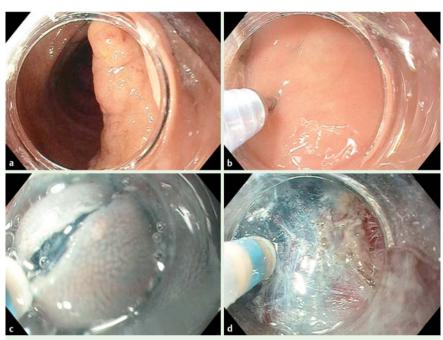
Endoscopic resection and colonic stoma: endoscopic submucosal dissection at the hepatic flexure using an upper gastrointestinal scope and endoscopic mucosal resection by hand at the everted edge of the stoma

A 71-year-old man with a 6-cm, non-granular, laterally spreading tumor (NG-LST) at the hepatic flexure was referred to our unit for endoscopic submucosal dissection (ESD) because of a central depression in the lesion. He had previously undergone Hartmann's surgery [1] for a sigmoid adenocarcinoma (pT3N0M0) in April 2015. Surgeons preferred to maintain the stoma because of co-morbidities (amputation of both legs, diabetes, stroke). Thus, ESD was performed at the hepatic flexure via the stoma.

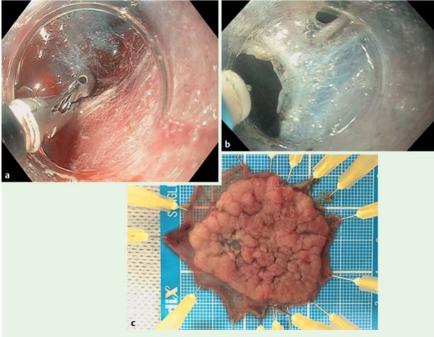
Using an upper gastrointestinal scope (GIF 190; Olympus, Tokyo, Japan), we performed a complete R0 resection of a 5.4-cm, low grade dysplastic lesion, without any adverse events (**Fig. 1**, **Fig. 2**, **Video 1**).

During scope withdrawal, we detected six additional adenomas, and resected them completely by endoscopic mucosal resection (EMR). The final adenoma was detected at the everted edge of the stoma ( Fig. 3, Fig. 4, Video 1). Endoscopic resection was impossible at this location owing to the lack of scope rigidity and stability to perform submucosal injection. Thus, we removed the scope and performed the procedure by hand using the endoscopic tools. It was actually easier because of better maneuverability and stability. This lesion was a low grade dysplasia and was resected completely (R0). In Japan, colonic ESD is the standard treatment for colonic NG-LSTs over 2 cm in size [2,3], and the procedure is now recommended by the European Society of Gastrointestinal Endoscopy [4]. However, there are no reports of ESD being performed through a stoma, a technically difficult approach because of air leakage and restricted scope maneuverability. Cancer recurrence on the stoma has been described after surgery [5], but metachronous lesions on the everted stoma have never been described.

To summarize, endoscopic resections are possible in patients with a stoma and the right colon can be reached with an upper gastrointestinal scope, which has greater



**Fig. 1** Endoscopic submucosal dissection in the right colon at the hepatic flexure using an upper gastrointestinal scope. **a** The 6-cm adenoma (nongranular laterally spreading tumor) at the hepatic flexure. **b** Submucosal injection. **c** Incision using a Dual Knife (Olympus, Tokyo, Japan). **d** Submucosal dissection using the Dual Knife.



**Fig. 2** The final stages of endoscopic submucosal dissection. **a** Coagulation using hot biopsy forceps (Cook Medical, Limerick, Ireland). **b** The final cut. **c** Specimen stretched out onto cork.



Endoscopic resections and stoma: endoscopic submucosal dissection and endoscopic mucosal resection.



**Fig. 3** Endoscopic mucosal resection at the everted edge of the stoma. **a** Adenoma (arrows) at the everted part of the stoma. **b** Injection by hand. **c** Injection by hand. **d** View of the procedure.







Fig. 4 Endoscopic mucosal resection at the everted edge of the stoma without the use of the scope. a Snare positioning by hand. b Cutting by snare. c Resected area.

maneuverability and control. For lesions on the everted part of the stoma, direct EMR by hand is probably easier than endoscopic techniques.

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**Competing interests:** None

# Laure Servais<sup>1</sup>, Jérome Rivory<sup>1</sup>, Isabelle Lienhart<sup>1</sup>, Gaspard Bertrand<sup>1</sup>, Camille Giacino<sup>2</sup>, Thierry Ponchon<sup>1</sup>, Mathieu Pioche<sup>1,3</sup>

- <sup>1</sup> Department of Endoscopy and Gastroenterology, Edouard Herriot Hospital, Lyon, France
- <sup>2</sup> Department of Endoscopy and Gastroenterology, Pierre Oudot Hospital, Bourgoin, France
- <sup>3</sup> INSERM U1032, LabTau, Lyon, France

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#### **Corresponding author**

## Mathieu Pioche, MD

Endoscopy Unit – Digestive Disease Department Pavillon L – Edouard Herriot Hospital 69437 Lyon Cedex France Fax: +33-4-72110147 mathieu.pioche@chu-lyon.fr