



## ENDOSCOPIC SNAPSHOT

# Successful Endoscopic Removal of a Kerh-Tube Placed in an Iatrogenic Esophageal Perforation: Push to Pull



## Remoção Endoscópica de um Tubo Kerh Colocado Após Perfuração Esofágica Iatrogénica: *Push to Pull*

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### KEYWORDS

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### PALAVRAS-CHAVE

Endoscopia Gastrointestinal;  
Perfuração Esofágica;  
Esófago/lesões;  
Doença Iatrogénica

## 1. Case description

Esophageal perforation is a rare complication during cervical surgery associated with high morbidity and mortality.<sup>1–3</sup> Currently, the treatment of esophageal perforations remains controversial.<sup>1</sup> The use of modified T-tube (Kerh-tube) repair can be a therapeutic option associated with a low mortality rate.<sup>4</sup>

The authors report a 68-year-old man with a cervical spinal cord lesion submitted to an anterior cervical surgery when a plate fixation removal complicated with an iatrogenic cervical esophageal perforation that was immediately diagnosed. A T-tube was inserted into the esophagus following debridement of adjacent wall with its inferior portion extending into the stomach. The esophageal wall was closed loosely about the tube with sutures placed in the nearest healthy submucosa (Figs. 1 and 2A and B). Two weeks later, an upper endoscopy was performed in order to remove the T-tube. Using a polypectomy snare (10 mm, Olympus®) the distal end of the Kerh-tube was

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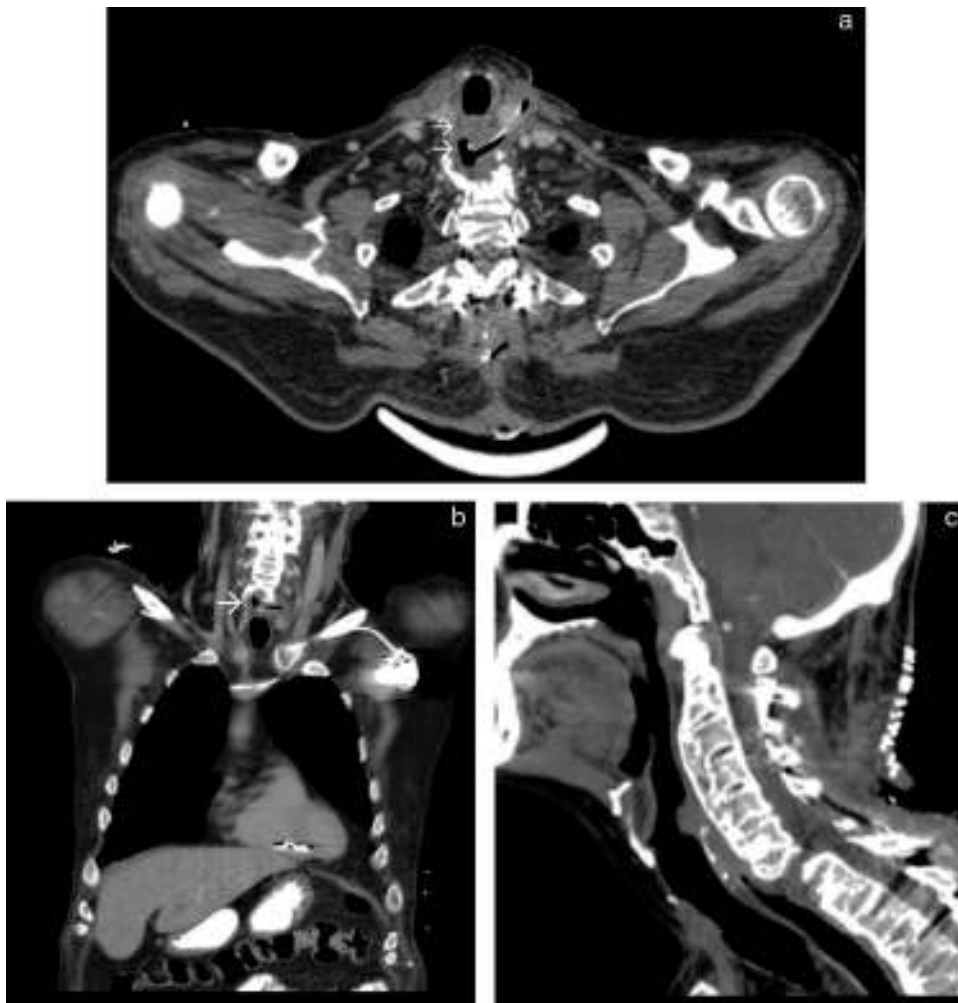


**Figure 1** Image of the T-tube (Kerh-tube) placed in the cervical esophagus.

grabbed. The external (cutaneous) part of the T-tube was then cutted and the entire tube was distally pulled into the esophagus. Endoscopic extraction of the Kerh-tube was then successfully performed. An orifice, with 6 mm of diameter, localized 18 cm from the upper incisor teeth was observed after drain removal. As it was located in the beginning of the esophagus it was decided not to perform an endoscopic clip closure. Seven days later, a cervical computed tomography (Fig. 2C) confirmed the healing of

the esophagus perforation and the remaining orifice. The patient started oral intake without complications.

This is the first case reported in the literature of a successful endoscopic removal of a T-tube in the esophagus. This case highlights the safety, simplicity and efficacy of this procedure avoiding a more invasive technique. Due to the T-tube characteristic form, the authors recommend that before its removal the drain must be pulled down to the esophagus to minimize the risk of esophageal laceration.



**Figure 2** Computed tomography showing the T-tube placed in the cervical esophagus (arrows). (A) Axial view. (B) Coronal view. Cervical computed tomography confirmed the healing of the esophageal perforation the remaining orifice. Coronal view. (C).

### Conflict of interest

The authors declare that there is no conflict of interest.

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### Appendix A. Supplementary data

Supplementary material associated with this article can be found in the online version available at [doi:10.1016/j.jjpe.2015.09.007](https://doi.org/10.1016/j.jjpe.2015.09.007).

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