Correlation of Clinical and Sonographic Findings with Cytohistology for Diagnosis of Ovarian Tumours

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Abstract : Introduction: Ovarian masses are common forms of neoplasm in women and represent 2/3rd of gynaecological malignancies. A pre-operative suggestion of malignancy can guide the gynecologist to refer women with suspected pelvic mass to a gynecological oncologist for appropriate therapy and optimized treatment, which can improve survival. In the younger age group preoperative differentiation into benign or malignant pathology can decide for conservative or radical surgery. Imaging modalities have a definite role in establishing the diagnosis. By using International Ovarian Tumor Analysis (IOTA) classification with sonography, costly radiological methods like Magnetic Resonance Imaging (MRI) / computed tomography (CT) scan can be reduced, especially in developing countries like India. Thus, this study is being undertaken to evaluate the role of clinical methods and sonography for diagnosis of the nature of the ovarian tumor. Material And Methods: This prospective observational study was conducted on 40 patients presenting with ovarian masses, in the Department of Obstetrics and Gynaecology, at a tertiary care center in northern India. Functional cysts were excluded. Ultrasonography and color Doppler were performed on all the cases.IOTA rules were applied, which take into account locularity, size, presence of solid components, acoustic shadow, dopper flow etc . Magnetic Resonance Imaging (MRI) / computed tomography (CT) scans abdomen and pelvis were done in cases where sonography was inconclusive. In inoperable cases, Fine needle aspiration cytology (FNAC) was done. The histopathology report after surgery and cytology report after FNAC was correlated statistically with the pre-operative diagnosis made clinically and sonographically using IOTA rules. Statistical Analysis: Descriptive measures were analyzed by using mean and standard deviation and the Student t-test was applied and the proportion was analyzed by applying the chi-square test. Inferential measures were analyzed by sensitivity, specificity, negative predictive value, and positive predictive value. Results: Provisional diagnosis of the benign tumor was made in 16(42.5%) and of the malignant tumor was made in 24(57.5%) patients on the basis of clinical findings. With IOTA simple rules on sonography, 15(37.5%) were found to be benign, while 23 (57.5%) were found to be malignant and findings were inconclusive in 2 patients (5%). FNAC/Histopathology reported that benign ovarian tumors were 14 (35%) and 26(65%) were malignant, which was taken as the gold standard. The clinical finding alone was found to have a sensitivity of 66.6% and a specificity of 90.9%. USG alone had a sensitivity of 86% and a specificity of 80%. When clinical findings and IOTA simple rules of sonography were combined (excluding inconclusive masses), the sensitivity and specificity were 83.3% and 92.3%, respectively. While including inconclusive masses, sensitivity came out to be 91.6% and specificity was 89.2. Conclusion: IOTA's simple sonography rules are highly sensitive and specific in the prediction of ovarian malignancy and also easy to use and easily reproducible. Thus, combining clinical examination with USG will help in the better management of patients in terms of time, cost and better prognosis. This will also avoid the need for costlier modalities like CT, and MRI.
Keywords : benign, international ovarian tumor analysis classification, malignant, ovarian tumours, sonography

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