Left ventriculo-colic fistula – a late complication of colonic interposition for the oesophagus

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Summary: An 18 year old man developed recurrent haematemesis 12 years after colonic interposition for corrosive injury to the oesophagus. A colonic ulcer close to the cologastric anastomosis appeared to have fistulated into the cavity of the left ventricle. This so far unreported complication needs to be considered when patients who have had colo-oesophageal substitution present with gastrointestinal bleeding.

Introduction

The colon has been used successfully as an oesophageal substitute for many years. Although the development of gastrocolic reflux is of some concern, reported cases of peptic ulceration have been infrequent. We describe an extreme example, where an intrathoracic colonic ulcer developed into a fistula adjoining the colonic lumen with the cavity of the left ventricle. This is a so far unreported complication.

Case report

An 18 year old man, who at the age of 6 underwent oesophageal substitution with colon for a caustic oesophageal stricture, presented with recurrent haematemesis over a period of 2 years. He was overindulging in alcohol and was smoking heavily. He was given advice, an H₂-receptor antagonist and blood was transfused on several occasions. A barium swallow demonstrated considerable redundancy of the colonic segment and stomach with arrest of barium medially at the lower end of the colonic segment (Figure 1). An endoscopic view of this area revealed a chronic ulcer of the colon 4 cm above the cologastric anastomosis. A pyloroplasty was performed to enhance gastric emptying. This failed to

arrest his recurrent haematemesis and therefore months later an exploratory lower left thoracotomy was carried out. The intrathoracic colon was seen to be 8–10 cm in diameter. Because of widespread and dense adhesions the approach to the ulcer was made by opening the cologastric anastomosis where it was densely adherent to the very elevated left hemi-diaphragm. The ulcer was identified and appeared to be adherent to the diaphragm. There was no clear evidence as to the source of the haematemesis and the ulcer was therefore closed by under running it with heavy suture material.

A further massive haematemesis occurred 11 months later and the left lower thoracotomy was re-explored. On this occasion an attachment to the pericardium over the posterolateral aspect of the left ventricle was identified, but once again, no definite bleeding point was seen. The ulcer was left adherent to the pericardium and the colon detached from it to exclude the ulcer. Two months later a further haematemesis occurred. The left lower thoracotomy was re-opened as a life-saving manoeuvre. Free bleeding was seen to be coming from the floor of the ulcer. This was temporarily controlled by suture and exploration through a median sternotomy with extracorporeal cardiopulmonary bypass undertaken 2 weeks later. The fistulous communication between the cavities of the left ventricle and the colon was found to be obliterated only by debris and clot. The ventricle and pericardium were repaired and the colonic defect closed.

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Figure 1 A-P view of chest and upper abdomen depicting the ulcer crater penetrating into the pericardium.

Postoperatively he developed a gastropleural fistula with an output of 2.5–3 litres/24 h. This persisted despite prolonged intravenous nutrition and a further exploration with excision of the cologastric junction and re-anastomosis. The effluent from this fistula was on many occasions blood-stained, suggesting a continuing blood loss from the heart. After a long hospitalization he was finally allowed home with a feeding jejunostomy. The effluent from his fistula was collecting into a simple drainage bag.

Despite the support provided he eventually despaired and died of self-neglect and inanition 2 years after the initial diagnosis of his fistula.

Discussion

Since 1911 when Vulliet¹ first described colonic substitution for the oesophagus, the operation has proved most valuable when long-term use is envi-

saged – such as in young patients with a benign condition.

It is a procedure of considerable severity. A collective report by Postlethwaite² of 474 cases treated between 1971–81 revealed an operative mortality of 4.9%. However, after a long follow-up period, only 7% of patients were considered to have obtained a poor result from the operation.

Gastric reflux is a fairly common sequel, estimated to be troublesome in 10% of cases. Approximately one-third of cases with reflux will develop ulceration at the gastrocolic junction.³ Such ulcers usually manifest with bleeding or pain. More bizarre presentations, such as intrathoracic perforation⁴ and development of colobronchial fistula⁵ have been described.

This case highlights the possibility of a coloventricular fistula in cases with gastrointestinal

bleeding following the colonic replacement of the oesophagus. Ventriculography would provide a diagnosis at instances of acute bleeding. In aorto-oesophageal fistulae, balloon tamponade has been suggested as a temporary resuscitative measure. However, in cases of coloventricular fistulae this would be most unlikely to be helpful in view of the considerable intrathoracic colonic redundancy. The existence of a tight cervical anastomotic stricture made the initial diagnosis much more difficult.

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References

1. Vulliet, H. De l'oesophagoplastie et des diverses modifications. *Sem Méd Prof Méd-soc* 1911, **31**: 529.
2. Postlethwaite, W. Colonic interposition for esophageal substitution. *Surg Gynecol Obst* 1983, **156**: 377–383.
3. Fekete, F., Hugentobler, J.P. & Breil, Ph. Ulceres anastomotiques des oesophagoplastie coliques. *Ann Chir* 1982, **36**: 334–339.
4. Menguy, R. Intrathoracic perforation of the colon: an unusual complication of colonic interposition for esophageal stricture. *Am Surg* 1965, **31**: 329–332.
5. Perlmutter, D.H., Tapper, D., Teele, R.L. & Winter, S.H. Colobronchial fistula as a late complication of coloesophageal interposition. *Gastroenterology* 1980, **86**: 1570–1572.