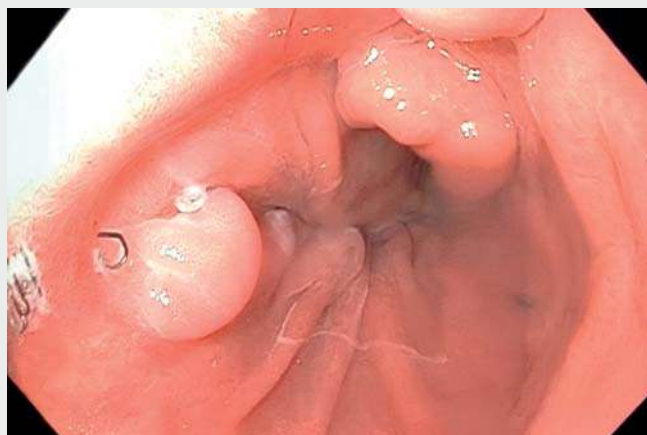


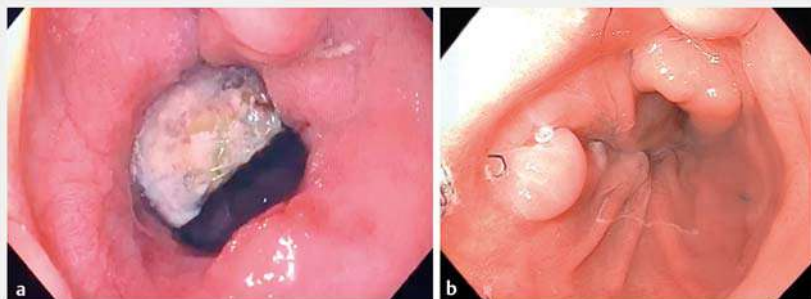
## Long-term endoscopic follow-up after closure of a post-bariatric surgery fistula with a cardiac septal defect occluder



▶ **Video 1** Long-term follow-up of successful gastrocutaneous fistula closure using a cardiac septal defect occluder.



▶ **Fig. 2** Image from an upper gastrointestinal series showing no evidence of gastrointestinal leakage or a fistula, and no evidence of the previously placed cardiac septal defect occluder.



▶ **Fig. 1** Endoscopic images showing: **a** the well-positioned cardiac septal defect occluder, with closure of the gastrocutaneous fistula at 1-year follow-up; **b** no evidence of leakage or a fistulous tract, despite apparent migration of the cardiac septal defect occluder, at 3-year follow-up.

Bariatric surgery is currently the most effective treatment strategy for obesity; however, post-surgical fistulas may occur in up to 8.3% of patients following traditional Roux-en-Y gastric bypass (RYGB) [1]. Currently endoscopic treatment of these complications remains challenging, with unsuccessful fistula closure occurring in 20% of patients [1,2]. More recently, the use of a cardiac septal defect occluder (CSDO) device has been pro-

posed as a novel treatment for the closure of gastrointestinal fistulas. A CSDO is a double-disc self-expanding closure device made of nitinol and interwoven polyester. The successful use of CSDOs in the management of gastrointestinal surgical and bariatric leaks has been reported; however, there are limited data regarding long-term outcomes [3,4]. In this video, we describe the successful closure of a gastrocutaneous fistula using

a CSDO and demonstrate persistent closure at long-term follow-up (▶ **Video 1**). A 36-year-old man with a history of RYGB 3 years previously presented to our institution with a gastrocutaneous fistula. Initial treatment with a fully covered self-expandable metal stent (SEMS) was unsuccessful, and the patient subsequently underwent treatment with a CSDO [5]. The CSDO procedure was immediately successful with closure of the gastrocutaneous fistula and, at 1-year follow-up, endoscopy demonstrated an intact, well-positioned CSDO, with no evidence of a fistula (▶ **Fig. 1 a**). At 3-year follow-up, routine endoscopy did not identify the CSDO (▶ **Fig. 1 b**). An upper gastrointestinal contrast study was performed and confirmed that the CSDO was not present in the gastrointestinal lumen or intra-abdominal cavity (▶ **Fig. 2**). Despite the presumed migration of the device, the fistula remained closed with no recurrent fistula or leakage noted. In summary, the use of a CSDO device appears to be a safe and effective long-





term treatment for patients with post-surgical gastrocutaneous fistulas. While more data are needed to verify these results, CSDOs may be a feasible alternative for gastrointestinal leaks and fistulas that are refractory to traditional endoscopic techniques.

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### Competing interests

The authors declare that they have no conflict of interest.

### The authors

**Diogo Turiani Hourneaux de Moura**<sup>1</sup> , **Mateus Bond Boghossian**<sup>1</sup> , **Bruno Salomão Hirsch**<sup>1</sup> , **Thomas R. McCarty**<sup>2</sup>, **Alberto Jose Baptista**<sup>3</sup>, **Eduardo Guimarães Hourneaux de Moura**<sup>1</sup> 

- 1 Gastrointestinal Endoscopy Unit, Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil
- 2 Gastroenterology, Hepatology, and Endoscopy Division, Harvard Medical School, Brigham and Women's Hospital, Boston, Massachusetts, USA
- 3 Department of Endoscopy, Hospital de Clínicas Caracas, San Bernardino, Venezuela

### Corresponding author

**Mateus Bond Boghossian, MD**

Av. Dr Enéas de Carvalho Aguiar, 225, 6º andar, bloco 3, Cerqueira César, São Paulo, SP, 05403-010, Brazil  
mateus.boghossian@hc.fm.usp.br

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