Severe peroral endoscopic myotomy (POEM)-related complications are uncommon (about 1.2% [1]), and CO₂-related complications are usually mild. Nevertheless, severe life-threatening complications such as tension capnothorax or capnoperitoneum with hemodynamic and respiratory compromise could develop. Underwater POEM, described by Binmoeller [2], could be used to prevent CO₂-related complications.

A 77-year-old man (American Society of Anesthesiologists class IV) with chronic kidney disease requiring hemodialysis, severe chronic obstructive pulmonary disease (COPD, GOLD IV), and other co-morbidities presented with severe dysphagia with regurgitation and malnutrition. He had an 8-year history of type 2 achalasia (Eckardt score 10), with previous unsuccessful treatment (three balloon dilations [40 mm] and nine botulinum toxin injections). POEM was scheduled.

The procedure was performed under general anesthesia, with the patient in the supine position. Longitudinal mucosal incision and submucosal tunneling were performed without incidence using a Hybrid Knife (ERBE Elektromedizin, Tübingen, Germany). However, when starting the myotomy, severe hypercarbia, subcutaneous emphysema, and hemodynamic instability with livedo reticularis occurred due to capnothorax and tension capnoperitoneum. Emergency therapeutic measures including percutaneous thoracic and abdominal needle decompression were performed and the patient was stabilized. Capnothorax was reabsorbed as confirmed by intraprocedural ultrasound, and the procedure was restarted.

To avoid gas-related complications, CO₂ was switched off, room temperature sterile water was infused through the scope, and underwater myotomy was performed (▶Video 1).

A selective myotomy of the circular muscle fibers was completed including 2 cm of gastric myotomy. During myotomy more water irrigation was used to push the mucosa away from the myotomy plane and flush out bubbles generated by diathermy. The patient was discharged after 5 days with no further complications. At 3-month follow-up, he had a normal diet with Eckardt score 0. Underwater POEM might be a good alternative in high-risk patients (severe COPD) as shown in this case.

Endoscopy_UCTN_Code_TTT_1AO_2AN

Competing interests

The authors declare that they have no conflicts of interest.

The authors

Hugo Uchima¹, Juan Colan¹, Ingrid Marín¹, Vicente Moreno¹, Guillermo Larios², Rachid Tazi³, Jordi Serra⁴

1 Endoscopy Unit, Gastroenterology Department, Hospital Germans Trias i Pujol, Badalona, Barcelona, Spain
2 Anesthesiology Department, Hospital Germans Trias i Pujol, Badalona, Barcelona, Spain
3 Respiratory Diseases Department, Hospital Germans Trias i Pujol, Badalona, Barcelona, Spain
4 Motility Disorders Unit, Gastroenterology Department, Hospital Germans Trias i Pujol, Badalona, Barcelona, Spain

Corresponding author

Hugo Uchima, MD
Endoscopy Unit, Gastroenterology Department, Hospital Germans Trias i Pujol, Vilana 12 Planta – 1, Barcelona 08022, Spain
Fax: +34-93-2279387
huchima.germanstrias@gencat.cat
References


Bibliography

DOI https://doi.org/10.1055/a-1144-2547
Published online: 2020
Endoscopy
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

ENDOSCOPY E-VIDEOS
https://eref.thieme.de/e-videos

Endoscopy E-Videos is a free access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online.

This section has its own submission website at https://mc.manuscriptcentral.com/e-videos