Communication from the ASGE Standards of Practice Committee

GUIDELINE

The role of endoscopy in benign pancreatic disease

Prepared by: ASGE STANDARDS OF PRACTICE COMMITTEE

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This is one of a series of statements discussing the use of GI endoscopy in common clinical situations. The Standards of Practice Committee of the American Society for Gastrointestinal Endoscopy (ASGE) prepared this text. In preparing this guideline, a search of the medical literature was performed by using PubMed from January 1980 through October 2014 by using the keyword(s) "acute pancreatitis," "chronic pancreatitis," "autoimmune pancreatitis," "benign pancreatic disease," "gastrointestinal endoscopy," "endoscopy," and "endoscopic procedures." Pertinent studies published in English were reviewed, and additional references were obtained from the bibliographies of the identified articles and from recommendations of expert consultants. When little or no data exist from well-designed prospective trials, emphasis is given to results from large series and reports from recognized experts. Guidelines for appropriate use of endoscopy are based on a critical review of the available data and expert consensus at the time the guidelines are drafted. Further controlled clinical studies may be needed to clarify aspects of this guideline. This guideline may be revised as necessary to account for changes in technology, new data, or other aspects of clinical practice. The recommendations were based on reviewed studies and were graded on the strength of the supporting evidence by using the GRADE criteria (Table 1).[1]

This guideline is intended to be an educational device to provide information that may assist endoscopists in providing care to patients. This guideline is not a rule and should not be construed as establishing a legal standard of care or as encouraging, advocating, requiring, or discouraging any particular treatment. Clinical decisions in any particular case involve a complex analysis of the patient's condition and available courses of action. Therefore, clinical considerations may lead an endoscopist to take a course of action that varies from these guidelines.

A variety of benign pancreatic disorders can be diagnosed and treated with endoscopy. Endoscopy may be useful in the evaluation of idiopathic acute recurrent pancreatitis, suspected chronic pancreatitis (CP), or differentiation of focal CP from malignancy. EUS and endoscopic retrograde pancreatography (ERP) are the 2 most common endoscopic procedures used to evaluate the pancreas. EUS provides high-resolution imaging of both the pancreatic parenchyma and ductal structures and can be used to guide FNA or other interventional procedures. ERP is a more invasive procedure that provides information about pancreatic duct (PD) structures, but not the pancreatic parenchyma. Compared with EUS, ERP is associated with a higher risk of pancreatitis and is often reserved for therapeutic indications such as management of CP-associated PD strictures, stones, leaks, and symptomatic fluid collections.

ACUTE PANCREATITIS

Acute pancreatitis (AP) is most commonly due to gallstones or alcohol. History, physical examination, laboratory testing, and abdominal imaging can identify the cause in 80% of adults with AP.[2] For the remaining 20% with a single episode of unexplained or idiopathic pancreatitis, the role of endoscopic investigation is unclear. However, endoscopy may be indicated in select patients with a single episode or recurrent idiopathic pancreatitis to evaluate for choledocholithiasis, biliary sludge, pancreas divisum, sphincter of Oddi dysfunction (SOD), ampullary lesions,

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TABLE 1. GRADE system for rating the quality of evidence for guidelines

Quality of evidence	Definition	Symbol
High quality	Further research is very unlikely to change our confidence in the estimate of effect.	⊕⊕⊕⊕
Moderate quality	Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.	⊕⊕⊕◯
Low quality	Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.	⊕⊕◯◯
Very low quality	Any estimate of effect is very uncertain.	⊕◯◯◯

Adapted from Guyatt et al.[1]

pancreatic cystic neoplasms, pancreatic cancer, or acute exacerbation of CP.[2]

Emerging data suggest that EUS may be beneficial for the investigation of a single episode of unexplained pancreatitis.[3,4] In a prospective study of 201 patients, EUS identified a cause of a single episode of unexplained pancreatitis in 31%.[5] The most common EUS findings in these patients are choledocholithiasis, biliary sludge, and CP, although the yield of EUS is lower in those who have undergone cholecystectomy.[4] Older patients with an initial episode of AP warrant investigation for pancreatic cancer, often with noninvasive cross-sectional imaging and/or EUS. Some authors suggest that all patients older than 40 years of age with idiopathic pancreatitis should be investigated for pancreatic neoplasia.[6] However, the mean age of patients with pancreatic cancer who present with AP is closer to 60 years.[2,7,8]

The utility of ERCP after a single episode of unexplained mild AP is not established and is generally not recommended.[2,9] Given the favorable safety profile of EUS (particularly with regard to ERCP-induced pancreatitis), there is a growing trend for an initial evaluation with EUS in these patients for the detection of biliary sludge and CP before consideration of ERCP.[2,5,10,11]

ERCP is generally reserved for the treatment of abnormalities found by less-invasive imaging techniques. However, in patients with idiopathic recurrent AP and negative imaging studies, ERCP has been reported to have a diagnostic yield of 38% to 79%.[2] When ERCP is performed for idiopathic recurrent AP, biliary and/or pancreatic sphincterotomy may be required. In this scenario, some centers perform manometry to evaluate for SOD and perform therapy accordingly.[12,13] Pancreas divisum in the setting of recurrent AP may be treated with papillotomy of the minor papilla.[14] In high-risk patient populations, placement of a pancreatic duct stent and/or the administration of rectal indomethacin reduces the risk of post-ERCP pancreatitis.[15,16]

Choledocholithiasis and microlithiasis

Choledocholithiasis and microlithiasis are common causes of AP. Microlithiasis refers to stones less than 3 mm in diameter, whereas biliary sludge is a suspension of crystals, mucin, glycoproteins, cellular debris, and proteinaceous material.[2] The reported prevalence of microlithiasis in the setting of idiopathic pancreatitis varies from 6% to 70% and is largely dependent on the testing methods and the timing of these tests relative to the onset of pancreatitis.[17-20] Microlithiasis and biliary sludge may develop as a consequence of biliary stasis secondary to pancreatitis and their presence does not confirm a causal role. Furthermore, microlithiasis and biliary sludge are more common in individuals with an intact gallbladder. Endoscopic methods for detection of microlithiasis and sludge include duodenal fluid sampling for the detection of biliary crystals by polarized microscopy, ERCP with or without intraductal bile aspiration, and EUS. The role of endoscopy in choledocholithiasis has been discussed extensively in a previous ASGE guideline.[21] Cholecystectomy is recommended for patients with recurrent AP thought to be secondary to microlithiasis.[14] Endoscopic biliary sphincterotomy may also be used to prevent recurrent biliary pancreatitis in patients with choledocholithiasis or microlithiasis but should be limited to individuals unable or unwilling to undergo cholecystectomy.[22-24]

Pancreas divisum

Pancreas divisum is an anatomic variant characterized by the failure of fusion between the dorsal and ventral PDs. This variant is present in approximately 7% of the population. The role of divisum as a cause of recurrent AP or CP remains controversial, although there is a significant association between divisum and these disorders.[25,26] Magnetic resonance imaging (MRI) is considered sensitive for the detection of divisum, particularly when secretin is administered before the study.[27] However, the sensitivity of MRI for the detection of divisum is lower in those with CP.[28] EUS may be superior to multidetector CT or MRI without secretin for detection of divisum.[27] Pancreatography is considered the best method for establishing the presence of divisum; however, ERP via the minor papilla should not be offered only for diagnostic purposes. ERP with minor papillotomy may prevent further attacks of acute recurrent pancreatitis in certain patients with divisum, yet there are no prospective, randomized, controlled trials that confirm this hypothesis. In a retrospective series of 53 patients with pancreas divisum and recurrent pancreatitis treated with minor papillotomy, 60% of patients reported immediate