Salvage Temporal Stenting for Intractable Choledocholithiasis

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Introduction

Conventional endoscopic retrograde cholangiopancreatography (ERCP) with endoscopic sphincterotomy (EST) and balloon/basket stone extraction is usually performed as a first line treatment for patients with common bile duct (CBD) stones with a high success rate and a low complication rate. However, about 10-15% of CBD stones are difficult to be removed by using conventional techniques. Factors like multiple (>3) or large CBD stones (>20 mm in diameter), the presence of periampullary diverticula, narrowing or stricture of the distal CBD, limited EST caused by small papillae, and serious comorbid patient condition could influence the probability of the successful stone extraction. Alternative approaches for these difficult stones are lithotripsy and/or endoscopic papillary large balloon dilatation (EPLBD). Lithotripsy could be performed with mechanical lithotripter, laser lithotripsy, electrohydraulic lithotripsy (EHL) and extracorporeal shockwave lithotripsy (ESWL). However, even with the application of alternative methods, in some cases, the procedure is often prolonged and repeated when it is necessary to clear all stones or stone fragments.

When CBD stones cannot be completely removed, one or more plastic stents are often placed to prevent impaction. The results from many studies consistent with that indwelling endoprostheses may affect stone size or lead to fragmentation. Stone clearance rate at follow up ERCP after plastic stenting has been known from 60 to 100%. Mechanical irritation of the stent on the stone is postulated to be one of the mechanisms. For salvage temporal stenting, metal stents are also tried in some studies although most of studies use plastic stents. With regard to the numbers of stents, double biliary stenting has been known superior to single stenting in maintaining higher stent patency. Although the durations of stenting were vary in studies, usually 2-3 months are acceptable. In some studies, addition of choleretic agents in multiple plastic stents were tried but did not result in a statistical significant difference in stone size or rate of successful duct clearance.

Since development of EPLBD, it is sure that larger stones could be removed easier at first session of ERCP than past time. Furthermore, combination of the EST and EPLBD has been known as an effective therapy for patients with difficult-to-treat multiple or large common bile duct stones, because it requires fewer sessions and shorter operative times than EST alone. Therefore, indication of temporal stenting for difficult CBD stones seemed to be reconsidered and organized.
Conclusions

Salvage temporal stenting is a good alternative treatment modality for intractable choledocholithiasis that is difficult to be removed by conventional ERCP techniques. Factors like multiple (>3) or large CBD stones (>20 mm in diameter), the presence of periampullary diverticula, stricture of the distal CBD, limited EST caused by small papillae, and serious comorbid patient condition could be the indication of temporal stenting. However, with development of EPLBD nowadays, indication of temporal stenting for difficult CBD stone seems to be reconsidered and studied.

References

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