Peroral endoscopic myotomy (POEM) is an accepted treatment modality for achalasia [1]. However, postoperative pain, mainly related to CO2 insufflation causing pneumothorax, pneumomediastinum, and pneumoperitoneum, occurs in 25%–85% of patients [2, 3]. Underwater endoscopic resection is an emerging strategy for the management of duodenal and colorectal lesions [4]. We introduced underwater POEM with the aim of limiting the complications of CO2 insufflation.

A 53-year-old man was diagnosed with type II achalasia following the onset of solid food dysphagia, regurgitation, and weight loss. We decided to treat him with POEM.

The procedure was completed under general anesthesia with orotracheal intubation, using a cap attachment (ST Hood; Fujifilm, Tokyo, Japan), a Fujifilm 700 gastroscope, and a triangle-tip knife (Olympus, Tokyo, Japan). After injecting the submucosa with indigo-stained saline and performing posterior transversal mucosal incision, we started submucosal tunneling in spray coagulation mode for 1 cm. We then stopped CO2 insufflation and pumped sterile saline solution into the tunnel through the waterjet channel of the endoscope. Submucosal tunneling and myotomy were performed using the triangle-tip knife and the usual generator settings for spray coagulation (effect 4) and endocut (effect 1/3 – 3). The mucosal incision was closed with four 16-mm endoclips (Fig. 1, Video 1).

We have performed underwater POEM in three patients at our institution, with favorable outcomes. This technique is feasible and safe, offers optimal visibility during the procedure, and has the potential to limit insufflation-related complications.

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Competing interests

The authors declare that they have no conflict of interest.

The authors

Rachel Hallit, Maximilien Barret, Einas Abouali, Arthur Belle, Chloé Leandi, Romain Coriat, Stanislas Chausssade
Gastroenterology Department, Cochin University Hospital, Assistance Publique – Hôpitaux de Paris and University of Paris, Paris, France
Corresponding author

Rachel Hallit, MD
Gastroenterology Department, Cochin University Hospital, Assistance Publique – Hôpitaux de Paris and University of Paris, 27, rue du Faubourg St Jacques, 75014 Paris, France
Fax: +33-1-58411965
rachelhallit@hotmail.com

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