Epidermotropic poorly differentiated adenocarcinoma of colon presenting as a diffuse erythematous petechial rash

Luis-Antonio Sardiña, MD,[a] Addie Walker, MD,[b] and Melissa Piliang, MD, FAAD[a,c]
Cleveland, Ohio and Gainesville, Florida

Key words: adenocarcinoma; epidermotropism; metastasis.

INTRODUCTION

Epidermotropic metastases from colorectal adenocarcinoma are very uncommon. Frequently, these metastases appear within 2 years after resection of the primary tumor and just like renal, breast, ovarian, and bladder cancer, disseminate to the skin through lymphatic and blood. The early recognition of cutaneous metastases establishes the management and prognosis for the patient by indicating a potential relapse. Less frequently, these findings are the first manifestation of the malignancy, facilitating an immediate therapeutic action.[1,2]

We present an 87-year-old woman with a previous diagnosis of colonic adenocarcinoma, who presented to her primary care physician with an abdominal diffuse erythematous petechial rash of unknown etiology.

CASE REPORT

An 87-year-old woman was admitted to our institution for further investigation of chronic constipation and a diffuse abdominal erythematous petechial rash after a hemicolectomy because of invasive poorly differentiated adenocarcinoma of the colon. During a previous admission, she was found to have on imaging dilated bowel loops and retroperitoneal lymphadenopathy. On physical examination, an asymptomatic diffuse abdominal erythematous petechial rash was identified. A skin biopsy was performed, and treatable conditions such as low-grade lymphoma, coagulopathies, and vasculitis were within the differential diagnosis.

The histopathology of the skin showed a multifocal nodular infiltrate of enlarged atypical epithelioid cells with mucin, involving the deep and superficial dermis with extension into the epidermis. Vascular invasion was identified (Fig 1).

The histologic differential diagnosis included malignant melanoma, squamous cell carcinoma, and metastatic carcinoma. To distinguish among these entities, immunohistochemical stains for SOX10, CK5/6, p63, CK7, CK20, and CDX2 were performed and compared with appropriate controls. The tumor cells expressed CK20 and CDX2 and were negative for SOX10, CK5/6, p63, and CK7 (Figs 2 and 3).

The histopathology of prior hemicolectomy was reviewed and showed an invasive poorly differentiated adenocarcinoma with lymphatic permeation associated with tubule-villous adenoma. Cytologically, the primary tumor was composed of atypical epithelioid cells with some morphologic features like the tumor seen on the skin biopsy (Fig 4). The primary tumor was diagnosed 11 months preceding the cutaneous manifestations.

Overall, the histologic features and immunophenotype were compatible with the diagnosis of epidermotropic cutaneous metastasis of the patient's known adenocarcinoma. The clinical staging was consequently updated to IVB due to distant metastasis and regional lymph node involvement based on the American Joint Committee on Cancer protocol.

From Robert J. Tomsich Pathology and Laboratory Medicine Institute[a] and the Department of Dermagology,[c] Cleveland Clinic and the Department of Dermatology, University of Florida College of Medicine.[b]

Funding sources: None.
Conflicts of interest: None disclosed.

Correspondence to: Melissa Piliang, MD, FAAD, Associate Program Director, Dermatology Residency Training Program, Associate Program Director, Dermatopathology Fellowship, Departments of Dermatology and Pathology, Cleveland Clinic, 9500 Euclid Ave, A61, Cleveland, Ohio 44195. E-mail: pilianm@ccf.org.

JAAD Case Reports 2019;5:113-5.
2352-5126

https://doi.org/10.1016/j.jdcr.2018.10.007

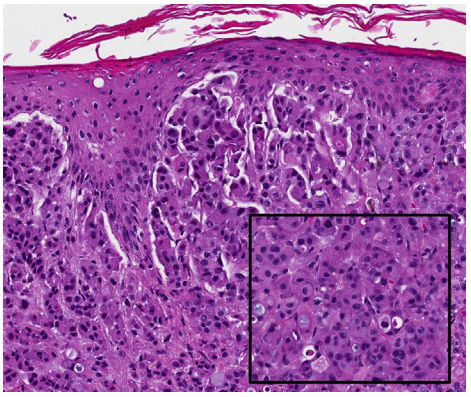

Fig 1. Representative composite image shows the epidermotropic poorly differentiated adenocarcinoma on hematoxylin-eosin stain. (Original magnifications ×10 and ×40 [inset]).

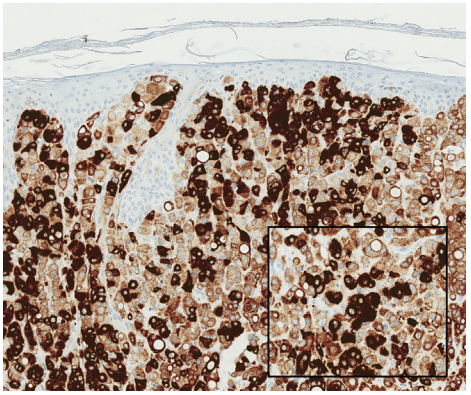

Fig 2. Representative composite image shows immunoreactivity with CK20. (Original magnifications ×12 and ×40 [inset]).

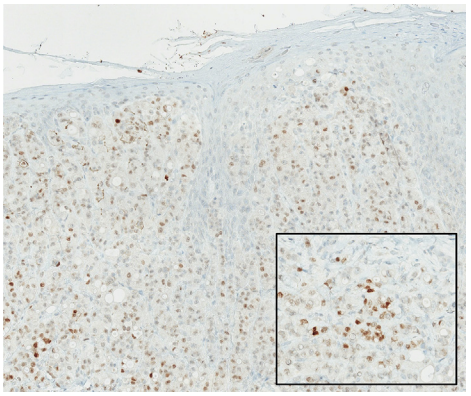

Fig 3. Representative composite image shows immunoreactivity with CDX2. (original magnifications ×12 and ×40 [inset]).

DISCUSSION

It is estimated that only 0.7% to 9.0% of all malignancies metastasize to the skin. Breast and lung carcinomas are the most common primary noncutaneous malignancies that metastasize to the skin in females and males, respectively, as they are the most frequent types of cancer worldwide. However, the most common cutaneous metastasis is melanoma, which comprises 45% of all cutaneous metastases. Less than 4% of cases are caused by a primary gastrointestinal malignancy.[3,4]

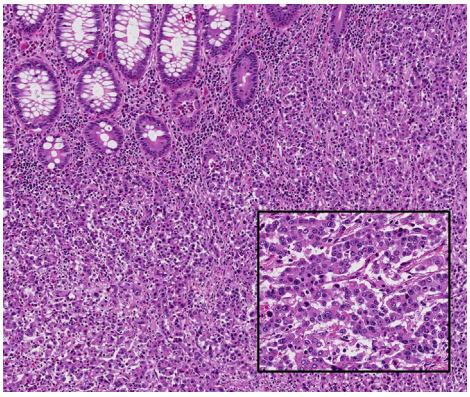

Fig 4. Representative composite image of primary tumor on hematoxylin-eosin stain. (Original magnifications ×10 and ×40 [inset]).

The most common location for cutaneous metastases of colorectal cancer is the abdominal wall. Less frequently, it might involve the pelvis, back, chest, upper extremities, hallux, or head and neck area. However, very few cases have been labeled as an epidermotropic colorectal adenocarcinoma.[5] The most commonly reported clinical appearance is of a single or multiple flesh-colored firm nodules (ie, Sister Mary Joseph nodule). In rarer cases, it may present as an indurated erythema with well-demarcated borders mimicking infection (ie, carcinoma erysipelatoides). A diffuse erythematous petechial rash, as seen in our patient, is an uncommon presentation. On histology, a nodular or infiltrative tumor is seen. However, it is often limited to the dermis with epidermal involvement much less frequently seen.[6-8]

Melanoma is the most common tumor to show epidermotropic cutaneous metastasis. Other solid tumors, such as epithelioid sarcoma and primary lung carcinoma have also been reported. The prevalence of epidermotropic carcinomas from the gastrointestinal tract is not well described in the literature. A case of metastatic cecal carcinoma with epidermotropism has been reported in Japan.[9,10] Management may range from a wide local excision for isolated lesions to a palliative approach for extensive cutaneous metastases. Life expectancy after diagnosis of cutaneous metastases from adenocarcinoma of colon, ranges from 1 to 34 months.[1]

In overall, it is important to consider an epidermotropic metastatic carcinoma when a tumor with epidermal involvement is seen on a skin biopsy. Our case additionally emphasizes the importance of including cutaneous metastases on the clinical differential diagnosis of an erythematous petechial rash in a patient with history of an internal malignancy.

REFERENCES

1. Nesseris I, Tsamakis C, Gregoriou S, Ditsos I, Christofidou E, Rigopoulos D. Cutaneous metastasis of colon adenocarcinoma: case report and review of the literature. *Anais Brasileiros de Dermatologia*. 2013;88(6 suppl 1):56-58.
2. Hu SC, Chen GS, Wu CS, Chai CY, Chen WT, Lan CC. Rates of cutaneous metastases from different internal malignancies: experience from a Taiwanese medical center. *J Am Acad Dermatol*. 2009;60:379-387.
3. Krathen RA, Orengo IF, Rosen T. Cutaneous metastasis: a meta-analysis of data. *South Med J*. 2003;96(2):164-167.
4. Wong CY, Helm MA, Helm TN, Zeitouni N. Patterns of skin metastases: a review of 25 years' experience at a single cancer center. *Int J Dermatol*. 2014;53(1):56-60.
5. Reuter J, Bruckner-Tuderman L, Braun-Falco M. Epidermotropic scrotal metastasis of colorectal cancer. *Int J Colorectal Dis*. 2007;22(9):1133-1134.
6. Pereira WA, Humaire CR, Silva CS, Fernandes LH. Sister Mary Joseph's nodule: a sign of internal malignancy. *An Bras Dermatol*. 2011;86:S118-S120.
7. Menzies S, Chotirmall SH, Wilson G, Oriordan D. Sister Mary Joseph nodule. *Case Rep*. 2015;2015.
8. Durai R, Fernandes C, Ng PC. Sister Joseph nodule from a colon cancer in a paraumbilical hernial sac. *ANZ J Surg*. 2009;80(5):377-378.
9. Ohata C, Imamura T, Nakama T. Cutaneous metastasis of cecal carcinoma with epidermotropism. *Derm Surg*. 2015;41(7):854-856.
10. Ishii A, Nishiguchi T, Kitagawa T, et al. A case of epidermotropic metastatic malignant melanoma with multiple nodular lesions of the scalp. *J Dermatol*. 2005;32(10):821-826.