Cutaneous Metastasis of Gastric Carcinoma: A Rare Case with Unusual Presentation Site

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Abstract

Skin metastases are relatively rare but are of important clinical significance because they usually indicate a worse prognosis. The most common sources are lung and colorectal cancers in males and breast and colorectal in females. In this report, we presented a chest wall skin metastasis of gastric origin in a 50-year-old male. Tumor metastasis to unusual locations such as chest wall skin and from unusual origins such as stomach is of great clinical importance.

Keywords: Gastric carcinoma, metastasis, skin

INTRODUCTION

Skin metastasis is not so frequent.[1-3] About 0.7%–10.4% of different malignancies have skin metastasis at some point of time.[1] Colon is the most common source of primary gastrointestinal carcinoma with cutaneous metastasis.[1,4] However, skin metastasis from gastric origin is relatively rare and occurs in <5% of gastric cancers.[4,5]

Here, we reported a rare case of skin metastasis of gastric carcinoma which was clinically presented by multiple skin nodules of neck and chest wall. This case is reported because of rarity of skin metastasis of gastric cancer and occurrence in relatively unusual site with unusual clinical presentation to emphasize the importance of cutaneous metastasis as a possible and also a poor prognostic sign in patients with a history of cancer.

CASE REPORT

A 50-year-old male was admitted with dysphagia. The routine hematology and biochemistry tests were normal. Upper gastrointestinal endoscopy was performed for the patient and revealed an ulcerative mass at gastroesophageal junction (GEJ) and cardia [Figure 1]. Endoscopic biopsy from the lesion was performed. The specimen received in pathology department was composed of multiple fragments of creamy-colored soft tissue measuring 1.2 cm × 0.7 cm × 0.4 cm, totally.

Microscopic examination of prepared slides stained with hematoxylin and eosin method showed proliferation of signet
ring tumoral cells in mucosal and submucosal layers [Figure 2]. The diagnosis was signet ring cell carcinoma of stomach.

The patient underwent gastrectomy. Gross examination of gastrectomy specimen showed an infiltrative ulcerated tumoral area at gastric cardia with extension to GEJ measuring 8 cm in greatest diameter. Microscopic evaluation revealed signet ring cell carcinoma of stomach with penetration to gastric serosal surface (PT3). Lymphatic and perineural invasion, involvement of proximal margin, and also lymph nodes’ involvement (two involved lymph nodes, PN2) were also seen. As no distant metastasis was identified during metastasis workup, the patient stage was categorized as Stage IIIB. The patient received standard chemoradiotherapy regimen for gastric carcinoma.

Nine months later, the patient admitted with multiple skin nodules on neck and chest wall. Chest radiography, brain magnetic resonance imaging, colonoscopy, and upper gastrointestinal endoscopy were normal and did not reveal any tumoral lesion.

Biopsies were taken from skin lesions, and microscopic examinations showed skin tissue infiltrated by signet ring cell carcinoma [Figure 3a and b]. Histochemistry staining with periodic acid–Schiff (PAS) method revealed large malignant epithelial cells containing cytoplasmic PAS-positive material (mucin), [Figure 4]. To confirm the diagnosis, immunohistochemistry staining for CK7, CK20, and CDX2 was performed. The tumoral cells were positive for all three markers [Figures 5 and 6]. These features confirmed the diagnosis of skin involvement by metastatic signet ring cell (adenocarcinoma) of gastric origin. The patient underwent new chemotherapy treatment course but unfortunately died 1 month later.

**Discussion**

Skin is an uncommon site for distant metastasis. According to the literature, up to 10.4% of various malignancies may have cutaneous metastasis in their clinical course.

The most common form of skin metastasis is adenocarcinoma, originated from lung, breast, or colon. In males, the most common solid tumors with skin metastasis are lung cancer, colorectal cancer, and malignant melanoma and in women.

**Figure 2:** Gastroesophageal mucosa infiltrated by malignant signet ring cells (arrows), (H and E, ×20)

**Figure 3:** (a) Low magnitude of skin showing intact epidermis and an infiltrative area in deep dermis (arrows) (H and E, ×4). (b) higher magnitude of Figure 3a showing infiltration of malignant cells within dermis (arrow), with clear cytoplasm and signet ring features (signet ring cell carcinoma) (H and E, ×20)

**Figure 4:** Periodic acid–Schiff stain showing positive reaction in signet ring cells (pinkish-purple stain) showing cytoplasmic periodic acid–Schiff positive material in signet ring cell, (periodic acid–Schiff, ×40)

**Figure 5:** Positive staining for CK7 in immunohistochemistry staining in signet ring cells (immunohistochemistry, ×20)
are breast carcinoma, colorectal cancer, and malignant melanoma.[6-8] Only 6% of all skin metastases in males and 1% in females are from gastric origin.[1] On the other hand, skin metastasis occurs in only 0.8% of gastric cancers.[5] Signet ring cell carcinoma is the most common form of gastric carcinoma with distant metastasis.[3] Similarly, in our patient, skin metastasis resulted from signet ring cell carcinoma of the stomach. Secondary malignant skin tumors usually occur through the direct extension of the nearby tumor such as skin involvement in breast cancer which is usually the overlying skin tissue of the involved breast.[1] Metastatic dissemination to skin may occur through the lymphatic channels or hematogenous spread.[1-2] According to the literature, most of the reported cases of gastric skin metastases were observed in skin tissue of abdominal wall.[1,4,8] In our patient, skin metastasis appeared in neck and chest wall. Skin metastasis of gastric cancer can show different clinical manifestations. Usually, as in our case, they present as skin nodules but can also be seen as erysipelas-like pattern, scirrhouss carcinoma, zosteriform pattern, lesions resembling an epidermoid cyst, or even as nonspecific contact dermatitis.[3] In general, cutaneous metastasis indicates a poor prognosis.[1,2,4] The overall survival after diagnosis of skin metastasis is only a few weeks.[1,5] Similarly, our patient died 1 month after diagnosis.

Skin metastasis is a very rare clinical presentation of cancers which can be seen as various nonspecific clinical presentations and so can be missed by physicians. As it is a strong sign of poor prognosis, it is recommended to be aware of this condition and take biopsies from any suspicious skin lesion in patients with a history of cancer.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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