Evaluation of Adnexal Masses by Three-Dimensional Ultrasound Multi-slice View: Do we really need it?

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Abstract:

Objective: The purpose of this study is to evaluate the benefit of use of three-dimensional ultrasound multi-slice view in detailed assessment of adnexal masses morphology. Methods: Two-hundred thirty one patients with adnexal masses elected for surgery at Woman's Health Center, Assiut, Egypt between October 2012 and October 2013 were recruited for the study. Each patient had 2D ultrasound and detailed morphological evaluation was reported. Then, 3D ultrasound volumes were obtained. The stored 3D volumes were then digitally analyzed using 3D ultrasound multi-slice view. The results of 2D, 3D ultrasound multi-slice were compared to the postoperative histopathological findings. Results: The mean age of included patients was 30.2 ± 12.7 years. Overall, 189 patients (81.8%) confirmed to have benign masses, and 42 patients (18.2%) with malignant masses according to their final histopathological analysis. Subjective assessment by 2D ultrasound correctly classified 95.6% of benign masses and 87% of malignant masses. On detailed assessment of the masses by 3D ultrasound multi-slice view, there was agreement in morphological assessment of all masses except in 3 cases in which 3D ultrasound multi-slice view permitted better description of their morphological criteria and hence changing the presumed diagnosis and management. Conclusions: The ability of detailed analysis of the volumes taken during 3D ultrasound using multi-slice view can aid in better morphological assessment of adnexal masses especially in detection of papillary projections in adnexal cysts. This information is valuable in deciding the optimal management of adnexal masses in some cases.

Keywords:

adnexal mass, 3D ultrasound, multi-slice view, tomographic ultrasound

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