Caso Clínico / Clinical Case

SECONDARY ESOPHAGEAL STRICTURE AFTER SUCCESSFUL CLOSURE OF A BENIGN ESOPHAGO-PLEURAL FISTULA MANAGED WITH A POLYESTER STENT: CASE REPORT

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Resumo

Descreve-se um caso clínico de encerramento com sucesso de uma fistula esofago-pleural benigna com recurso a uma prótese de *Polyflex*. Um mês após remoção da prótese o doente referiu disfagia, identificando-se uma estenose no local prévio de localização da prótese. Após dilatação e injecção de corticoide intra-parietal verificou-se a sua resolução. As prótese de *Polyflex* têm uma utilização crescente em patologia benigna do esófago (estenoses, fistulas ou perfuração). Estenoses secundárias após a sua remoção não foram previamente descritas.

Summary

We report a case of successful closure of a benign esophago-pleural fistula with a Polyflex stent. One month after stent retrieval the patient developed dysphagia and a stricture was noted at the previous stent location. After esophageal dilation and steroid injection the stricture resolved. The new Polyflex stent is increasingly being used to manage benign esophageal diseases such as strictures, fistulas or perforation. Secondary esophageal strictures have not been previously reported.

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INTRODUÇÃO

Esophago-pleural fistula is an infrequently condition, associated with major morbidity and mortality. The recently introduced self-expanding plastic stent (Polyflex stent) is increasingly being used to manage benign esophageal diseases such as iatrogenic perforations or fistulas. This is because of its easy retrieval, low cost and effectiveness in sealing, although with a possible higher risk of migration (1).

CASE REPORT

A 78-year-old man was admitted for bilateral inguinal hernia repair. Sepsis developed after surgery with need of mechanical ventilation. When oral intake was resumed the patient complained of dysphagia. EGD showed an esophageal diverticulum with exsudative discharge in the mid esophagus (Figure 1). The past medical history was unremarkable, namely for pulmonary tuberculosis. An esophagogram (Figure 2) and CT (Figure 3) documented an esophageal-pleural fistula with a left pleural collection. Broad-spectrum antibiotics were started and a pleural drainage chest tube was placed. To avoid prolonged parenteral nutrition, a decision was made to deploy an esophageal stent. Using conscious sedation, and under combined endoscopic and fluoroscopic guidance, a polyester self-expanding stent was placed (Polyflex; Rüsch, Kernen, Germany; inner diameter 23/18 mm, 90 mm length) (Figure 4). After three days a significant decreased in the chest tube drainage output was noted. Oral feeding was resumed and the patient was discharged 7 days later.

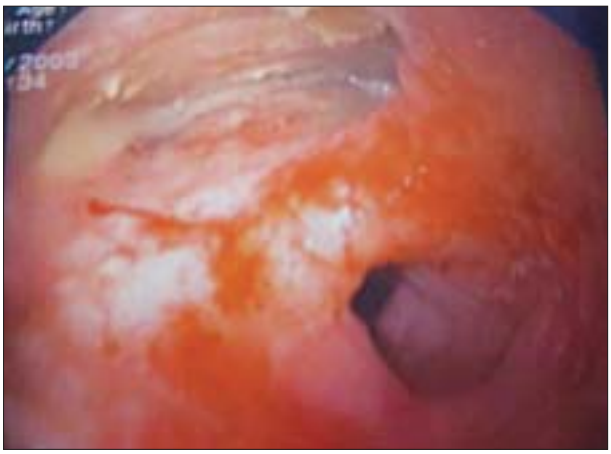

Figura 1 - Esophageal diverticulum with exsudative discharge.

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Figura 2 - Esophagogram showing esophago-pleural fistula.

After 4 weeks, the stent was retrieved using a rat-tooth forceps. The esophagogram showed no evidence of residual fistula and the patient resumed a full diet thereafter.

Four weeks later the patient complained of dysphagia for solid food. An EGD showed a stricture at the diverticula level (Fig. 5), coincident with the mid section stent previous location. He was scheduled for esophageal dilation with Savary-Gilliard dilators, for which he underwent 5 sessions, up to 48 Fr, every 2 to 4 weeks, with associated intra-parietal steroid injection. At 18 months follow-up he is doing well with no recurrent dysphagia.

DISCUSSION

Esophago-pleural fistula management requires early diagnosis and a multidisciplinary team approach. The literature describes several etiologies, including esophageal ulcer and variceal sclerotherapy (2, 3, 4). In this case trauma caused by the NG tube associated with a pre-existent large mid esophageal diverticulum may have been the cause. It's unlikely related to the tracheal intubation since the fistula developed in the mid

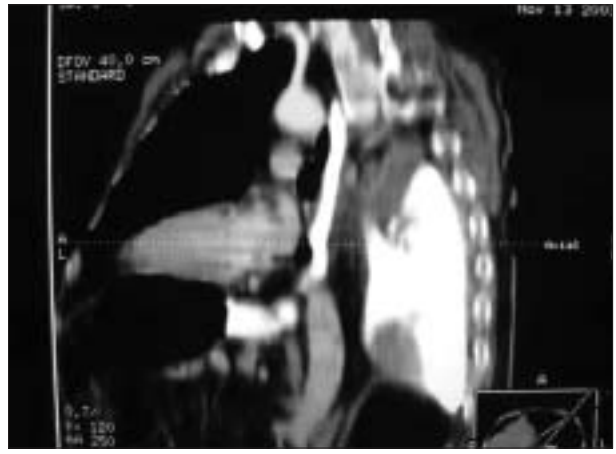

Figura 3 - CT showing esophago-pleural fistula with left pleural effusion.

esophagus.

In the setting of benign esophageal fistula, placement of a temporary stent is emerging as a challenging but viable treatment option, allowing fistula closure and early oral intake. The ideal stent should be covered and allow safe removal.

The use of metallic stents is controversial in benign disorders because of embedment in the esophageal wall, making successful extraction extremely difficult and often followed by secondary strictures (5,6). Nevertheless, two patients with postoperative esophago-pleuro-cutaneous fistulae were treated with metallic stents and in both the leak closed, although only one had the stent removed (7).

Recently, a new esophageal plastic stent has been developed. The Polyflex stent (Rüsh) is a silicone covered self-expanding stent made of a polyester weave. Barium impregnated bands at the proximal, middle and distal sections allows fluoroscopic visualization. One of its major advantages is the cost, which at our institution is approximately half of a metallic sent. The other is pliability, being easly removed with minimal trauma, since it narrows under tension. The polyester weave and silicone membrane seem to have a critical role in preventing mucosal hyperplasia, thus avoiding secondary strictures.

The polyflex stent has been used in malignant esophageal strictures with similar success rates when compared with metallic stents (8,9,10,11). It has also been used in different benign conditions such as Boerhave's syndrome (12), post-surgical fistula (11,13), post-polypectomy fistula (14), esophageal perforation (11, 15, 16), anastomotic leaks (11,16,17 18), post-surgical stenosis (19) and peptic strictures (20). Stent

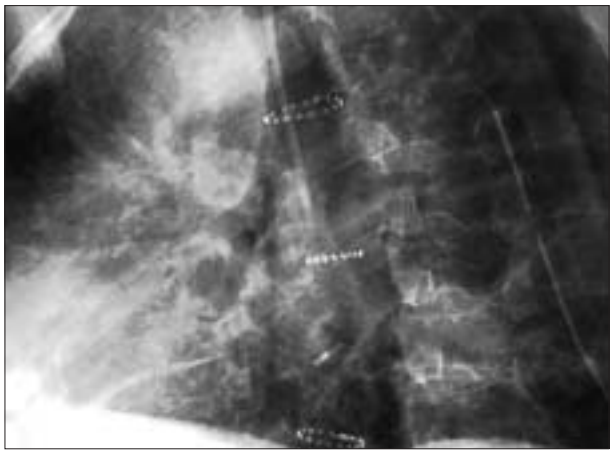

Figura 4 - X-Ray after stent deployment.

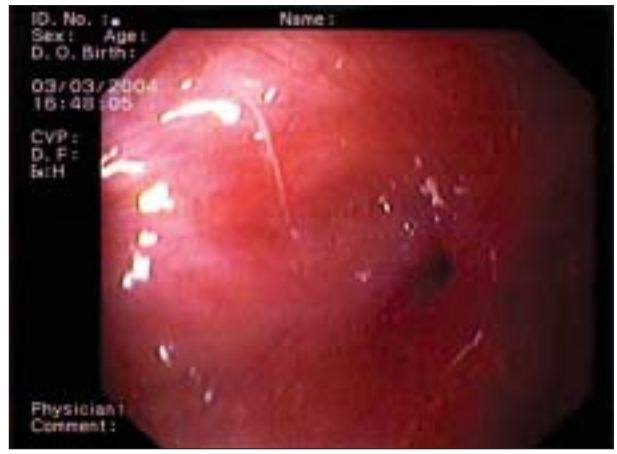

Figura 5 - Esophageal stricture after stent removal.

retrieval has been described from 3 to 5 weeks (12,13, 18,19) up to 4 to 5 months after (15,16).

To the best of our knowledge no previous secondary esophageal strictures have been described after stent removal. In our patient there was no prior history of dyphagia and no radiological or endoscopic evidence of stricture either before or immediately after stent placement. Initially the response to endoscopic dilation alone was poor but with associated intra-parietal steroid injection we were able to progressively increase the time between dilations.

At the present time, the true incidence of secondary strictures associated with the polyflex stent and its relation with the stent retrieval timing are unanswered questions. A prospective trial is warranted to assess the efficacy, safety and optimal timing of stent removal in the setting of benign esophageal diseases, which hopefully may identify predictive factors for secondary strictures.

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REFERENCES

1. Siersema P. Treatment of esophageal perforations and anastomotic leaks: the endoscopist is stepping into the arena. Gastrointest Endosc 2005; 61: 897-900.
2. Chertow GM, Marcantonio ER, Wells RG. Saccharomyces cerevisiae empyema in a patient with esophago-pleural fistula complicating variceal sclerotherapy. Chest 1991; 99: 1518-9.
3. Andersson R, Nilsson S. Perforated Barrett's ulcer with esophago-pleural fistula. A case report. Acta Chir Scand 1985; 151: 495-6.
4. Roufail WM, Brice BS Jr. Esophago-pleural fistulae secondary to perforated esophageal ulcer. Gastrointest Endosc 1972; 18: 165-6
5. Ackroyd R, Watson DI, Devitt PG et al. Expandable metallic stents should not be used in the treatment of benign esophageal strictures. J Gastroenterol Hepatol 2001; 16: 484-7.
6. Sandha G, Marcon N. Expandable metal stents for benign esophageal obstruction. Gastrointest Endosc Clin N Am 1999; 9: 437-46.
7. Lee HJ, Hsu R, Leung JW. Are self-expanding metal mesh stents useful in the treatment of benign esophageal stenoses and fistula? An experience in four cases. Am J Gastroenterol 2000; 95:1920-5
8. Costamagna G, Shah SK, Tringali A, et al. Prospective evaluation of a new self-expanding plastic stent for inoperable esophageal strictures. Surg Endosc 2003; 17: 891-5.
9. Dormann AJ, Eisendrath P, Wigginghaus B et al. Palliation of esophageal carcinoma with a new self-expanding plastic stent. Endoscopy 2003; 35: 207-11.
10. Decker P, Lippler J, Decker D, et al. Use of the polyflex stent in the palliative therapy of esophageal carcinoma: results in 14 cases and review of the literature. Surg Endosc 2001; 15: 1444-7.
11. Radecke K, Gerken G, Treichel U. Impact of a self-expanding, plastic esophageal stent on various esophageal stenoses, fistulas, and leakages: a single-center experience in 39 patients. Gastrointest Endosc 2005; 61: 812-8.

12. Petruzziello L, Tringali A, Riccioni ME, et al. Successful early treatment of Boerhaave's syndrome by endoscopic placement of a temporary self-expandable plastic stent without fluoroscopy. Gastrointest Endosc 2003; 58: 608-12.
13. Repici A, Romagnoli R, Reggio D, et al. Successful closure of a postsurgical benign esophagomediastinal fistula by temporary placement of a polyester expandable stent: case report and review. Gastrointest Endosc 2002; 56: 747-50.
14. Adler DG, Pleskow DK. Closure of a benign tracheoesophageal fistula by using a coated, self-expanding plastic stent in a patient with a history of esophageal atresia. Gastrointest Endosc 2005; 61: 765-8.
15. Dormann AJ, Wigginghaus B, Deppe H, et al. Successful treatment of esophageal perforation with a removable self-expanding plastic stent. Am J Gastroenterol 2001; 96: 923-4.
16. Gelbmann CM, Ratiu NL, Rath HC, et al. Use of self-expandable plastic stents for the treatment of esophageal perforations and symptomatic anastomotic leaks. Endoscopy 2004; 36: 695-9
17. Langer FB, Wenzl E, Prager G et al. Management of postoperative esophageal leaks with the Polyflex self-expanding covered plastic stent. Ann Thorac Surg 2005; 79: 398-403.
18. Schubert D, Scheidbach H, Kuhn R, et al. Endoscopic treatment of thoracic esophageal anastomotic leaks by using silicone-covered, self-expanding polyester stents. Gastrointest Endosc 2005; 61: 891-6.
19. Muldner A, Reinshagen K, Wustner M, et al. Modified self-expanding plastic stent for the treatment of refractory benign esophageal strictures. Endoscopy 2005; 37: 925.
20. Garcia-Cano J. Esophageal insertion of polyflex stents without fluoroscopy in peptic strictures. Endoscopy 2005; 37: 400.