Second isolated anastomotic recurrence after curative surgery for colorectal cancer

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ABSTRACT

INTRODUCTION The two mechanisms postulated for cancer recurrence at the anastomosis site ('anastomotic recurrence' (AR)) after curative surgery for colorectal cancer are: (i) intraluminal dissemination of viable cancer cells; (ii) metachronous carcinogenesis related with changes in the local *milieu* provoked by the materials employed to carry out the anastomosis.

CASE HISTORY We describe a 79-year-old female who underwent a left hemicolectomy due to a stenotic lesion shown on colonoscopy: an adenocarcinoma (pT3N0, G2). One year after surgery, control colonoscopy revealed an AR, so a new resection was carried out. Pathology showed it to be a recurrent adenocarcinoma over the staple line (pT3N0, G2). One year after the second surgical procedure, control colonoscopy evinced a new AR, resulting in a new resection. Pathology revealed a new AR.

CONCLUSIONS This is only the second time that a second isolated AR after curative resection for colorectal cancer has been reported.

KEYWORDS

Anastomotic recurrence – Stapled anastomosis – Colorectal cancer

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Prevalence of local recurrence after curative surgery for colorectal cancer is 5–19%, and is 2–4% specifically for colon cancer. Usually, this situation suggests the unresectability of lesions, and is associated with a 5-year mortality of >80%.¹

Main mechanisms of cancer recurrence at the anastomosis site ('anastomotic recurrence' (AR)) are suspected to be the: (i) intraluminal dissemination and subsequent implantation of viable cancer cells; (ii) metachronous carcinogenesis favoured by changes in the local *milieu* (possibly due to the materials used to undertake the anastomosis). Other factors presumed to be involved are the: oncological stage and differentiation of the original tumour; emergency surgery; appearance of leakage/dehiscence of the anastomosis; technical defects during the first procedure (eg incomplete resection/mesorectal excision, lymphadenectomy).²

Case History

Here, we describe a 79-year-old female with no known allergies or history of biliary pancreatitis. Previously, she had undergone laparoscopic cholecystectomy, bilateral total hip replacement, and had suffered an incisional umbilical hernia.

Colonoscopy evinced a stenotic lesion in the left colon with no pathological lymphadenopathies or distant metastases visualised on computed tomography (CT). The level of carcinoembryonic antigen (CEA) was in the normal range.

An oncological, open, left-sided hemicolectomy and side-to-side mechanical anastomosis was carried out in March 2013 with no complications. Pathology revealed a moderately differentiated (G2) adenocarcinoma (pT3N0) with no metastatic lymph nodes (among 15 analysed) or perineural/lymphovascular invasion. The adenocarcinoma had free radial margins and resection margins >5cm.

One year after surgery, an AR in the staple line was observed during control colonoscopy. CT showed no signs of local/distant recurrence. Lynch syndrome and familial adenomatous polyposis were excluded. The CEA level was in the normal range.

An open oncological resection with a new side-to-side mechanical anastomosis was completed in May 2014. The postoperative course was uneventful. Pathology revealed a moderately differentiated (G2) adenocarcinoma (pT3N0) with no metastatic lymph nodes (among 13 analysed) or perineural/lymphovascular invasion. The adenocarcinoma had free radial margins and resection margins >5cm.

During a new control colonoscopy 1 year after the second surgery, another AR was revealed, and again CT did not suggest local/distant recurrence (Fig 1). Again, the CEA level was in the normal range.

In July 2015, an iterative, open oncological resection with an end-to-end mechanical anastomosis (with a CEEATM 31 stapler; Covidien, Dublin, Eire) was done. The postoperative course was unremarkable. Pathology revealed a moderately

Figure 1 Surgical specimen: scissors show an anastomotic recurrence over the staple line

differentiated (G2) adenocarcinoma (pT3N0) with no metastatic lymph nodes (among 12 analysed) or perineural/lymphovascular invasion. The adenocarcinoma had resection margins >5cm and free radial margins.

Discussion

With regard to malignant cells within the large bowel, some authors have defended use of intraluminal irrigation with

5% povidone–iodine solution, alleging that AR may be reduced following this procedure from 10–16% to 2–3%.⁵ A recent meta-analysis showed that rectal washout reduces the risk of local recurrence after anterior resection for rectal cancer.⁴ With regard to the materials employed, some authors have suggested that a stapled anastomosis may facilitate implantation of malignant cells even though no difference in local recurrence has been observed after curative resection for colorectal cancer when undertaking a stapled anastomosis or hand-sewn anastomosis. The mechanism responsible for development of repeated ARs is not known.

In our patient, both ARs were isolated because pathological lymph nodes or distant metastases were not observed. These ARs appeared over the suture line after a side-to-side stapled anastomosis had been carried out. Intraluminal washout was not done in either of the two first procedures. If local disease is present, a new oncological resection with a margin of 5cm should be done. Only Conzo and colleagues⁵ have described a second isolated AR after curative resection for colorectal cancer such as the one revealed for our patient.

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