

## Introduction

- Peroral endoscopic myotomy (POEM) is a procedure introduced in 2010 that has gained notoriety in recent years for the treatment of achalasia, largely replacing the conventional Heller myotomy.
- It has been shown to have less complications than traditional management and many patients no longer require symptomatic management after the procedure.
- As with any procedure, adverse events can occur. In the case of POEM, these include perforation, bleeding, and events related to insufflation, such as pneumothorax, pneumoperitoneum, and subcutaneous emphysema.

## Case Report

- A 64 y.o male with a past medical history of hypertension and GERD underwent POEM for persistent achalasia. FLIP panometry showed evidence of Type 1 achalasia.
- Gas insufflation with CO<sub>2</sub> was utilized to distend the esophagus and mucosal tissues in order to create a submucosal tunnel. A full thickness myotomy in a posterior orientation was started at 35 cm from the incisors and was extended to 42 cm from the incisors, with extension into the cardia by 3cm. The tunnel was closed with endoscopic clips and hemostasis was obtained.
- During the procedure, there was build-up of CO<sub>2</sub> in the abdomen during the procedure, necessitating needle decompression after the POEM was completed. During the decompression, while under anesthesia, the patient had a violent coughing episode.
- During post-operative recovery, asymptomatic crepitus of the penile shaft was discovered, presumably due to the coughing episode and tracking of carbon dioxide into the distal tissues. Patient continued to display crepitus during the remainder of his hospital stay that was nontender and did not interfere with urination.

## Discussion

- Peroral Endoscopic myotomy (POEM) is now considered the first line for treatment of achalasia due to its safety and effectiveness of symptom reduction shown by multiple meta-analyses.
- Although adverse events are rare, the highest risk is for insufflation complications, especially subcutaneous emphysema.
- This case presentation is unique because this is the first mention of subcutaneous emphysema of the penile shaft, as extension is typically only into the legs, chest, head neck, labia, or scrotum.

## References

1. Inoue H, Minami H, Kobayashi Y, Sato Y, Kaga M, Suzuki M, Satodate H, Odaka N, Itoh H, Kudo S. Peroral endoscopic myotomy (POEM) for esophageal achalasia. *Endoscopy*. 2010 Apr;42(4):265-71. doi: 10.1055/s-0029-1244080. Epub 2010 Mar 30. PMID: 20354937.
2. Khashab MA, Vela MF, Thosani N, Agrawal D, Buxbaum JL, Abbas Fehmi SM, Fishman DS, Gurudu SR, Jamil LH, Jue TL, Kannadath BS, Law JK, Lee JK, Naveed M, Qumseya BJ, Sawhney MS, Yang J, Wani S. ASGE guideline on the management of achalasia. *Gastrointest Endosc*. 2020 Feb;91(2):213-227.e6. doi: 10.1016/j.gie.2019.04.231. Epub 2019 Dec 13. PMID: 31839408.
3. Bang YS, Park C. Anesthetic Consideration for Peroral Endoscopic Myotomy. *Clin Endosc*. 2019;52(6):549-555. doi:10.5946/ce.2019.033
4. Akintoye E, Kumar N, Obaitan I, Alayo QA, Thompson CC. Peroral endoscopic myotomy: a meta-analysis. *Endoscopy*. 2016 Dec;48(12):1059-1068. doi: 10.1055/s-0042-114426. Epub 2016 Sep 12. PMID: 27617421.
5. Talukdar R, Inoue H, Nageshwar Reddy D. Efficacy of peroral endoscopic myotomy (POEM) in the treatment of achalasia: a systematic review and meta-analysis. *Surg Endosc*. 2015 Nov;29(11):3030-46. doi: 10.1007/s00464-014-4040-6. Epub 2014 Dec 25. PMID: 25539695.
6. Jawaid S, Draganov PV, Yang D. Esophageal POEM: the new standard of care. *Transl Gastroenterol Hepatol*. 2020;5:47. Published 2020 Oct 5. doi:10.21037/tgh.2019.12.17
7. Ott DE. Subcutaneous emphysema—beyond the pneumoperitoneum [published correction appears in *JLS*. 2016 Apr-Jun;20(2)]. pii: e2016.00050. doi: 10.4293/JLS.2016.00050. *JLS*. 2014;18(1):1-7. doi:10.4293/108680813X13693422520882