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Case Report

Anterior abdominal wall metastasis following curative resection and chemoradiation of rectal cancer masquerading as a desmoid tumour: A clinical conundrum

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الملخص

يحدث الورم الرباطي لجدار البطن الأمامي (الغمد المستقيم) بشكل شائع عند النساء بعد جراحة البطن. من النادر حدوث نقيلة من سرطان القولون والمستقيم إلى جدار البطن الأمامي وينتج عنه معضلة علاج معقدة. نقدم امرأة تبلغ من العمر ٥٧ عاما كانت قد خضعت لعملية استئصال أمامية منخفضة بالمنظار وإجراء علاج إشعاعي كيميائي مساعد في عام ٢٠١٣. وبعد سبع سنوات، ظهرت عليها كتلة في جدار البطن الأمامي بدون أعراض. سريريا، بدا أن الورم هو ورم رباطي. وتم إجراء استئصال موضعي واسع للورم وأظهر التشريح المرضي النهائي وجود نقيلة ورمية (سرطانة غدية). مع العلاج الكيميائي المساعد، أصبح المريض الآن خاليا من الورم وفي صحة جيدة. يجب أن يؤخذ في الاعتبار احتمال حدوث نقيلة ورمية لدى جميع المرضى، حتى عند من خضع لاستئصال علاجي مع استخدام العلاج الإشعاعي الكيميائي المساعد لسرطان القولون والمستقيم.

الكلمات المفتاحية: سرطان القولون والمستقيم؛ إشعاع كيميائي؛ استئصال الجزء الأمامي المنخفض بالمنظار؛ ورم؛ رباطي؛ سرطانة غدية

Abstract

Desmoid tumour of the anterior abdominal wall (rectus sheath) commonly occurs in women post abdominal surgery. Metastasis from colorectal cancer to the anterior abdominal wall, on the other hand, is rare and produces a complex management dilemma. This Case study presents a 57-year-old woman who received a curative laparoscopic low anterior resection and adjuvant chemoradiation in 2013. Seven years later, she presented with an asymptomatic anterior abdominal wall lump. Clinically, the lump appeared to be a desmoid tumour. A wide local excision of the lump was carried out and the final histopathology showed a metastatic lesion (adenocarcinoma). With adjuvant chemotherapy, the patient is now disease-free and doing well. A possibility of distant metastasis must be kept in mind for all patients, even when they have undergone curative resection with adjuvant chemoradiation for colorectal cancer.

Keywords: Adenocarcinoma; Chemoradiation; Colorectal cancer; Desmoid tumour; Laparoscopic low anterior resection

Introduction

Anterior abdominal wall metastasis from primary colorectal cancer (CRC) is a poorly understood phenomenon that has not received adequate attention in existing research. It has been the subject of recent studies after port-site metastases were noticed in patients with previous laparoscopic colorectal resections. Clinical studies have shown that the incidence of abdominal wall recurrence is approximately 1% after laparotomy for CRC.[1] Isolated abdominal wall

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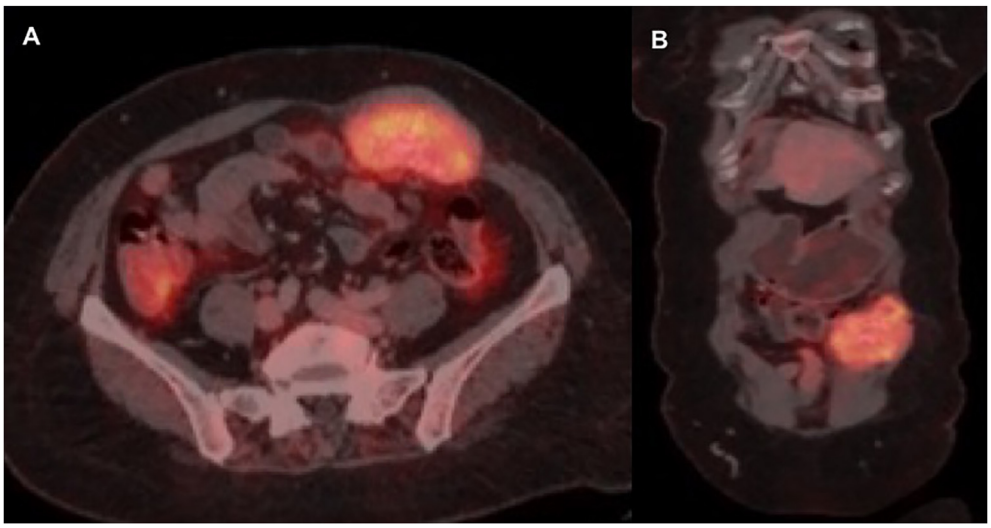

Figure 1: PET scan (A) axial and (B) coronal view of the hypermetabolic anterior abdominal mass.

recurrence/metastasis is a rare occurrence in the natural history of CRC. This type of cancer is most often accompanied by intra-abdominal deposits and systemic involvement. Though in a limited number of patients, it is the only tumoral foci where all other organ systems are free of disease.[2] CRC disseminates via the lymphatic and hematogenous route to the lung, liver, and other distant organs. Metastasis by cancer cell implantation in the peritoneum, anastomotic, surgical incision, or drain sites is relatively uncommon, and it suggests an advanced stage of the disease.[3] The most common differential diagnosis in such patients is a desmoid tumour originating from the rectus sheath of the abdominal wall, and it occurs frequently in young, fertile women especially during or after pregnancy. Though rare, they can be locally aggressive, with a high incidence of recurrence. Presence of spindle-shaped cells on a fine needle aspiration cytology (FNAC) may confirm the diagnosis of a desmoid tumour that warrants excision.[4] This Case study presents a patient with a solitary abdominal wall metastasis seven years post curative laparoscopic anterior resection (AR) for lower rectal adenocarcinoma and adjuvant chemoradiation.

Case report

A 57-year-old lady with a history of altered bowel habits and bleeding per rectum was diagnosed with lower rectal adenocarcinoma in 2013. She underwent laparoscopic low AR with negative histological margins and D3 lymph node dissection (pT2N0M0). Postoperatively she received adjuvant radiation therapy of 28 fractions with concurrent capecitabine and was disease-free for seven years. She had undergone two caesarean sections (CS) before this oncological surgical procedure. In 2020 she reported an asymptomatic, gradually growing left lower abdominal lump of one-year duration with no gastrointestinal symptoms. On examination, a single 8 × 6 cm, ovoid, firm, mobile, non-compressible mass with an irregular surface was palpated arising from the abdominal muscle layers, along the Pfannenstiel incision of previous CS. Though a clinical diagnosis of a desmoid tumour of the left rectus sheath was made, differential diagnoses of fibrosarcoma, lymphoma, rhabdomyosarcoma, liposarcoma, leiomyosarcoma, neurofibroma, benign fibrous tumour, and primitive neuroectodermal tumour were considered. A PET scan was done as a part of the pre-operative assessment, which revealed a hypermetabolic well-defined soft tissue mass lesion in the left rectus sheath of 7.4 × 4.7 × 6.7 cm, involving the left rectus muscle and the peritoneum (Figure 1). No peritoneal dissemination, distant-organ metastasis, or lesions in the colon were found. As per the patient's wish, an FNAC of the mass was done, which revealed a spindle cell neoplasm (likely to be a desmoid tumour) that could not be differentiated, but warranted surgery. Intraoperatively under general anaesthesia, a hard mass of 10 × 8 cm involving the left rectus sheath and muscle was noted, and wide local excision of the mass (resection of the full thickness of left rectus muscle and underlying peritoneum with adequate margins, Figure 2), followed by reconstruction with polypropylene mesh of the defect, was

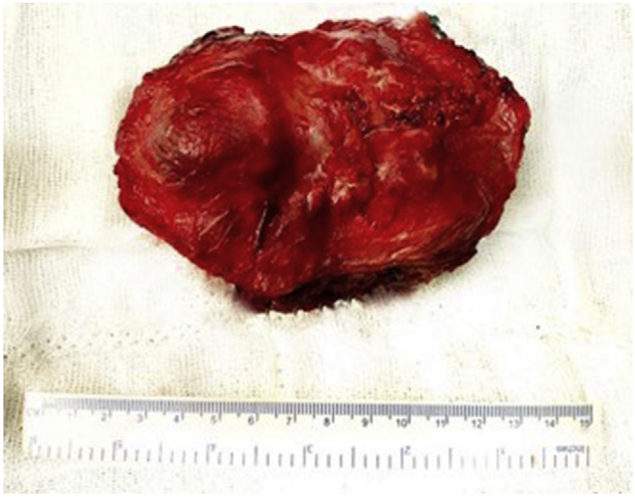

Figure 2: Resected tumour specimen.

done. The postoperative period was uneventful. The final histopathology report revealed an invasive tumour composed of irregular, enlarged glands lined by mucin-depleted pleomorphic columnar cells consistent with a metastatic deposit of adenocarcinoma (Figure 3). The patient received eight cycles of capecitabine and oxaliplatin based chemotherapy and has been kept under close follow-up. At the end of first year, she is well with no local or systemic disease.

Discussion

Abdominal wall metastasis after conventional resection of CRC is uncommon and usually considered a sign of advanced disease.[3] Locoregional metastasis of CRC includes anastomotic recurrence, nodal, abdominal wall, and pelvic deposits. Development of abdominal wall recurrence is a potential risk in patients with transmural extension and node-positive tumours; colon cancers involving the right side are most commonly implicated.[4] But our patient's previous histopathological staging was pT2N0M0, namely, no transmural and no nodal involvement. Metastasis to the abdominal wall may occur by cancer cell implantation, lymphatic or hematogenous route, or direct invasion.[5] Clinical and experimental studies have put forward data that suggest tumour metastasis by surgical trauma.[6] Port site metastasis and intraperitoneal tumour dissemination have been reported, although the role of laparoscopic surgery on metastasis is not very well understood.[7]

Paolucci V et al. reported an overall incidence of tumour seeding of 4.6%, with an incidence of port-site metastases of 3.9%.[2] Incidence of colorectal tumour seeding is generally higher in laparoscopic surgery than open surgeries and is often limited to tumours involving the serosal layer. Detection of abdominal wall and port site metastases of colorectal carcinoma by PET or CECT abdomen aids in planning and efficient management.[8] Abdominal wall metastases are often indicators of recurrent intra-abdominal cancer; control of local disease by aggressive resection of the abdominal wall and associated adherent viscera can result in adequate management with minor morbidity and no mortality.[8] Radiation therapy is not indicated when complete excision of the metastatic site with negative margins is performed.[7]

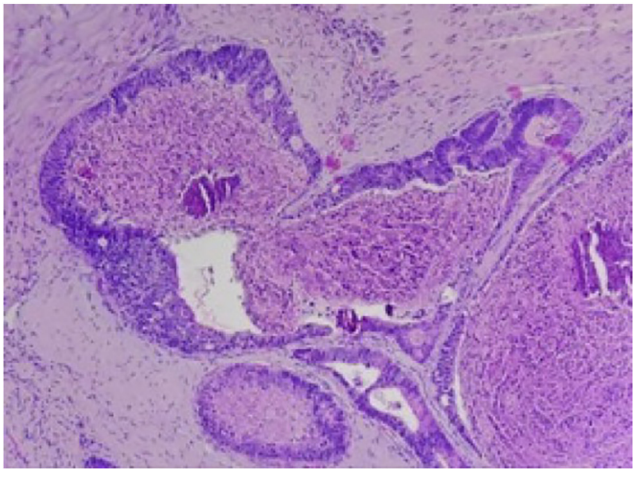

Figure 3: Photomicrograph showing invasive tumour composed of irregular, enlarged glands lined by mucin depleted pleomorphic columnar cells with nuclear stratification and luminal necrotic debris surrounded by desmoplastic stroma (200×).

In conclusion, our patient had undergone a laparoscopic curative AR and postoperative chemoradiation. Prior to this surgical procedure, she had also undergone two CS. As the mass was along the Pfannenstiel incision and because a desmoid tumour is a common occurrence in such patients, this was clinically thought of, with FNAC suggesting the same! The final histopathology, however, revealed a solitary metastasis. Our patient's Case indicates that a possibility of distant metastasis must be kept in mind in all patients, even when they have undergone curative resection with adjuvant chemoradiation for CRC.

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Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

Departmental Review Committee approval was obtained (KMC/Surg/019/2021 dated April 29, 2021) for submission to the journal.

Consent

Consent for publication of this report has been obtained from the patient.

Authors' contributions

GR, CG, KH, and VM conceived and designed the study, conducted the research, provided research materials, and collected and organized data. AR and MG analysed and interpreted the data. GR, KH, and VM wrote the initial and final draft of the Case study and provided logistic support. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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