

The Value of Gadopentetate Dimeglumine in the Staging of Advanced Gastric Cancer with MR Imaging: Comparison with T2 Weighted Imagings with Water Contrast

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Purpose: To evaluate the usefulness of gadopentetate dimeglumine as a positive oral contrast agent, in the staging of advanced gastric cancer (AGC), as compared with variable T2 weighted images with water contrast.

Material and Method: MR imaging (1.0T) was performed in 15 patients with AGC, diagnosed by endoscopic biopsy. The MR findings were correlated with the histopathologic findings. All patients underwent intramuscular injection of antiperistaltic drug just before MR examination. The position of the patients during MR examination was decided by the location of the lesion; prone position in the case of anterior wall mass and vice versa. In each patient, axial T2 weighted images with HASTE (TR 6.0 ms, TE 84.0 ms), TRUFISP (TR 7.6 ms, TE 3.5 ms) pulse sequences were obtained after ingestion of 1 liter of water, and then, enhanced FLASH (TR 160 ms, TE 6.6 ms) axial images were obtained after ingestion of 100 ml gadopentetate dimeglumine (Magnevist[®] enteral, Shering AG, Berlin), positive oral contrast agent. Conspicuity of the lesion, delineation of organs (especially pancreas), diagnostic accuracy, and occurrence of artifact were evaluated retrospectively by two radiologists without pathologic information, according to scoring system; poor (0), fair (1), good (2).

Results: All 15 patients underwent total or subtotal gastrectomy and pathologic T stages were as follows: T2 (10 patients), T3 (4), T4 (1). In imaging analysis, all cases demonstrated good conspicuity of the lesion in TRUFISP and FLASH images, but HASTE images revealed fair in 27% of cases. Delineation of organ, especially pancreas, was good in 60 % in HASTE, 60% in TRUFISP with water contrast and 93 % in FLASH before and after positive oral contrast. Diagnostic accuracy was 73 % in HASTE, 73 % in TRUFISP, and 87 % in contrast-enhanced FLASH. The artifacts were negligible in all pulse sequences except for only one case, HASTE image.

Conclusion: T1 weighted MR imaging with gadopentetate dimeglumine provided more accurate diagnostic information than T2 weighted image with water contrast, in staging of AGC including better lesion conspicuity, better delineation of organs, and less artifact.