

## Endoscopic management of small bowel obstruction caused by intragastric balloon using antegrade single-balloon enteroscopy



► **Fig. 1** An abdominal computed tomography scan revealed a distally migrated intragastric balloon (white arrow) with evidence of luminal obstruction.



► **Fig. 2** Migrated intragastric balloon at mid-jejunum totally occupied the lumen of the mid-jejunum.



► **Fig. 3** Proximal jejunum showed erythematous and edematous mucosa with circumferential ulceration.



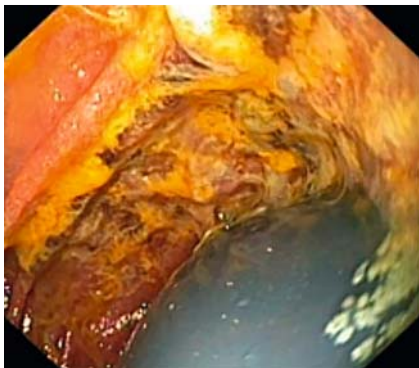
► **Video 1** Removal of the migrated intragastric balloon using antegrade single balloon-assisted enteroscopy.

A 44-year old woman with type 2 diabetes mellitus who underwent intragastric balloon (Spatz3) insertion 1 year ago presented with acute abdominal pain for 3 days. Abdominal examination showed mild tenderness at the epigastrium. Laboratory investigation showed a white blood cell count of  $12,630/\text{mm}^3$ . An abdominal computed tomography (CT) scan revealed a distally migrated intragastric balloon in the mid-jejunum causing a small bowel obstruction (► **Fig. 1**). After a discussion regarding treatment options, she decided to undergo endoscopic removal using antegrade single balloon-assisted enteroscopy.

On endoscopy, an intragastric balloon filled with methylene blue completely occupied the jejunal lumen (► **Fig. 2**). Duodenal and proximal jejunal mucosa, especially the surrounding area, was markedly inflamed and covered with exudates (► **Fig. 3**, ► **Fig. 4**). The balloon was punctured with a 25G needle, aspirated until completely collapsed, and then retrieved using a polypectomy snare (► **Video 1**, ► **Fig. 5**). A broad-spectrum intravenous antibiotic was given post-

procedure. She was able to advance her diet and was safely discharged after hospitalization for 3 days.

Intragastric balloon insertion is a minimally invasive and effective procedure with favorable safety profiles. Migration of an intragastric balloon occurred in approximately one percent of cases whereas 0.3 percent had an intestinal obstruction [1]. The risk of spontaneous balloon deflation and possible subsequent migration increases over time, especially after 6 months [2]. An intragastric balloon causing obstruction in the proximal duodenum is likely to be successfully removed endoscopically, whereas more distal migrations have been successfully treated laparoscopically, with few reports of percutaneous aspiration [2, 3]. At present, only two cases of successful endoscopic treatment of a migrated intragastric balloon using double balloon-assisted enteroscopy have been reported [4, 5]. We reported the first experience using antegrade single-balloon enteroscopy to remove a migrated intragastric balloon. Meticulous care should be taken while gently with-



► **Fig. 4** Endoscopic image of surrounding jejunal mucosa showed erythematous, edematous changes, and ulceration with overlying yellowish sludge.



► **Fig. 5** The balloon was firmly grasped with a polypectomy snare before gentle removal.

drawing the scope with the attached balloon tightly grasped. Trauma to surrounding inflamed mucosa should be kept to a minimum.

Endoscopy\_UCTN\_Code\_CPL\_1AH\_2AJ

### Competing interests

The authors declare that they have no conflict of interest.

### The authors

**Manus Rugivarodom<sup>1</sup>, Theera Pongprasopchai<sup>2</sup>, Chompol Yamcharoen<sup>3</sup>, Kotchakon Maipang<sup>1</sup>, Varayu Prachayakul<sup>1</sup>**

- 1 Siriraj GI Endoscopy Center, Division of Gastroenterology, Department of Internal Medicine, Faculty of Medicine, Siriraj hospital, Mahidol University, Bangkok, Thailand
- 2 Surgery Unit, Thonburi Hospital, Bangkok, Thailand
- 3 Liver and Digestive Institute, Thonburi Hospital, Bangkok, Thailand

### Corresponding author

**Varayu Prachayakul, MD**

Siriraj GI Endoscopy Center, Division of Gastroenterology, Department of Internal Medicine, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand  
 Fax: +66-2-411-5013  
 kaijyr@gmail.com

### References

- [1] Abu Dayyeh BK, Kumar N, Edmundowicz SA et al. ASGE Bariatric Endoscopy Task Force systematic review and meta-analysis assessing the ASGE PIVI thresholds for adopting endoscopic bariatric therapies. *Gastrointest Endosc* 2015; 82: 425–438
- [2] Hay D, Ryan G, Somasundaram M et al. Laparoscopic management of a migrated intragastric balloon causing mechanical small bowel obstruction: a case report and review of the literature. *Ann R Coll Surg Engl* 2019; 101: e172–e177
- [3] Brooks J, Rimon U, BenSaid P et al. Percutaneous needle aspiration of a partially deflated intragastric balloon: a forgotten modality? Review of the literature. *Obes Surg* 2018; 28: 1781–1784
- [4] Halm U, Grothoff M, Lamberts R. Gastric balloon causing small bowel obstruction: treatment by double-balloon enteroscopy. *Endoscopy* 2013; 45: E78–E79
- [5] Vlachou E, Direkz S, Murino A et al. Small bowel obstruction caused by a migrated Obalon gastric bariatric balloon: nonsurgical management by antegrade double-balloon panenteroscopy. *Endoscopy* 2016; 48: E403–E404

### Bibliography

*Endoscopy* 2022; 54: E624–E625  
 DOI 10.1055/a-1724-7016  
 ISSN 0013-726X  
 published online 26.1.2022  
 © 2022. Thieme. All rights reserved.  
 Georg Thieme Verlag KG, Rüdigerstraße 14,  
 70469 Stuttgart, Germany

**ENDOSCOPY E-VIDEOS**  
<https://eref.thieme.de/e-videos>



*Endoscopy E-Videos* is an open access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online. Processing charges apply (currently EUR 375), discounts and waivers acc. to HINARI are available.

This section has its own submission website at  
<https://mc.manuscriptcentral.com/e-videos>