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Mini-invasive Surgery

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First reported laparoscopic conversion of magnetic side-to-side duodeno-ileostomy to single-anastomosis duodeno-ileal bypass with sleeve gastrectomy

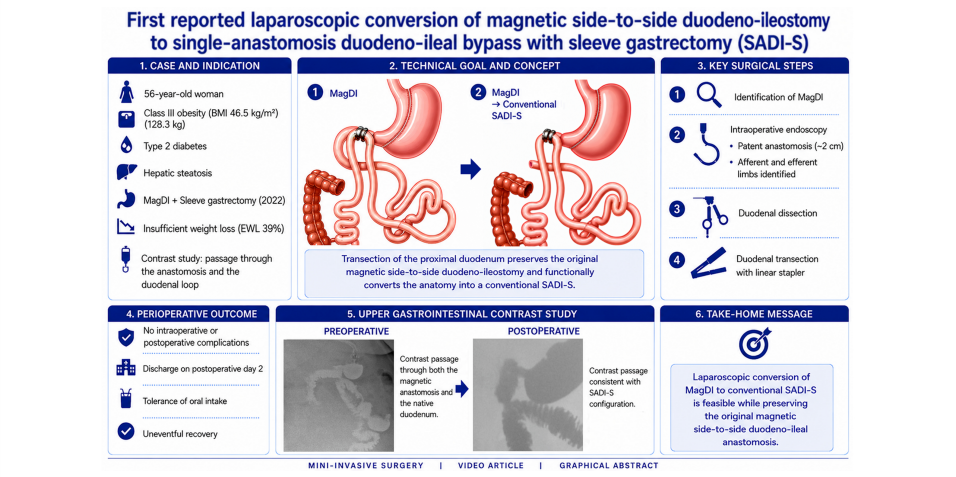
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MagDI, SADI-S, revisional bariatric surgery, magnetic compression anastomosis, duodeno-ileostomy

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Abstract

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BRIEF EXPLANATION

Single-anastomosis duodeno-ileal bypass with sleeve gastrectomy (SADI-S) is an established bariatric and metabolic procedure providing durable weight loss and metabolic improvement[1-3]. Magnetic compression anastomosis has been introduced to create a magnetic side-to-side duodeno-ileostomy (MagDI), avoiding complications related to conventional hand-sewn or stapled intestinal anastomosis, while demonstrating encouraging early and medium-term postoperative outcomes[4,5]. As clinical adoption expands, revisional procedures will inevitably become necessary; however, the optimal revisional surgical strategy has not yet been described.

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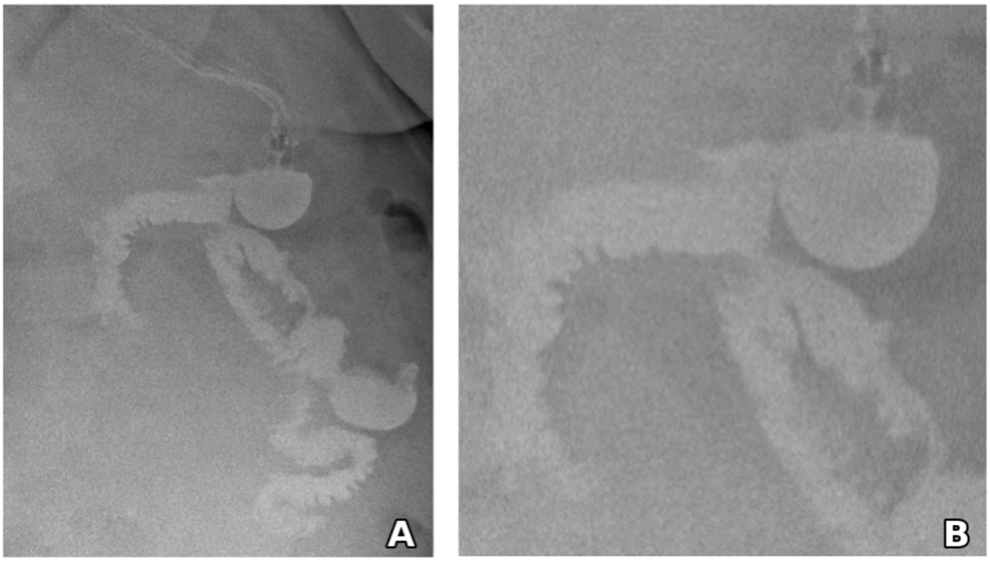


Figure 1. Preoperative upper gastrointestinal contrast study. (A) Contrast passage through both the magnetic anastomosis and the native duodenum; (B) Magnified view of (A).

A 56-year-old woman with class III obesity [128.3 kg; body mass index (BMI) 46.5 kg/m^2], type 2 diabetes and hepatic steatosis underwent MagDI associated with sleeve gastrectomy in 2022. Despite a patent magnetic anastomosis, weight loss was insufficient after 22 months [105 kg; BMI 38.1 kg/m^2; excess weight loss (EWL) 39%]. Upper gastrointestinal contrast study demonstrated contrast passage through both the magnetic anastomosis and the native duodenum [Figure 1]. Following multidisciplinary evaluation of the anatomical findings, insufficient weight loss, the patient's preferences and alternative revisional and pharmacological options, laparoscopic completion of the duodenal bypass was indicated. To the best of our knowledge, this is the first reported laparoscopic conversion of MagDI to a SADI-S configuration.

SURGICAL TECHNIQUE

The key operative steps are shown in Figure 2 and Video 1. Laparoscopic exploration identified the gastric sleeve and the MagDI, with the presence of mild-to-moderate fibrosis and adhesions around the previous magnetic anastomosis. Intraoperative upper gastrointestinal endoscopy demonstrated a patent anastomosis measuring approximately 2 cm, and confirmed access to both the afferent and efferent limbs. Careful adhesiolysis and duodenal dissection were performed. The duodenum was transected 1.5-2 cm distal to the magnetic anastomosis using a linear stapler, thereby achieving functional conversion to a SADI-S configuration while preserving the original magnetic anastomosis.

The postoperative course was uneventful. The patient was discharged on postoperative day two and no leak, bleeding, stenosis or readmission occurred. At 24 months after revisional surgery, she remained asymptomatic, with sustained weight loss [96 kg; BMI 34.8 kg/m^2, EWL 54%, total weight loss (TWL) 25%] and remission of diabetes (HbA1c 5.5%). Postoperative upper gastrointestinal contrast study confirmed adequate contrast passage consistent with SADI-S configuration [Figure 3].

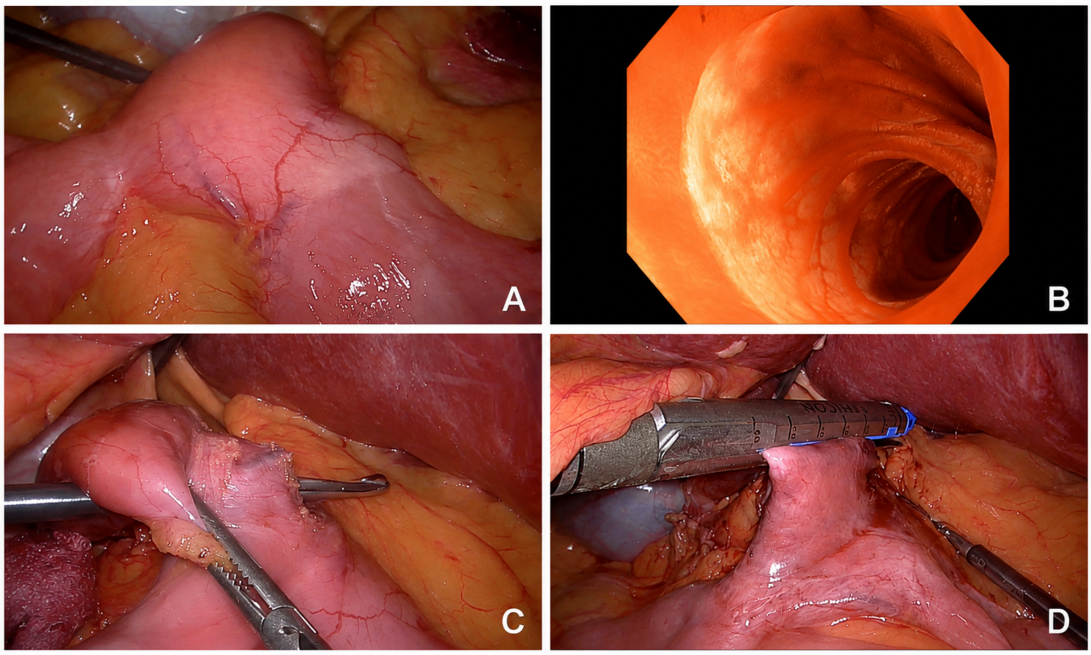


Figure 2. Key operative steps. (A) Identification of MagDI; (B) Intraoperative endoscopy: patent anastomosis (~2 cm) and limbs identified; (C) Duodenal dissection; (D) Duodenal transection using linear stapler. MagDI: Magnetic side-to-side duodeno-ileostomy.

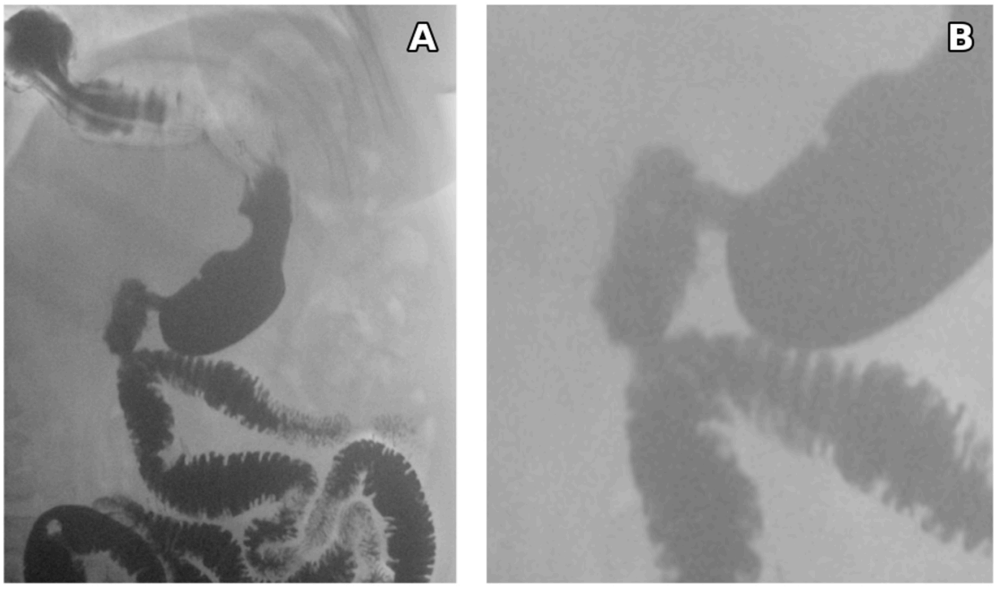


Figure 3. Postoperative upper gastrointestinal contrast study. (A) Contrast passage consistent with SADI-S configuration; (B) Magnified view of (A). SADI-S: Single-anastomosis duodeno-ileal bypass with sleeve gastrectomy.

DECLARATIONS

Authors' contributions

Conceptualization and manuscript drafting: Gallardo A, Lasses B
Video preparation: Gallardo A, Lasses B
Manuscript revision and final approval: Torres A

Availability of data and materials

Not applicable.

AI and AI-assisted tools statement

During the preparation of this manuscript, the AI tool ChatGPT (OpenAI; GPT-5.6 Sol) was used to assist with English language editing and with the design and generation of schematic illustrations for the graphical abstract. Clinical radiological, endoscopic, and intraoperative images were original patient images and were not AI-generated. The authors take full responsibility for the scientific content, clinical interpretation, and final manuscript preparation.

Financial support and sponsorship

None.

Conflicts of interest

Torres A is an Editorial Board Member of the journal *Mini-invasive Surgery*. He was not involved in any steps of the editorial process, notably including reviewer selection, manuscript handling, and decision-making. The other authors declare that there are no conflicts of interest.

Ethical approval and consent to participate

According to the institutional policy of the Comité de Ética para la Asistencia Sanitaria (CEAS) of the Hospital Clínico San Carlos, ethics committee approval was not required for this video article/case-based educational report. Informed consent was obtained from the patient.

Consent for publication

Written informed consent for publication of the video and related images was obtained from the patient.

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Supplementary Materials

Supplementary Materials

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