



Utilization of an overtube for placement of a lumen-apposing metal stent for removal of a capsule endoscope retained proximal to an ileal stricture

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Capsule endoscopy is a noninvasive procedure used to evaluate the small bowel. Capsule retention remains a significant adverse event of capsule endoscopy, and endoscopic capsule extraction may be technically complicated when device-assisted enteroscopy is necessary to reach the retained capsule. The length and limited diameter of enteroscope working channels limit the endoscopic tools available and can make extraction of the capsule difficult. The presence of enteral strictures can also further complicate endoscopic extraction of a retained capsule. We present the use of a lumen-apposing metal stent (LAMS), successfully deployed within the ileum through a shortened single-balloon enteroscope overtube for therapy of a radiation-induced ileal stricture to facilitate retained capsule removal.^{1,2}

A 61-year-old woman with a history of cervical cancer was treated with radiation therapy (Video 1, available online at www.giejournal.org). She had years of chronic abdominal pain, for which she underwent a motility capsule endoscopy. The capsule endoscopy was complicated by retention within the ileum, documented on multiple imaging studies over 1.5 years (Fig. 1A).

Retrograde double-balloon enteroscopy was performed with advancement up to an ulcerated severe ileal stricture 50 cm proximal to the ileocecal valve (Fig. 1B). The stricture was dilated to 10 mm, but the enteroscope was unable to traverse the stricture. A repeat enteroscopy performed 3 days later demonstrated severe re-stenosis of the ileal stricture. Dilatation was performed to 12 mm

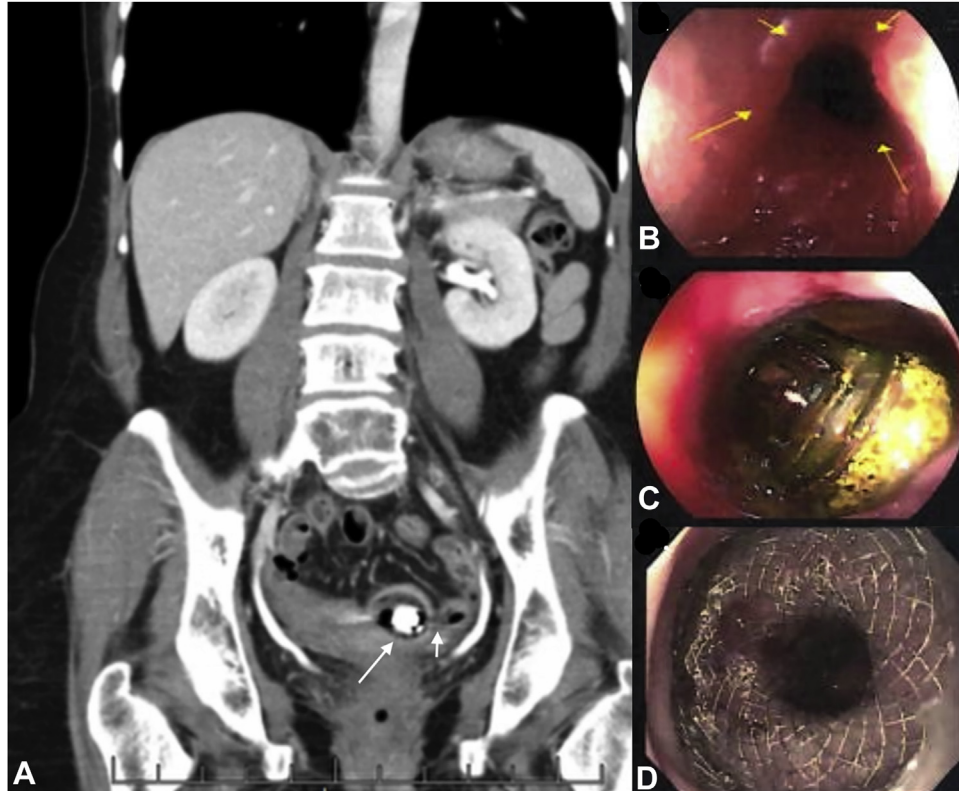


Figure 1. A, Abdominal CT demonstrating retained capsule (*short arrow* pointing to stricture, *long arrow* pointing to retained capsule). B, Endoscopy demonstrating ileal stricture (*yellow arrows*). C, Endoscopy demonstrating retained capsule. D, Lumen-apposing metal stent placed across ileal stricture.

and a retrieval net was used, but the capsule could not be extracted across the ileal stricture (Fig. 1C).

With the rapid re-stenosis of the ileal stricture and anticipated need for sequential dilation to facilitate capsule extraction, the decision was made to place an ileal stent. The enteroscope was removed and the segment of the overtube, measuring 200 cm, external to the patient's body was then cut shorter such that a pediatric endoscope, with a 2.2-mm working channel, could be advanced through the overtube to reach the ileal stricture. Under direct visualization, a 15-mm × 10-mm LAMS was placed across the stricture (Fig. 1D). The stent was then left in place for 3 months for prolonged stricture therapy.

An abdominal radiograph performed afterward demonstrated spontaneous complete migration of the previously retained capsule, and a repeat enteroscopy was performed for removal of the LAMS. The patient continues to do well, with no further obstructive symptoms.

This case demonstrates why a history of pelvic irradiation is a contraindication to capsule endoscopy, owing to the risk of ileitis and associated stricture formation. With retained capsule endoscopes, serial endoscopic dilation may not successfully extract the capsule, and enteral stent placement can potentially facilitate stricture therapy and capsule removal. To achieve successful deployment within the ileum, however, we report the success with using a modified single balloon overtube that may be used as a working conduit.

DISCLOSURE

Dr Watson is a consultant for Boston Scientific. Dr Binmoeller is a consultant for Boston Scientific and an inventor of the Axios stent and electrocautery delivery system. Dr Hamerski is a consultant for Boston Scientific. All other authors disclosed no financial relationships.

Abbreviation: LAMS, lumen-apposing metal stent.

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