

MRCP versus ERCP in the evaluation of patients with suspected bile duct obstruction: A randomized clinical trial

Caroline REINHOLD¹, Naeim Salah¹, Alan Nicolas BARKUN², Lawrence JOSEPH³, Jeffrey S Barkun¹, Eric Valois¹

¹Montréal General Hospital, McGill University, 1650 Cedar Avenue, Montréal, PQ Canada; ²McGill University, Montreal General Hospital\Gastroenterology\1650 Cedar Avenue, Montreal, Quebec Canada; ³McGill University, Medicine, Montreal General Hospital, Montreal, Quebec Canada;

Introduction

To evaluate the accuracy of MR cholangiopancreatography (MRCP) in the evaluation of patients with suspected bile duct obstruction (BDO) in the setting of a randomized controlled clinical trial.

Methods

205 consecutive patients with suspected BDO (clinical, laboratory, US/CT) were randomized either to MRCP [n=104, 50.73%] or endoscopic retrograde cholangiopancreatography (ERCP) [n=101, 49.27%]. Block randomization was performed according to the suspected level of obstruction at US/CT using sealed envelopes. MRCP examinations were performed using a multicoil array, and a combination of single shot fast spin-echo (coronal, axial, oblique, 5mm-40mm, 256 x 256) and 2D fast spin-echo high-resolution sequences (axial, 3mm, 512 x 256).

Results

Of the 104 patients randomized to MRCP, 52 (50%) were diagnosed with BDO, while 52 (50%) had no BDO at MRCP. The etiology of BDO at MRCP was as follows: CBD stones (n=28), undetermined distal obstruction (n=13), pancreatic carcinoma (n=2), cholangiocarcinoma (n=2), inflammatory (n=6), and acute pancreatitis (n=1).

49 patients or 47% underwent successful ERCP after MRCP. In 4 of 53 patients, or 8%, the ERCP failed. In the subgroup of patients with ERCP correlation, MRCP diagnosed BDO with a sensitivity of 97% (95% CI: 91%-100%). The ERCP and MRCP results were concordant with respect to the cause of bile duct obstruction in 38 or 78% of patients. Of the 11 discrepancies, MRCP diagnosed CBD stones in 6 patients, which were not confirmed at ERCP (see Figure 1). In the remaining 5 discrepancies, MRCP overcalled BDO in 3 patients, and undercalled a small bile leak in one patient and sphincter of Oddi dyskinesia in another patient.

Of the patients with no BDO at MRCP, no biliary pathology has been found at 6 months to one year follow-up. In 2 patients, MRCP diagnosed small distal CBD stones (2-3mm), however, ERCP was unsuccessful and the patients remained asymptomatic.

Discussion

Although these results are still preliminary, MRCP appears to be an accurate test for selecting out which patients would benefit from an ERCP in the work-up of clinically suspected BDO.

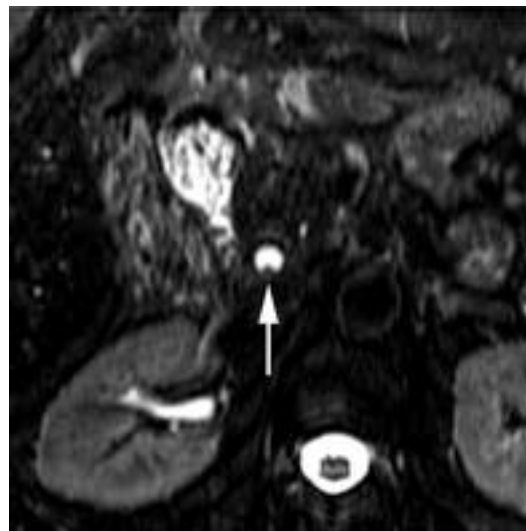


Figure 1

FIGURE LEGEND

Axial high resolution T2-weighted fast spin-echo MRCP image shows a filling defect in the dependant portion of the CBD consistent with a stone. There is mild dilatation of the CBD. ERCP performed the same day did not demonstrate the stone.

References

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