Peroral pyloromyotomy for the treatment of infantile hypertrophic pyloric stenosis

Infantile hypertrophic pyloric stenosis (IHPS) is the most common condition requiring surgical treatment in infants [1]. Traditionally, the standard treatments are laparoscopic or open pyloromyotomy [2]. Here, we report on the use of peroral pyloromyotomy (POP), also called gastric peroral endoscopic myotomy (G-POEM), which has shown promising results in the treatment of adult gastroparesis [3], for a novel application, the treatment of IHPS.

A 35-day-old infant was admitted with a 1-week history of progressively forceful vomiting after feeding. An ultrasound scan showed a thickened pyloric muscle and extended pyloric channel length and an upper gastrointestinal series showed narrowing of the pylorus, which was filled with a thin strip of contrast agent (▶ **Fig. 1 a**). The patient was therefore diagnosed as having IHPS. POP was proposed after a full multidisciplinary discussion.

The procedure included four steps (▶ **Video 1**): (i) a transversal mucosal incision was performed at the proximal antrum (▶ **Fig. 1 b**); (ii) a submucosal longitudinal tunnel was created across the pyloric ring (▶ **Fig. 1 c**); (iii) full-thickness pyloromyotomy was performed, with a little extension at the antrum (▶ **Fig. 1 d**), after which an ultrathin gastroscope was used to inspect the mucosa and pyloric outlet; (iv) after careful hemostasis had been performed, the mucosal entry was closed by clips (▶ **Fig. 1 e**).

The postoperative upper gastrointestinal series showed a normal stream of the contrast without evidence of any leakage (▶ **Fig. 1 f**). The patient recovered well without any perioperative complications. During 2 months of follow-up, the patient took oral feeds well without vomiting and with an increase of 3 kg in body weight.

Laparoscopic or open pyloromyotomy is the traditional standard treatment for IHPS [2]. However, because of severe dehydration, electrolyte disturbance, and malnutrition, these patients have a lower tolerance of surgery and recover more slowly than usual. In this video, we report the first application of POP in IHPS, which may indicate that POP is a minimally invasive, safe, and effective alternative for treating infants with IHPS.

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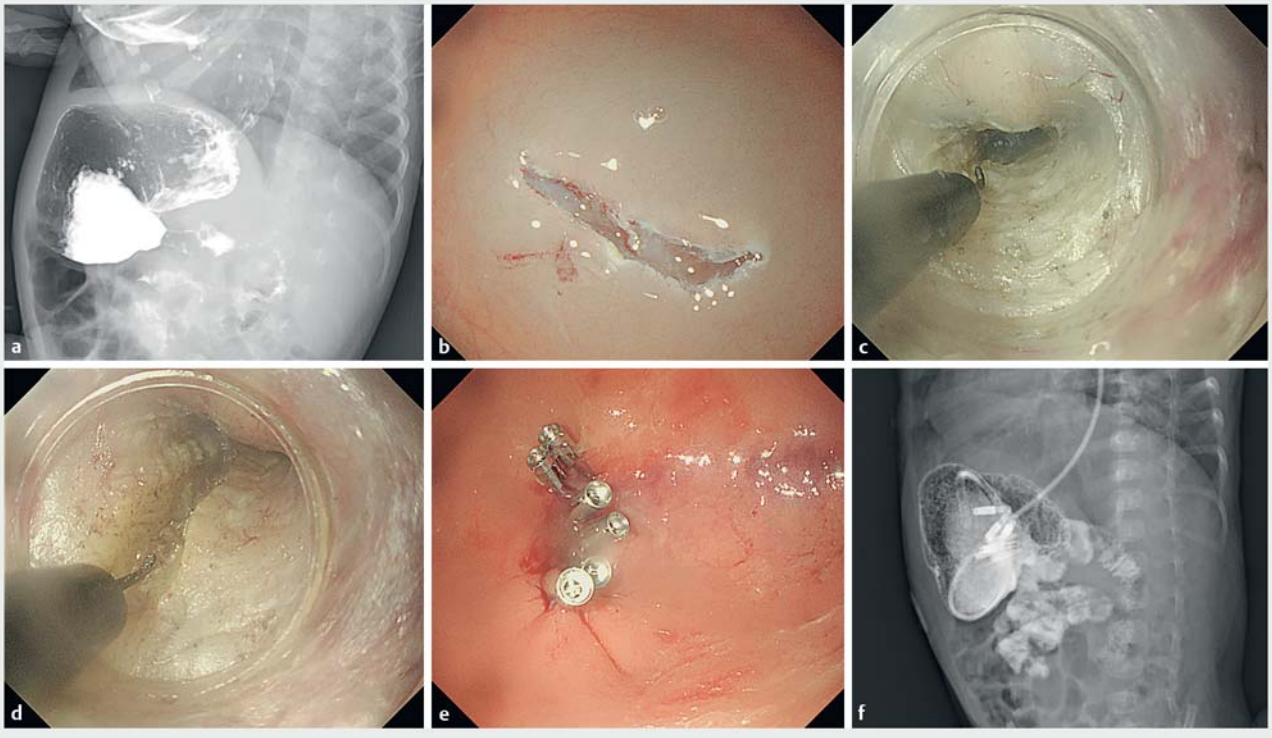
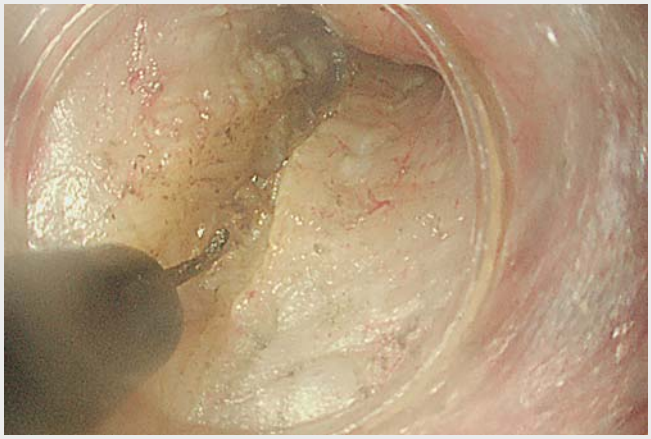


▶ **Fig. 1** Peroral pyloromyotomy (POP) for the treatment of infantile hypertrophic pyloric stenosis in a 35-day-old infant. **a** The upper gastrointestinal series showed narrowing of the pylorus, which was filled with a thin strip of contrast agent. **b – e** Endoscopic images showing: **b** mucosal incision at the entry site; **c** creation of a submucosal tunnel; **d** full-thickness pyloromyotomy; **e** complete closure of the mucosal entry site with clips. **f** Repeat upper gastrointestinal series 4 days after the POP showed the contrast now passed easily.



Video 1 Per-oral pyloromyotomy is performed to treat infantile hypertrophic pyloric stenosis with the following steps: a traversal mucosal incision was performed at the proximal antrum; a longitudinal submucosal tunnel was created across the pyloric ring between the mucosal and muscular layers (because of the narrow space and tender mucosa, the tunnel was performed along the muscular layer with more submucosal injections to avoid mucosal injury); full-thickness pyloromyotomy was performed, with a little extension to the antrum (because of the protection of intact mucosa, perforation is not a worry and any intraoperative bleeding was coagulated by hot biopsy forceps); the mucosal entry was closed by clips (the enlarged pyloric outlet can be seen through which the gastroscope could pass easily).

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Competing interests

None

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