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CASE REPORT
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Cutaneous metastasis: a rare phenomenon of colorectal cancer

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Cutaneous metastases from colorectal cancer are extremely rare and generally appear several years after diagnosis or resection of the primary tumor. Although this phenomenon is uncommon, it is very important and often indicates a poor prognosis. We present a case of a 76-year-old female patient with multiple cutaneous metastatic nodules on the back, just 1 month after resection of rectal cancer. Unfortunately, the patient gave up the follow-up treatment due to her age and poor physical condition; she died 3 months later. In view of its rarity of occurrence and lack of experience in treatment, we reviewed the literature and report as follows.
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Key Words: Colorectal neoplasms, Neoplasm metastasis, Cutaneous

INTRODUCTION

Cutaneous metastases are discovered in only about 1.3% of cases at the time of presentation of the primary tumor [1]. They may be the first manifestation of metastatic spread of an internal malignancy. Cutaneous metastases are commonly secondary to malignant melanoma, cancer of lung and breast. The most common metastatic site of colorectal adenocarcinoma is liver and lung. Meanwhile, cutaneous metastases also occur in 4%–6.5% of these metastatic cases, with abdominal skin being the most common site [2]. This often indicates a poor prognosis, but there is no standardized treatment so far.

CASE REPORT

A 76-year-old female was seen in March 2016, presenting with a 10-day history of hematochezia and change in bowel habit, including tenesmus, constipation, and defecating too frequently. Digital rectal examination showed a huge mass, 6 cm from the anal margin, occupying the whole circle of the rectum. Abdominal CT, chest CT, pelvic MRI, and PET/CT demonstrated rectal tumor, multiple pelvic enlarged lymph nodes, no lung or liver metastasis, 2 suspicious nodules in the right adrenal gland and bottom of oral cavity respectively, with high fluorodeoxyglucose metabolism, clinical stage T4aN1Mx. Colonoscopy failed due to the narrow intestine resulting from the biopsy-proven adenocarcinoma.

Her medical history included hypertension, chronic bronchitis, and mild Alzheimer disease all of which were well controlled pharmacologically. According to the guidelines, she should have received neoadjuvant chemotherapy. However, because of the incomplete intestinal obstruction, she underwent a low anterior resection of the rectum (Hartmann). Pathologic findings showed poorly differentiated ulcerative adenocarcinoma with lymph node metastasis, intravascular tumor thrombus, with no perineural invasion. Immunohistochemical

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results showed: MSH2(+), MSH6(+), MLH1(+), PMS2(+). The pathological stage was T4aN2Mx. The operation was successful, but postoperative complications like pulmonary infection, hydrothorax, respiratory failure, and urinary retention occurred. Fortunately, all of the complications were relieved by conservative treatment.

Curiously, in the postoperative period, we observed a rare phenomenon. One month after surgery, multiple subcutaneous nodules appeared on the patient's back, hard, isolated, clear boundary, absence of tenderness, and 10–20 mm in size (Fig. 1). Core needle biopsy and histopathology confirmed it to be a metastatic poorly differentiated adenocarcinoma of colorectal origin positive for CK20, and negative for CDX2 and MUC2 (Figs. 2, 3). Meanwhile, one rapidly increasing gingiva nodule was observed as well (Fig. 4), regrettably, the patient refused biopsy. Therefore, we were not sure whether it was a metastatic lesion, but it was highly suspect according to the PET/CT result. In addition, a small amount of atypical cells was found in the pleural fluid. The patient gave up follow-up treatment due to her age and poor physical condition; she died 3 months after surgery, or, 2 months after the diagnosis of cutaneous metastasis.

Fig. 1. Multiple subcutaneous nodules on the patient's back.

DISCUSSION

Cutaneous metastases of cancer are rare, occurring in about 1.3% of cases at the time of presentation of the primary tumor, as previously mentioned. Patterns of cutaneous metastases vary among men and women. In men, melanoma, lung cancer, and colorectal cancer are the most common sites of cutaneous metastases. Breast cancer, colorectal cancer, and melanoma frequently metastasize to the skin in women [3]. These metastases have also been associated with cancers of gastric, esophageal,

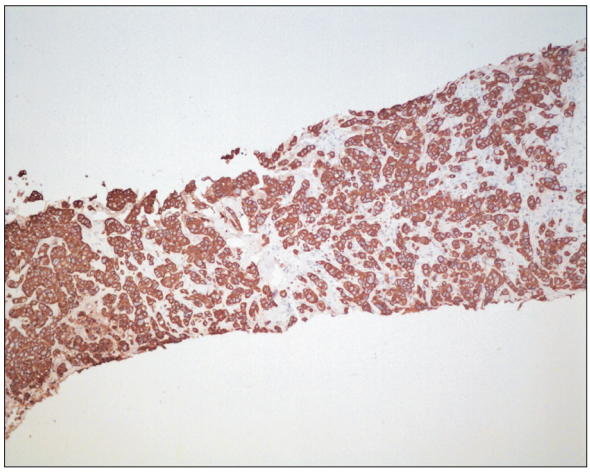

Fig. 3. Immunohistochemical staining was positive for CK20 (×100).

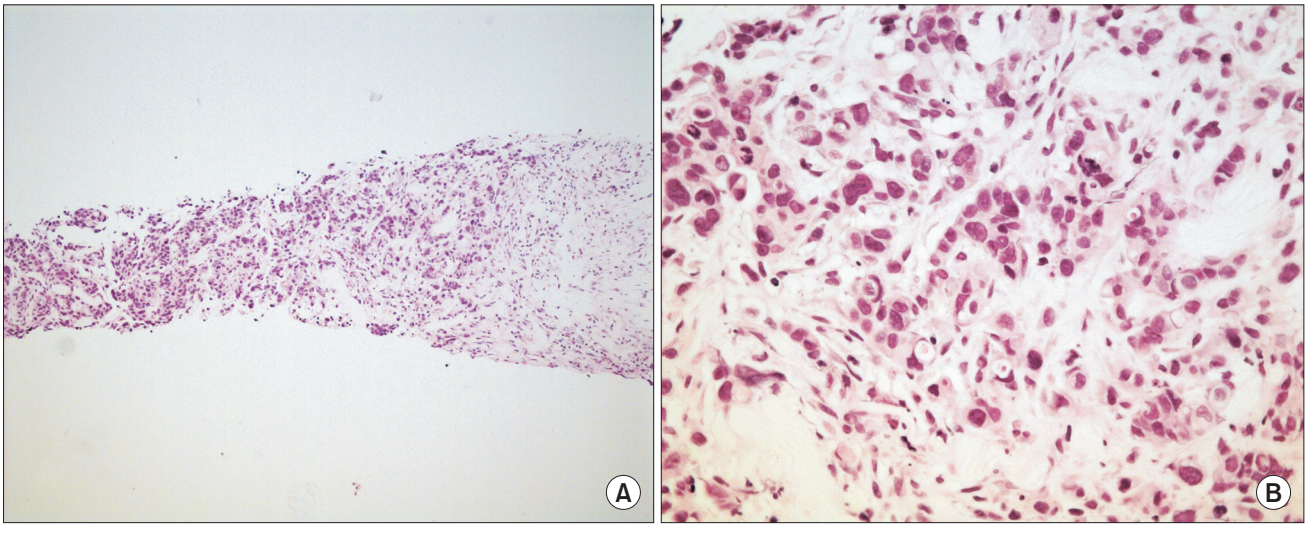

Fig. 2. Metastatic rectal adenocarcinoma involving skin: poorly differentiated adenocarcinoma, a few glands but largely composed of infiltrating nests of tumor cells (A: H&E, ×100; B: H&E, ×400).

Fig. 4. Rapidly increasing gingiva nodule.

prostatic, ovarian, hematologic, laryngeal, palatine-tonsillar, pancreatic, parotid, thyroid, uterine origin, and miscellaneous others.

Cutaneous metastases occur in about 3% of colorectal cancers [4]. The most frequent sites of cutaneous metastasis from colorectal cancer are abdomen followed by extremities, perineum, head, neck, and penis. These metastases generally occur within the first 2 years after resection of the primary colorectal tumor and often present simultaneously with metastases to the liver, peritoneum, and lung. It is extremely rare that tumors metastasize to the back and gingiva (not confirmed) just 1 month after surgery, as in our case.

Cutaneous metastases may occur through lymphogenous spread, intravascular dissemination, direct extension of tumor, and surgical implantation and spread along embryonal remnants such as the urachus.

In the majority of the metastases, the diagnosis was based on the morphologic appearances, histomorphology and immunohistochemistry of the cutaneous lesion, in conjunction with comparison with the primary tumor morphology if it is available. Cutaneous metastases can present in a variety of clinical manifestations, such as a rapidly growing painless dermal or subcutaneous nodules with intact overlying epidermis, or mimic inflammatory dermatosis. Ulceration, nodules, bullae, or fibrotic processes are the most common presentations of cutaneous metastases [2]. While most cancers present as solitary nodules, melanomas and carcinomas with an unknown primary frequently present as multiple nodules. Although metastases cells may be more undifferentiated than the primary tumor, careful microscopic examination usually reveals important clues. For example, colon cancer may be associated with mucinous cells. When tumors are poorly differentiated or anaplastic, screening immunohistochemical studies such as CK7, CK20, CK19, and CDX2 can be very helpful [5].

Identification of cutaneous metastasis from an internal malignancy indicates poor prognosis, as it usually reflects widespread disease. Survival after diagnosis of cutaneous metastasis ranges from 1 to 34 months [6]. Schoenlaub et al. [7] reported the median survival of cutaneous metastasis patients with colorectal primary tumours was 4.4 months. On the other hand, a retrospective study by Lookingbill et al. [1] showed a median survival of 18 months in patients with similar characteristics. In our case, the patient died 3 months after surgery.

Treatment of metastatic carcinoma of the skin is limited and lacks any standardization strategy. Although management of metastatic colorectal cancer has been based on systemic chemotherapy, surgical resection in selected patients with metastatic colorectal cancer offers the only possibility for long-term survival [8]. For isolated lesions, Nesseris et al. [6] suggested wide local excision and reconstruction. Nevertheless, another research paper proposed typical resection with a 1-cm margin of normal skin. Furthermore, in some areas of high cosmetic importance or when therapy is limited to palliation, excisions may be performed with very limited margins [5]. For patients with multiple cutaneous metastases or unresectable lesions, systemic chemotherapy can be considered. However, there is no optimal chemotherapy regimen as of yet. Radiotherapy, polychemotherapy, isolated limb perfusion, interferon alpha injections, cryotherapy, laser ablation, radiofrequency ablation, imiquimod 5% cream, and oncogene-targeted therapy were be also mentioned in some other studies [9,10].

In conclusion, cutaneous metastasis is a rare but important phenomenon, which should not be ignored, frequently indicates advanced disease and poor prognosis. Early diagnosis will be the key element in its effective management, which requires careful physical examination. Once any change in the skin is noted, further examination should be implemented. More effective treatment modalities need further exploration.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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