



SIMPLE ULTRASONOGRAPHY RULES' ROLE IN PREDICTING THE CANCEROUSNESS OF ADNEXAL TUMOURS BEFORE SURGERY

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ABSTRACT:

Background: Ovarian cancer accounts for approximately 24% and 60% of pre-menopausal and post-menopausal women's malignancies, accordingly. In order to diagnose and treat these patients, it is crucial to screen for ovarian cancer and adnexal masses since, in addition to being a major cause of infertility in the reproductive age group, they also significantly contribute to overall morbidity and death among women. Gynecologists find it difficult to make a preoperative diagnosis of cancer due to the paucity of literature on screening techniques and their clear significance in identifying malignancies. Our current research on the use of USG rules may aid in pre-operative screening for malignancy, and prediction of malignancy aids in making plans for administration that avoids recurrent surgery and morbidity. Ultra sonographic evaluation is regarded as one of the most dependable and precise diagnostic tools for diagnosis of colon cancer.

Objective: This research looks for a way to diagnose a condition quickly and accurately so that it can get the right care.

Methods: All gynecological patients with adnexal masses visiting IPD at Mayo Hospital were assessed for adenocarcinomas based on their history, diagnostic tests, USG findings, and standard preoperative tests in empirical comparison research. Her preoperative diagnostic and histopathology report was connected. Frequent data collection, the material was processed and evaluated using the Pearson chi-square test, and the p-value was employed to investigate connections among ultrasound findings and final histology outcomes.

Results and Conclusions: By using the Pearson chi-square test, it was determined that the aforementioned variables were substantially linked with one another and had high p values. Therefore, by employing Simple Ultrasonographic Rules as a diagnostic tool, we can anticipate the probability of malignancy early on, and as a result, earlier identification is made feasible, reducing both mortalities and morbidities in patients who presented with adenocarcinomas.

KEYWORDS: malignancy, pre-menopausal, gynecology



INTRODUCTION:

The mortality rate of all gynecological malignancies is greatest for ovarian cancer, which is the sixth most recurrent disease among women. In pre-menopausal females, up to 25% of ovarian tumors are malignant, and in post-menopausal women, up to 60%. [1–3] Ovarian cancer is the second most prevalent malignancy in women and primary reason of mortality from gynecologic malignancies in women. Before age 40, it hardly ever happens. The risk of having ovarian cancer rises sharply and peaks between the ages of 65 and 75. Ovarian cancer incidence has been growing over the last three decades, even in low-risk nations like Pakistan. More women would get first-line treatment if pre-operative pelvic mass discrimination was improved. [4,5] Thus, indicating the need for the adaptation of different screening techniques and diagnostic instruments to identify and treat such malignancies early in order to raise five-year survival rates. More accurate techniques for ovarian cancer diagnosis are needed for increased effectiveness. [6] One of the most trustworthy and effective diagnostic tools for the identification of ovarian malignancies is ultrasonographic examination. Ultrasonography assessment is trustworthy and effective even for individuals who are not familiar with tumor classification, making it widely useful. Furthermore, ultrasound provides a higher diagnostic value than RMI and IOTA on its own. [7-10] Therefore, this research on the usefulness of USG guidelines may aid in preoperative cancer screening, and cancer prediction aids in treatment planning, preventing recurrent surgery and morbidity.

METHODS:

This research is observational, prospective, and comparative. Every IPD patient who first presents with a pelvic adnexal mass. includes 60 patients who were checked into Mayo Hospital. The current research took one and a half years to complete (November 2020 to April 2022). All

gynecological patients with adnexal masses who attended IPD at Mayo were assessed for adnexal masses grounded on their medical background, physical examination, USG results, and regular preoperative tests. Her preoperative diagnostic and histopathology report was connected.

Following adequate data collection, the information was organized and analysed using the Pearson chi-square test, and the p-value was used to evaluate connections across ultrasound findings and final histology results. Statistical method: The percentage and frequency distribution of the data were calculated using SPSS 18.0, and associations between the variables were highlighted using EPINFO 5.0.

Patients with the following criteria were excluded from the study.

1. Individuals who clearly have peritoneal, lung, or hepatic metastases.
2. Female patients receiving conservative treatment for adenocarcinomas.
3. Patients with cysts smaller than 5 cm.
4. Pregnant women.
5. Females refusing to participate in the research.

The following patients were included in the study.

1. Females who have an adnexal mass are having surgery.
2. Females agreeing to participate in the research.
3. Females who are menopausal or not.
4. Females who may have adnexal masses.

RESULTS:

Table 1 shows that the majority of women are among ages of 21 and 30, though minority are amongst the ages of 71 and 80. The mean age of the study's female participants is 37.5 years. The mean age of the study's female participants is 28 years old. And the majority of females with benign multitudes present between the ages of 21 and 30; the majority of females with malignancies present between the ages of 31



and 40; 41 to 50; and 71 to 80. The majority of women in the reproductive age set appear through benign masses, while pre-and post-

menopausal females do so having malignancies, which leads to the conclusion.

Table 1: Age-based occurrence distribution of patient populations

Age Group	20-Nov	21-30	31-40	41-50	51- 60	61- 70	71- 80	Total
Malignant	1	1	2	2	1	1	2	10
Benign	6	15	12	4	9	3	13	50
Percent	11.7	26.7	23.3	10	16.7	6.7	5	100
Frequency	7	16	14	6	10	4	3	60

Table 2: Patient frequency and mass characteristics related to parity

Obstetrical History	Nullipara	Single para	Multi para	Total
Malignant	1	0	9	10
Benign	8	9	33	50
Percent	25	5	70	100
Frequency	15	3	42	60

Table 3 shows that 42 (or 70%) of the 60 persons tested were multipara, 3 (or 10%) have been nullipara, and 15 (or 25%) remained unmarried. Additionally, the majority of the female participants in the research who are multiparous had benign masses most often

(f=33), whereas some (f=9) had malignancies. Only benign masses were observed in all of the nulliparous females, whereas malignancy was present in one out of nine unmarried ladies and benign mass in the other eight.

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Table 3: Frequency distribution of ovarian mass categorization under IOTA

IOTA	Percent	Frequency
Malignant	13.3	8
Inconclusive	3.3	2
Benign	83.3	50
Total	100	60

According to Table 3, the majority of the patients (83.3%) were classified as having benign conditions, whereas two patients (3.3%) and 13.3% were classified as having malignant conditions.

50 out of 60 cases were judged to be benign clinically, with 43 of them being benign and 7 being malignant histopathological after analysis and interpretation of the same data. Similarly, 2 of the 8 individuals were determined to have malignant histopathology and IOTA classification, whereas the other 6 were determined to have benign histopathology. Two participants' findings—of which one was

determined to be malignant and the other to be benign histologically—remain unresolved in terms of IOTA classification.

Based on the data, Pearson's chi-square test was used for statistical analysis to examine the relationships between factors influencing pre-operative prediction of malignancy in females having adnexal masses. The findings were as follows:

IOTA grading and histological inspection have an χ^2 value ($p=0.0385$) that is less than 0.05 when using Pearson's chi-square test, indicating a relationship between the two.

DISCUSSIONS:



In their lives, 10% of women have exploratory laparotomies for the examination of ovarian masses. [11] Early detection of ovarian cancer and referral to specialist oncology facilities may increase patient survival rates. However, there is currently no way to predict malignancy using a single technique. Major diagnostic tools include ultrasound examination and clinical impressions. However, because of their shortcomings in terms of identifying malignancy, it is now very frequent to run across intra-operational cancer. [12,13] So, using a better scoring system to predict malignancy may help with pre-operative patient counseling, well pre-operative planning, and initial referral of difficult malignancies to a specialist oncologic facility. [14]

In the present research, women with ovarian cancer are given priority when learning about diagnostic tools. They are aware of the value of the ultrasound score and the risk of malignancy index in identifying cancer in women through adnexal masses before surgery. In this research, patients with ovarian mass had a mean age of 37.5 years, which is a little older than in other studies.

In our research, 16.67% of the patients had malignant ovarian masses, and premenopausal and postmenopausal individuals both had 60% of the malignancies. In contrast, recent research discovered that 42.9% of premenopausal and postmenopausal women had cancer and 13.2% of patients had a malignant ovarian illness. [15] According to recent research that looked at demographic characteristics, ovarian cancer risk was shown to increase with age. Even if the proportion of participants in the senior age group of patients is relatively low, it is observed that the likelihood of developing cancer rises as patients become older. This information seems to be consistent with other research on incidence rates and a preference for post- and premenopausal individuals. [16]. Another demographic determinant is patient parity; 70% of women who come with malignant tumors are multipara, and parity has been linked to malignant mass. Therefore, a woman's parity

and rising age have a significant effect on the analysis of malignancy and essentially be taken into account for preoperatively forecasting malignant tumors. The research similarly raises the possibility of a link between cancer malignancy and parity.

The International Ovarian Tumour Analysis group, or IOTA, is often used to define the morphological characteristics of ovarian tumors using a standardized examination method. In our research, 58 of the 60 patients who were first tested were simply categorized as benign or malignant, however, the results were unclear in 2 cases. The percentage of ambiguous results was 3.3%. Out of the entire 65 patients examined, 11 (17.68%) had malignancies and 54 (82.32%) had benign lesions based on HPE (17-18). Of the 58 instances in which IOTA rules were correctly applied, 9 (14.78%) had malignancies and 66 (85.22%) had benign lesions. One of the two remaining instances that were deemed inconclusive was malignant and the other benign. The results are reliable and closely related to past research that suggested IOTA basic criteria might predict ovarian cancer and serve as an aid in early diagnosis.

CONCLUSION

The aforementioned variables were substantially linked with one another and had high p values. Therefore, by employing Simple ultra-sonographic Rules as a diagnostic tool, we can anticipate the probability of malignancy early on, and as a result, earlier identification is made feasible, reducing both mortalities and morbidities in patients who presented with adenocarcinomas.

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