Unexpected outcome (positive or negative) including adverse drug reactions

Postchemotherapy expulsion of oesophageal endoluminal stent with vomiting: a rare occurrence.

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Summary

Self-expandable metallic stents (SEMS) are currently the most widely used modality for palliation of dysphagia from oesophageal malignancy. However, placement of SEMS is associated with a number of complications. We report a rare late complication of SEMS placed for relief of malignant dysphagia (Locally advanced Carcinoma mid-oesophagus) in a 65-year-old man. SEMS was expelled out intact with vomiting following complete response to disease after three cycles of chemotherapy. Check on endoscopy done the day after, patient's growth had shown partial response to chemotherapy with scope easily negotiable upto Gastroesophageal junction with area of scarring and healed ulceration and stent imprint on the oesophageal wall. Partial response of the disease to chemotherapy and lack of expected fibrosis between stent and oesophageal wall resulted in loss of scaffolding for the stent and its subsequent expulsion in vomiting and relief in patient's dysphagia.

BACKGROUND

Oesophageal cancer is the seventh leading cause of cancer-related death worldwide. More than 50% of oesophageal cancers are incurable at presentation.¹ Palliation remains the only realistic therapeutic option for these patients. Palliative modalities include chemotherapy, radiationtherapy, oesophageal dilatation, multipolar electrocoagulation, photodynamic therapy and oesophageal endoprosthesis (plastic/metallic) alone or in combination.

In recent years, self-expandable metallic stents (SEMS) have demonstrated higher efficacy and cost-effectiveness in palliation of dysphagia.² Even though the complication rate is lower than plastic stents, a number of complications are associated with SEMS that may be classified as: immediate, early (<2 weeks poststent) and late (>2 week status poststent). We report a rare late complication of SEMS placed for relief of malignant dysphagia (locally advanced carcinoma mid-oesophagus) in a 65-year-old man. SEMS was expelled out intact with vomiting following partial response to disease after three cycles of chemotherapy. Partial response of the disease to chemotherapy and lack of expected fibrosis between stent and oesophageal wall resulted in loss of scaffolding for the stent and its subsequent expulsion in vomiting.

CASE PRESENTATION

A 65-year-old man, chronic smoker, presented with complaints of gradually progressive dysphagia (solids>liquids) for last 3 months. The patient reported significant weight loss (>10 kg) over last 2 months with complaints of marked weakness and malaise. Upper gastrointestinal endoscopy (UGIE) revealed a friable ulcerated circumferential growth extending from 28 to 35 cm with scope negotiable across the growth with difficulty. Endoscopic biopsy revealed moderately differentiated squamous cell

carcinoma of oesophagus. Considering advanced nature of disease on contrast enhanced computed tomography (CECT) scan thorax (figure 1), the patient was considered for SEMS placement for relief of dysphagia. A nitinol, covered, antireflux self-expandable stent with proximal phlange (stent length of 14 cm and internal diameter of 20 mm) was successfully placed, following which patient was relieved of his symptoms.

Poststenting, patient was subjected to chemotherapy (Cisplatin, 75 mg/m²; 5 FU, 750 mg/m² and Paclitaxel, 175 mg/m²) at three weekly interval. Six days after receiving third cycle of chemotherapy, patient had an episode of vomiting with expulsion of an intact stent (figure 2). This episode was not accompanied by haematemesis/pain abdomen. Check endoscopy (figure 3A,B) done a day later

Figure 1 CECT thorax showing locally advanced carcinoma oesophagus.

Figure 2 Intact oesophageal stent after expulsion.

revealed partial response of the disease to chemotherapy, resulting in loss of scaffolding for the stent and its subsequent expulsion in vomiting.

INVESTIGATIONS

UGIE(OGD) revealed a friable ulcerated circumferential growth extending from 28 to 35 cm with scope negotiable across the growth with difficulty.

Figure 3 (A and B) Poststent expulsion, endoscopic appearance showing partial tumour response with areas of healed ulceration and scarring.

Endoscopic biopsy (histopathological examination (HPE)): revealed moderately differentiated squamous cell carcinoma of mid-oesophagus.

OUTCOME AND FOLLOW-UP

On check UGIE, done the day after, patient's growth had shown partial response to chemotherapy with scope easily negotiable upto gastroesophageal (GE) junction with area of scarring and healed ulceration and stent imprint on the oesophageal wall. Subsequently, there were no complaints of dysphagia. The patient subsequently received concurrent chemoradiotherapy (40 Gy with Cisplatin and 5-FU) with sustained response. The patient is on regular follow-up and is asymptomatic for the last 6 months.

DISCUSSION

SEMS have been conclusively shown to be more efficacious and cost-effective, considering shorter hospital stay, with lower complication (0% vs 21%) and death (0% vs 15%) rate as compared with plastic stent.²

Placement of SEMS is associated with number of complications:

- Immediate complications include aspiration, airway compromise, malposition/stent dislodgement and perforation.
- Early complications include chest pain, bleeding, reflux and nausea.
- Delayed complications seen with SEMS are classified as major (haemorrhage, tracheal compression, stent migration, tracheoesophageal fistula (TEF) formation, granulomatous obstruction, tumour ingrowth and overgrowth and stent covering disruption) or minor (gastroesophageal reflux disease (GERD), chest pain and food impaction).³

Raltz *et al*⁴ analysed data from 75 SEMS and found stent migration rate averaged 7% (range 3–21%). Tumour tissue ingrowth may help in preventing migration of SEMS at the cost of recurrence of dysphagia. Recurrent dysphagia rates vary between 30% and 40%.⁵ With the advent of covered stents, rate of recurrent dysphagia has reduced.

Despite there being few reports of higher life-threatening complication rate after palliative SEMS placement following chemoradiotherapy,⁶ there are no clear guidelines regarding the timing, frequency and dosage of poststenting chemoradiotherapy. Attention needs to be paid to the type of stent used, to avoid the complication as reported here. As the tumour shrinks in response to chemotherapy, hold of the covered stent lessens (due to limited tumour in growth) causing expulsion/migration of stent.⁷ Stent placed across soft, polypoidal tumours are more likely to migrate.⁷

In our case, presence of proximal phlange may have prevented distal migration of stent. The presence of antireflux valve rather than phlange at the distal end and use of covered stent may have contributed to the expulsion of stent.

New oesophageal stent design, *Niti-s-Stent*, a double-layered stent with an inner polyurethane layer to prevent tumour ingrowth (and thus prevent recurrent dysphagia) and an outer uncovered nitinol wire tube to allow the mesh of the stent to embed itself in the oesophageal wall, may hold promise for use with chemoradio therapy.^{8 9} Use of slightly larger-diameter stents may be useful.

Learning points

- ▶ Care must be taken to choose appropriate stent design, to avoid the complication as reported here.
- ▶ Use of double-layered stent with phlange at either end and use of larger-diameter stents may be useful.
- ▶ Niti-s-Stent, a double-layered stent may hold promise for use with chemoradio therapy.

Competing interest None.

Patient consent Obtained.

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