

Primary adenocarcinoma arising in esophageal colon interposition for corrosive esophageal injury: a case report and review of the literature



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ABSTRACT

Background and study aims Colon interposition for benign strictures is associated with significant perioperative complications that carry high morbidity and mortality. Although rarely reported in the literature, adenocarcinoma can occur as a late complication in an interposed colonic segment. We report a case of a late-stage adenocarcinoma in a colonic interposition performed for benign esophageal stricture.

Introduction

Esophageal reconstruction with colon interposition after esophagectomy caused by caustic ingestion or malignant neoplasms has been standardized for almost a century [1–3]. The colon is chosen due to its size, extension, excellent blood supply, good resistance to gastric reflux and low disease incidence [1, 4]. Even with a 5% to 8% mortality due to benign lesions, this type of surgery is not free from serious early or late complications, such as dehiscence of sutures leading to mediastinitis, necrosis of the anastomotic site, formation of fibrosis, and strictures [5].

Presence of malignant neoplasm in colonic interpositions post-esophagectomy is extremely rare. A review of the literature using the electronic database Medline (PubMed), reported only 11 cases (► **Table 1**), all with a common outcome, the death of the patient.

Case report

We report the case of a 63-year-old Hispanic female with a history of smoking habits (54 packs per year) and chronic obstructive pulmonary disease; she also had a previous history of squamous cell carcinoma of the cervix, cured after a total hysterectomy, 15 years earlier.

At age 33, the woman attempted suicide with caustic soda intake. Initially treated with endoscopic dilation with bougies, she remained asymptomatic for 20 years. Then, her symptoms including dysphagia and severe malnutrition (body mass index 17.1) returned, and new dilations with bougies by endoscopy were performed. However, at that, time she did not response to dilations, and after 2 years, she was referred for subtotal esophagectomy with colonic graft interposition. A colonoscopy was performed before surgery to rule out lesions. Eight years after surgery, the patient was referred to our endoscopy unit due to severe progressive dysphagia of 3 years' duration and significant weight loss (8 kilos in 2 months).

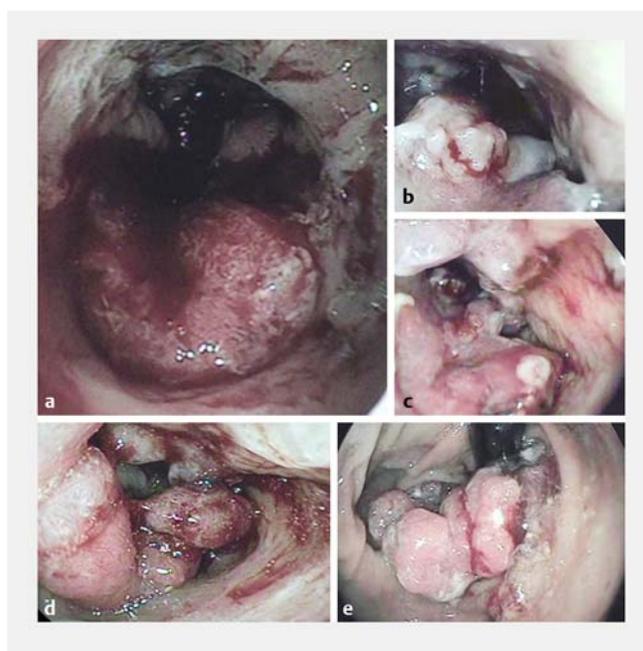
► **Table 1** Adenocarcinoma in colon interposition: literature review.

| Authors | Year of publication | Surgical indication | Delay before occurrence (year) |
|-------------------------|---------------------|-------------------------|--------------------------------|
| Cheng et al. [1] | 2015 | Corrosive | 15 |
| Tranchart H et al. [9] | 2014 | Corrosive | 19 |
| Aryal MR et al. [2] | 2013 | Corrosive | 30 |
| Shersher DD et al. [11] | 2011 | Corrosive | 40 |
| Bando et al. [12] | 2010 | Squamous cell carcinoma | 14 |
| Sikorszki et al. [10] | 2010 | Corrosive | 44 |
| Kuwabara et al. [13] | 2009 | Esophageal cancer | 9 |
| Roos et al. [6] | 2007 | Corrosive | 40 |
| Hsieh et al. [14] | 2005 | Corrosive | 39 |
| Martín et al. [7] | 2005 | Corrosive | 14 |
| Liau et al. [5] | 2004 | Esophageal cancer | 30 |
| Altorjay et al. [15] | 1995 | Corrosive | 5 |
| Lee et al. [16] | 1994 | Squamous cell carcinoma | 20 |
| Theile et al. [17] | 1992 | Adenocarcinoma | 12 |
| Houghton et al. [3] | 1989 | Corrosive | 20 |
| Haerr et al. [18] | 1987 | Squamous cell carcinoma | 9 |
| Licata et al. [19] | 1978 | Corrosive | 11 |
| Goldsmith et al. [4] | 1968 | Squamous cell carcinoma | 2 |

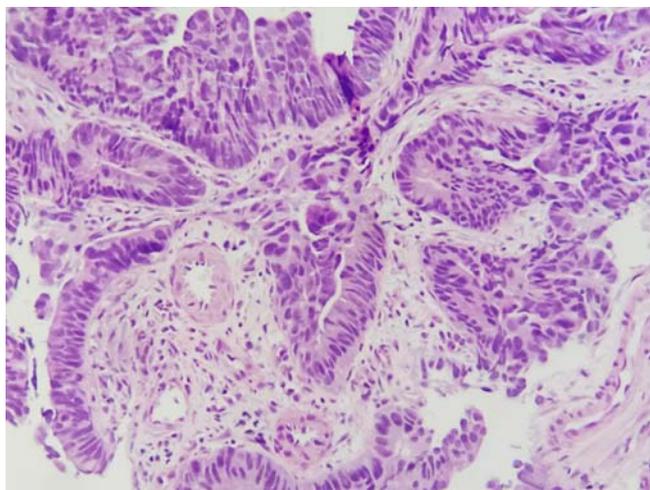
Upper gastrointestinal endoscopy (UGIE) excluded disease in the esophagus-colon anastomosis, however, an irregular, ulcerated, friable lesion, measuring 8 cm in length, causing stenosis of the organ, was diagnosed 18 cm from the incisors (► **Fig. 1**). Tissue biopsies were properly taken and anatomopathological examination showed a moderately differentiated invasive colonic adenocarcinoma (► **Fig. 2**). Computed tomography (CT) showed a colonic graft tumor and suspicious lesions in the left and right lung, which were confirmed to be metastatic after biopsy (► **Fig. 3** and ► **Fig. 4**). After a multidisciplinary meeting, a palliative approach was recommended due to the patient's poor functional status and comorbidities. She patient was started on chemotherapy and radiotherapy and died 2 months after the diagnosis.

Discussion

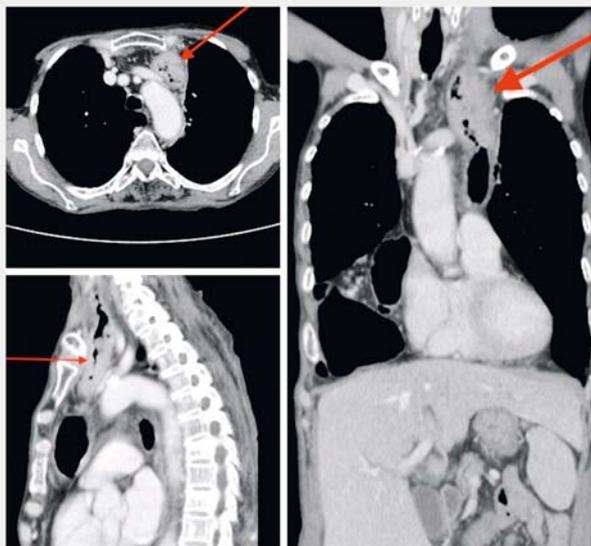
Most reported cases of esophageal cancers arising in colonic graft after esophageal surgery are due to incomplete resection of the primary tumor [3, 6, 7]. However, the etiopathogenesis of malignancy in postsurgical caustic stenosis is not yet fully understood [1, 2]. Previous presence of polyps, colitis, chronic reflux disease and inflammation produced by food stasis are postulated etiologies for dysplastic transformation and evolution to malignant neoplasm [8]. A positive family history of colon carcinoma is also considered a risk factor [9, 10].



► **Fig. 1** Upper gastrointestinal endoscopy view of the esophageal lesion. **a** Proximal portion of lesion in transposed colon. **b** Vegetative and infiltrative lesion. **c** Medial portion of lesion causing sub-stenosis of organ lumen. **d, e** Revision of the lesion.



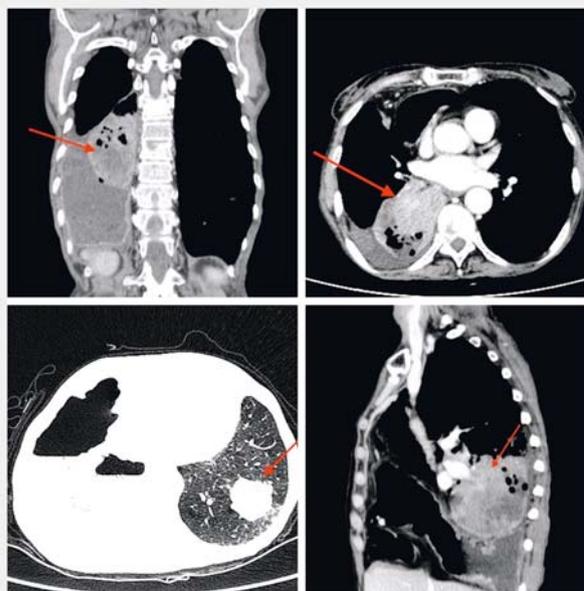
► **Fig. 2** Microscopic image with magnification of 400x. Label: Moderately differentiated invasive adenocarcinoma



► **Fig. 3** Computed tomography showing colonic graft tumor.

Patients most often present with progressive dysphagia. Respiratory symptoms due to invasion or compression have also been reported. Biopsies performed during UGIE are the gold standard for confirming the diagnosis [1, 11]. Treatment consists of complete surgical resection and might include gastric interposition, jejunal graft, and Roux-en-Y esophagojejunostomy [11]. Endoscopic resection can be curative and is recommended for early neoplasms limited to the mucosa [5, 12]. A palliative approach with radiotherapy, chemotherapy and placement of self-expanding metallic stents is possible mostly in patients whose condition is inoperable cases or who have poor functional status [1, 2, 8, 10].

There are no available guidelines for follow-up of patients with colonic transposition esophageal surgery. We believe that



► **Fig. 4** Computed tomography showing suspicious lesions in the chest.

preoperative or intraoperative colonoscopy and a follow-up with UGIE every 5 years can successfully prevent malignant lesions [1].

Conclusion

Adenocarcinoma is a very rare although possible and most often fatal late complication of colon interposition esophageal surgery. There are no available guidelines for follow-up of patients with colonic transposition esophageal surgery. More studies of this condition are needed.

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Competing interests

None

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