

What Do Contrast Media Add to Three-Dimensional Power Doppler Evaluation of Adnexal Masses?

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Aim. To investigate the potential usefulness of contrast-enhanced three-dimensional (3D) power Doppler sonography in the differentiation of benign and malignant adnexal lesions.

Methods. Thirty one patients with complex adnexal lesions of uncertain malignancy at transvaginal B-mode and/or color Doppler sonography were prospectively evaluated with three-dimensional power Doppler sonography before and after injection of a contrast agent. Presence of a penetrating pattern and a mixed penetrating and/or peripheral pattern suggested adnexal malignancy. The results were compared with histopathology.

Results. There were 10 cases of ovarian malignancy and 21 benign adnexal lesions. Of the 10 ovarian cancers, 6 showed vascular distribution suggestive of malignancy at nonenhanced 3D power Doppler sonography. After injection of a contrast agent, a penetrating vascular pattern and/or a mixed penetrating and peripheral pattern were detected in all cases of ovarian malignancy as well as in 2 benign lesions (fibroma and cystadenofibroma), which were misdiagnosed as malignant. The use of a contrast agent with three-dimensional power Doppler sonography showed diagnostic efficiency of 96.7%, superior to that of nonenhanced 3D power Doppler sonography (93.5%).

Conclusion. Contrast-enhanced 3D power Doppler sonography provides better visualization of tumor vascularity in complex adnexal masses. If used together with 3D morphological ultrasound assessment, enhanced 3D power Doppler imaging may precisely discriminate benign from malignant adnexal lesions.

Key words: *adnexa uteri; contrast media; Doppler ultrasonography, color; ovarian neoplasms; ultrasonography, Doppler, color; visual contrast sensitivity*

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