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<tr>
<td><strong>Citation</strong></td>
<td>Thorax, 1988, v. 43 n. 10, p. 796-797</td>
</tr>
<tr>
<td><strong>Issued Date</strong></td>
<td>1988</td>
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<tr>
<td><strong>URL</strong></td>
<td><a href="http://hdl.handle.net/10722/45382">http://hdl.handle.net/10722/45382</a></td>
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Long ischaemic stricture of the interposed colon

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ABSTRACT A case is reported of a long segment stricture in a colonic oesophageal replacement with radiographic evidence to support the diagnosis of ischaemia. Ischaemia of the substitute organ following oesophageal resection is a well recognised, serious complication that usually results in anastomotic leakage. If the anastomosis heals primarily, late manifestations of ischaemia are rare.

Ischaemia of the substitute organ following oesophageal resection is a well recognised, serious complication that usually results in anastomotic leakage. If the anastomosis heals primarily, late manifestations of ischaemia are rare. A case of a long segment stricture in a colonic oesophageal replacement is reported, with radiographic evidence to support the diagnosis of ischaemia.

Case report

A 71 year old Chinese man presented with a six month history of progressive dysphagia. This was found to be due to an adenocarcinoma at 41 cm, extending from the cardia on to the lesser curvature of the stomach. At operation there was no evidence of metastatic spread, and a transhiatal, total oesophagegastrectomy was performed and the right hemicolone was interposed orthotopically. The upper anastomosis was to the oesophagus in the neck and the lower anastomosis to the duodenum. The bowel preparation was poor, and he had a rather stormy postoperative course, which included a left subphrenic abscess and wound dehiscence. He did, however, recover and was discharged from hospital able to swallow normally. He presented with recurrent dysphagia two months after his initial operation. A barium swallow (fig 1) showed a long stricture in the colon from D4 to D7-8. Fibreoptic endoscopy showed a smooth, fibrous stricture 14 cm long, starting 2 cm beyond the anastomosis. Biopsies did not show any recurrence of malignancy. Further investigation with a superior mesenteric arteriogram (fig 2) showed the middle colic artery to be visualised only to D10. The stricture was managed conservatively with bougination, resulting in relief of dysphagia.

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Accepted 15 April 1988

Fig 1 Barium swallow showing a long smooth stricture of the colon transplant. The arrow indicates the level of the anastomosis. Note that the stricture is proximal to the surgical clips and that the vasculature stops distal to the clips (see fig 2).

Fig 2 Superior mesenteric pedicle passing into the clip at the level of D12 (arrow) above D10. The stricture is some distance away from it (fig 1).

Discussion

The most common postoperative surgery relating to leakage, anastomotic stricture, substitute organ. Intrathoracic substitutes both posed a risk. Both may be due to technical errors arising from the preparatory vascular pedicle. Short lengths associated with non recurancy and may also be associated with recurrent malignancy. Interposed colon is an unusual occurrence published case the first report of the of the further surgery.
An unusual aspect of this particular complication is that all 11 but one 12 of the reported cases had primary anastomotic healing, with the stricture presenting no earlier than one month postoperatively. The stricture may affect all or part of the colon loop. In our case the stricture affected about 40% of the interposition with sparing of the proximal 2 cm. The other reported cases had either segmental 11 or total interposition strictures 14. Most authors have considered ischaemia, either arterial11 or venous, 24 to be the underlying cause. Indirect evidence for this has been provided by two authors. Harvey and Kettlewell 2 concurred in a period of postoperative hypotension and hypoxia, followed by “thumbprinting” of the colonic mucosa, on a barium swallow five days postoperatively, characteristic of ischaemic colitis. Larson et al. 7 found that either necrosis or strictureting occurred in those patients whose preoperative angiogram showed an interrupted marginal artery. In addition, Hong et al. 2 postulated that venous stasis with subsequent thrombosis might be responsible, as they noted that the colon in the neck often looked deeply congested.

Our patient had arterial insufficiency demonstrated and we presume this to be the cause. It does not, however, explain why the proximal 2 cm should be spared, and why in most such cases there is no anastomotic leak. The ischaemia may have a delayed onset, allowing primary anastomotic healing with subsequent stricture formation. Our case was complicated by abdominal sepsis, which could have compromised the blood supply; but in none of the other cases were similar incidents reported to account for delayed ischaemia. Another possibility is occlusion of one or more radial branches of the marginal artery. This might occur secondary to hypotension but was reported in only one case. 2

Fibrous stenosis of the interposed colon is uncommon, but its development poses a major challenge if further surgery is required. The mechanism of ischaemia in these cases, with the exception of one, is not clear, making precise preventive measures difficult. Awareness of this complication, however, should be one more reason to treat the blood supply of the colonic interposition with the greatest care.

References