

## Endoscopic resection of prepyloric diaphragm in an adult

Prepyloric diaphragm is a rare anatomic anomaly in adults and can cause gastric outlet obstruction. A 33-year-old man presented with postprandial epigastric distress and a 10-year history of repeated nonbilious vomiting. He was otherwise healthy with no medical history of peptic ulcer or caustic ingestion. Body mass index was 15.9.

Barium swallow test revealed linear antropylic narrowing (▶ Fig. 1). Computed tomography scan showed prepyloric web of the distal gastric antrum, about 0.5 cm proximal to the pylorus (▶ Fig. 2). Esophagogastroduodenoscopy demonstrated gastric outlet obstruction with a pinhole opening and a linear scar on the posterior wall of the antrum (▶ Fig. 3).

Direct endoscopic resection was performed in a radial fashion using a Hook-Knife (Olympus, Tokyo, Japan) until the circular muscle was cut open completely (▶ Video 1). A normal pylorus was exposed and the prepyloric diaphragm was resected thoroughly (▶ Fig. 4).

The patient's symptom resolved immediately after endoscopic therapy and he was discharged uneventfully 3 days later. Esophagogastroduodenoscopy and barium swallow test were repeated 3 months

later and revealed no gastric outlet obstruction (▶ Fig. 5).

The etiology of prepyloric diaphragm is controversial in adults as to whether it is congenital or acquired [1]. The association of a linear scar near the prepyloric diaphragm in the current case indicates that it was possibly caused by scarring from a gastric ulcer. Prepyloric diaphragm can be managed with surgical or endoscopic intervention. Endoscopic methods include balloon dilation, resection with a snare, needle knife, or laser [2, 3]. However, there is no standard regarding the width and depth required for sufficient resection of prepyloric diaphragm. Direct endoscopic resection until the circular muscle is cut open without building a submucosal tunnel has been used for congenital pyloric stenosis, achalasia, and other benign strictures [4, 5]. We chose this method to achieve maximum alleviation of obstruction and minimize the possibility of re-obstruction. Endoscopic resection can be performed safely in patients with prepyloric diaphragm.

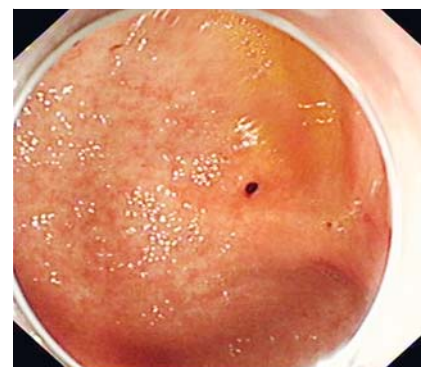
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▶ Fig. 1 Barium swallow test showed linear antropylic narrowing (arrow).



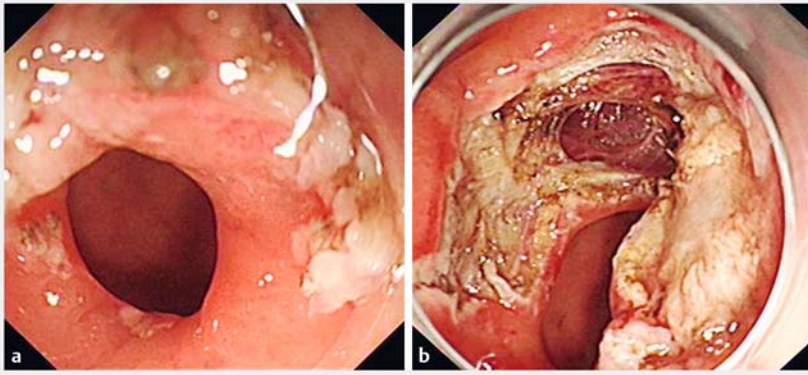
▶ Fig. 2 Computed tomography scan showed prepyloric diaphragm (short arrow) proximal to the pylorus (long arrow).



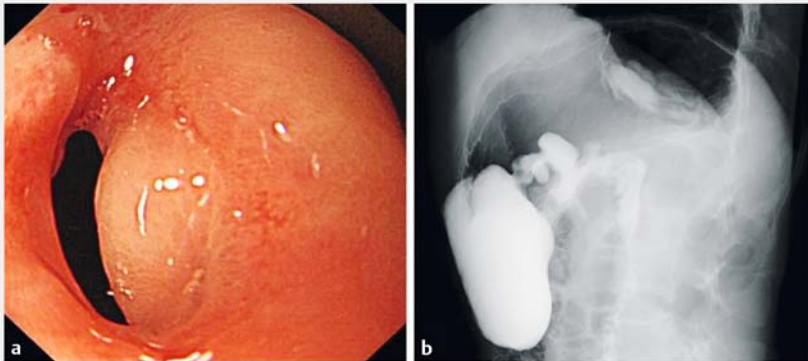
▶ Fig. 3 Esophagogastroduodenoscopy demonstrated gastric outlet obstruction with a pinhole opening and a linear scar on the posterior wall of the antrum.

 A large endoscopic image showing the resection of the prepyloric diaphragm. The circular muscle has been cut, and the pylorus is now clearly visible. A QR code is located to the right of the image.
 

▶ Video 1 Endoscopic resection of prepyloric diaphragm in an adult.



► **Fig. 4** Endoscopic resection of the prepyloric diaphragm. **a** A normal pylorus was found distal to the prepyloric diaphragm. **b** The prepyloric diaphragm was resected thoroughly.



► **Fig. 5** Follow-up 3 months after endoscopic treatment showed no gastric outlet obstruction. **a** Esophagogastroduodenoscopy. **b** Barium swallow.

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### Competing interests

None

### The authors

#### Lin-Jie Guo, Chun-Cheng Wu, Bing Hu

Department of Gastroenterology, West China Hospital, Sichuan University, Chengdu, China

### Corresponding author

#### Bing Hu, MD

Department of Gastroenterology, West China Hospital, Sichuan University, 37 Guoxue Road, Chengdu, Sichuan Province 610041, China  
 Fax: +86-028-85423387  
 hubingnj@163.com

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### Bibliography

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