Laparoscopic-assisted percutaneous endoscopic gastrostomy – rendez-vous PEG – in infants, children and adolescents

In children with insufficient oral intake, the percutaneous endoscopic gastrostomy (PEG) has become the preferred method for enteral feeding [1,2]. However, percutaneous puncture of the stomach may not be safe because of unfavorable anatomy. Major puncture-related complications, such as failed attempts, gastrocolocutaneous fistula, and massive hemorrhage, were seen in 9% of all children who underwent PEG [3]. In order to avoid these complications we use a combined laparoscopic-assisted endoscopic (rendez-vous) approach in selected patients.

In the past 5 years, 277 pediatric patients were referred to our unit for PEG. Nine patients (3.24%) did not qualify for a solely endoscopically guided placement of a gastric feeding tube because of missing translumination, gastric indentation, or an abdominal tumor. These patients were selected for a laparoscopic-assisted PEG. The patients were aged 5 months to 19 years (median 12.7 years), and median body weight was 20.7 kg (range 6.0–58.6 kg). All patients underwent general anesthesia in the supine position. After a pneumoperitoneum was created via a Hasson umbilical access, a 5 mm 30° optic device was inserted. Additional laparoscopic instruments, such as a grasper and a mini-forceps, were needed in four patients. Endoscopy was performed using an appropriate-sized flexible endoscope. The stomach was punctured under direct laparoscopic and endoscopic vision (Figure 1a–d).

We propose the laparoscopic-assisted PEG technique, even in small children, whenever conventional PEG placement is not considered safe due to unfavorable anatomy [4]. The laparoscopic monitoring helps to avoid major complications of conventional PEG, such as puncture of the bowel or solid organs.

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