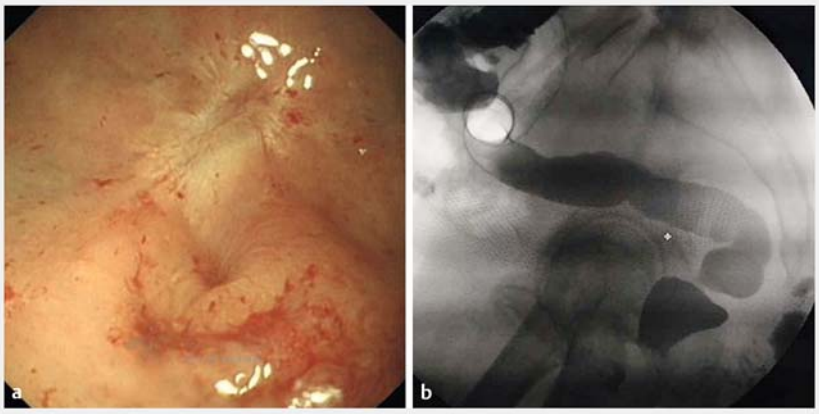
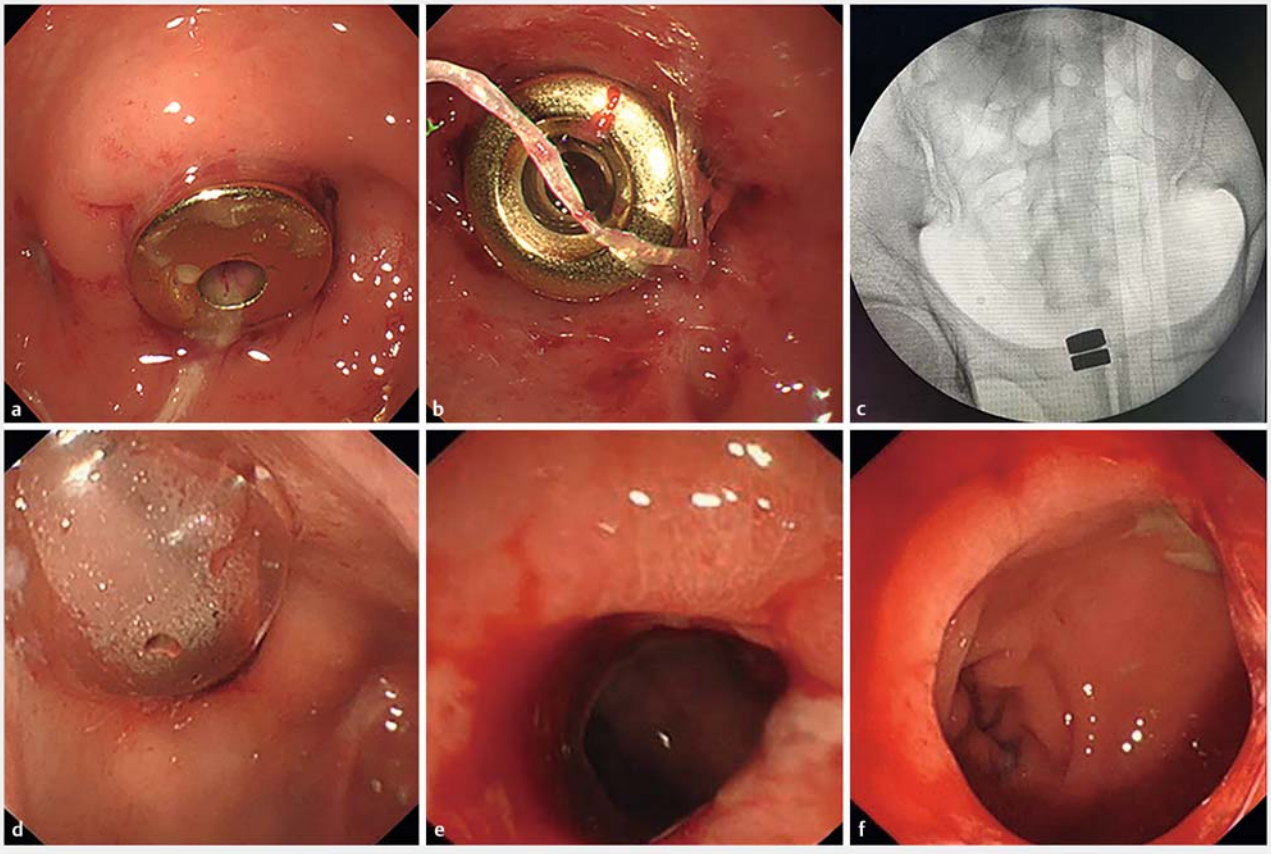
Endoscopy-assisted magnetic compression anastomosis for rectal anastomotic atresia

Magnetic compression anastomosis (MCA) has been used to achieve anastomotic recanalization to treat severe stenosis or atresia of the biliary tract and digestive tract [1–4]. Herein, we report successful recanalization by means of MCA in a case of rectal anastomotic atresia.

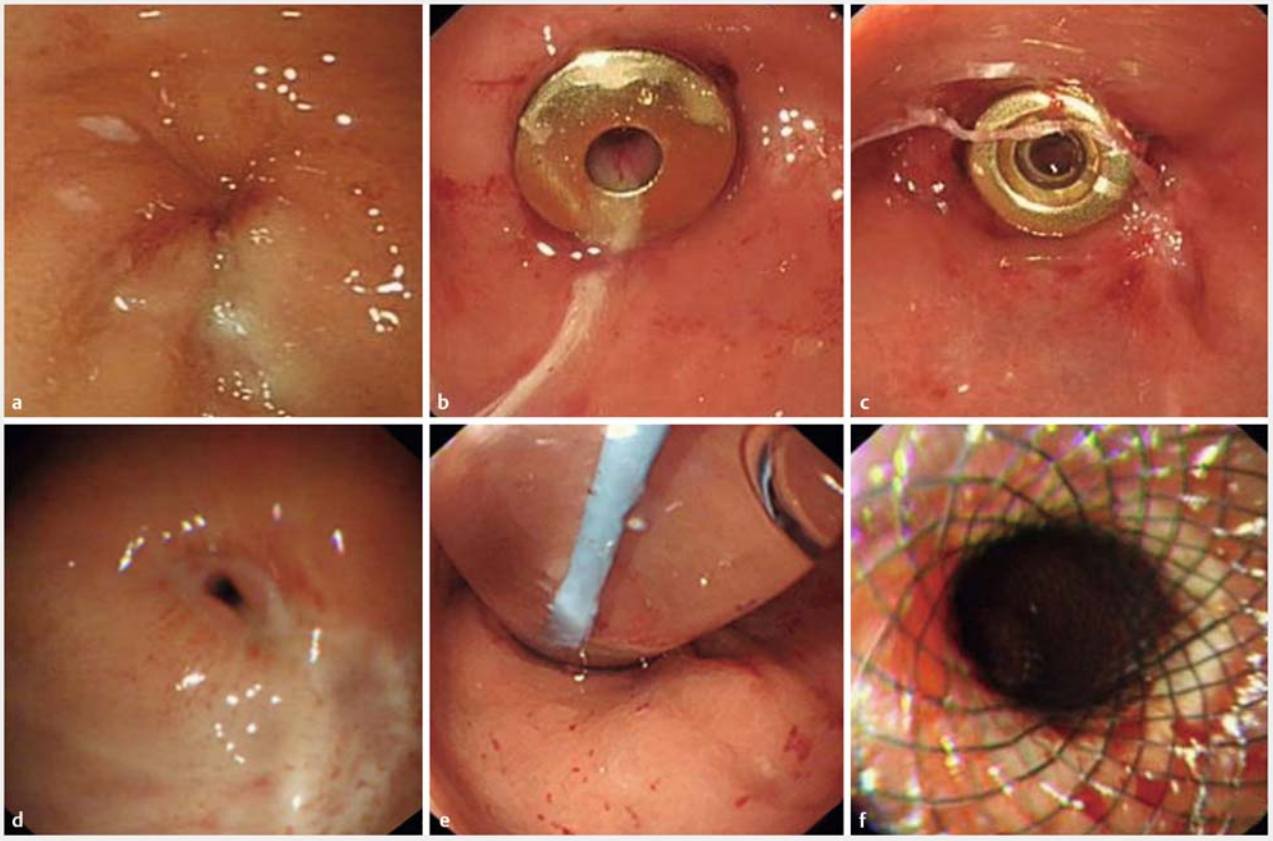
A 60-year-old man who had undergone radical resection combined with double-lumen ileostomies for rectal carcinoma 1 year ago, and was scheduled to undergo stoma closure surgery 3 months ago, was admitted to our hospital with anastomotic atresia, where the anastomosis was completely obstructed by regenerated scar tissue. Anastomotic atresia 0.5 cm in



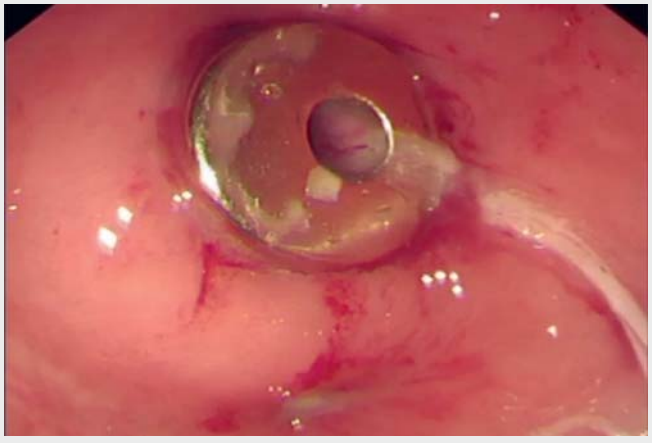
▶ **Fig. 1** Rectal anastomotic atresia 0.5 cm in length: **a** colonoscopy, **b** meglumine diatrizoate radiography.



▶ **Fig. 2** Endoscopy-assisted rectal magnetic compression anastomosis and balloon dilatation. **a, b** Magnetic rings in place: **a** on the oral side, **b** on the anal side. **c** C-arm radiography shows the magnetic rings to be well-aligned. **d** Balloon dilation. **e, f** Anastomotic stoma after dilation.



▶ **Fig. 3** Re-formed atresic rectal anastomotic stoma, treated by repeat magnetic compression anastomosis and balloon dilatation followed by stent implantation. **a** Atresic anastomotic stoma. **b, c** Magnetic rings in place: **b** on the oral side, **c** on the anal side. **d** Anastomotic stoma stenosis. **e** Balloon dilation. **f** Stent implantation.



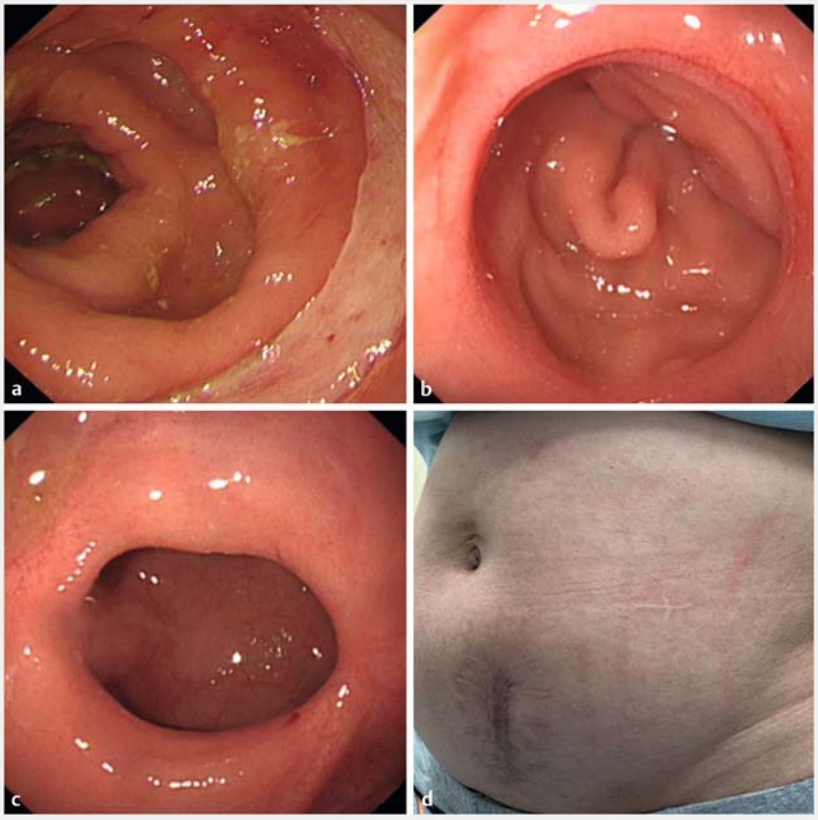
Video 1 Endoscopy-assisted rectal magnetic compression anastomosis.

length was confirmed under colonoscopy and meglumine diatrizoate radiography (▶ **Fig. 1**).

After the patient had given signed informed consent and undergone preoperative examination and general anesthesia, endoscopy-assisted rectal MCA was performed, lasting 1.5 h (▶ **Fig. 2**). The enteroscope with the magnetic ring attached to it was passed in a retrograde manner from the terminal ileum to the blind end of the anastomotic stoma, where the magnetic ring was released. Then another magnetic ring was passed by hand through the anus to the anastomosis. The two magnetic rings were attracted to each other across the anastomotic stoma. Lastly, the enteroscope was removed and C-arm radiography showed that the magnetic rings were well aligned. At 13 days after MCA, the magnetic ring complex was discharged through the anus. Anastomotic stoma recanalization with an intestinal diameter enlarged to 1 cm after balloon dilatation was confirmed by colonoscopy (▶ **Fig. 2**).

After 1 month, the rectal anastomotic stoma was atresic again, and endoscopy-assisted rectal MCA was again carried out; repeat anastomotic balloon dilation with subsequent stent implantation were then performed (▶ **Fig. 3**; ▶ **Video 1**).

Anastomotic stoma recanalization was confirmed by colonoscopy without re-



▶ **Fig. 4** **a – c** Recanalized anastomotic stoma. d Patient's abdomen after stoma closure surgery.

sistance 7 months after the operation. Stoma-closure surgery has been performed, and normal transanal defecation has been restored (▶ **Fig. 4**).

Endoscopy_UCTN_Code_TTT_1AQ_2AF

Acknowledgments

The authors want to thank the State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University.

Competing interests

The authors declare they have no conflict of interest.

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Endoscopy 2021; 53: E437–E439
DOI 10.1055/a-1322-1899
ISSN 0013-726X
published online 27.1.2021

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

CORRECTION

Endoscopy-assisted magnetic compression anastomosis for rectal anastomotic atresia

Lu G, Li J, Ren M et al. Endoscopy-assisted magnetic compression anastomosis for rectal anastomotic atresia. Endoscopy 2021; 53: E437–E439.

In the above-mentioned article the length of the anastomotic atresia was corrected to 0.5 cm. This was corrected in the online version on September 23, 2022.