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A rare case of a windsock-shaped intraluminal duodenal diverticulum treated successfully with endoscopic diverticulectomy

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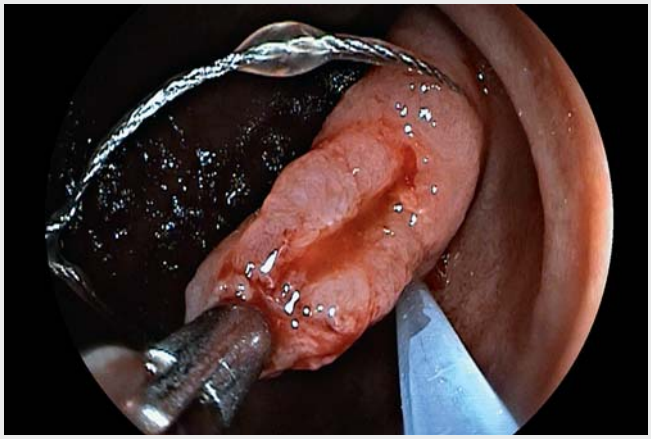
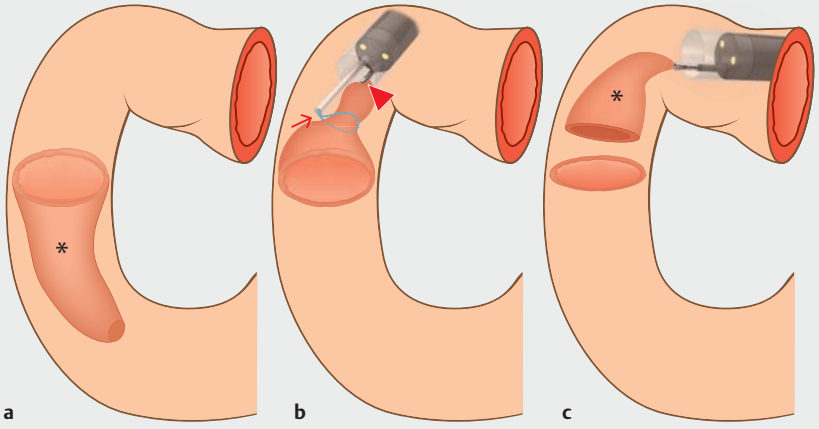
An intraluminal duodenal diverticulum is a rare congenital anomaly stemming from incomplete duodenal lumen formation during embryogenesis [1–5]. Over time, the remnant duodenal diaphragm resembles a windsock by elongation secondary to intestinal peristaltic movements [1–3]. In most patients, the condition is detected incidentally [1,2]. However, a few patients may present in adulthood with symptoms of partial duodenal obstruction, such as early satiety, vomiting, and abdominal pain [1,2]. Rare bleeding and pancreatitis may complicate the scenario [1,2]. Herein we present a case treated with endoscopic intraluminal diverticulectomy (▶ **Fig. 1**).

A 20-year-old woman with no previous medical history presented with complaints of early satiety and postprandial vomiting for 5 years. Symptoms had intensified in the last 6 months. An upper gastrointestinal endoscopy revealed a diverticulum at the intersection of the first and second parts of the duodenum, which extended distally in the form of a funnel, resembling a windsock. There was an orifice in its dome that did not allow the passage of the endoscope. The diverticulum was undulating and freely inverted with aspiration. Computed tomography supported the diagnosis of an intraluminal duodenal diverticulum (▶ **Fig. 2**). Subsequently, the patient underwent endoscopic diverticulectomy with an EG-530D dual-channel endoscope (Fujifilm, Tokyo, Japan). A polypectomy snare was opened in the duodenal lumen proximal to the diverticulum. Forceps inserted via the second working channel were passed through the snare. The orifice at the diverticular dome was grasped and pulled into the snare that connected to the electrosurgical unit, and the diverticulectomy was performed in "Force-Coag-2" mode in two stages (▶ **Video 1**). No complications such as bleeding or perforation occurred. Adrenalin injection and hemoclips were applied to the edges of the newly created opening (▶ **Fig. 3**). The patient has been symptom-free for 1 month.



Video 1 A rare case of a windsock-shaped intraluminal duodenal diverticulum treated successfully with endoscopic diverticulectomy.



▶ **Fig. 1** An illustration representative of the intraluminal duodenal diverticulectomy. **a** The anatomical position of the intraluminal duodenal diverticulum resembling a windsock (asterisk). **b** The orifice at the diverticular dome was grasped by forceps (arrowhead) and pulled into the snare (arrow) at the same time using the Fujifilm dual-channel endoscope. **c** Luminal reconstruction was achieved with the removal of the excised diverticular part (asterisk).

In conclusion, an intraluminal duodenal diverticulum should be included in the differential diagnosis in patients with duodenal stenosis and complaints such as early satiety and vomiting. Endoscopic diverticulectomy is an effective and safe treatment option for an intraluminal duodenal diverticulum.

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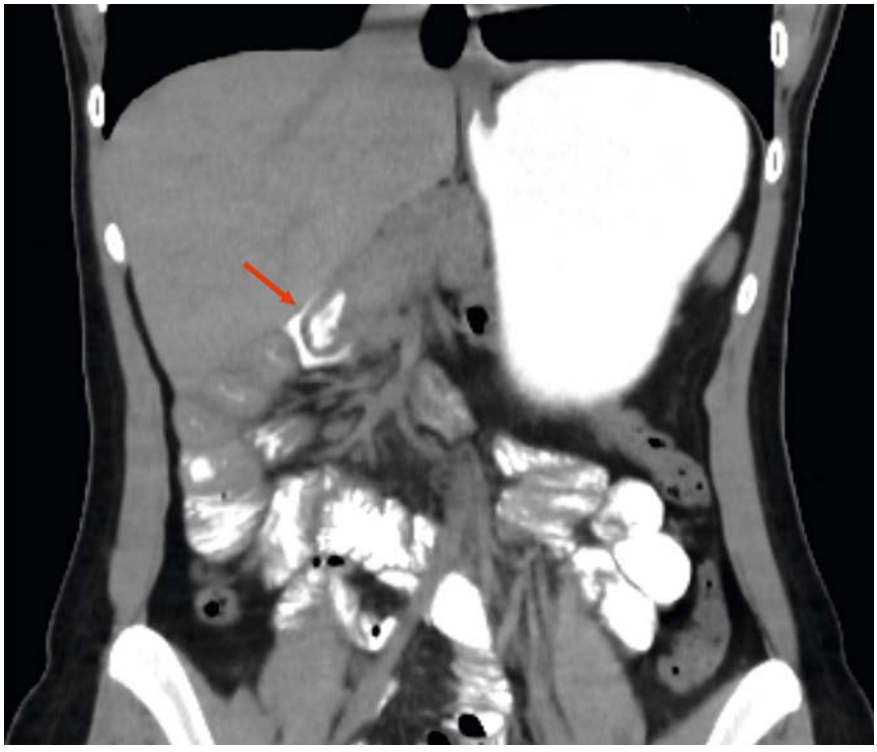
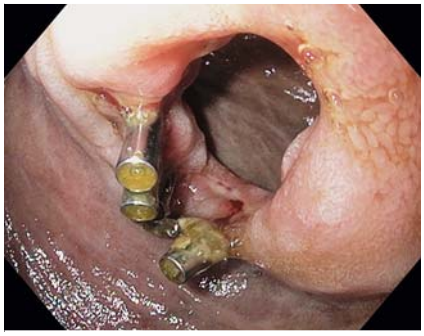


▶ **Fig. 2** Computed tomography image demonstrating the windsock-shaped intraluminal duodenal diverticulum (arrow).



▶ **Fig. 3** Reconstructed duodenal lumen observed on the 7th day of the endoscopic diverticulectomy procedure.

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