**Biliary scintiscan had high sensitivity and specificity for predicting pathologic findings in the common bile duct**


**Question**

In patients with symptomatic gallstone disease, can biliary scintiscan predict the presence of pathologic findings in the common bile duct (CBD)?

**Design**

A blinded comparison of scintiscan and ultrasonography alone or combined with clinical or standard criteria (history of jaundice or acute pancreatitis, elevated serum bilirubin and alkaline phosphatase levels, and visualization of a stone or presence of dilated bile ducts on ultrasonography) and modified criteria (jaundice within the past 3 months, elevated serum bilirubin and alkaline phosphatase levels, and visualization of a stone or presence of dilated bile ducts on ultrasonography).

**Setting**

A tertiary referral center in Bombay, India.

**Patients**

75 consecutive patients (mean age 46 years, 61% women) with symptomatic gallstone disease. Patients with acute cholecystitis, acute pancreatitis, or cholangitis were excluded.

**Description of tests and diagnostic standard**

Biliary scintigraphy was done using intravenous injection of 5 μCi 99mTc-radio-labeled mebrofenin with a recording at baseline and at 1 and 2 hours. Reading of recordings was blinded using predetermined criteria (standard and modified) for pathologic findings in the CBD. Positive ultrasonographic criteria were visualization of a CBD stone, presence of intrahepatic bile duct dilatation, or common hepatic or CBD size > 7 mm. The diagnostic standard was endoscopic or preoperative cholangiography; if calculi were found, endoscopic sphincterotomy or open surgical exploration of the CBD was done.

**Main outcome measures**

Sensitivity and specificity of features of biliary scintiscan, ultrasonography, and clinical criteria for predicting pathologic findings in the CBD.

**Main results**

Sensitivity and specificity for biliary scintiscan alone and combined with ultrasonography were high (Table). The sensitivity and specificity of other features or parameters are listed in the table.

**Conclusion**

Sensitivity and specificity for biliary scintiscan alone and combined with ultrasonography were high.

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**For correspondence:** Dr. S.K. Mathur, 3rd Floor, Assistant Dean’s Bungalow, Dr. S.S. Rao Road, Bombay, 400 012, India. FAX 91-22-413-3435.

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**Commentary**

Cholangiography is considered the diagnostic standard in detecting CBD stones. Endoscopic retrograde and perioperative (intraoperative) cholangiography are 2 widely used methods. Both, however, are invasive and entail some risk. Finding a noninvasive or risk-free method of confirming or excluding CBD stones has always been frustrating. Mathur and colleagues have evaluated biliary scintigraphy and other noninvasive methods and criteria. Biliary scintigraphy was found to be superior to many of the noninvasive criteria used by the authors.

The best use of biliary scintigraphy to diagnose cholecodolithiasis is probably in patients at high risk for cholangiography-related complications and with low probability for cholecodolithiasis. In such patients, more information is needed to justify the risks and costs of cholangiography, especially if experts who can do the procedures are not readily available.

Potential criticisms of the study include a lack of clearly stated patient inclusion criteria, a lack of clearly stated criteria for biliary obstruction as seen on scintigraphy, and a methods section that requires several readings to be understood. Finally, all of the tests evaluated are highly operator dependent. Individual expertise should be considered when deciding to apply the results of this study.

The authors have re-explored and given new life to a widely available, safe, and relatively inexpensive tool. They are to be commended. Their results should spur others to further investigate the use of biliary scintigraphy.

**William B. Silverman, MD**

University of Iowa Hospitals and Clinics

Iowa City, Iowa, USA