

Case Report

Direct percutaneous endoscopic jejunostomy performed with gastroscope

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Abstract

While percutaneous endoscopic gastrostomy (PEG) is a well-known approach for achieving enteral feeding, direct percutaneous endoscopic jejunostomy (DPEJ) is a technique that allows endoscopic placement of percutaneous/transabdominal feeding tube directly into the jejunum. It offers a non-surgical alternative for postpyloric enteral feeding for long-term nutritional support when gastric feeding is not technically possible or is inappropriate. Conventionally DPEJ is done with pediatric colonoscope or small bowel enteroscope. Here, we report a case where DPEJ was accomplished with gastroscope.

Key words

Direct percutaneous endoscopic jejunostomy, gastroscopic jejunal intubation, jejunostomy, percutaneous endoscopic gastrostomy alternative, percutaneous endoscopic gastrostomy failure

Introduction

Percutaneous endoscopic gastrostomy (PEG) has evolved as a safe, effective, and reliable method for achieving enteral feeding. However, it may not be feasible for patients with severe gastroparesis, gastric outlet obstruction, gastric resection, or who cannot tolerate gastric feeding. For these patients, postpyloric enteral feeding can be accomplished by direct percutaneous endoscopic jejunostomy (DPEJ). It involves the insertion of a feeding tube directly into the jejunum. It has emerged as a non-surgical method for postpyloric enteral nutrition for long-term management of nutrition. It was first described by Shike *et al.*, in 1985, and thereafter, a number of centers have shown it to be a safe, reliable, and feasible approach to gain access to the jejunum for feeding.^[1-3]

Conventionally DPEJ is performed using a pediatric colonoscope or enteroscope. We report a case where DPEJ was performed in a patient with conventional gastroscope.

Case Report

A 32-year-old, 180-cm tall [Figure 1] male who was in coma was referred for placement of PEG. He had suffered from intracerebral bleed, for which he underwent ventriculoperitoneal shunt and was receiving feeding via a nasogastric tube for 3 months before referral. Patient had no other comorbidity and was otherwise healthy.

At our hospital, we initially attempted to insert PEG with Olympus GIF H180 gastroscope, but it failed because optimal transillumination and finger indentation could not be obtained



Figure 1: A 6-ft tall patient

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in stomach on repeated attempts. Hence, during the same procedure, the gastroscop tip was advanced beyond the duodeno-jejunal (D-J) flexure (without fluoroscopy guidance). After confirming good transillumination and finger indentation in the jejunum, DPEJ was performed with conventional “pull technique”^[3] using a 24 Fr PEG set available with Boston Scientific Corporation, USA [Figure 2].

After 20 months, the DPEJ tube was pulled out accidentally, and after about 24 h, the patient was brought to the hospital. Stoma had closed by the time the patient was brought to the hospital. Similar problems were encountered while attempting PEG with Olympus GIF H180 gastroscop on the following day as in the initial attempt, i.e. failure to obtain optimum transillumination and finger indentation in the stomach. During the same procedure with Olympus GIF H180 gastroscop, DPEJ was accomplished again by the conventional pull technique and a new cutaneous puncture [Figure 3].

Discussion

Conventionally, DPEJ is done with pediatric colonoscope or enteroscope.^[1-3] Pediatric colonoscope and enteroscope may not be available in majority of endoscopy centers. Conventional gastroscop can most often be advanced beyond the D-J flexure.^[4,5] The present case demonstrates that DPEJ could be accomplished with conventional gastroscop in a 6-ft tall individual without surgically altered upper gastrointestinal (GI) anatomy (viz. esophagectomy, gastrectomy, gastrojejunostomy, etc.) or spinal deformity. Feeding port insertion could be accomplished during the same intubation. DPEJ can be done even if pediatric colonoscope or enteroscope is not available with the endoscopist. However, the most important prerequisite for PEG and DPEJ insertion is demonstration of clear-cut transillumination and finger

indentation for safe placement of the feeding tube.

For deeper intubation of the small intestine, endoscopes with longer insertion tubes, viz. colonoscope and enteroscope, appear to have obvious advantages. However, distensibility of the stomach, especially fundus and greater curvature, necessitates “short-scope-position” along the lesser curvature, as has been well described and emphasized for achieving deeper intubation into the second part of duodenum during endoscopic retrograde cholangiopancreatography (ERCP). In short-scope-position, the ampulla of Vater is seen at a scope length of 60–70 cm from the incisors. Thus, 100 cm length of the gastroscop should be enough to reach the proximal jejunum, provided short-scope-position in the stomach is maintained. So, to advance the gastroscop beyond the D-J flexure, one needs to shorten the gastroscop in proximal D₂, whereby, most often, its tip plunges into distal D₂ (not unlike shortening “N” loop or alpha-loop of colonoscope at the descending–sigmoid colon junction or as shortening of the duodenoscope during ERCP with the tip just beyond the superior duodenal angle). During further advancement beyond distal D₂, tip of the gastroscop should be deflected mainly left +/- slightly down or sometimes down with clockwise torque on the shaft. Up or right deflection of the tip works against (exactly opposite of the preferred tip deflection of colonoscope at sigmoid–descending colon junction or tip deflection at superior duodenal angle for duodenoscope or gastroscop). Initial experience did suggest that endoscope with down angulation up to 180° may have inherent advantages for deeper intubation.^[5] Over the years, it has been observed that even if the down angulation of the gastroscop is up to 120°, it can be easily advanced beyond the D-J flexure. Colonoscope with an outer diameter of 12.4 mm or more is certainly a bit too bulky and cumbersome to negotiate from patient’s oral cavity, while gastroscop with an outer diameter of 9.8 mm or less can do the same job.



Figure 2: Contrast study of DPEJ done on 11/11/2011



Figure 3: Contrast study of repeat DPEJ done on 14/06/2013

Conclusion

To conclude, DPEJ can be performed with gastroscop even in tall individuals without surgically altered upper GI anatomy.

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