Localized peritoneal carcinomatosis mimicking an irreducible left inguinal hernia

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ABSTRACT

Perforated colonic cancers are not rare and leave patients at risk of developing peritoneal carcinomatosis. We present a 68-year-old male patient with a perforated transverse colonic tumour who underwent emergency extended right hemicolectomy. He made an uneventful postoperative recovery, and received adjuvant chemotherapy. Unfortunately, a routine positron emission tomography–computed tomography scan 16 months later demonstrated a fluorodeoxyglucose-avid nodule in the left scrotum associated with an irreducible left inguinal hernia that contained sigmoid colon. At laparotomy, the discovery of isolated peritoneal recurrence in the hernia sac was unexpected, given the absence of local recurrence in the region of the original transverse colon cancer perforation. The etiology therefore remains uncertain, but one may speculate that cell implantation occurred within the hernia sac at the initial emergency laparotomy.

KEYWORDS

Colorectal cancer – Perforation – Peritoneal carcinomatosis – Treatment – PET/CT – Recurrence

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Peritoneal carcinomatosis (PC) is the dissemination of cancer cells throughout the lining of the abdominal cavity.¹ Whilst PC is not rare, its management and its preoperative diagnosis in particular remain challenging. Only 40% of patients can be diagnosed by imaging modalities and, in many of them, PC will be found only at the time of surgery.¹

We present an interesting case of peritoneal recurrence, mimicking an irreducible inguinal hernia.

Case presentation

A 68-year-old male with a known left inguinal hernia was admitted with acute abdominal pain and peritonitis. Abdominal computed tomography (CT) identified a perforated transverse colonic tumour. He underwent emergency extended right hemicolectomy, abdominal washout, curettage and omental obliteration of a cavity in the left upper quadrant, and received a primary ileocolic anastomosis. He made an uneventful postoperative recovery. Pathological examination showed a Dukes' B (pT4N0Ly1V1R0) adenocarcinoma and the patient received an adjuvant FOLFIRI chemotherapy regimen.

Sixteen months later, routine positron emission tomography–computed tomography (PET-CT) scan demonstrated a fluorodeoxyglucose-avid nodule in the left hemiscrotum that was associated with both a left inguinal hernia containing sigmoid colon and a further nodule at the neck of the

scrotum (Figures 1 and 2). Clinically, the hernia was irreducible, although there was no sign of obstruction or strangulation. There was no obvious testicular mass. A flexible sigmoidoscopy did not reveal any intraluminal colonic lesion.

At laparotomy, and following reduction of the sigmoid colon out of the hernia sac, a nodule was found on the sigmoid serosa, and another at the neck of the sac adjacent to the pubic tubercle. Macroscopic disease was not seen anywhere else in the abdomen. On-table colonoscopy confirmed the absence of mucosal disease, and a limited segmental sigmoid resection, preserving the inferior mesenteric artery (IMA), and a separate resection of the peritoneal sac and second nodule were performed. Metastatic adenocarcinoma was confirmed microscopically in the two nodules. While three mesenteric lymph nodes were also positive for adenocarcinoma, no luminal cancer was detected. All disease was immunohistochemically identical to the original transverse colon cancer, confirming peritoneal recurrence.

Discussion

Perforated colorectal cancer is associated with worse oncological outcomes,² and patients with T4 tumours, especially after emergency surgery, are at risk of developing PC.³ Indeed, the peritoneum remains the second most common

Figure 1 Positron emission tomography–computed tomography showing a hypermetabolic nodule in a left inguinal hernia (arrow)

site for metastasis after the liver.¹ Time to recurrent disease has been reported to be approximately 16 months,³ as seen in our case. All imaging modalities have limitations when it comes to diagnosing PC, but PET-CT appears to be the most sensitive.⁴ Diagnosis is more frequently and accurately found during laparoscopy or laparotomy.¹

Figure 2 Coronal positron emission tomography–computed tomography showing two hypermetabolic nodules (arrows) in the left inguinal hernia and in the sigmoid mesentery

Treatment of PC remains controversial and generally limited or palliative. However, new developments in surgical treatment, chemotherapy and its delivery, such as cytoreductive surgery combined with hyperthermic intraperitoneal chemotherapy (HIPEC), appear to be the most effective approach in selected cases.^{5–7}

While not unique, our case is interesting, as it raises several questions regarding diagnosis and management. To date, only a few cases of peritoneal metastasis in an inguinal hernia are reported in the literature.^{8,9} When considering more specifically colorectal carcinomatosis in a groin hernia, the experience is even scarcer.¹⁰ The utility of PET-CT in this particular situation was acknowledged,⁸ and might help to differentiate a benign hernia from a malignant nodule.

In the present case, the discovery of isolated peritoneal recurrence in a hernia sac was unexpected in the absence of local recurrence in the region of the original transverse colon cancer perforation. The etiology therefore remains uncertain, but one may speculate that cell implantation occurred within the hernia sac at the initial emergency laparotomy. Limited, rather than radical, sigmoid resection was performed on the assumption that this represented isolated peritoneal recurrence. In addition, the need to preserve the IMA was a further challenge. After the initial extended right colectomy, all colonic branches from the superior mesenteric artery had been divided. A radical sigmoid resection would have required the sacrifice of the IMA, which in turn would have compromised the perfusion of the remaining colon. The benefits of a radical resection are uncertain in this case. In addition, the role of HIPEC in this particular situation is also unclear and, while the patient is radiologically disease-free 6 months after surgery, more aggressive therapy may need to be contemplated.

Conclusions

Peritoneal carcinomatosis is not rare, but its presentation in this case is unusual. We believe that cell implantation occurred within the hernia sac at the initial emergency laparotomy, which underlines the importance of a proper washout. The management and preoperative diagnosis of PC remains challenging.

Disclosures

The authors have no financial disclosures.

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