morphological spectrum and non-specific clinical presentation make diagnostic modality challenging. Pelvic Ultrasonography is commonly used to detect and distinguish between benign and malignant masses[5] and combined clinical and ultrasonography has increased sensitivity and specificity for diagnosis of tumours. Histopathological examination is the gold standard for distinguishing between benign and malignant tumours.[4] However, Risk of Malignancy index (RMI), based on menopausal status of patient, sonographic findings and serum CA125 level, helps in preliminary evaluation of all ovarian masses and assist in reducing mortality and morbidity of patients with ovarian carcinoma.[6]

AIMS AND OBJECTIVES

1. To evaluate clinical, radiological, RMI scoring and histo pathological analysis of ovarian masses who underwent surgery.
2. Correlate clinical and radiological findings with histopathological diagnosis.
3. Correlate RMI score with histopathological diagnosis.

METHODS

Study setting :
Department of Obstetrics and Gynaecology, Dr. PSIMS & RF, Andhra Pradesh.

Duration : December 2021 to December 2022

Type of study : Retrospective study

Sample size : 50

Inclusion criteria :
Patients who were diagnosed with ovarian masses clinically and radiologically and who were surgically managed were included.

Exclusion criteria :
1. Patients who were managed conservatively
2. Adnexal masses which are not- ovarian in origin,
3. Patients who did not give consent.

Data regarding age, clinical symptoms, menopausal status, details of mass like size, laterality, per- operative findings were collected.

Each case was assigned a Menopausal score (M) with a value of 1 - Premenopausal and 3 - Menopausal. An Ultrasound score (U) was assigned based on bilaterality, multilocularity, and presence of solid areas, ascites and metastasis. If none of these criteria present score - 1 and if two or more criteria present score - 3 was given. Serum CA-125 levels were also determined for all patients and CA-125 > 35 U/ml (postmenopausal) and CA-125 >200 U/ml (reproductive age) was defined as abnormal.[7]

The RMI was calculated as RMI = US score (U) X Menopausal score (M) X CA-125 levels. The cut- off point for RMI at 200 was used to distinguish between benign and malignant tumours.

The Histopathology reports were collected and statistically analysed for the correlation with the RMI using Chi- square test and clinical, radiological findings with histopathology were analysed.

RESULTS

Total 50 cases of ovarian tumours were studied over a period from December 2021 to December 2022. Out of 50 cases, with a majority of 27 cases of Non- neoplastic lesions and 23 cases were neoplastic with 21 benign tumours, 2 were Malignant tumours. Maximum number of ovarian masses were reported at 41-50 years (11 non- neoplastic lesions and 8 benign ovarian tumours) followed by 31-40 years of age.

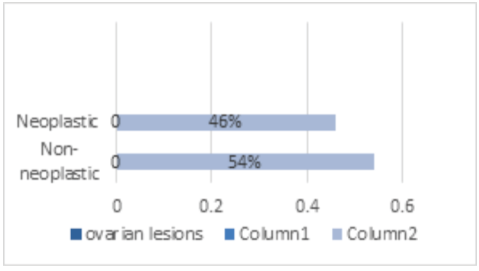

Fig-1 : Showing distribution of ovarian lesions

Table-1 : Age wise distribution of ovarian tumours

Age (Years)	Total cases (n=50)	Non- neoplastic (n= 27)	Benign (n=21)	Malignant (n= 2)
10-20	4	1	3	-
21-30	8	6	2	-
31-40	12	8	4	-
41-50	20	11	8	1
51-60	5	1	3	1
61-70	1	-	1	-

Table-1 represents age wise distribution of ovarian tumours with majority of the tumours occurring at 41-50 years followed by 31-40 years. 2 cases of Malignant tumours occurred at age group of 40-60 years with mean age of 50 years.

Table-2 : Showing occurrence of Non Neoplastic lesions and Neoplastic lesions of Ovary

	No. of cases	Total no. of cases (n=50)	Percentage
Non- Neoplastic lesions		27	54 %
Corpus luteal cyst	16		32%
Follicular cyst	5		10%
Torsion of Haemorrhagic ovarian cyst	6		12%
Neoplastic lesions		23	46 %
Serous cystadenoma	15		30%
Seromucinous cystadenoma	2		4%
Cystadenofibroma	2		4%
Mucinous cystadenoma	2		4%
Granulosa cell tumour (Malignant)	2		4%

Table 2 represents the occurrence of non- neoplastic and neoplastic lesions of ovary. The most common non- neoplastic lesion was corpus luteal cyst (32%) followed by torsion of haemorrhagic ovarian cyst and follicular cyst. Among Neoplastic lesions, Serous cystadenoma were the commonest benign lesion (30%) and Granulosa cell tumour was the common malignant tumour.

Table-3 : Clinical features of ovarian tumours

S.No	Clinical features	No. of cases n=50 (%)
1	Abdominal Pain	27 (54%)
2	Abdominal Mass	10 (20%)
3	GIT disturbances	7 (14%)
4	Menstrual disturbances	9 (18%)
5	Urinary symptoms	4 (8%)
6	Low backache	1 (2%)

Table-3 represents clinical features of ovarian tumours with most common presenting complaint of Abdominal pain (54%) followed by abdominal mass (20%) and GIT disturbances. Most of cases presented with combined symptoms of pain, menstrual disturbances and GIT disturbances.

Table-4 : Clinical and USG findings with Histopathology correlation

Clinical + USG	Histopathology (HPE)			
		Benign	Malignant	Total
	Benign	20	1	21
	Malignant	1	1	2
	Total	21	2	23

Sensitivity : 95.2 %
Specificify : 50 %
P-value : <0.0001

Table-4 represents correlation of clinical and radiological findings with histopathological diagnosis which shows 20 cases were true negative 1 case was true positive. Combined clinical and radiological findings has increased the sensitivity and specificity.

Table-5 : Correlation of clinical findings + USG with RMI Score

RMI Score	Clinical findings + USG			
		Benign	Malignant	Total
	< 200	19	1	20
	>200	2	1	3
	Total	21	2	23

P-value <0.05 is considered significant.
Sensitivity – 90.4 %
Specificity – 50 %
P- value - < 0.0001

Table-5 depicts that when clinical findings combined with ultrasonography, it was correlated with RMI score.

Table-6 : Correlation of RMI score with Histopathology

Histopathology (HPE)	RMI Score			
		< 200	>200	Total
	Benign	19	2	21
	Malignant	1	1	2
	Total	20	3	23

Sensitivity – 95 %
Specificity – 66.6 %
P- value - <0.0001

Table-6 depicts that RMI score correlates with Histopathology in differentiating benign lesions from malignant tumours

DISCUSSION

In the present study, 54 % were Non- neoplastic lesions and 46 % were Neoplastic lesions. Among neoplastic tumours, 42 % were benign tumours and 4 % were malignant tumours, similar to the study conducted by Thakar et al.[8] and Kreuzer GF et al.[9] reported 40.39% of non- neoplastic lesions.

Among the Non-neoplastic lesions, corpus luteal cyst (32 %) were the most common lesion followed by Torsion of hemorrhagic cyst (12 %), whereas in a study conducted by Kreuzar GF et al., Gupta N et al. and Kanithkar SN et al. reported 74.6 % of follicular cyst and in a study by Guerriero et al. reported endometriotic cyst was the most common non-neoplastic lesion.

According to WHO classification of ovarian tumour, serous cystadenoma was the most common benign lesion similar to our present study followed by mucinous cystadenoma and cystadenofibroma which is synchronous with study conducted by Gupta et al.[10] In our study, among malignant tumours, 2 cases of Granulosa cell tumours were reported whereas Thirukumar et al. reported 5 cases of granulosa cell tumour which is closely related to the present study.

In our study, the most common age group for non-neoplastic and neoplastic lesions was 40-50 years. In a study conducted by Nehal ahmad et al., Farooq et al. and Mondal SK et al. it was 30-40 years. In our study malignant lesions were found in women who were in 4th and 5th decade which was similar to study conducted by Murthy NS et al., M. Thirukumar et al.[11]

The most common clinical presentation of both non-neoplastic and neoplastic lesions were pain abdomen (54%) followed by mass per abdomen (20%), similar to a study by Dasgupta S et al. whereas in a study conducted by Kanithkar SN et al., Pilli et al. and Jagadeshwari et al., the most common presenting complaint was mass per abdomen followed by pain abdomen.

In our study, the combined use of clinical and ultrasonography for diagnosis of malignancy was 95.2 % sensitive and 50 % specific when compared to 87.5% sensitive and 96.7% specific in Radhamani et al study.[12]

In the present study, it was determined that all malignant cases had a US score of 3 ($P < 0.0001$) and combined clinical and USG has similar sensitivity (95 %) as RMI when correlated with histopathology. Furthermore, CA-125 is useful as a biological marker for screening of ovarian masses. While CA-125 used separately may have poor sensitivity, but when coupled with the RMI, the sensitivity is markedly enhanced.

CONCLUSION

Non- Neoplastic lesions are more common than neoplastic ovarian tumours. Surface epithelial tumours are the commonest benign neoplasms. Most common age group of occurrence of non-neoplastic or neoplastic lesions was 4th and 5th decade and both have similar clinical, radiological and surgical characteristics. So, histo pathological diagnosis is the gold standard for sub categorization of ovarian lesions, thereby aiding better clinical outcome.

RMI is the most reliable tool for malignant risk stratification among the ovarian tumours and is helpful in aiding therapeutic strategies and further management. The major limitation of this study is the small sample size and short duration of study hence further research is warranted.

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Conflict of interest : None declared

Ethical approval : The study was approved by the Institutional Ethics Committee.

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