Evaluation of Ultrasonography in Patients with Peritoneal Dissemination of Abdominal Malignancies

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Abstract

Purpose: In patients with abdominal malignancy, it is important to diagnose peritoneal dissemination as well as to detect location in view of treatment planning. The aim of this study was to investigate the detection accuracy of ultrasonography for peritoneal dissemination of abdominal malignancies.

Methods: In total, 72 patients with peritoneal dissemination (36 patients for preoperative staging and 36 patients for re-staging after surgery) were evaluated by ultrasonic diagnosis. was Additionally, 134 nodules detected by PET/CT were evalated. These nodules were examined according to 7 regions.

Results: In an overall patient analysis, the sensitivity was 30.6% (22 cases). In addition, the sensitivity of patients with preoperative staging was 25.7% (10 cases), and that of the patients for re-staging after surgery was 34.2% (12 cases). Ultrasonography nodule detection abilities of the respective regions were as follows: right hemidiaphragm 24.0% (6 cases / 25 cases); left hemidiaphragm 0% (0/8); omental 17.9% (5/28) small bowel and mesent 47.1% (8/17); right paracolic gutter 10.5% (2/19); left paracolic gutter 0% (0/14); and pelvis 17.4% (4/23). In addition, in the preoperative and the re-staging after surgery cases, the following abilities were obtained: right hemidiaphragm 16.6%/30.8%; left hemidiaphragm 0%/0%; omentum 17.6% / 18.2%; small bowel and mesent 66.7%/36.4%; right paracolic gutter 8.3%/14.3%; left paracolic gutter 0%/0%; and pelvis 15.4%/22.2%. The sensitivity of patients with ascites was 40.7% (11 cases / 27 cases). On the other hand, the sensitivity of patients without ascites was 24.4% (11 cases /45 cases). In addition, the sensitivity of patients with preoperative staging with ascites was 30.0% and without ascites, it was 25.0%. The sensitivities of patients with re-staging after surgery, with and without ascites, were 71.4% and 24.1%, respectively.

Conclusion: The sensitivity of ultrasonography was highest for structures within the small bowel and mesent , and the right hemidiaphragm. Sensitivity was reduced markedly within the left hemidiaphragm and left paracolic gutter. It was considered important to observe the region in which peritoneal dissemination exists in ultrasonography.

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