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Endoscopic Retrograde Cholangiopancreatography in the Treatment of Pancreatic and Biliary Tract Disorders

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Endoscopic Retrograde Cholangiopancreatography in the Treatment of Pancreatic and Biliary Tract Disorders

INTRODUCTION

Endoscopic retrograde cholangiopancreatography (ERCP) is increasingly being considered as a means through which to treat pancreatic and biliary tract disorders. ERCP allows for minimally invasive access to the pancreatic and bile ducts. This access and the ability to introduce various instruments into the ducts via the endoscope channel allow for ductography as well as procedures that can be effective in the diagnosis and treatment of a variety of disorders. This review begins with a general discussion of ERCP and then provides case-based discussions that illustrate the appropriate role of the technique in the treatment of patients with pancreatic and biliary tract disorders.

ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

PATIENT EVALUATION

A history and physical examination are important when patients are being considered for an ERCP procedure. They aid in identifying individuals who are proper candidates—the risk/benefit profile of an ERCP procedure is optimized by proper patient selection. They can also aid in the early recognition of factors that may influence the choice of endoscope, accessory instruments, and specific technique.

Evaluating patients via imaging studies is also often necessary for proper patient selection, as well as for planning the procedure, decision making, and objective follow-up. The choice of an imaging modality hinges on the clinical situation and the availability of local/regional expertise and technology. The emergence of complementary imaging modalities (including helical computed tomography [CT], endoscopic ultrasonography, and magnetic resonance cholangiopancreatography) will likely improve the patient-selection process.

In addition, a history and physical examination, including the completion of a specialty-nurse preprocedure checklist, should occur just before every ERCP procedure is performed. The patient should then be counseled appropriately to obtain informed consent.

CHARACTERISTICS OF THE PROCEDURE

The patient is routinely placed in a prone position, and midazolam is administered in addition to an intravenous opioid (usually fentanyl or meperidine) to achieve conscious sedation. In situations in which the patient is difficult to sedate, droperidol is often given to augment sedation. Propofol, with or without endotracheal intubation, is often used when there is a higher than average likelihood of sedation difficulty or cardiorespiratory decompensation. Glucagon is used frequently to slow duodenal peristalsis, and thus facilitate visualization during the procedure.

ERCP is routinely performed with a side-viewing duodenoscope, as opposed to a forward-viewing endoscope, which is used for esophagogastroduodenoscopy, enteroscopy, and colonoscopy. Much like forward-viewing endoscopes, side-viewing endoscopes allow for the insertion of accessory instruments via the endoscope channels.

The endoscope is inserted, under direct visualization, to the second portion of the duodenum (when the patient's anatomy has not been altered), and the ampulla of Vater is identified. The endoscopist then straightens the duodenoscope to its shortest possible position keeping the ampulla in view to optimize the position of the duodenoscope. By manipulating a cannula or sphincterotome, the endoscopist cannulates the bile and pancreatic ducts. A contrast medium is injected in retrograde fashion to mark the anatomy of the desired duct. The anatomy of the duct is then made clear through fluoroscopy, and still images can be acquired for documentation purposes. The endoscopist should be familiar with pancreaticobiliary ductal anatomy and interpret the fluoroscopy images on a