Broken stent in oesophageal malignancy : A rare complication

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Abstract

Metallic expandable stents are used increasingly for palliative treatment of inoperable malignant tumours of oesophagus to improve dysphagia. We report a rare case of oesophageal stent fracture that was broken and left in situ within the stomach uneventfully until the end of the patient's life after the application of another stent. (Acta gastroenterol. belg., **2005**, 68, **264-266**).

Key words : Oesophageal cancer, metallic expandable stent, malignant oesophageal obstruction.

Introduction

Fewer than half the patients diagnosed with oesophageal carcinoma are candidates for resection and only a small percentage of them are cured by surgery (1). Therefore palliation remains the management of choice for the large majority of patients (2).

Procedure related complications include haemorrhage, tracheal compression, stent migration, ulceration, perforation or fistula, granulomatous obstruction, tumour ingrowth or overgrowth, funnel phenomenon and stent covering disruption or minor complications (reflux, chest pain, food impaction, stent torsion and incomplete expansion) (2,3,4).

We report here an oesophageal stent fracture as a very rare complication of stent application in a patient with malignant oesophageal obstruction.

Case report

A 50 year old patient presented with a three month history of progressive dysphagia even with liquid foods and weight loss. Upper gastrointestinal examination demonstrated an obstructing lesion at distal third of oesophagus (Figure 1), which on upper endoscopy and biopsy proved to be an adenocarcinoma. Due to CT scan evidence of mediastinal invasion and liver metastases, the patient was not considered an appropriate surgical candidate.

In order to improve dysphagia, a 18 mm diameter expandable metallic stent (EG-18-10-VR Instent) was inserted over a guide wire into the malignant stricture under fluoroscopic control and was felt to be in good position (Figure 2). Upper gastrointestinal examination confirmed the appropriate position of stent with good patency (Figure 3).

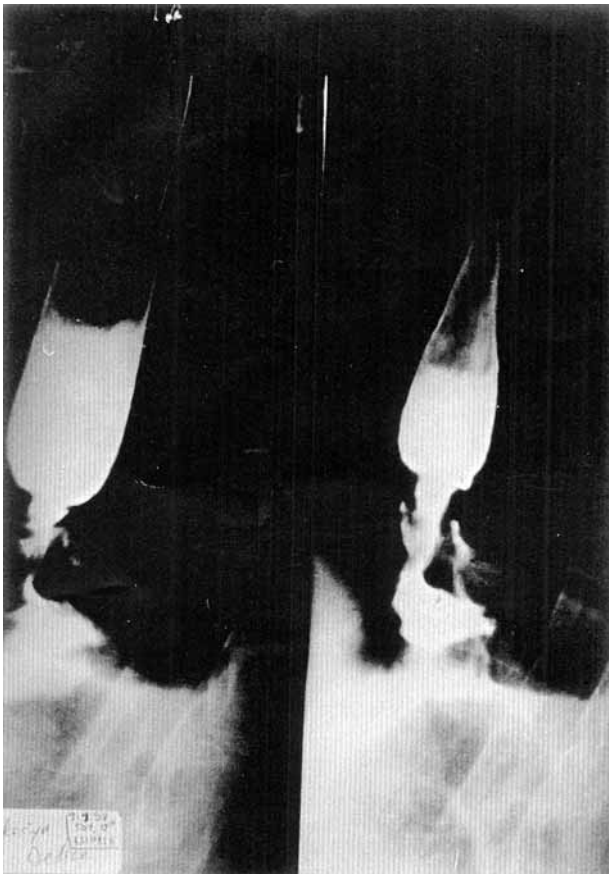

Figure 1. — Obstructive lesion at the distal third of oesophagus.

The patient showed immediate improvement of dysphagia, under H2 receptor blocker agent medication. The patient was however readmitted 2.5 months later with dysphagia and regurgitation. X-ray of abdomen showed that the distal stent portion had broken and migrated into the stomach (Figure 4).

Upper GI endoscopy confirmed these findings and showed additionally tumor overgrowth with partial obstruction of stent proximal. Therefore another 18 mm

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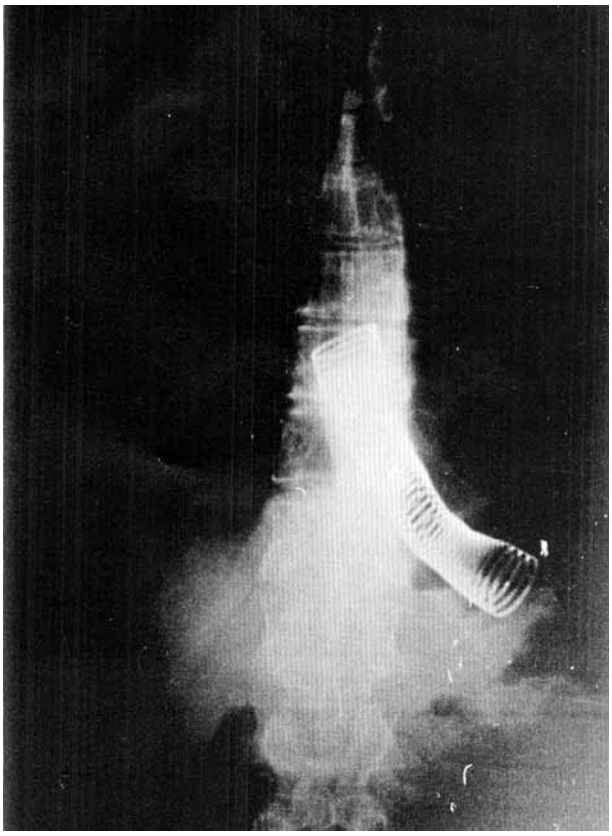

Figure 2. — Placement of a 18 mm diameter expandable metallic stent (EG-18-10-VR Instent).

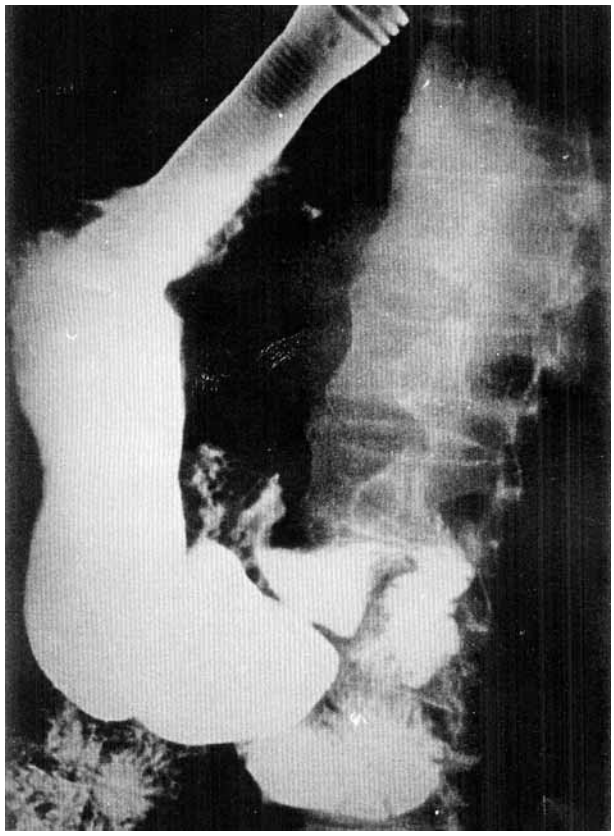

Figure 3. — Upper gastrointestinal examination showing appropriate position of stent with good patency.

diameter metallic stent was inserted through the first one. The patient was followed for sixth months until his death without any obstruction. The fractured free portion of the broken stent was left within the stomach and was seen to be located in the stomach lumen on routine X-ray checks without any complication.

Discussion

There is little doubt that the use of self-expanding metallic stents is increasing for the palliation of malignant oesophageal obstruction (4,5,6,7). Published results provide evidence of effectiveness of these devices. However some drawbacks and complications have been described (2,3,4).

Stent fracture is one of the most rarely encountered complications. Only few cases were published in the literature for oesophageal malignancy. Grimley and Bowling reported the first case of stent fracture (8), where stent fracture seemed to be caused by defective material or thermal overstrain during laser application (8, 9). The free segment of broken stent had almost migrated to the lumen of stomach as we have seen in our case. Another case report described a fractured stent after dilation causing partial obstruction and needing endoscopic removal (10). Another reported complication of broken oesophageal stent was occurence of a gastro-colic fistulae (12).

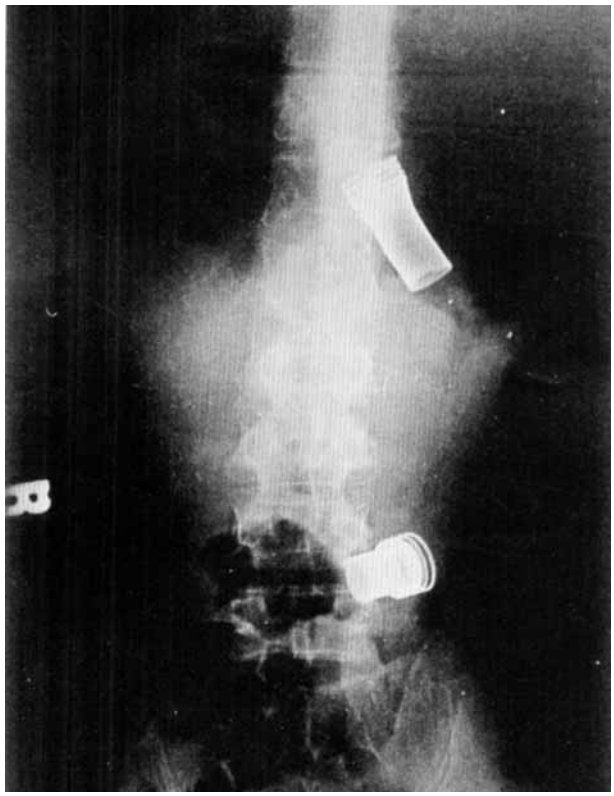

Figure 4. — X-ray of abdomen showing a distal broken stent portion having migrated into the stomach.

Rapid tumour shrinkage can also result in stent migration into the stomach (2). The migrated stents may spontaneously passe in stool (2) or can be removed endoscopically (11). If the patient remains asymptomatic, it may be appropriate to leave the migrated stent in situ (4).

In our case, the correctly inserted stent broke spontaneously. No reason for stent fracture was found except for tumor overgrowth or defective material. The latter explanation seems more adequate since it was of the same kind of stent than in the first reported case of stent fracture (8).

It is our opinion that if no clinical symptom occurs due to the broken stent, it is appropriate to leave the broken stent within the stomach lumen with close follow-ups. If symptoms occur it should be removed endoscopically, if possible.

References

1. Lightdale CJ. Esophageal cancer. Am J Gastroenterol 1999 ; 94 : 20-9.
2. Wang MQ, Sze DY, Wang ZP, Wang ZQ, Gao YA, Dake MD. Delayed complications after esophageal stent placement for treatment of malignant esophageal obstructions and esophagorespiratory fistulas. J Vasc Interv Radiol 2001 ; 12 : 465-74.
3. Acunağ B, Rozanes I, Akpinar S, Tunaci A, Tunaci M, Acunağ G. Palliation of malignant esophageal strictures with self-expanding nitinol stents : drawbacks and complications. Radiology 1996 ; 199 : 648-52.
4. Watkinson AF, Ellul J, Entwisle K, Mason RC, Adam A. Esophageal carcinoma : Initial results of palliative treatment with covered self-expanding endoprostheses. Radiology 1995 ; 195 : 821-7.
5. Knyrim K, Wagner HJ, Bethge N, Keymling M, Vakil N. A controlled trial of an expansile metal stent for palliation of oesophageal obstruction due to inoperable cancer. N engl J Med 1993 ; 329 : 1302-7.
6. Cwikiel W, Stridbeck H, Tranberg K-G, Von Holstein CS, Hmbreus G, Lillo-Gil R, Willen R. Malignant oesophageal strictures : treatment with a self-expanding nitinol stent. Radiology 1993 ; 187 : 661-5.
7. Singhvi R, Abbasakoor F, Manson JM. Insertion of self-expanding metal stents for malignant dysphagia : assessment of a simple endoscopic method. Ann R Coll Surg Engl. 2000 ;82 :243-8.
8. Grimley CE, Bowling TE. Oesophageal metallic stent dysfunction : first reported case of stent fracture and separation. Endoscopy 1999 ; 31 : S45.
9. Schoefl R, Winkelbauer F, Haefner M, Poetzi R, Gangl A, Lammer J. Two cases of fractured esophageal nitinol stents. Endoscopy 1996 ; 28 : 518-20.
10. Winkelbauer FW, Schofl R, Niederle B, Wildling R, Thurnher S, Lammer J. Palliative treatment of obstructing esophageal cancer with nitinol stents : value, safety, and long-term results. AJR Am J Roentgenol 1996 166 : 79-84.
11. Schonfeld J. Endoscopic retrieval of a broken and migrated esophageal metal stent. Z Gastroenterol. 2000 ; 38 : 795-8.
12. Altiparmak E, Saritağ U, Diğibeyaz S, Sahin B. Gastrocolic fistula due to a broken esophageal self-expandable metallic stent. Endoscopy 2000 ; 32 : S72.