

Safety of percutaneous endoscopic gastrostomy in highrisk patients

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Percutaneous endoscopic gastrostomy (PEG) is a minimally invasive procedure. However, major complications occurred at a rate of 1.0%-2.4% and mortality has been reported as 0.8%. Safe site selection for placement of the PEG tube is generally enhanced by using good transillumination of light through the abdominal wall and clear visualization of indentation of the stomach by external palpation. These techniques have certain limitations in patients who have intestinal obstruction or severe ileus; or have undergone previous abdominal operations. The endoscopic approach uses transillumination from within the stomach lumen as the sole guide to percutaneous needle puncture.

The exact position of the colon or small bowel loop, which frequently lies superficial to the distal body of the stomach, is not known and can be inadvertently punctured. Failure to transilluminate the anterior wall or visualize of the indentation of the physician's finger represents the most frequent obstacles encountered by the endoscopist in safely completing PEG tube placement. To position a safe gastric puncture point prior to the PEG a technique using an abdominal plain film with a gastric insufflation was assessed. After insufflated with 500 mL of air, an abdominal plain film was obtained before PEG in patients. The body of the stomach near the angularis, equidistant from the greater and lesser curves, was defined as the optimal gastric puncture point. The location of the puncture points varied greatly, being situated over the right upper quadrant in 31% of patients, left upper in 59%, right lower in 5%, and left lower quadrant in 5% of patients.

Computed tomography (CT) can provide detailed anatomy and orientation along the PEG tube. Abdominal computed tomography can show detailed anatomical images along the PEG tract. CT guidance PEG has been described when there has been difficulty either in insufflating the stomach, previous surgery, or anatomical problems. \

PEG is a safe and minimally invasive procedure. Only a minority of patients died shortly after PEG. Endoscopists should not only focus on familiarizing themselves with the technical risks of the procedure, but also on selecting patients without poor underlying conditions. For high risk patients, a reasonable waiting period provides the opportunity to better evaluate patients eligible for PEG, and to improve the selection of patient candidates for whom the benefits of PEG are likely to outweigh the risks. Full assessment of the position of the stomach and adjacent organs prior to gastric puncture may help minimize the risk for potential complications and provide further assurance to the endoscopist and safety for the high-risk patients.