Multiple Nodular Cutaneous Metastases as the First Clinical Sign of Signet Ring Cell Gastric Carcinoma: Case Report

Gyula László Fekete¹, Ovidiu Simion Cotoi², Júlia Edit Fekete³

¹Department of Dermatology; ²Department of Histopathology, University of Medicine and Pharmacy; ³Public Health Center, Târgu-Mureş, Romania

Corresponding author:
Gyula László Fekete, MD, PhD
Department of Dermatology
University of Medicine and Pharmacy
Bulevardul 1 Decembrie 1918, nr. 211/27
RO-540530 Târgu-Mureş
Romania
dermafek@yahoo.com

Received: May 9, 2011
Accepted: February 15, 2012

SUMMARY Cutaneous metastases from signet ring cell gastric carcinoma are uncommon. A 35-year-old male presented with a three-month history of multiple asymptomatic, indurated, pinky colored nodules of 2.5 to 4 cm in diameter, without any local and general symptoms. Nodule biopsy revealed an infiltrating signet ring cell carcinoma. Gastroscopy and biopsy confirmed the diagnosis of gastric carcinoma with signet ring cells. The present report describes an unusual clinical case of a young patient diagnosed with cutaneous metastasis before detection of his gastric carcinoma.

KEY WORDS: signet ring cell, metastasis, gastric carcinoma

INTRODUCTION

Skin metastasis from internal carcinoma is rarely observed, with the reported incidence ranging from 0.7% to 9%, and it may be the first sign of an unknown malignancy (1). Breast carcinoma is the commonest cause of cutaneous metastases in women, followed by carcinoma of large intestine, lungs and ovaries. In males, the primary sites of carcinoma with cutaneous metastases in a decreasing order are the lungs, colon and rectum, oral cavity, kidney and stomach (2). Skin metastases from gastric cancers are rare (3). Cutaneous metastases from signet ring cell gastric carcinoma are uncommon (4).

CASE REPORT

A 35-year-old man, body height 1.78 cm, body weight 72 kg, apparently healthy, presented with a three-month history of multiple asymptomatic, indurated, well-defined pinky colored, firm, non-tender nodules of 2.5 to 4 cm in diameter. The nodules developed fast and at the time of consultation we found 7 nodules located on the upper chest, abdomen and left scapular region, without any local or general clinical symptoms (Fig. 1). His medical history was unremarkable. Clinical general examination of sys-
tems and organs revealed no relevant findings. Our presumptive clinical diagnosis was cutaneous lymphoma, benign tumor or cutaneous metastasis. Nodule biopsy was performed. While the histopathologic examination was in progress, we investigated the patient for tumor screening. Laboratory results showed moderately elevated inflammatory analyses, elevated transaminase levels and discrete anemia. For an accurate diagnosis, it is recommended to establish the levels of CA 19-9 tumor antigen, but unfortunately, it was not possible. Chest x-ray was negative. Gastroscopy revealed a giant vegetating and infiltrating tumor of the antrum of the stomach (Fig. 2). Biopsy was performed. The resultant computer tomography and ultrasound examination revealed multiple metastatic nodules in the liver, mesentery, and retroperitoneal lymph nodes. In the meantime, the result of dermal infiltrate histopathology arrived: under normal epidermis, the tumor cells with signet ring cell aspect were found to be dispersed, sometimes as individual cells or alternatively in small groups of cells in the deep dermis and hypodermis. The tumor cells exhibited positive acid mucin secretion in the cytoplasmic areas, generally alcian positive (acid mucin-brown colored), and neutral mucin (red colored). Immunohistochemical studies showed intense positivity for pancytokeratin (PanCK) antibodies and negativity for vimentin, S-100, and HMB-45 (Fig. 3). The diagnosis was metastasis of the signet ring cell carcinoma. Histopathology of the gastric biopsy confirmed the diagnosis of signet ring cell gastric carcinoma: in the submucosa and the wall of the glands there was a diffuse proliferation of cells with signet ring aspect. The tumor cells expressed acid mucin secretion in the cytoplasmic area on PAS staining (Fig. 4). Definitive diagnosis was metastatic gastric carcinoma with signet ring cells in an advanced stage. Palliative surgical treatment and oncologic treatment was proposed, but an acute upper digestive hemorrhage that appeared suddenly was fatal for the patient.

**DISCUSSION**

Cutaneous metastases from signet ring cell gastric carcinoma are uncommon, and they are even rarer as the presenting sign of this cancer. In a clinical study on tumor registry data of 7316 cancer patients, Lookingbill et al. found 367 (5.0%) cases with skin involvement. Skin involvement was present at the time of presentation in 92 (1.3%) patients, only 26 of whom had remote metastases. Skin involve-
ment was the first sign of cancer in 59 (0.8%) patients (4). Gastric cancer, specifically, causes only 6% of all skin metastases. Signet ring cell gastric carcinomas comprise only 8.7% of all gastric cancers (5). Most cutaneous metastases arise as nonspecific, painless, dermal or subcutaneous nodules with an intact over-
lying epidermis (6). Occasionally, the lesions may be
zosteriform or inflammatory having a furuncle-, cellulitis-
or erysipelas-like aspect (7,8). Also, they can re-
semble an epidermoid cyst, condyloma acuminatum,
or a benign soft tissue tumor. In rare cases, there can
be simple papules or sometimes a solitary nodule (9).
It has also been described with telangiectatic, angio-
momatous, sclerotic and ulcerative-vegetant clinical aspects. The localization of the metastasis can be various: ab-
dominal (25%), anterior part of the thorax (24%), face
and neck (18%), back and lumbar region (13%), head
(8.5%), upper arms (7%), legs (3%) and pelvis (1.5%). Tumor cells metastasize to the skin through several
routes, i.e. by direct invasion from underlying struc-
tures, extension through lymphatics, embolization
through lymphatics and blood vessels, and acciden-
tal implantation on surgery. When it occurs through
lymphatics, there is involvement of the overlying skin. Hematogenous spread may cause lesions anywhere
in the skin (10,11). From the histologic point of view, it
has been described as possessing two aspects: (a) the
differentiated form, the tumor cells are not specific.
In this case, supplementary immunohistochemical
investigations should be conducted for correct di-
agnosis. The histologic differential diagnosis should
also consider other malignant tumors that can also
have a signet ring cell pattern, such as melanoma,
lymphoma lamina propria muciphages, xanthomas,
and detached or dying cells associated with gastritis
(12,13). In general, cutaneous metastases are associ-
ated with advanced systemic cancer disease, and ex-
pected survival is less than one year (14,15). Thus, the
age of patients ranged from 38 to 83 years (mean 62
years) and the interval between the diagnosis of me-
tastasis and the diagnosis of the primary tumor was
3 months (16,17). The treatment is palliative in most
cases, although chemotheraphy and radiotherapy are
often used to treat these patients, although in many
cases the treatment yields moderate or no results. The
widespread dissemination of the tumor often means
early fatality.

CONCLUSION

The present report describes the unusual clinical-
diagnostic sequence of a young patient without
any clinical and subjective symptoms, diagnosed
with cutaneous metastasis before detection of his
gastric carcinoma. We want to highlight that cuta-
naneous metastases, unfortunately, in some visceral
carcinomas can be the first visible sign of internal
malignancy. Skin metastases from carcinomas of the
upper gastrointestinal tract are very rare. Cutaneous
metastases from signet ring cell gastric carcinoma
are uncommon. The majority of cutaneous meta-
stases appear as multiple nodules; so biopsy of these
nodules must be performed to diagnose cutaneous
metastases. Complete clinical examination of the skin
for any metastasis is mandatory for a patient with any
type of cancer.

References

1. Spencer PS, Helm TN. Skin metastases in cancer
2. Johnson WC. Metastatic carcinoma of the skin:
incidence and dissemination. In: Lever’s Histopa-
thology of the Skin, 8th ed., edited by Elder D,
Elenitsas R, Jaworsky C, Johnson Jr B, Lippincott-
3. Brady LW, O’Neill EA, Farber SH. Unusual sites of
4. Lookingbill DP, Spangler N, Sexton FM. Skin in-
volvement as the presenting sign of internal carcino-
ma. A retrospective study of 7316 cancer patients.


