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Risk prediction of common bile duct stone recurrence based on new common bile duct morphological subtypes

Saito H *et al.* Common bile duct morphological subtypes

Hirokazu Saito, Shuji Tada

Abstract

Stones in the common bile duct (CBD) are reported worldwide, and this condition is majorly managed through endoscopic retrograde cholangiopancreatography (ERCP). CBD stone recurrence is an important issue after endoscopic stone removal. Therefore, it is essential ¹⁰ to identify its risk factors to determine the necessity of regular follow-up ¹ in patients who underwent endoscopic removal of CBD stones. The authors identified that the S and polyline morphological subtypes of CBD were associated with increased stone recurrence. New morphological subtypes of CBD presented by the authors can be important risk predictors of recurrence after endoscopic stone removal. Furthermore, the new morphological subtypes of CBD may predict the risk of residual CBD stones or technical difficulty in CBD stone removal. Further ³ studies with a large sample size and longer follow-up durations are warranted to examine the usefulness of the newly identified morphological subtypes of CBD in predicting the outcomes of ERCP for CBD stone removal.

² **Key Words:** Endoscopic retrograde cholangiopancreatography; Common bile duct stone; Stone removal; Recurrence; Common bile duct morphology; Risk prediction

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Core Tip: It is important to identify the risk factors associated with the recurrence of common bile duct (CBD) stones after endoscopic treatment as it helps determine the necessity of regular follow-up in patients who underwent endoscopic CBD stone removal. CBD morphology can be an important predictor of stone recurrence after endoscopic stone removal. Further studies with a large sample size and a longer follow-up period are warranted to examine the efficacy of the new CBD morphological subtypes presented by the authors for predicting endoscopic retrograde cholangiopancreatography outcomes after CBD stone removal.

TO THE EDITOR

We read with interest the retrospective cohort study by Ji *et al*^[1]. In their study, the authors presented that the morphologies of the common bile duct (CBD), especially the S and polyline types, were associated with increased recurrence of CBD stones. Identifying the risk factors for recurrence after endoscopic stone removal is important to determine the necessity of regular follow-up examination for patients who underwent endoscopic removal of CBD stones.

Several studies have reported the risk factors of CBD stone recurrence after endoscopic treatment^[2-6]. To the best of our knowledge, this is the first study to demonstrate that CBD morphology can be associated with CBD stone recurrence after endoscopic treatment. The new morphological subtypes of CBD presented in this study can be important predictors of the risk of CBD stone recurrence after endoscopic CBD stone removal.

Several aspects of this study need to be discussed. First, the recurrence of cholesterol CBD stones, which account for 10% of all CBD stones^[7], was not evaluated in this study because CBD stones reported in this study were diagnosed using abdominal computed tomography. Furthermore, the follow-up protocol for evaluating stone recurrence was unclear. Second, CBD morphology was evaluated using a cholangiogram from an endoscopic nasobiliary drainage (ENBD) tube; however, evaluating CBD morphology using magnetic resonance cholangiopancreatography before endoscopic treatment may be a better option as the shape of the ENBD tube may affect the CBD morphology. Third, the new CBD morphological subtypes suggested by the authors may be useful for predicting residual stones after endoscopic removal as the CBD morphology may be responsible for the technical difficulties associated with endoscopic CBD stone removal. Finally, the authors' new CBD morphological subtypes were not risk predictors of multiple stone recurrence in this study, which included a small sample size and a short follow-up period of 19 mo; however, the author's new CBD morphological subtypes may have the potential to predict multiple stone recurrence. Therefore, further studies with a larger sample size and a longer follow-up period are warranted to investigate the

usefulness of the new CBD morphological subtypes for predicting the outcomes of endoscopic retrograde cholangiopancreatography for endoscopic CBD stone removal.

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SIMILARITY INDEX

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