Imaging of the common bile duct

EDITOR,—The finding by Hainsworth et al., that the combination of clinical history, liver function tests, and ultrasonography generated a negative predictive value of 91% in the age range 21–88 (unit A) ( Gut 1994; 35: 991–5), implies that, in subgroups such as the elderly, characterised by a high degree of prior probability and, hence, cholecdocho lithiasis, the negative predictive value of these diagnostic criteria might well be lower, because the negative predictive power is inversely correlated with the prevalence of the condition under diagnostic consideration. 3 With increasing age, therefore, there should be greater justification for routine imaging of the common bile duct either by ERCP or by cystic duct cholangiography, in prospective candidates for laparoscopic cholecystectomy.

Finally, we believe that prospective identification of patients with a ‘low’ risk of cholecdocho lithiasis in which percutaneous cholangiography is not indicated 2 should be carried out by means of a clinical history, liver function tests, and ultrasonography. This policy will result in a lower incidence of false- positive cholangiograms without increasing the risk of retained common bile duct stones.

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Reply

EDITOR,—We are glad that our paper has stimulated discussion and debate in this controversial field. Drs Mayol and Alvarez Fernandez-Repesa seek clarification of the criteria used for categorising patients into ‘high’ and ‘low’ risk groups for bile duct stones. We relied on a combination of history, liver function tests, and bile duct diameter. In our paper, we set out individual features from a high or a low risk of pancreatitis, and showed their ability to predict the presence of duct stones. The working definition of a dilated common bile duct used in the study was a diameter greater than 8 mm. While the probability of finding duct stones rises with increasing bile duct diameter, 1 interpretation of bile duct diameter is not a precise science. Bile duct diameter increases with advancing stages of ‘nonoperative’ chronic pancreatitis. This finding is supported by many studies, and the overall sensitivity for detecting bile duct stones with ultrasonography ranges from 25–55%. 2–5 Liver function tests are a very imprecise and nonspecific test with regard to bile duct stones, which is the reason why most investigators have used a combination of factors to assign patients to ‘high’ and ‘low’ risk groups. We must take issue with our correspondents’ 3,4 assertions that Voyles et al. 4 These authors do not cite any data on the sensitivity, specificity, and positive or negative predictive values of liver function tests in themselves. We await with interest full publication of the results from Mayol et al.

We were initially surprised too that, at the time of post-cholecystectomy ERCP, eight of 12 ducts had cleared. One of the eight had a small stone present, which we were not able to see in the common bile duct. The stone was sufficiently small to be removed at ERCP but, postoperatively, the patient developed pain and clearly the stone had been passed before ERCP was done. We believe that the other seven had stones in their bile ducts at the time of surgery for these reasons. Firstly, we used high quality C-arm image intensification, which is associated with a high rate of stone clearance. Secondly, we used a high-quality diagnostic ERCP and successful stone extraction.

We used a very positive test for bile duct stones on unit A coheres with the high rate of stone clearance. This is dynamic and permits further flushing and assessment under vision where doubt exists. Secondly, the 16% detection rate for bile duct stones on unit A coheres with the high rate of stone clearance in our study.

Cholecystectomy may differ from conventional cholecystectomy in the degree of manipulation of the gall bladder before the cystic duct is ligated. It is certainly possible that some stone could be passed during the procedure, only to subsequently pass spontaneously. We know of no evidence that low pressure pneumoperitoneum encourages the formation of air bubbles in the biliary tree. First principles suggest that intra-abdominal pressure would equilibrate between the peritoneal cavity and bile duct lumen across the bile duct wall, in much the same way as...