Metastatic Gastric Adenocarcinoma Presenting as a Solitary Plaque on the Palm

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Cutaneous metastases from gastric adenocarcinoma are extremely rare. When present, metastasis typically signifies disseminated disease with a poor prognosis. We report a case of an 80-year-old male with gastric cancer who presented with a single, erythematous plaque on the left palm, a very rare site for skin metastasis. Results of a skin biopsy demonstrated that the cutaneous metastasis originated from the stomach. This report emphasized the need for appropriate investigation into newly appearing, unusual, or persistent skin lesions.

CASE REPORT

An 80-year-old male patient underwent a subtotal gastrectomy for moderately differentiated gastric adenocarcinoma staged T2N1M0. The postoperative course was unremarkable. Chemotherapy was administered, and the patient was discharged uneventfully three months ago. The patient was hospitalized again with the chief complaint of a skin lesion, which he said had developed one week after discharge. A physical examination showed that he was cachectic and jaundiced, and had an erythematous, firm, well-circumscribed ulcerative plaque on the palmar aspect of his left hand that was sore (Fig. 1A). The lesion was 3 cm by 1.5 cm, and appeared to be two ulcerative plaques that had coalesced into a single plaque (Fig. 1B). Laboratory tests revealed pancytopenia in addition to elevated lactic acid dehydrogenase of 211 IU/L (normal range, 110~200 IU/L) and total/direct bilirubin of 2.4/0.9 μmol/L (normal range, 0.3/0.0 ~ 1.3/0.4 μmol/L). Tumor marker studies showed an increased carcinoembryonic antigen level of 11.17 μg/L (normal range, 0~3.4 μg/L) and a CA 19-9 level of 890.3 U/ml (normal range, 0~27 U/ml). Abdominal computed tomography showed two small hepatic nodules in the left lobe, mild dilation of the common duct, and low-density para-aortic adenopathies at the level of the renal hila.

Skin biopsy revealed infiltrating neoplastic cells in the dermis and subcutaneous tissue. The neoplastic cells formed somewhat irregular but relatively well-formed glands in a desmoplastic stroma that consisted of polygonal or round cells with irregular and conspicuous nuclei.
Fig. 1. (A) An erythematous, firm, well-circumscribed ulcerative plaque on the palmar aspect of the left hand. (B) The lesion was 3 × 1.5 cm sized and appeared to be two ulcerative plaques that had coalesced into a single plaque.

Fig. 2. (A) The skin biopsy showed irregular, but relatively well-formed glandular structure, and diffuse inflammatory cells infiltrating the dermis (H&E, ×40). (B) Variable-sized atypical polygonal cells with hyperchromatic and pleomorphic nuclei in atypical glandular structure of the dermis (H&E, ×200).

and poor cytoplasm (Fig. 2A). Variably sized atypical polygonal cells with hyperchromatic and pleomorphic nuclei were seen in the dermis of the skin (Fig. 2B). Biopsy confirmed the diagnosis of cutaneous metastasis from the gastric cancer. The patient chose noncurative, conservative management for the metastatic skin lesion and was transferred to a hospice facility where he died after one month.

**DISCUSSION**

Cutaneous metastasis is a relatively uncommon manifestation of visceral malignancies. The overall incidence of cutaneous metastasis from visceral neoplasm is 5.3% and ranges from 0.7% to 9%\(^1,4,5\). The highest incidence of cutaneous metastasis has been seen for breast cancer.

Cancers of the lung, colon/rectum, kidney, ovary, and bladder all have similar rates for cutaneous metastasis, ranging from 3.4% to 4%\(^5\). Gastric cancer causes only 6% of all skin metastases\(^2\), and cutaneous metastasis occurs in 0.8% of all gastric cancers\(^6\). Thus, gastric cancer is a relatively rare cause of cutaneous metastasis from visceral cancer. Multiple subcutaneous nodules on the trunk seem to be the most common manifestation of such metastases\(^7\) and the typical location of gastric cancer cutaneous metastases has been demonstrated to be the umbilical area (Sister Joseph’s nodule)\(^8\), which is near the primary cancer.

In the Korean-language scientific literature, Kim et al.\(^9\) investigated the frequency of cutaneous metastasis from gastric cancer in 14,053 patients who were diagnosed with gastric cancer, and found that 27 (0.19%) had
cutaneous metastasis. The reported location of the cutaneous metastases were abdomen (9 cases, 33%), face (6 cases, 22.2%), scalp (6 cases, 22.2%), chest (3 cases, 11.1%), extremities (3 cases, 11.1%), neck (2 cases, 7.4%), and pubic area (2 cases, 7.4%). In addition, in the same literature, cases of scalp and penis metastasis from gastric cancer have been rare.

The case presented here is also remarkable because of the unusual location of the cutaneous metastasis. Cutaneous metastasis in the palmar area from visceral cancer has been reported in only four cases in the English-language literature since Camiel et al. originally reported skin metastasis on palm and sole from lung cancer. However, this had not yet been reported in the Korean-language literature. Presentation of a solitary ulcerative plaque, as in our case, may lead to multiple differential diagnoses such as granuloma pyogenicum, cutaneous lymphomas, or another skin cancer; a biopsy is needed for the accurate diagnosis of these patients.

Histologic appearance has been the most important feature in the diagnosis of cutaneous metastases, as they are similar to the primary tumor. The histologic features of cutaneous metastases from gastric cancer have been observed to be mainly those of an adenocarcinoma. In the current case, the features were identical to those of the gastric carcinoma, and tumor cells with cytoplasmic mucin and laterally displaced nuclei were recognized upon examination of the skin biopsy.

Because of advances in cancer therapy, the life expectancy of patients with cutaneous metastases has increased; however, cutaneous metastases remain a poor prognostic sign. Bordin and Weitzner reported that the duration of survival from the time of diagnosis of metastatic carcinoma in the skin averaged 11.4 weeks, with a range of 2 to 34 weeks. The treatment for most patients has been palliative, and although chemotherapy and radiotherapy have been often used in such patients, they have been ineffective in many cases.

In conclusion, we presented a very uncommon case of gastric metastatic tumor with a single palm plaque observed instead of several subcutaneous trunk lesions. This case emphasizes that newly appearing skin lesions may be the first presentation of advanced visceral cancer and should be appropriately investigated. Despite the low frequency, persistent indurated erythema and all skin plaques of undetermined causes must be biopsied to rule out a diagnosis of cutaneous metastasis from visceral malignancy.

**REFERENCES**

1. Nashan D, Müller ML, Braun-Falco M, Reichenberger S, Szeimies RM, Bruckner-Tuderman L. Cutaneous metastases of visceral tumours: a review. J Cancer Res Clin Oncol 2009;135:1-14.
2. Lookingbill DP, Spangler N, Helm KF. Cutaneous metastases in patients with metastatic carcinoma; a retrospective study of 4020 patients. J Am Acad Dermatol 1993;29:228-236.
3. Boscaino A, Orabona P, D’Antonio A, Staibano S, De Rosa G. Cutaneous metastases from gastric adenocarcinoma. Report of two cases and review of the literature. Arch Anat Cytol Pathol 1996;44:60-64.
4. Schwartz RA. Cutaneous metastatic disease. J Am Acad Dermatol 1995;33:161-182.
5. Krathen RA, Orenjo IF, Rosen T. Cutaneous metastasis: a meta-analysis of data. South Med J 2003;96:164-167.
6. 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.
7. Hashiro M, Fujio Y, Tanimoto T, Okumura M. Disseminated cutaneous nodules revealing gastric carcinoma. Dermatology 1994;189:207-208.
8. Lee HL, Kwon YI, Song SY. Umbilical metastasis: Sister Mary Joseph’s nodule. Clin Gastroenterol Hepatol 2011;9:e20.
9. Kim MS, In SG, Won CH, Chang SE, Lee MW, Choi JH, et al. A clinicopathological analysis of cutaneous metastasis from gastric cancer in Korea. Korean J Dermatol 2010;48:360-365.
10. Park JY, Kwon IH, Lee HS, Cho KH. Four cases of cutaneous metastasis to the scalp from internal malignancies. Korean J Dermatol 2002;40:666-670.
11. Kim SJ, Park HS, Lee YS, Chun DK. A case of cutaneous metastasis of signet-ring cell gastric carcinoma. Korean J Dermatol 2003;41:808-810.
12. Kim JH, Choi JH, Kim JB, Kim HJ, Park HJ, Lee JS, et al. A case of penile cutaneous metastasis from gastric carcinoma. Korean J Dermatol 2010;48:306-309.
13. Elamurugan TP, Agrawal A, Dinesh R, Aravind R, Naskar D, Kate V, et al. Palmar cutaneous metastasis from carcinoma cervix. Indian J Dermatol Venereol Leprol 2011;77:252.
14. Nishimoto J, Amoh Y, Niiyama S, Takasu H, Katsuoka K. Aggressive digital papillary adenocarcinoma on the palm with pulmonary metastases. J Dermatol 2008;35:468-470.
15. Yoshimasu T, Yamamoto Y, Uede K, Furukawa F. Skin metastasis of neuroendocrine carcinoma derived from the mediatinum. J Dermatol 2001;28:168-171.
16. Camiel MR, Aron BS, Alexander LL, Benninghoff DL, Minkowitz S. Metastases to palm, sole, nailbed, nose, face and scalp from unsuspected carcinoma of the lung. Cancer 1969;23:214-220.
17. Bordin GM, Weitzner S. Cutaneous metastases as a manifestation of internal carcinoma: diagnostic and prognostic significance. Am Surg 1972;38:629-634.
18. Wang JY, Chai CY, Su YC, Soo KM, Huang YS, Huang TJ, et al. Cutaneous metastasis from gastric adenocarcinoma: a case report. Kaohsiung J Med Sci 2005;21:329-332.