

---

## Malignant gastrotracheal fistula treated by self-expandable metallic stent: First case report from India

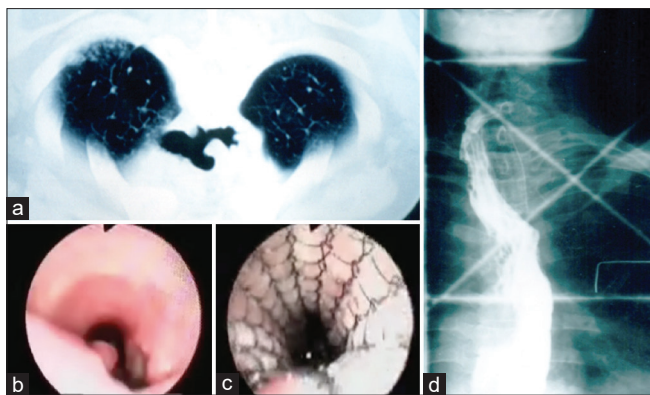
---

Sir,

A gastrotracheal fistula (GTF) or gastrobronchial fistula (GBFs), between the tracheobronchial tree and stomach following gastric pull-up surgery, is an extremely rare (0.3%–0.5%) complication of esophagectomy.<sup>[1]</sup> Patients usually present with dyspnea, acute respiratory distress, aspiration pneumonia, or coughing attacks after drinking and eating. This is potentially a

life-threatening condition. We describe here a case of malignant GTF that was successfully treated with a covered self-expanding metallic stent which is being reported first time in India.

A 57-year-old female had undergone esophagectomy with a gastric pull-up and radiotherapy for esophageal cancer 1 year ago. She presented with progressively increasing coughing, expectoration of liquid and food pieces, choking,



**Figure 1:** (a) Chest computed tomography scan showing a fistula communicating between the trachea and pulled-up intrathoracic stomach, (b) bronchoscopic view of the fistula and (c) self-expandable metallic stent in trachea, (d) barium swallow study showing no leakage of the contrast fluid into the tracheobronchial tree after sealing of the gastrotracheal fistula by the stent

and respiratory distress following eating and drinking in the past 3 months. Computed tomography scanning demonstrated a fistula between the trachea and the residual stomach [Figure 1a]. Bronchoscopy confirmed the presence of a fistula in the mid trachea [Figure 1b]. The fistula measured 3.5 cm in its length and was located 3.0 cm below the vocal cords and distally 2.5 cm from the carina. The fistula was sealed by deploying a covered self-expanding metallic stent (18 mm × 60 mm; Ultraflex®, Boston Scientific, USA) into the trachea [Figure 1c]. Stent insertion was performed by flexible bronchoscopy under conscious sedation without using fluoroscopic guidance [Video 1]. A follow-up barium swallow study confirmed the successful sealing of the fistula [Figure 1d] with no communication between the trachea and intrathoracic stomach. The patient had complete resolution of his aspiration symptoms and tolerated a diet without any coughing.

Malignant GTF occurring in the late postoperative period is most often due to tumor recurrence, radiation necrosis, and tracheobronchial erosion along the gastric staple. Treatment options for GTF include surgery and endoscopic approaches. Although surgical repair is the modality of choice, it is associated with a mortality of 32%.<sup>[1]</sup> Airway stenting is an appropriate alternative if the operative risk is prohibitive, or the underlying cause is malignancy, and the goal of therapy is only palliative. For the patient described herein, the placement of a gastric stent would not have been effective in view of the large lumen of the replaced stomach. Therefore, we deployed a covered

self-expandable metallic stent (SEMS) in the trachea to seal off the fistula which in this patient was malignant in nature and also not amenable to surgical repair. We preferred SEMS over the silicone stent which is generally not considered to be ideal for a fistula.<sup>[2]</sup> The inherent flexibility and radial force enable SEMS to fit the contours of the trachea and make stents well-suited to prevent luminal contents from leaking.<sup>[3]</sup> The literature review shows that GTFs and their successful closure by metallic airway stents have been reported rarely and primarily in the form of case reports.<sup>[3-5]</sup> A small case series<sup>[6]</sup> involving 16 patients with GTFs and GBFs demonstrated that stents completely sealed off the fistula in 12 patients, whereas the remaining four patients had persistent aspiration.

Malignant GTF is a rare but serious complication and inserting a covered metallic airway stent into the trachea is an effective nonsurgical palliative method to prevent complications of pulmonary aspiration.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

#### Financial support and sponsorship

Nil.

#### Conflicts of interest

There are no conflicts of interest.

**Manoj Kumar Goel**

*Department of Pulmonology, Critical Care and Sleep Medicine,  
Fortis Memorial Research Institute, Gurugram, Haryana, India  
E-mail: drgoelmanoj@yahoo.co.in*

**Submitted:** 10-Mar-2020 **Accepted:** 18-Jun-2020

**Published:** 31-Dec-2020

#### REFERENCES

1. Buskens CJ, Hulscher JB, Fockens P, Obertop H, van Lanschot JJ. Benign tracheo-neo-esophageal fistulas after subtotal esophagectomy. *Ann Thorac Surg* 2001;72:221-4.
2. Sparks A, Beckham T, Stewart JR. Treatment of late benign post-esophagectomy tracheal-gastric fistula with tracheal stenting. *Lung Breath J* 2018;2:1-2.
3. Ross WA, Alkassab F, Lynch PM, Ayers GD, Ajani J, Lee JH, et al.

Evolving role of self-expanding metal stents in the treatment of malignant dysphagia and fistulas. *Gastrointest Endosc* 2007;65:70-6.

4. Wang F, Yu H, Zhu MH, Li QP, Ge XX, Nie JJ, *et al.* Gastrotracheal fistula: Treatment with a covered self-expanding Y-shaped metallic stent. *World J Gastroenterol* 2015;21:1032-5.
5. Nardella JE, Van Raemdonck D, Piessevaux H, Deprez P, Droissart R, Staudt JP, *et al.* Gastro-tracheal fistula—unusual and life threatening complication after esophagectomy for cancer: A case report. *J Cardiothorac Surg* 2009;4:69.
6. Li YD, Li MH, Han XW, Wu G, Li WB. Gastrotracheal and gastrobronchial fistulas: Management with covered expandable metallic stents. *J Vasc Interv Radiol* 2006;17:1649-56.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Video available on: [www.lungindia.com](http://www.lungindia.com)

Access this article online

Quick Response Code:



Website:

[www.lungindia.com](http://www.lungindia.com)

DOI:

10.4103/lungindia.lungindia\_136\_20

**How to cite this article:** Goel MK. Malignant gastrotracheal fistula treated by self-expandable metallic stent: First case report from India. *Lung India* 2021;38:93-5.

© 2020 Indian Chest Society | Published by Wolters Kluwer - Medknow