

Small-bowel perforation: a consequence of feeding jejunostomy

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Enteral feeding is a preferred route for postsurgical sustenance of very ill patients with a functioning small bowel.^{1,2} Postpyloric feeding through a jejunal tube is in wide practice and usually well tolerated. We report a case of small-bowel perforation related to a feeding jejunostomy tube.

A 76-year-old female was evaluated for symptoms of pruritis, painless jaundice, tea-coloured urine and yellow stools. An ampullary carcinoma was found via endoscopic retrograde cholangiopancreatography (ERCP). A pancreatoduodenectomy was performed, with insertion of a feeding jejunostomy tube. On the seventh

postoperative day the patient had painful abdominal cramps.

Upon examination, her abdomen had tympany and severe tenderness in the right upper quadrant. Computed tomography of the abdomen and pelvis revealed marked thickening of the proximal small bowel distally near the jejunostomy site.

We did an emergency laparotomy and found wall necrosis with perforation, 100 cm distal to the tube insertion (Fig. 1). There was no evidence of intestinal strangulation or arterial occlusion. The necrotic edges of her bowel were immediately resected and sutured. The pathology report documented transmural necrosis

and enteral nutrition impacted in the lumen (Fig. 2). The patient's further recovery was uneventful.

The causative mechanism of this small-bowel perforation remains unclear, but the condition had many similarities to necrotizing enterocolitis, including systemic and mechanical factors. Hyperosmolarity, invasive bacterial overgrowth and massive bolus impaction were implicated for direct mucosal injury in this case, probably by intense local vasospasm, which could cause ischemic necrosis and perforation.

In cases of small-bowel obstruction, tube feeding should be discontinued im-



FIG. 1. Necrosis of the wall of the small intestine.



FIG. 2. Impacted enteral nutritive substance removed from the bowel.

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mediately and total parenteral nutrition considered.³ Enteral nutrition has priority for nutritional support. When bowel obstruction occurs it is important to decide early whether surgical intervention is necessary, for which decision abdominal CT, ultrasound and contrast radiography are useful.^{4,5}

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Implantation metastasis from adenocarcinoma of the colon into a fistula-in-ano: a case report

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Viable malignant cells have been isolated from the lumen of bowel and from surgical gloves and instruments after colorectal cancer surgery.¹ There are reports of implantation of malignant cells into benign anal lesions during colorectal cancer surgery,² and of implantation metastasis from colon cancer during colonoscopy and biopsy.³ These reports are, however, rare, and the clinical significance of exfoliated, viable malignant cells from colorectal neoplasms remains unclear.

We review a patient with an adenocarcinoma of the left colon and a metastasis in a benign fistula-in-ano, presumably acquired through implantation of viable malignant cells shed from the primary tumour, and discuss the importance of these findings in colorectal cancer surgery.

Case report

A 44-year-old obese male came to hospital with a perianal abscess requiring incision and drainage. Shortly thereafter, a mass developed at the wound; an inci-

sional biopsy was performed. Histopathology identified a well-differentiated mucin-producing adenocarcinoma. Colonoscopy revealed a normal rectum, but with a grossly malignant lesion 65 cm from the anal verge. Biopsy of the lesion revealed a moderately differentiated adenocarcinoma.

A complete staging work-up found no other evidence of metastatic spread. An open left hemicolectomy (primary reconstruction) was completed, with concurrent wide local excision of the infected perianal mass. The perianal wound remained open to heal by secondary intention.

The colon neoplasm (Fig. 1) was a moderately differentiated adenocarcinoma (T3 N1, mesenteric implant). The perianal neoplasm (Fig. 2) was a moderately differentiated adenocarcinoma. The histologic appearance of the 2 malignancies was similar. Immunohistochemistry staining with carcinoembryonic antigen (CEA), cytokeratin 7 and cytokeratin 20 also showed a similar pattern.

The patient recovered from surgery

and adjuvant chemotherapy (6 cycles of 5-fluorouracil and leucovorin). The perianal wound healed with a residual fistula. The fistula tract was biopsied aggressively on 3 separate occasions, revealing benign inflammatory tissue, and managed successfully with a seton suture. The patient remains well at 3 years of follow-up, with no local recurrence or distant metastases identified clinically or by colonoscopy, chest radiography or CEA (<0.5 µg/L).

Discussion

The implantation of malignant cells into benign tissues during open or laparoscopic bowel resection for colorectal cancer remains a serious concern. The sequelae of wound implantation of malignant cells are severe, dramatically impairing patient outcomes and reducing survival. Unexpected occurrences of metastases at trocar sites after laparoscopic bowel resection for colorectal cancer initiated a widespread moratorium on the laparoscopic approach.⁴

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