Endoscopic management of small bowel obstruction caused by intragastric balloon using antegrade single-balloon 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/mm³. 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-
Drawing the scope with the attached balloon tightly grasped. Trauma to surrounding inflamed mucosa should be kept to a minimum.

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**Competing interests**

The authors declare that they have no conflict of interest.

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**Bibliography**

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**References**


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**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.