

Approach of suspected common bile duct stones — Current recommendations from the Belgian Working group

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Clinical case

A 65 y.o. female presents with a typical history of biliary colic.

Abdominal US show multiple gallbladder stones. The diameter of common bile duct is 10 mm.

Therapeutic options

- laparoscopic cholecystectomy (LC) and bile duct exploration ;
- biliary imaging before LC ;
- endoscopic retrograde cholangiography (ERC) before LC.

1. Choledocolithiasis is found in 5 to 20% of patients undergoing cholecystectomy for symptomatic and/or complicated gallbladder stones.
2. Although not sensitive neither specific, symptoms evaluation, laboratory findings and transcutaneous ultrasonography (US) are necessary for the decision to explore or not preoperatively the common bile duct (CBD).
3. Risk factors for the presence of CBD stones include : age (> 60 years) ; fever, jaundice, cholangitis, acute pancreatitis at admission ; liver enzymes (AST, ALT, alkaline phosphatase, gamma gt) and CBD diameter (> 8 to 10 mm).
These parameters allow to classify the patients in 3 groups :
Group 1 : no or mid risk (0-3%) of CBD stones : age < 60 ; normal liver tests ; CBD diameter < 8 mmHg.
Group 2 : intermediate risk (< 50%) of CBD stones : previous history of cholangitis or acute biliary pancreatitis ; transitory elevation of AST, ALT, gamma gt, alkaline phosphatase ; CBD diameter 8 to 10 mm.
Group 3 : high risk (> 50%) of CBD stones : age > 60 ; recent cholangitis or acute biliary pancreatitis ; elevation of bilirubin and/or alkaline phosphatase ; CBD diameter > 10 mm.
The jury recommends that the preoperative strategy should be influenced by this classification.
4. In patients with *low risk* of CBD stones, the jury do not recommend the systematic use of ERC, magnetic resonance (MR), spiral-CT cholangiography or endo-ultrasonography (EUS). A "single" laparoscopic

cholecystectomy without preoperative further examinations should be performed.

Some members of the jury recommend to perform systematically an intraoperative cholangiography, even in a population with a low risk of CBD stones, not only to objectivate occult stones, but also to detect peroperative bile duct injury, more frequent with the laparoscopic approach.

5. In patients with *high risk* of CBD stones, a complementary preoperative procedure is systematically required.
In these patients, the choice of the procedure is depending on the local experience and the availability of MR, spiral-CT-cholangiography, EUS, or ERC. Some members of the jury advice to document the presence of the CBS by a non invasive procedure (MR, CT) and to perform a peroperative extraction of the stone via the cystic duct or via a laparoscopic choledochotomy.
Most Belgian groups, however, perform a 2-steps procedure : preoperative ERC with sphincterotomy and stone extraction, followed by laparoscopic cholecystectomy. This approach is preferred for old (> 75 years) or high operative risk patients even in centers where laparoscopic exploration of the CBD and laparoscopic extraction of the CBD stones is the rule.
6. In the group of patients with *intermediary risk*, most centers will investigate the CBD by a non-invasive procedure (MR or CT). EUS is a good alternative, especially for the detection of small stones, but is not available everywhere. It is not recommended to perform an ERC preoperatively, excepted, in case of unavailability of the non invasive procedures or a long delay to obtain them, and when the peroperative cholangiography is not systematically performed.
7. If CBD stones are documented preoperatively, in the group of patients with intermediary risk via MR, CT, EUS or ER, 2 attitudes are possible : a preoperative endoscopic extraction of the CBD stones, or a per-laparoscopic extraction. In case of unsuccessful laparoscopic extraction, a postoperative extraction via ERC is recommended.
8. Therapeutic alternatives should further and prospectively be investigated in multicenter trials, based on clinical outcome and cost-effectiveness. Finally, the strategy will largely depend on the local expertise and the multidisciplinary team approach of the hospital where the patient is admitted.