Complication Rate of Spiral Enteroscopy in the First 2950 Patients

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Abstract

INTRODUCTION: Serious complications of deep small bowel enteroscopy occur infrequently. In published series, severe complications occur in deep small bowel enteroscopy in 0.3 to 4% of cases. The aim of this study is to publish all recognized serious complications occurring during spiral enteroscopy.

AIMS & METHODS: There are 2950 patients who have undergone spiral enteroscopy from August 2006 until May 2009. Cases have been performed in North America and Europe. Data was collected from a central data base and from a survey of users of the devices. The device used in all cases was the Discovery SB which is 118 cm long with a hollow spiral 5.5 mm high and 22 cm long with a locking device on the proximal end. The Discovery SB has an outer diameter of 16 mm and an internal diameter of 9.8 mm. The enteroscopes used in the examinations were 9.2 mm Olympus SIF-180 and 9.4 mm Fujinon EN450T-5 200 cm enteroscopes. Severe complications were defined as pancreatitis, nontransient intussusception, bleeding requiring transfusion or admission to the hospital, cardio-pulmonary arrest during a procedure and perforation. During interim analysis at 1750 patients, a technique change was instituted and the scope tip was maintained at 25-30 cm from the end of the Discovery SB overtube. This was done to reduce stiffness of the scope during push to advance.

RESULTS: There were no reported complications of esophageal or gastric perforations, severe bleeding requiring transfusion, or cardio-pulmonary arrest during or resulting from the spiral enteroscopy procedures. There were 9 reported severe complications (0.3%) and no deaths reported as a result of the procedure. There were eight small bowel perforations (0.27%), all were recognized immediately. Four small bowel perforations occurred in the jejunum. Three duodenal perforations occurred while pushing to advance the scope through the duodenum. Two of four jejunal perforations occurred during therapeutic interventions. One perforation occurred in a Roux en Y patient. None of the perforations appeared to occur during rotation of the overtube to pleat the small bowel. Five perforations occurred when the experience of the physician was less than 10 cases. After the technique changes one perforation occurred in 1200 patients, 0.08% p value less than 0.05%.

CONCLUSION: The overall severe complication rate was 0.3% and the perforation rate was 0.27%. No esophageal or gastric perforations occurred. One case of pancreatitis occurred in a patient that had duodenal cauterization, 0.03%. No duodenal perforation and only one jejunal perforation occurred in the last 1200 cases, 0.08% p value less than 0.05. Perforations may be minimized by advancing the enteroscope only when the lumen is clearly visualized and maintaining the scope tip 25-30 cm from the end of the Discovery SB overtube. Spiral enteroscopy is a safe procedure with a low rate serious complications.

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