Successful endoscopic closure of a refractory button-battery tracheoesophageal fistula in a 3-year child using endoscopic submucosal dissection of the surrounding mucosa

Most serious button-battery ingestions are not witnessed and they can cause life threatening complications. We present here the case of a 3-year-old girl who swallowed a button battery in January 2016 with a delayed diagnosis being made after 10 days. A 5-mm tracheoesophageal fistula was endoscopically diagnosed (▶ Fig. 1). The first attempts at closure involved the deployment of two successive esophageal covered stents between January and May (▶ Fig. 2). The fistula decreased in size but persisted, so we then attempted controlled wound healing with a nasogastric tube, but the fistula still remained. Next, we tried a side fistula abrasion with argon plasma coagulation. Unfortunately, these techniques did not allow full recovery, even though the fistula reduced notably. After 1 year, we tried endoscopic submucosal dissection (ESD) of the mucosa surrounding the fistula, resecting a 1-cm mucosal patch centered on the fistula. After injecting the submucosa and making the mucosal incision, we used a Dual-Knife (Olympus) to dissect the fibrotic area. After the dissection, the fistula was closed with three clips anchored into the submucosa of the resected area (▶ Fig. 3; ▶ Video 1). We arranged a radiologic check with contrast, which
showed no sign of a fistula in the tracheal tract, and the girl made good and rapid progress without pain. A barium swallow 5 days later showed no signs of the fistula, and she was able to eat again. At 3 months after the procedure, a barium swallow and laryngoscopy confirmed complete healing of the fistula (▶Fig. 4).

The current management of tracheoesophageal fistula after button-battery ingestion is not well defined and, although some studies have demonstrated the role of conservative treatment [1], the way of stenting is not well defined and, although some studies have demonstrated the role of conservative treatment [1], the place of endoscopy is not known. In all kind of fistulas, stent placement only permits healing in 53% [2]. ESD can be key in non-surgical treatment to achieve complete closure of such chronic fistulas, as was previously also shown by Rodríguez-Lago et al. [3].

The Authors

Melissa Gruner1, Sophie Heissat2, Vincent Pitiot2, Paul Suy3, Alain Lachaux2, Thierry Ponchon1,5, Mathieu Pioche1,5
1 Department of Endoscopy and Gastroenterology, Pavillon L, Edouard Herriot Hospital, Lyon, France
2 Department of Pediatric Endoscopy and Gastroenterology, Hôpital Femme Mère Enfant, Lyon, France
3 Department of Pediatric Digestive Surgery, Hôpital Femme Mère Enfant, Lyon, France
4 Department of Pediatric ENT, Hôpital Femme Mère Enfant, Lyon, France
5 Inserm U1032 LabTau, Lyon, France

Corresponding author

Mathieu Pioche, MD
Endoscopy unit – Digestive Disease department, Pavillon L – Edouard Herriot Hospital, 69437 Lyon, France
mathieu.pioche@chu-lyon.fr

Competing interests

None
References


Bibliography
DOI https://doi.org/10.1055/s-0043-113549
Published online: 29.6.2017
Endoscopy 2017; 49: E212–E214
© 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