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A novel algorithmic approach for endoscopic ultrasound-guided biliary drainage based on factors influencing success of endoscopic ultrasound-guided transpapillary stenting
Abstract

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Background and Objectives: Endoscopic ultrasound-guided biliary drainage (EUS-BD) has emerged as an acceptable option for patients with failed endoscopic retrograde cholangiopancreatography (ERCP). However, it is not known that which of the multiple EUS-BD procedures is most appropriate in a given situation. Attempts at an algorithmic approach are hampered by sparsity of data about transpapillary procedures such as EUS-rendezvous (EUS-RV) and EUS-antegrade (EUS-AG) although published algorithms favor them over transluminal methods (choledochoduodenostomy or hepaticogastrostomy) as the first choice. To analyze factors influencing technical success of EUS-guided transpapillary stent placement through EUS-RV and EUS-AG procedures. To develop an algorithm for EUS-BD based on the results.

Methods: Data were collected retrospectively from two centers (India and Japan) over a 7-year period from 2009 to 2016. Records of patients who underwent transpapillary stenting via EUS-AG and EUS-RV procedures following a failed ERCP were entered in a uniform database. Collected data included procedural details, technical success, outcomes, and follow-up. Factors affecting technical success were analyzed by multivariate analysis. An algorithm was developed based on these results. Results: A total of 197 patients underwent transpapillary stenting in the defined period (127 EUS-RV and 70 EUS-AG). Technical success was achieved in 181 patients (91.8%). There were 16 adverse events (8.1%). These included pancreatitis (2.5%), bile leak (2.5%), perforations (0.5%), and bleeding and cholangitis (1% each). One patient died in the EUS-RV group (0.5%). There was no significant difference in success and adverse events of EUS-RV and EUS-AG (success 92.9% vs. 90% P = 0.58, adverse events 7% vs. 10% P = 0.24).

Conclusions: EUS FNA is a very effective method for diagnosis of distal bile duct masses. Its efficacy is better than ERCP-guided brush cytology. Even small masses are suspicious for malignancy 10.6%.

Discussion: ERCP-guided brush cytology is one of the most important diagnostic procedures in management of patients with bile duct masses. However, the results are not consistent and influence the therapeutic strategy. EUS FNA is the diagnostic method of choice when ERCP brush cytology is unsatisfactory. It provides a definite diagnosis in many cases.

Results: FNA was done with a 22-gauge needle for lesions in the body and tail and 25-gauge needle were studied with EUS FNA. FNA was done with a 22-gauge needle making at 2–5 passes, and then material was sent for cytology. The same patients then subjected to ERCP.