

UC Davis

Dermatology Online Journal

Title

Jejunal adenocarcinoma with cutaneous metastasis

Permalink

<https://escholarship.org/uc/item/2fh785fw>

Journal

Dermatology Online Journal, 21(7)

Authors

Chung, Esther
Syklawer, Ericka
Pulitzer, Melissa P
et al.

Publication Date

2015

DOI

10.5070/D3217028135

Copyright Information

Copyright 2015 by the author(s). This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Peer reviewed

Photo vignette

Jejunal adenocarcinoma with cutaneous metastasis

Esther Chung BA¹, Ericka Syklawer MD², Melissa P Pulitzer MD², Michael A Marchetti MD¹, Christiane Querfeld MD PhD³, Patricia L Myskowski MD¹

Dermatology Online Journal 21 (7): 15

¹Dermatology Service, Department of Medicine, Memorial Sloan Kettering Cancer Center, New York, NY, U.S.A.

²Dermatopathology Service, Department of Pathology, Memorial Sloan Kettering Cancer Center, New York, NY, U.S.A.

³Dermatopathology Service, Department of Pathology, City of Hope National Medical Center, Duarte, CA, U.S.A.

Correspondence:

Esther Chung, BA
Dermatology Service, Department of Medicine, Memorial Sloan Kettering Cancer Center
16 E. 60th Street, New York, NY 10022, USA
Phone: 646.888.6270
Fax: 646.227.7274
Email: chungj1@mskcc.org

Abstract

Small bowel adenocarcinoma (SBA) is a rare primary gastrointestinal malignancy. We present a 60-year old man who developed a cutaneous metastasis of jejunal adenocarcinoma to his neck. This case highlights the clinicopathologic and immunophenotypic features of this uncommon cutaneous metastasis.

Keywords: Cutaneous metastasis, jejunal adenocarcinoma

Introduction

Despite the fact that the small bowel represents the longest segment of the gastrointestinal (GI) tract, small bowel adenocarcinomas (SBA) are rare and account for only ~3% of all primary GI malignancies. Herein, we describe a patient who developed a cutaneous metastasis of jejunal adenocarcinoma, which to our knowledge is the first reported case of a primary SBA metastasizing to the skin.

Case synopsis

A 60-year old man was referred to the dermatology service for evaluation of a skin nodule on the left neck that had been increasing in size over five weeks. The patient's history was notable for a diagnosis of jejunal adenocarcinoma six years prior. At that time he was successfully treated with jejunal resection and FOLFOX (leucovorin calcium, fluorouracil, and oxaliplatin) chemotherapy. The patient remained in disease remission for four years, after which he decided to stop further surveillance testing

and examinations. One year later, he developed tenesmus and back pain; computed tomography imaging demonstrated diffuse nodules of the liver, pelvic wall, and peritoneum, concerning for metastatic disease. Magnetic resonance imaging showed multi-level spinal degeneration and spinal cord stenosis at L3 to L4 and L4 to L5. Histopathologic examination of a biopsy specimen from the abdominal wall confirmed metastatic jejunal adenocarcinoma with immunohistochemistry significant for focal cytokeratin (CK) 7 and CK20 positivity and diffuse caudal type homeobox-2 (CDX2) positivity. He was started on FOLFIRI (leucovorin calcium, fluorouracil, and irinotecan) chemotherapy but elected to discontinue treatment after 8 cycles and pursue holistic therapies. Three months after the patient's last FOLFIRI cycle, he presented to the dermatology service for evaluation.

Inspection of the skin revealed a solitary, red, tender 1-cm nodule on the left anterior neck (Figure 1). A punch biopsy was performed to confirm suspected cutaneous metastasis of the patient's primary jejunal adenocarcinoma. Histopathologic examination of the biopsy specimen showed a large nodular aggregate of moderately to poorly differentiated glands in a back-to-back arrangement within a desmoplastic stroma (Figures 2-3). The atypical columnar cells were characterized by hyperchromatic nuclei, prominent nucleoli, and numerous mitoses. Glandular lumina showed "dirty necrosis." These findings were interpreted as metastatic jejunal adenocarcinoma. Given the patient's pain and discomfort, the nodule was treated with local palliative excision. The patient subsequently received palliative radiation to the pelvis with capecitabine (15 mg by mouth daily) as a radiosensitizer. He was later transferred to hospice care after an inpatient admission for gastrointestinal bleeding complicated by enterococcal urinary tract infection and sepsis.



Figure 1. Clinical overview image showing a solitary, red, 1-cm nodule on the patient's left anterior neck (black arrow).

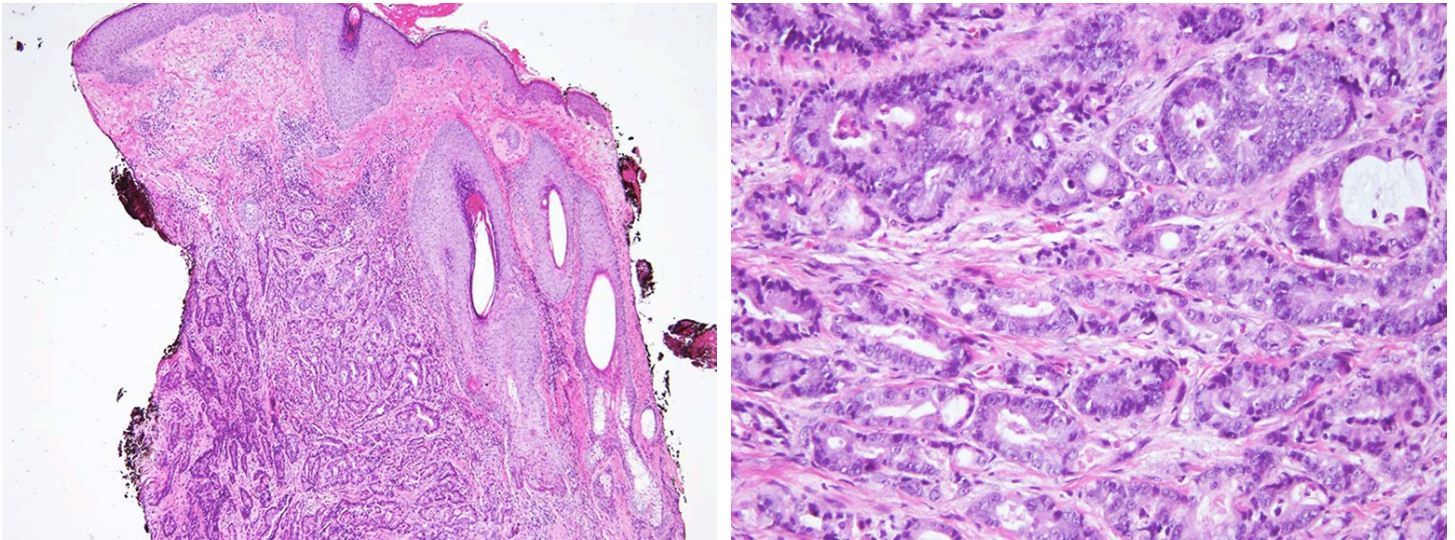


Figure 2. Metastatic jejunal adenocarcinoma in dermis (hematoxylin-eosin stain; original magnification, x4). **Figure 3.** Metastatic jejunal adenocarcinoma in dermis (hematoxylin-eosin stain; original magnification, x40).

Discussion

Small bowel adenocarcinomas (SBA) are rare and [ENREF 2](#) [ENREF 3](#) account for only ~3% of all primary GI malignancies [1]. A 2014 study in the United States of 401 patients who had skin metastases found that breast cancer was the most common cancer to metastasize to the skin (32.7% of all skin metastases seen), followed by bronchus and lung (13.2%), melanoma (9.5%), lymph nodes (7.5%), oral cavity/pharynx/larynx (6.2%), bone and bone marrow (5.5%), and colorectal cancers (4.2%) [2]. In order to identify any potential cases of primary SBA metastasizing to the skin we performed a PubMed search for articles published from 1950 through 2014 using the search terms "small intestine metastases," "cutaneous metastases AND small intestine," "cutaneous metastases AND jejunum," "cutaneous metastases AND ileum," and "cutaneous metastases AND duodenum" without language, publication, or document type restrictions. No cases of SBA metastasizing to the skin were identified but two reports of ampullary carcinoma metastasizing to the skin were found. Lamarca et al described a case of a 72 year-old man with a case of ampullary carcinoma that relapsed to the left neck, similar to the cutaneous clinical presentation of the

patient presented in this case report [3]. In addition, Cho et al reported a 71 year-old man with ampullary carcinoma who developed cutaneous metastases on his hands [4].

The diagnosis of cutaneous metastases is often facilitated by a known history of internal malignancy and histomorphologic resemblance of the cutaneous metastatic lesion to the primary tumor [5]. Physicians should have a high index of suspicion for cutaneous metastases when evaluating new skin lesions on patients with underlying internal malignancies because disease presentations can be highly variable. Cutaneous metastases most frequently appear as solitary or multiple nodules, plaques, or ulcers, although inflammatory, cicatricial, and bullous morphologies may also occur [1]. In general, the most common presentation is the appearance of a painless erythematous papule, which then progresses to an inflamed nodule [6]. Cutaneous metastases may be the first sign of internal malignancy, but are more often a sign of recurrent or late-stage disease and are indicators of poor prognosis [7, 8].

In situations with poorly differentiated metastatic tumors of unknown origin, screening immunohistochemical studies are often used to identify the primary site of malignancy. Unlike metastatic colorectal adenocarcinoma, which most often shows characteristic antigen expression, the immunophenotype of metastatic small bowel adenocarcinoma is not specific, making the clinical findings and awareness of the primary malignancy an important component of diagnosis [2, 9].

Immunohistochemical testing for CK7, CK20, and CDX2 expression has been evaluated as an ancillary diagnostic aid in the identification of SBA metastases at other sites. The rates of CK7 expression in SBA reported in two case series (23 and 24 cases of primary adenocarcinomas) were 35% and 100%, respectively, whereas the rates of CK20 expression were 48% and 67% respectively [10, 11]. In a larger study of 54 cases that included 43 cases of primary disease and 11 cases of metastatic disease, the reported rates of CK7 and CK20 were 31% and 57%, respectively. Interestingly, 43% of cases were CK20+/CK7-[9], which is significantly lower than in colorectal cancer, in which 75-94% of cases will be CK20 positive [12, 13]. This study also showed that 70% of SBA tumors expressed CDX2 but CDX2 expression varied with histological grade. All well-differentiated tumors expressed CDX2 whereas only 58% of poorly differentiated tumors showed expression. This trend was similar for adenocarcinomas of colorectal origin [9, 14]. Of note, no significant differences in expression of CK7, CK20, and CDX2 were found between duodenal and non-duodenal SBA or between the primary and metastatic tumors [9].

In summary, we describe a case of SBA metastasizing to the skin, which appears to be a rare occurrence. Clinicians should be aware of the typical clinical presentations of metastatic cancer and the most efficacious ancillary tests to help identify their origin in order to provide optimal patient care.

References

1. Raghav K, Overman MJ. Small bowel adenocarcinomas--existing evidence and evolving paradigms. *Nat Rev Clin Oncol*. 2013;10(9):534-44. [PMID: 23897080]
2. 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. [PMID: 23432658]
3. Lamarca A, Martinez-Marin V, Feliu J. Cutaneous relapse of an ampullary carcinoma: an unusual presentation. *BMJ Case Rep*. 2012;2012. [PMID: 22761197]
4. Cho EY, Kim TH, Park SD, Yun KJ, Choi SC, Kim HC, et al. Acral metastasis in a patient with ampullary carcinoma. *Korean J Intern Med*. 2007;22(1):55-8. [PMID: 17427649]
5. Nashan D, Muller ML, Braun-Falco M, Reichenberger S, Szeimies RM, Bruckner-Tuderman L. Cutaneous metastases of visceral tumours: a review. *J Cancer Res Clin Oncol*. 2009;135(1):1-14. [PMID: 18560891]
6. Lookingbill DP, Spangler N, Sexton FM. Skin involvement as the presenting sign of internal carcinoma. A retrospective study of 7316 cancer patients. *J Am Acad Dermatol*. 1990;22(1):19-26. [PMID: 2298962]
7. Brownstein MH, Helwig EB. Patterns of cutaneous metastasis. *Arch Dermatol*. 1972;105(6):862-8. [PMID: 5030236]
8. Reingold IM. Cutaneous metastases from internal carcinoma. *Cancer*. 1966;19(2):162-8. [PMID: 5948332]
9. Overman MJ, Pozadzides J, Kopetz S, Wen S, Abbruzzese JL, Wolff RA, et al. Immunophenotype and molecular characterisation of adenocarcinoma of the small intestine. *Br J Cancer*. 2010;102(1):144-50. [PMID: 19935793]
10. Lee MJ, Lee HS, Kim WH, Choi Y, Yang M. Expression of mucins and cytokeratins in primary carcinomas of the digestive system. *Mod Pathol*. 2003;16(5):403-10. [PMID: 12748245]
11. Chen ZM, Wang HL. Alteration of cytokeratin 7 and cytokeratin 20 expression profile is uniquely associated with tumorigenesis of primary adenocarcinoma of the small intestine. *Am J Surg Pathol*. 2004;28(10):1352-9. [PMID: 15371952]
12. Loy TS, Calaluce RD, Keeney GL. Cytokeratin immunostaining in differentiating primary ovarian carcinoma from metastatic colonic adenocarcinoma. *Mod Pathol*. 1996;9(11):1040-4. [PMID: 8933513]
13. Rullier A, Le Bail B, Fawaz R, Blanc JF, Saric J, Bioulac-Sage P. Cytokeratin 7 and 20 expression in cholangiocarcinomas varies along the biliary tract but still differs from that in colorectal carcinoma metastasis. *Am J Surg Pathol*. 2000;24(6):870-6. [PMID: 10843291]

14. Werling RW, Yaziji H, Bacchi CE, Gown AM. CDX2, a highly sensitive and specific marker of adenocarcinomas of intestinal origin: an immunohistochemical survey of 476 primary and metastatic carcinomas. *Am J Surg Pathol.* 2003;27(3):303-10. [PMID: 12604886]