A case of resected retroperitoneal metachronous solitary metastasis from caecal cancer

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ABSTRACT

Colorectal cancer metastasis to the retroperitoneum, especially solitary metastasis allowing curative resection, is rare. We report a case of complete resection of retroperitoneal metachronous solitary metastasis from caecal cancer without distant metastasis. An 80-year-old woman with caecal cancer underwent laparoscopic ileocaecal resection with regional lymph node dissection. According to the eighth edition of the TNM classification, the pathological diagnosis was stage IIA (T3N0M0). Six months following the surgery, computed tomography revealed a solitary mass of 2cm diameter, dorsal to the right kidney. A second procedure for the removal of the tumour was performed. The lesion was pathologically diagnosed as a metachronous solitary retroperitoneal metastasis from caecal cancer. The patient is surviving and free from recurrence 17 months following the second procedure.

KEYWORDS

Colon cancer – Retroperitoneum – Metastasis

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Background

The reported recurrence rate of colorectal cancer in patients who undergo curative resection is approximately 40%.¹ The most common metastatic sites of colorectal cancer are the liver, lung and regional lymph nodes. However, retroperitoneal metastasis is relatively rare and is mostly detected in terminal stages with multiple metastases. Cases presenting with solitary metastasis and permitting curative resection are rare.

We report a case of complete resection of a retroperitoneal metachronous solitary metastasis of caecal cancer, with no evidence of distant metastasis. The patient has had a recurrence-free long-term survival following surgical resection.

Case history

An 80-year-old woman was diagnosed with anaemia by a family physician; colonoscopy revealed caecal cancer. The patient was referred to our hospital for further examination and surgical resection. She had a history of open repair surgery for abdominal aortic aneurysm at 76 years of age. Laparoscopic ileocaecal resection with regional lymph node dissection was performed. A video recording of the surgery confirmed the accuracy of the procedure, which

was indicated by the absence of layer peeling around the right kidney during mobilisation of the ascending colon. According to the eighth edition of the TNM classification, the pathological staging of the tumour was stage IIA

Figure 1 Abdominal computed tomography reveals a solitary tumour in the retroperitoneal space dorsal to the right kidney (arrowhead)

(T3N0M0). She did not receive adjuvant chemotherapy. Six months following the surgery, computed tomography (CT) revealed a solitary mass of 2cm diameter dorsal to the right kidney, which was suspicious of metastasis from caecal cancer (Fig 1).

¹⁸F-fluorodeoxyglucose positron emission tomography (FDG-PET)/CT showed elevated uptake of FDG in the tumour, with a maximum standardised uptake value of 11.35 (Fig 2). However, there was no evidence of any other metastasis. A second surgical procedure to remove the tumour was performed. On mobilising the right kidney with the renal fascia, the fatty layer such as retroperitoneal fascia was exposed; the tumour was palpable in this fascia. Exposure of the tumour through the retroperitoneal fascia was not feasible and it was removed with the surrounding fat tissue. The postoperative course was uneventful, and the patient was discharged nine days after the surgery.

Microscopic examination of the resected tumour established a diagnosis of moderately to poorly differentiated tubular adenocarcinoma (Fig 3a). The resection margins were negative. Immunohistochemical analysis revealed that the tumour cells of lymph node metastasis were

Figure 2 ¹⁸F-fluorodeoxyglucose (FDG) positron emission tomography showing uptake of FDG (SUVmax 11.35) in the same lesion detected in the computed tomography image (arrowhead)

Figure 3 Histopathological findings of the resected specimen. (a) A retroperitoneal metachronous solitary lymph node metastatic tumour from the caecal cancer (original magnification, Loupe image). (b) Histopathological appearance of moderately to poorly differentiated tubular adenocarcinoma (original magnification $\times 20$). Tumour cells were positive for: (c) CAM5.2 immunohistochemistry (original magnification $\times 20$); (d) CK20 immunohistochemistry (original magnification $\times 20$); and (e) CDX2 immunohistochemistry (original magnification $\times 20$).

positive for CAM5.2, CK20 and CDX2 (Fig 3b, c, d). Although the stage of differentiation of the tumour was poorer than that of caecal cancer, the immunohistochemical findings of a part of the tumour showed similarity with caecal cancer (Fig 4b, c, d). Therefore, the pathology was diagnosed as metachronous solitary retroperitoneal metastasis from caecal cancer. Although the patient did not receive adjuvant chemotherapy, she is presently alive 17 months after the second surgical procedure, without recurrence of the disease.

Discussion

Following curative resection of colorectal cancer, the common metastatic sites being the liver, lung and lymph nodes.¹ Metastasis to the retroperitoneum is rarely reported and is often accompanied by metastasis to other sites, thereby resulting in an unresectable terminal stage.² The present case with a solitary metastasis to the retroperitoneum is thus unusual. Retroperitoneal recurrences have been reported to be defined either as locoregional or lymph node recurrences.⁵ The rate of locoregional recurrences in a retroperitoneal site in such cases was 16–40%.^{4,5} Following colectomy, these recurrences result

from direct local implantation and occur particularly after bowel perforation.

In the present case, the size of the primary tumour was T3 and there was no evidence of bowel perforation. Moreover, the procedure was accurate, as indicated by the absence of layer peeling around the right kidney during mobilisation of the ascending colon. As per these findings, it was unlikely that the recurrence occurred due to direct local implantation. Retroperitoneal isolated lymph node metastasis has been reported to occur in no more than 1% of cases.⁶ In the present case, although there was no regional lymph node metastasis, lymphatic invasion was detected. This indicated a higher likelihood of retroperitoneal isolated lymph node metastasis. Furthermore, the retroperitoneal area is a site prone to lymphatic spread and is closer to the site of the primary lesion.

The management of retroperitoneal recurrence is controversial, with few studies reporting this finding in colon cancer. Locoregional recurrence is primarily a local disease for which surgical treatment should be considered, while retroperitoneal lymph node metastasis is viewed as a systematic disease for which chemotherapy is the sole therapeutic option.⁵ However, Dumont *et al* concluded that complete resection with a multimodality approach may yield long-term survival for patients with retroperitoneal

Figure 4 Histopathological findings of the resected specimen. (a) A main tumour from the caecal cancer. Histopathological appearance of moderately differentiated tubular adenocarcinoma (original magnification $\times 20$). Tumour cells were: (b) positive for CAM5.2 immunohistochemistry (original magnification $\times 20$); (c) partially positive for CK20 immunohistochemistry (original magnification $\times 20$); (d) positive for CDX2 immunohistochemistry (original magnification $\times 20$).

lymph node metastasis, as locoregional recurrence in patients had a poorer prognosis than lymph node metastasis.³ Ho *et al* reported that a more aggressive surgical treatment of retroperitoneal nodal recurrence is acceptable in selected patients.⁷ Moreover, Shibata *et al* reported that factors associated with long-term survival in selected patients with isolated retroperitoneal recurrence included a longer disease-free interval, completely negative resection margins and a small tumour size.⁸ In the present case, the size of the tumour was small and facilitated complete resection. The patient is now alive without recurrence of the disease.

The benefit of adjuvant chemotherapy after resection of recurrence and improvements in the disease-free survival of patients is controversial as there have been fewer reports of cases with retroperitoneal recurrence. Accurate documentation of the data of patients with retroperitoneal recurrence in a multi-institutional setting is essential.

In conclusion, aggressive surgical treatment of retroperitoneal recurrence is highly recommended in selected patients.

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