

# What is the yield and clinical utility of EUS in patients with a prior non-diagnostic MRCP?

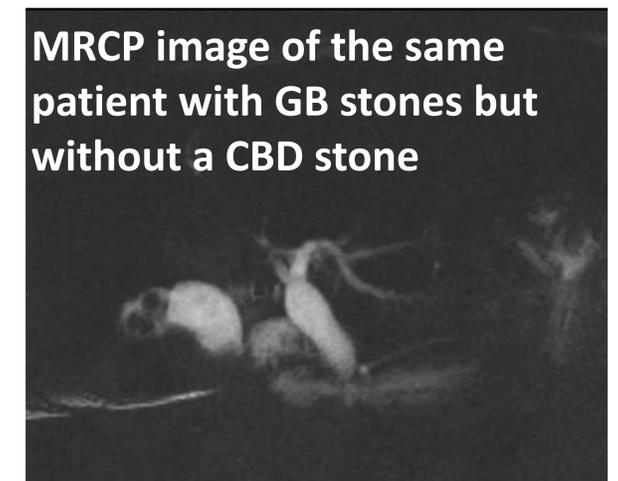
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## Background

The most effective investigation for suspected gallstones between MRCP and EUS is unclear. A 2015 Cochrane systematic review of their performance in common bile duct (CBD) stones concluded that the tests were of comparable accuracy. Conversely, a 2017 meta-analysis found EUS to be more sensitive. Any superiority of EUS may be due to better accuracy in detecting small stones. MRCP is routinely favoured as the 2<sup>nd</sup> line test following a non-diagnostic abdominal ultrasound and EUS subsequently performed as the 3<sup>rd</sup> line test when suspicion remains after a non-diagnostic MRCP. The yield and clinical utility of EUS in this setting is unclear. The aim was to identify the yield of EUS in patients with prior non-diagnostic MRCP undergoing EUS in our tertiary service.

## Methods

All EUS reports from 2017 were reviewed along with the electronic patient records to identify cases with prior MRCP. Indication for the procedure, symptoms, liver blood tests and interval between MRCP and EUS were recorded. Findings of sludge, microlithiasis (stones <2mm) and discrete stones were categorised together as stones. Subsequent ERCP or cholecystectomy was identified. The yield was defined as a finding that would lead to a change in management.



## Results

A total of 1058 diagnostic EUS were screened of whom 253 (24%) had prior MRCP and formed the study group. Median age was 58 (16-88) years, 179 (71%) were female and 91 (36%) had a cholecystectomy. Median interval between EUS and MRCP was 5.2 (0.1-37) months. Indications for EUS were: n=76 (30%) dilated CBD, n=65 (26%) query CBD stones, n=54 (21%) unexplained acute pancreatitis (AP), n=23 (9%) right upper quadrant pain, n=17 (6.7%) abnormal LFTs, n=16 (6.3%) double duct sign and n=2 (1%) dilated PD. There was a **yield from EUS in 30 (12%)** patients with no significant difference between those with (n=11) or without cholecystectomy (n=19). **Stones** were identified in 24 cases with **median size of 4 mm** (range 2-8) in: CBD (n=16), cystic duct (n=1) and GB (n=7). Three had abnormal CBD without stones (calcification CBD wall, thick walled CBD, polyp), 1 patient with possible stone on MRCP had no stone seen on EUS, 1 had a pancreatic mass, and 1 had chronic pancreatitis. All patients in whom EUS findings indicated an intervention (26/30) have been referred: ERCP in 13, cholecystectomy in 9, ERCP & cholecystectomy in 3 and chemotherapy in 1.

## Conclusion

EUS following non-diagnostic MRCP is a sizeable workload accounting for 24% of diagnostic activity in our unit with a clinically significant yield in 12% of predominantly small stones. Further prospective studies are required to ascertain the most cost-effective way to incorporate EUS into the investigation of suspected gallstone disease.