Unusual association of diseases/symptoms

Malignant gastro-colic fistula presenting with upper extremity deep vein thrombosis

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Summary

Locally invasive colonic carcinomas are seldom complicated by the formation of gastro-colic fistula. The authors present a case of a 52-year-old man with malignant gastro-colic fistula presenting with upper extremity deep vein thrombosis posing operative challenges.

BACKGROUND

Gastro-colic fistulae are rare. Causative factors are commonly gastric and colonic malignancy as well as anastomotic and benign gastric ulcers.^{1–5} We present what we believe to be the first case of a malignant gastro-colic fistula presenting with upper extremity deep vein thrombosis (UEDVT).

CASE PRESENTATION

A 52-year-old man presented to the colorectal clinic with recent exacerbation of left-sided abdominal pain, diarrhoea and aching pain in his right arm. On further questioning, he complained of generalised weakness, occasional vomiting and passing mucus per rectum. He had lost 5–6 kg over 3 months. His history included perforated duodenal ulcer 20 years ago, an open cholecystectomy 2 years ago and osteoarthritis secondary to congenital dislocation of right hip. Clinical examination was unremarkable except for pallor.

INVESTIGATIONS

Haematological and biochemical investigations, including carcinoembryonic antigen, were within normal limits except for normochromic normocytic anaemia with haemoglobin of 9.4 mg/dl. Duplex ultrasound scan of the right upper limb revealed a thrombus in the basilic vein extending to the proximal axillary vein. His thrombophilia screen was negative.

A barium enema examination was performed, which revealed a gastro-colic fistula between the greater curvature of stomach and distal transverse colon (figure 1). This was confirmed by an oesophagogastrroduodenoscopy (figure 2) and colonoscopy. Biopsies taken from the lumen of the fistula showed a moderately differentiated adenocarcinoma. Immunohistochemistry (negative for CK7, strongly positive for CK20) confirmed this to be of colonic origin.

Double contrast CT scan of the abdomen and pelvis revealed a long segment of thickening involving the distal transverse colon and splenic flexure with maximum thickness of 24 mm. There was a fistulous communication between this area of the colon and the stomach. The staging CT scans of chest, abdomen and pelvis were clear of distant metastases.

TREATMENT

A therapeutic dose of low molecular weight heparin (LMWH) was initiated for his UEDVT. On the third day of treatment, he became hypotensive and tachycardic with fresh rectal bleeding. This was managed conservatively with cessation of heparin.

Multi-disciplinary meetings involving interventional radiologists and haematologists concluded that the risks of placing a superior vena cava filter outweighed its potential benefits and it was decided to expedite surgery. The patient underwent radical subtotal colectomy with en-block resection of the tumour and wedge resection of the greater curve of stomach. The gastro-intestinal continuity was established by an ileo-sigmoid end-to-end anastomosis.

The tumour mass measured 120 × 90 mm with invasion of the stomach but no other surrounding tissue. Histology confirmed a moderately differentiated adenocarcinoma of colonic origin (figure 3), Dukes B (PT4N0M0) with a malignant gastro-colic fistula measuring 45 mm across, arising approximately 120 mm from the distal resection margin (figure 4). Eleven lymph nodes were examined and all were free of tumour.

OUTCOME AND FOLLOW-UP

Postoperative care included resuming LWMH treatment, which was substituted for warfarin from the third postoperative day. The patient made an uneventful recovery and underwent adjuvant chemotherapy with capecitabine.

Figure 1 Barium enema demonstrating fistulous connection (F) between the greater curvature of the stomach and the distal half of the transverse colon (arrow). S, stomach; SF, splenic flexure; T, transverse colon.

Follow-up upper limb duplex scan after 3 months showed regression of UEDVT. The patient will continue warfarin for a minimum period of 6 months.

DISCUSSION

Gastro-colic fistula is a well-recognised complication of malignancy arising from the stomach and colon.⁶ In a series of 3200 cases of colon carcinoma, Marshall *et al* found only 11 cases of gastro-colic fistula² reflecting the rarity of this condition. Long-term survival in patients with malignant aetiology is rarely reported.⁵ Characteristically, gastro-colic fistulae manifest as diarrhoea, nausea, faeculent vomiting, anaemia and weight loss.^{4 5 7 8} However, our patient presented with a paraneoplastic UEDVT, which has not previously been reported.

Thromboembolism constitutes the second leading cause of death in cancer patients.⁹ Paraneoplastic hypercoagulability syndrome results from a complex imbalance between coagulation and fibrinolysis, decreased fibrinogen and platelet catabolism to overproduction of thrombopoietin and interleukin 6 by the tumour.^{10–12} UEDVT is an increasingly encountered complication in cancer patients.^{13 14}

Patients with UEDVT may have mild cyanosis of the involved extremity, a palpable tender venous cord, arm and hand oedema, supraclavicular fullness, jugular venous distension, with insidious onset.^{13 15} Approximately 75% of patients will complain of a dull aching pain or fullness in the affected extremity that may be aggravated by exertion,¹³ which manifested in our case. Though rare, pulmonary embolus may be the presenting manifestation of upper

Figure 2 Gastroscopy showing fistula opening in the greater curvature of the stomach (arrow).

extremity deep vein thrombosis.¹⁵ Anticoagulation is the treatment of choice as it helps maintain patency of venous collaterals and reduces thrombus propagation;¹⁶ aiming to achieve international normalised ratio between 2.0 and 3.0.¹⁵

In our patient we initiated medical management of UEDVT to prevent the possible fatal complication of

pulmonary embolism. This unfortunately led to profuse bleeding from the tumour with no further guidelines for safe perioperative management.¹⁷ We expedited surgery using non-invasive pneumatic compression devices only on the lower limbs. This approach was influenced by the scarce evidence to support the effectiveness of superior vena cava filters or upper limb compression.¹⁸

Figure 3 Cytokeratin staining of the endoscopy biopsies shows characteristics of malignancy of colonic origin strongly positive for CK20 (arrows).

Figure 4 Macroscopic en-block surgical specimen showing 45 mm fistula between the stomach and the transverse colon.

Learning points

- ▶ Paraneoplastic upper extremity deep vein thrombosis is an increasingly encountered complication in cancer patients.
- ▶ Data concerning the management of this complication pre-operatively and peri-operatively are scarce.
- ▶ Clear guidelines are needed as to when a superior vena cava filter should be placed.

Competing interests None.

Patient consent Obtained.

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Matar HE, Sagriotis I, Nair MS, Navaratnam R, Stoker DL. Malignant gastro-colic fistula presenting with upper extremity deep vein thrombosis. *BMJ Case Reports* 2010;10.1136/bcr.11.2010.3491, date of publication

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