Staging of Gastric Cancer: A Comparative Study with 64-MDCT and 1.5 T MRI

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PURPOSE
To compare the usefulness of MRI with T2-weighted turbo spin-echo and fast T1-weighted 3D gradient-echo sequences with 64-DCT in the local staging of gastric carcinoma.

METHOD AND MATERIALS
Thirty patients with endoscopic diagnosis of gastric carcinoma underwent preoperative MRI and MDCT. MR (1.5 T) and 64-MDCT imaging (200 mA, 120 kv, thickness 1.25 mm, rec. int. 0.6 mm) were performed after i.m. injection of scopolamine and water distension of the stomach. In the MRI protocol True-FISP T2-weighted sequences in all three planes, turbo spin-echo T2-weighted axial sequences (TR 4000 ms, TE 100 ms, thickness 3 mm, matrix 384x384, TA 30) and gadolinium-BOPTA enhanced fat-suppressed 3D gradient-echo axial sequences (TR 5.8 ms, TE 2.75 ms, thickness 3 mm, matrix 384x384, TA 18) were included. 64-MDCT was performed 60 sec after contrast agent injection (3.5-4 ml/sec). Two groups each of two radiologists independently analyzed MRI and 64-MDCT images; results were compared with pathologic findings.

RESULTS
MR imaging accuracy was higher than that of 64-MDCT (85 and 79%, respectively) in the differentiation of T1-T2 stages; the accuracy of MR and CT were not significantly different in the differentiation of T2-T3 and T3-T4 stages (p>0.05). Overstaging was noted in 6% of cases with MRI and 10% with 64-MDCT. Understaging was noted in 15% of cases with MR imaging and 18% with 64-MDCT.
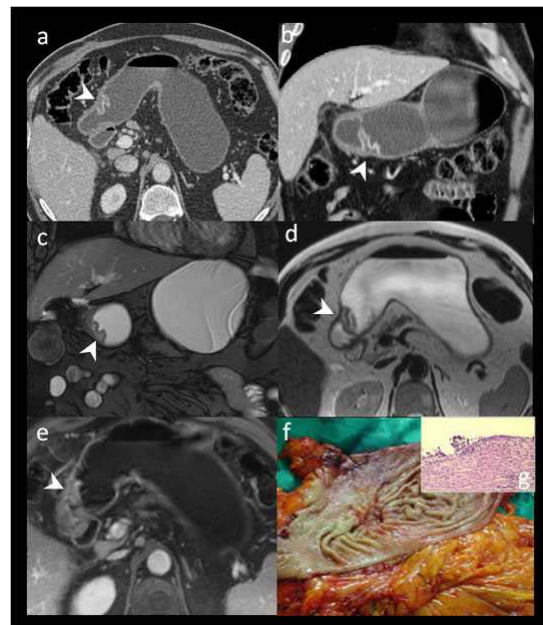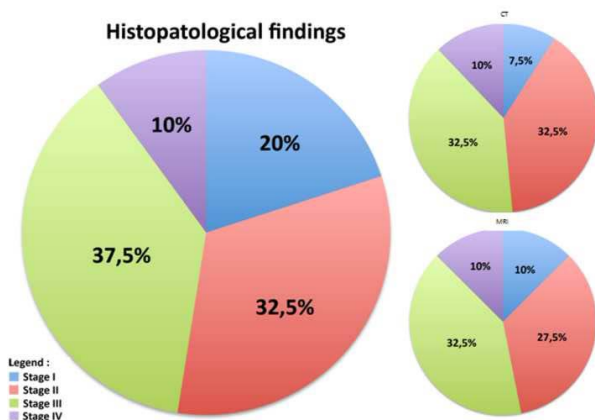
CONCLUSION
MRI and 64-MDCT accuracies were not different in advanced stages of disease, while MRI was superior in the differentiation of early stages of gastric cancer.