Magnetic Resonance Cholangiography:
Usefulness in the Diagnosis of Acute Cholecystitis

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Purpose: Ultrasonography has been accepted as the screening test of choice in acute cholecystitis.   However ultrasonographic diagnosis of acute cholecystitis more commonly rests on secondary findings rather than on identification of cystic duct obstruction.   The purpose of our study was to document the value of MRC in the diagnosis of acute cholecystitis.

Materials and Method: A total of twenty-two patients with surgically and pathologically confirmed acute cholecystitis who underwent MRC were included in this study.   MRC was taken with breath-hold Half-Fourier Acquisition Single-Shot Turbo Spin-Echo (HASTE) sequence.   The MR cholangiographic and ultrasonographic depiction of biliary stones were reviewed retrospectively.

Results: Seventeen patients were diagnosed surgically as having calculi impacted in either gallbladder neck (n=12) or cystic duct (n=5). MRC showed all 17 stones.   On ultrasonography, all of the five cystic duct calculi and two stones impacted in the gallbladder neck were not demonstrated. One cystic duct stone (size=3 mm) suggested on MRC was not found in surgery.   On MRC the sensitivity in the depiction of gallbladder neck/cystic duct stones was 100%, specificity was 80%, and accuracy was 95%.   On ultrasonography the sensitivity was 53%, specificity was 80%, and accuracy was 64%.   In the diagnosis of gallbladder wall thickening, the sensitivity with MRC was 53%, specificity was 66%, and accuracy was 54%. On ultrasonography the sensitivity was 95%, specificity was 33%, accuracy was 86%.

Conclusion: MRC is a noninvasive and highly accurate method in the diagnosis of acute cholecystitis associated with cystic duct/gallbladder neck stones.   In spite of limitation in the interpretation gallbladder wall change, MRC can be applied to patients with equivocal ultrasonographic findings.