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THE EFFICACY OF MRCP IN SUSPECTED GALLSTONE DISEASE WHEN THE BILIARY TREE IS NORMAL ON PREVIOUS IMAGING

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Introduction: Magnetic Resonance Cholangiopancreatography (MRCP) is increasingly used in the diagnosis of biliary abnormalities, particularly in stone disease¹. However initial studies into its role in the absence of a dilated biliary system on initial imaging have demonstrated a low diagnostic yield². The aim of this study was to further assess the role of MRCP when the biliary tree is non-dilated on index imaging. The factors associated with diagnostic yield in this setting are unclear.

Method: We performed a retrospective observational study of consecutive MRCP studies (n=375) performed between October 2010 and June 2013 at West Middlesex University Hospital using electronic medical records. All MRCPs were reported by a consultant gastrointestinal radiologist. MRCP findings were correlated with the presence of dilated or non-dilated biliary tree on initial imaging (USS/CT), jaundice (bilirubin > 21 µmol/L), transaminitis (alanine transaminase >45iu/L, aspartate transaminase >34iu/L), raised alkaline phosphatase (>120iu/L) and abdominal pain, and demographics including age and gender. Multivariate logistic regression analysis was performed using SPSS software.

Results: The study included 243 female and 132 male patients with a mean age of 62 (range 20-101) years. There were 153 patients with biochemical jaundice, 246 with a dilated biliary system and 129 with a non-dilated system. The sensitivity of MRCP was 81%, with a specificity of 80%. Multivariate analysis identified that age (p=0.0253), the presence of jaundice (p=0.0247), and abnormal index imaging (p=0.0003), are statistically significant predictors of the finding of biliary tree abnormalities on subsequent MRCP (see attached table). The c statistic for the multivariate analysis was only moderately high at 0.665 (95%CI 0.614-0.712, p<0.001).

Variable	Odds Ratio	95% Confidence Interval	P Value
Age	0.9850	0.9720 – 0.9981	0.0253
Jaundice	0.5897	0.3720- 0.9350	0.0247
Dilated biliary tree on index imaging	2.7304	1.5905 – 4.6873	0.0003

Conclusion: These data confirm there is a low diagnostic yield of MRCP in the absence of dilated biliary system on previous USS/CT. We propose that there should be a specific rationale for performing MRCP when initial imaging is normal, especially when the bilirubin is normal. Other clinical indices such as pain or abnormal liver chemistry (other than hyper-bilirubinaemia) are not independently predictive of positive finding on MRCP in our analysis.

References: 1. ShanmugamV, et al. Is magnetic resonance cholangiopancreatography the new gold standard in biliary imaging? British Journal of Radiology (2005) 78: 888-893.

2. Vadwhana B, et al. Is MRCP a useful investigation where the biliary tree is normal on previous imaging? Gut (June 2013) Vol 62 (Suppl 1): A210.

Disclosure of Interest: None Declared