Case Report

Cutaneous and Subcutaneous Metastases of Adenocarcinoma of the Colon and Rectum

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Abstract

Introduction: The interesting topic of cutaneous and subcutaneous metastasis from rectal carcinoma is discussed using 3 cases. Clinical Picture: The first case was a 70-year-old man with T3N2M0 rectal mucinous adenocarcinoma, who developed an inflammatory subcutaneous metastasis at the left scapula 2 years after anterior resection. The second case was a 51-year-old man with T4N2M0 splenic flexure mucinous adenocarcinoma, who developed metastatic disease including a subcutaneous secondary to the back. The third case was a 53-year-old woman who developed vulval recurrence 10 months after abdomino-perineal resection for a low T3N1M0 rectal adenocarcinoma. Treatment: All underwent wide resection. Conclusion: This entity is rare and usually signifies disseminated disease if found remote from the resection site and warrants a thorough metastatic work up. A high index of suspicion is recommended when encountered with unresolving skin lesions in cancer patients.

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Introduction

Cutaneous metastasis from colorectal adenocarcinoma is an interesting condition not only because of its rarity, it occurs in less than 4% of patients with colorectal cancers,[1] but also because it implies a poor prognosis. We discuss 3 patients with rectal adenocarcinoma who subsequently developed cutaneous metastases. These 3 patients represent 2 different modes of metastasis to the skin and subcutaneous tissue.

Case Reports

Case 1

WT was a 70-year-old man who underwent ultra-low anterior resection for a low rectal cancer 6 cm from the anal verge in March 2003. Preoperative metastatic work-up was negative. Histopathological analysis revealed a mucinous adenocarcinoma infiltrating the subserosal fat, with 6 of 15 lymph nodes involved. There was perineural invasion but no vascular emboli seen (T3N2M0 disease). He subsequently underwent a full course of adjuvant chemo-radiation (5-flurouracil and 54 Gy) from June 2003 to December 2003.

In January 2005, however, WT complained of an enlarging subcutaneous mass over the left scapula region. This lesion had grown to a size of 10 cm in diameter over 1 month and caused substantial discomfort whenever WT leaned on his back. Clinical examination revealed a warm tender, firm and erythematous subcutaneous tissue mass over the left scapula region (Fig. 1). Computed tomography revealed a soft tissue mass in the subcutaneous tissue plane and the stranding of adjacent adipose tissue (Fig. 2).

In view of his symptoms, wide excision of the lesion was performed together with primary closure. The mass was found to be only in the subcutaneous tissue plane, and did not involve the deeper muscles. Sectioning of the specimen revealed a fleshy, fibrous lesion. Histology of this specimen was that of adenocarcinoma with signet ring cells infiltrating the dermis and subcutaneous tissue (Fig. 3). He subsequently underwent further palliative chemotherapy.

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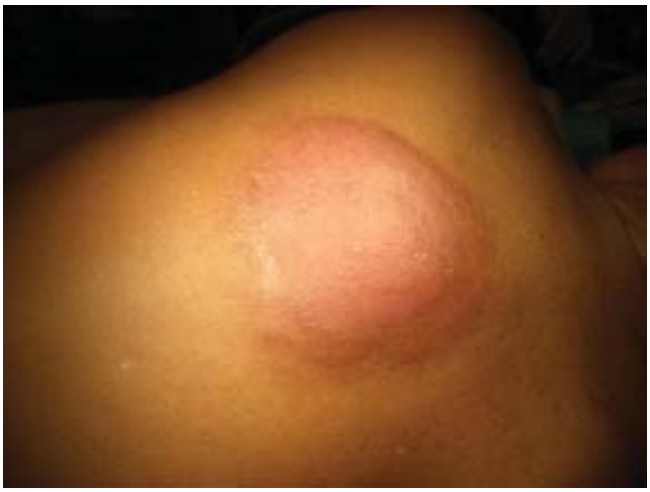

Fig. 1. Case 1 (WT) – preoperative picture of the inflammatory lesion at the left scapula.

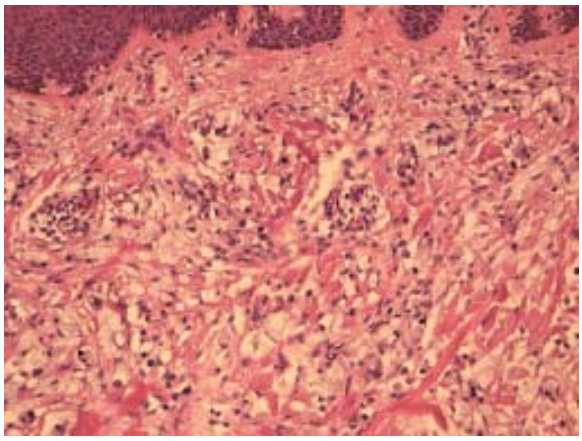

Fig. 3. Case 1 (WT) – histology slide showing adenocarcinoma with signet ring cells infiltrating the dermis and subcutaneous tissue.

Case 2

TW was a 51-year-old man who underwent left hemicolectomy for cancer of the splenic flexure in December 2002. The tumour was locally invasive, invading the abdominal wall. Histopathological staging was T4N2M0, moderately differentiated mucinous adenocarcinoma. He subsequently received 6 months of adjuvant chemotherapy (5-flurouracil and folinic acid).

He had a relapse in February 2004, with para-aortic nodal disease and pulmonary metastases evident on computed tomography. He developed an inflammatory subcutaneous mass at the right scapula region in September 2004. This lesion grew in size and caused increasing pain. Computed tomography showed a subcutaneous mass not dissimilar from that of WT. He underwent wide excision of this lesion to palliate his symptoms in January 2005. Histology revealed metastatic mucinous adenocarcinoma involving the dermis and subcutis. TW succumbed to metastatic disease in April 2005.

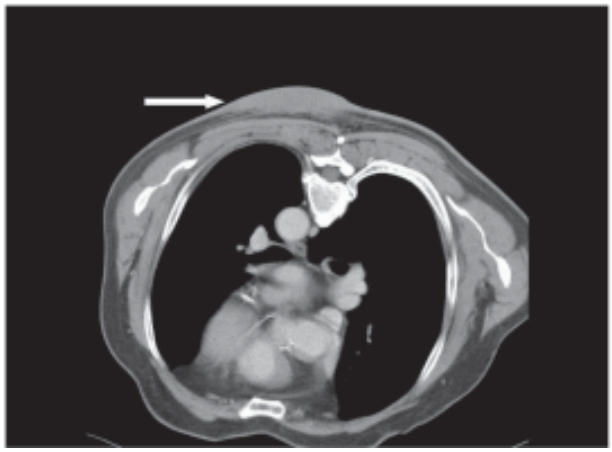

Fig. 2. Soft tissue mass in the subcutaneous tissue plane and stranding of adjacent adipose tissue.

Case 3

ST was a 53-year-old woman who underwent abdomino-perineal resection for a rectal adenocarcinoma extending from the anal verge to 9 cm proximally in May 1998. Intraoperative finding was that of a 6 cm x 9 cm ulcerating tumour extending to the anal verge. The histology of the tumour was a moderately differentiated adenocarcinoma of the rectum infiltrating the subserosal fat, with 1 of 27 lymph nodes involved. The proximal and lateral margins were clear (T3N1M0 disease).

ST declined adjuvant chemoradiation post surgery. Ten months after the initial surgery, she developed a fungating nodule at the left posterior labia. Wide excision of the lesion was performed and part of the posterior vaginal wall was excised en bloc. The histology was that of metastatic adenocarcinoma with clear excision margins.

ST subsequently underwent chemoradiotherapy, but her disease continued to progress and she developed pelvic recurrence together with metastases to the lungs and brain over a period of 2 years. She succumbed in May 2001.

Discussion

Cutaneous metastases from abdominal malignancies are rare, occurring in less than 5% of patients.[2] Those arising from adenocarcinomas of the colon and rectum are even rarer. They occur in 4% of patients and usually herald widespread disease and a poor prognosis.[3-7] Between 1998 and 2003, 2538 new cases of colorectal cancers were managed by our department. During that period, these were the only 3 cases (0.1%) in our prospectively collected database where cutaneous or subcutaneous metastases developed.

Kaufmann et al[4] suggested that metastatic spread of adenocarcinoma to the skin and subcutaneous tissue could be by lymphatic and haematogenous spread, by direct

extension or by implantation during surgery. They reported a case of adenocarcinoma of the rectum with inflammatory metastases to the thigh skin. They were able to show through immunohistochemical evaluation that the dermal vessels containing neoplastic cells were both lymphatic and capillary vessels and thus concluded that the tumour cells travelled to the skin via lymphatics and blood vessels.

Our 3 patients illustrate the 2 different modes of metastasis to the skin and subcutaneous tissue. WT's and TW's metastases developed in areas remote of the primary cancer in a setting of heavy nodal disease. The likely pathophysiology is that of a combination of intravascular and lymphatic dissemination. It is unlikely that spread to the skin over the scapula occurred via direct extension or by surgical implantation.

WT's and TW's metastases were inflammatory in nature. To our knowledge, this inflammatory type of cutaneous metastases arising from rectal cancer has been only described 3 times previously[4,8] and is a zone of deep red or purplish red indurated erythema with a well demarcated border. The oedema and erythema were suggested to arise from retrograde tumour spread leading to capillary congestion combined with partial vascular and lymphatic obstruction.[4] This lesion could easily be mistaken for bacterial infection. The clinician who provides follow-up for a cancer patient needs to have a high index of suspicion so that diagnosis can be made swiftly and appropriate treatment administered. Unexplained persistent erythema lasting more than 2 weeks should be biopsied.

We believe that the mode of metastasis to the vulval skin for ST is different from that of WT. Tumour cell implantation into the skin is a recognised entity.[9] There are numerous reports of port site metastases after laparoscopic cancer surgery. Having obtained clear lateral margins at the initial surgery, the recurrence was likely to have been secondary to the seeding of exfoliated tumour cells during tumour mobilisation. In ST's case, the posterior vulva was close to the operative field and the skin was likely to have been traumatised during retraction of the bulky tumour thus providing a bed for tumour implantation. This phenomenon was also noted by De Friend et al[10] when they reported a recurrence at the perianal skin after an anterior resection. Indeed, care must be taken not to injure the adjacent skin during anterior resection and abdomino-perineal resection so as not to allow raw areas for tumour seeding.

The presence of cutaneous and subcutaneous metastases remote from the site of resection usually signifies disseminated disease and warrants a full metastatic work-up. The fact that both WT and TW had mucinous adenocarcinoma reminds us that the underlying disease is aggressive. Lookingbill et al[2] found an average survival of only 18 months in patients with skin metastases from colorectal carcinoma. Although surgical excision is unlikely to confer survival benefit, it should still be performed for palliation when the patient is very symptomatic. There are currently no data on the effectiveness of various treatment modalities as there are simply too few cases to make any conclusion.

Conclusion

Cutaneous and subcutaneous metastases are rare and usually signify disseminated disease if found remote from the resection sites and warrant a thorough metastatic work-up. Meticulous technique can prevent disabling skin metastasis secondary to implantation. A high index of suspicion is recommended when unresolving skin lesions in cancer patients are encountered.

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