

Experience of Using Diffusion-Weighted Magnetic Resonance Imaging in Detection of Pelvic Recurrence in Patients with Ovarian Cancer

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Abstract

The aim of the study was to determine the possibilities of diffusion-weighted magnetic resonance imaging (DW MRI) in the study protocol of patients with suspected recurrent ovarian cancer, as well as the definition of DW MRI diagnostic efficiency based on a comparison with the results of postoperative morphological study. Examination included 28 patients, who have passed a specialized anti-cancer treatment for primary ovarian cancer with suspected recurrence according to the results of US or the tumor marker CA-125 level. All patients performed magnetic-resonance imaging of pelvis in 2 stages: using a standard protocol, including the following sequences: Sg T2, Ax T2, Cor T2 FatSat, Obl-Ax T2, Obl-Cor T2 и Co T1, and then with the application of DWI. After MRI analysis of both phases results was made, followed by the comparison with histological examination data. Parameters of diagnostic efficiency of MRI according to standard protocol were: accuracy – 50 %, sensitivity – 48 % and specificity – 64 %, positive predictive value (PPV) – 48 %, negative predictive value (NPV) – 67 %. When using DW MRI technique these figures had risen to: accuracy – 89 %, sensitivity – 88 % and specificity – 100 %, PPV – 88 %, NPV – 100 %. The results of the research show the effectiveness of DWI, that is why it can be recommended as the part of standard study protocol for patients with suspected recurrent ovarian cancer.

Key words: Magnetic Resonance Imaging, Recurrent Ovarian Cancer, Diffusion Weighted Images.

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