

## Case Report

# Cutaneous metastasis of a colon adenocarcinoma presenting as an unusual manifestation: a report of one case

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**Abstract:** Colorectal cancer has a low probability of metastasizing to the skin, usually < 6%, and the common sites of metastasis are the liver and lungs. Skin metastases usually occur within 2 years of the discovery of the primary tumor. Here we report a case in which the skin lesions were mainly characterized by unilateral scattered papules and “fake blisters”. The patient was initially misdiagnosed with lymphoma and was ultimately diagnosed with metastatic colorectal cancer through pathology.

**Keywords:** Colon adenocarcinoma, cutaneous metastasis

### Introduction

Metastatic malignant tumors of the skin are uncommon, with typically < 10% of all malignant tumors metastasizing to the skin. Colorectal cancer has an even lower probability of skin metastasis, usually < 6%, and the most common sites of metastasis are the liver and lungs [1, 2]. Skin metastases usually occur within two years of the discovery of the primary tumor [3]. The clinical manifestations of skin metastases are diverse and include painless nodules, which are the most typical manifestations, but other manifestations, such as ulcers, papules, cellulitis-like lesions, generalized erythema, and tumors are relatively rare. Metastatic lesions usually need to be distinguished from simple cysts, lipomas, neurofibromas or infectious lesions [4]. The most common skin metastatic site of colon cancer is the abdominal scar from surgery, and other sites ranked according to the probability of occurrence are the pelvis, back, chest, limbs, head, and neck [5]. The specific mechanism of skin metastasis is not clear. At present, it is speculated that the possible mechanisms of metastasis include hematogenous diffusion, lymphatic metastasis, direct diffusion, and tumor cell implantation [6]. It has been suggested that

the Koebner phenomenon is involved in the mechanism of skin metastasis, that is, herpes zoster virus infections or trauma can easily lead to the implantation of tumor cells [7].

### Case report

A 68-year-old male patient came to our department with erythema, papules, and “fake blisters” in his right groin, perineum, and scrotum with itching and pain (**Figure 1**). The patient had a history of colon cancer. Four years earlier, the patient underwent an abdominal CT and a colonoscopy because of abdominal pain. The abdominal CT (**Figure 2**) found that the ascending colon was occupied and surrounded by multiple enlarged lymph nodes. A colonoscopic biopsy (**Figure 3**) showed an adenocarcinoma and a partial mucinous adenocarcinoma. The patient then received six weeks of XELOX regimen chemotherapy (specific dose: bevacizumab 100 mg + oxaliplatin 200 mg D1 + carbinitabine 1.75 g D1-14). He underwent a right hemicolectomy four months later. The postoperative pathology showed that the tumor was a 14 × 10 cm, moderately-poorly differentiated adenocarcinoma with a semi-mucous secretion. The tumor regression grading (TRG) score was 3. It infiltrated to the serous



**Figure 1.** Infiltrative erythema in the right groin area, with red papules and “fake blisters” ranging from mung bean size to soybean size, and significant swelling of the scrotum and penis. Surgical scars can be seen below the right groin.

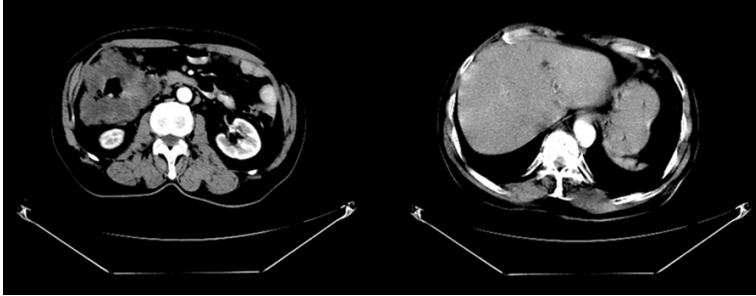
layer, lymph node 10 to 13, cancer metastasis, 5 mesenteric carcinoma nodules, vascular (+), nerve (-), incisional margin (-). No mutations were found in the KRAS, NRAS or BRAF genes. The patient underwent a percutaneous hepatic arterial port-catheter system implantation three years earlier. After that, he successively received percutaneous microwave ablation of the liver tumor and intertissue particle implantation and radioactive particle implantation of his abdominal wall lesions. Two months earlier, the patient removed the medicinal box for chemotherapy at the root of his right thigh because of swelling in his right lower limb. Before long, the patient's right groin began to show scattered red papules and “fake blisters”, which were painless. After he used erythromycin ointment, the rash did not improve, and it gradually increased and grew faster. His scrotum and penis gradually developed infiltrative erythema and papules, accompanied by swelling, itching and pain, so he came to the dermatology clinic.

The physical examination showed that the patient was in good condition. The dermatological examination found that infiltrative erythema could be seen in the patient's right groin area, with red papules ranging from mung bean size to soybean size, partially manifested as “fake blisters”, with significant swelling of the scrotum and penis, enlarged lymph nodes in the right groin, and sunken edema in the right leg. Surgical scars could be seen below the right groin. We suspected that the patient may have had herpes zoster or lymphangioma, but given the patient's history of colon cancer, we recommended that the patient undergo a skin biopsy and other examinations with the following results: Biochemistry: albumin, 28 g/l serum, potassium, 3.49 mmol/l serum. Blood analysis: red blood cell count,  $3.59 \times 10^{12}/l$ , hemoglobin, 100 g/l. Skin biopsy pathology: mucinous adenocarcinoma (**Figure 4**). Thoracic and abdominal CT: Metastasis of colon cancer after treatment, and changes after the implantation of particles in the liver area of the colon, right abdominal wall, and the head of the pancreas. Multiple metastases in both lungs, multiple metastases in the liver, low density lesions in the bladder and rectum. Enlargement of the right hilum, mediastinum, abdominal cavity, retroperitoneum, and bilateral inguinal lymph nodes. A small amount of perihepatic effusion. Cholecystolithiasis; bilateral renal cysts (**Figure 5**). The examination results showed that the patient had multiple metastases of colon cancer, and the skin lesions were considered metastatic cancer, so the patient was transferred to the oncology department for further treatment.

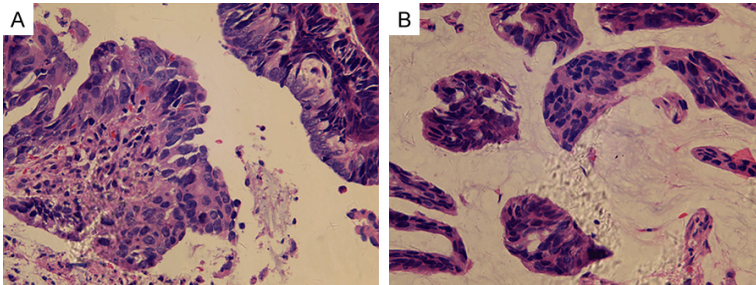
### Discussion

In our case, the skin metastases appeared in the thighs, perineum, and scrotum, showing infiltrative erythema, red papules and “fake blisters”. Metastatic sites and lesions are rare, but they were the most prominent features of this case. The patient's skin lesions were unilaterally distributed and turned into scattered papules and “fake blisters,” which need to be distinguished from herpes zoster and lymphangioma. Herpes zoster generally occurs in the facial and intercostal nerves, the blister walls are tense, the blister fluid is clear, and the pain is significant [8]. Lymphangioma usually occurs in young children, and the skin is generally

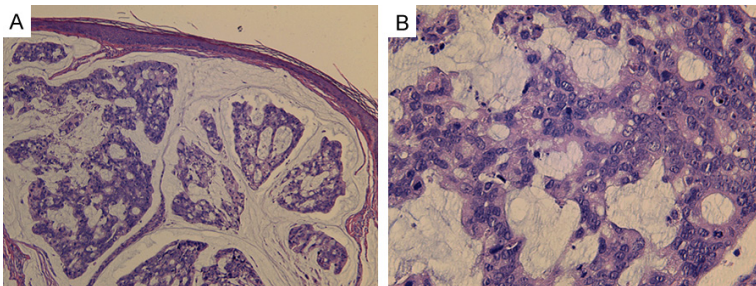
## Cutaneous metastasis of a colon adenocarcinoma



**Figure 2.** Abdominal CT: the ascending colon occupies space, and there are many enlarged lymph nodes around it.



**Figure 3.** Pathology: adenocarcinoma, partial mucinous adenocarcinoma. (hematoxylin & eosin,  $\times 200$ ).



**Figure 4.** Skin biopsy pathology: mucinous adenocarcinoma. (hematoxylin & eosin,  $\times 200$ ).

characterized by thick-walled blisters, which can be diagnosed pathologically [9].

Most metastases are anaplastic, and it is difficult to determine the tissue origin, so it is usually necessary to also use immunohistochemistry to make a definitive diagnosis [10]. This patient's primary tumor was adenocarcinoma with some mucinous adenocarcinomas. The pathology of the skin lesion showed mucinous adenocarcinoma, but the immunohistochemical data was lacking, but combined with the medical history of this patient, we could determine that the skin lesion was a metastatic cancer. The mechanism of the difference between

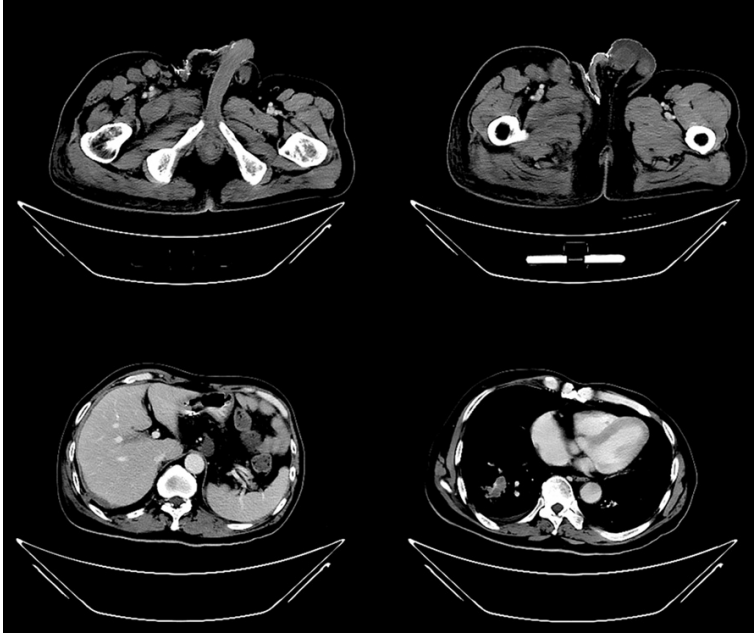
the pathological type of skin metastatic carcinoma and the primary tumor needs to be further studied.

The patient's skin metastasis occurred four years after the diagnosis of the primary tumor, which is later than is usually reported. The abdominal CT showed that the patient had liver, lung, and lymphatic metastases, so the tumor cells could have been transferred to the skin through the blood or lymphatic vessels. In addition, the skin metastasis occurred after the removal of the hepatic artery medicine kit, and it initially appeared at the location where the kit was removed, so implantation metastasis should also be considered. This case should remind doctors and colon cancer patients to avoid skin trauma, including iatrogenic injuries.

For single metastases, surgical resection is recommended, with an extensive resection margin larger than 1 cm. Resection of an extensive large metastasis is often the only palliative treatment [5]. It can be combined with radiotherapy and chemotherapy, and it has been reported that a metastatic focus can be

completely relieved by radiotherapy [10]. At present, the chemotherapy regimens include an oxaliplatin, 5-fluorouracil, and calcium folinate (FOLFOX) regimen and a 5-fluorouracil, calcium folinate, and irinotecan (FOLFIRI) regimen, and there are also reports of the combined application of monoclonal antibodies [11].

The prognoses of patients with skin metastases are usually poor; the survival time is generally no more than 34 months, and the average survival time of colon cancer patients with skin metastases is 18 months [12]. When skin metastasis occurs, it often indicates an



**Figure 5.** Thoracic and abdominal CT: Metastasis of the colon cancer after treatment, and changes after the implantation of particles in the liver area of the colon, the right abdominal wall, and the head of the pancreas. Multiple metastases in both lungs, multiple metastases in the liver, low density lesions in the bladder and rectum. Enlargement of the right hilum, mediastinum, abdominal cavity, retroperitoneum, and bilateral inguinal lymph nodes. A small amount of perihepatic effusion. Cholecystolithiasis; bilateral renal cyst.

advanced stage of disease, when there are multiple metastases in other organs [5]. The common metastatic sites of colon cancer are the liver and the lungs, but determining metastasis of the liver and lungs usually requires expensive and harmful tests such as CT, so it is impossible to detect cancer metastasis in those tissues in a timely manner. The skin can be observed in real time, and it's convenient and non-invasive. Therefore, for patients with colon cancer, oncologists should pay attention to their skin conditions, and it is also critical to remind patients to pay attention to their skin abnormalities during patient education. They should be told to be wary of nodules, hard-to-heal ulcers, or other rapidly progressive lesions. The early detection of skin metastases is conducive to the early detection of cancer recurrence and metastasis, thus helping clinicians carry out early intervention to improve patients' survival times.

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#### Disclosure of conflict of interest

None.

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