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WORD COUNT

1176

TIME SUBMITTED

27-NOV-2023 05:00PM

PAPER ID

104565720

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**Name of Journal:** *World Journal of Clinical Cases*

**Manuscript NO:** 88377

**Manuscript Type:** CASE REPORT

**Inflammatory cutaneous metastases originating from gastric cancer: A case report**

Tian L *et al.* Cutaneous metastases of gastric cancer

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## Abstract

### BACKGROUND

Cutaneous metastasis with gastric cancer (GC) origin is extremely rare and associated with poor prognosis. Nodular type is the most common type, while other forms are extremely rare.

### CASE SUMMARY

This study describes severe skin redness, swelling, pain, and fever in a 65-year-old man diagnosed with GC, whose left chest wall, left upper limb, and left back were mainly affected. Firstly, the patient was diagnosed with “lymphangitis” and treated to promote lymphatic return. However, the symptoms were constantly deteriorating, and skin thickening and scattered small nodules gradually appeared. Finally, the skin biopsy confirmed cutaneous metastases, and the patient died 7 d later.

### CONCLUSION

Our case highlights that cutaneous metastasis should be considered when skin lesions appear in patients with GC.

**Key Words:** Cutaneous metastasis; Gastric cancer; Inflammatory; Sclerodermoid; Nodular; Case report

Tian L, Ye ZB, Du YL, Li QF, He LY, Zhang HZ. Inflammatory cutaneous metastases originating from gastric cancer: A case report. *World J Clin Cases* 2023; In press

**Core Tip:** We describe a 65-year-old man with advanced gastric cancer and multiple metastases. He came to our hospital due to severe skin redness, swelling, pain, and fever in his left chest wall, left upper limb, and left back. He was diagnosed with “lymphangitis” and treated to promote lymphatic return. However, pain and swelling were constantly deteriorating, and skin thickening and scattered small nodules

gradually appeared. Finally, the skin biopsy confirmed cutaneous metastases, and he died 7 d later. We review the related literatures and emphasize the importance of skin biopsy in case of any skin lesions.

## **INTRODUCTION**

Gastric cancer (GC) is a highly heterogeneous disease, and the typical sites of metastasis are the liver, lung, bone, and the peritoneum<sup>[1]</sup>. Cutaneous metastasis of GC is extremely rare, occurring in 0.2% to 1% of cases<sup>[2-4]</sup>. Cutaneous metastasis usually occurs in the late stage but sometimes appears as the first manifestation<sup>[5-9]</sup>. Single or multiple nodules are the most common clinical presentations<sup>[1,2,5-7,10-12]</sup>. In this paper, we report a patient with GC who developed cutaneous metastases with extensive redness and swelling, followed by skin thickening and nodules. The patient died 7 d later after the diagnosis.

## **CASE PRESENTATION**

### ***Chief complaints***

A 65-year-old man developed redness and swelling in the left chest wall, left upper limb, and left back in April, 2023.

### ***History of present illness***

His symptoms were obvious, accompanied by fever and pain.

### ***History of past illness***

The patient was admitted to our hospital in February, 2023, due to left shoulder pain. He had been diagnosed with stage IV poorly differentiated adenocarcinoma of the stomach in May 2022 and received eight cycles of XELOX chemotherapy (oxaliplatin plus capecitabine) in other hospitals. Computed tomography (CT) was performed and showed multiple lymph nodes, bones and liver metastases. He underwent an ultrasound-guided left cervical lymph node puncture biopsy. Pathological examination

revealed poorly differentiated adenocarcinoma. Immunohistochemistry showed that cancer cells were positive for CK, CK7, and Villin and negative for Syn, CgA, and CD56. A small number of cells revealed CK20. HER2 was negative (Figure 1A), consistent with the primary GC. Sintilimab and albumin-bound paclitaxel were used as the second-line therapy. Unfortunately, he experienced progression after treatment with immune checkpoint inhibitors. Irinotecan was given as the third-line therapy.

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#### *Personal and family history*

He had a history of coronary heart disease, but no family history of malignant tumors.

#### *Physical examination*

Cutaneous examination revealed the left upper limb, chest wall, and left back edema, with increased skin tension and enlarged pores.

#### *Laboratory examinations*

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Blood biochemistry tests showed anemia with a hemoglobin level of 95 g/dL and hypoalbuminemia with an albumin level of 28.2 g/L, suggesting poor nutritional status.

#### *Imaging examinations*

Ultrasonography revealed subcutaneous edema, but no thrombosis was observed.

### **MULTIDISCIPLINARY EXPERT CONSULTATION**

After a multidisciplinary consultation with oncologists, vascular surgeons, and dermatologists, he was diagnosed with “lymphangitis” and treated to promote lymphatic return. However, pain and swelling were constantly deteriorating, and skin thickening and scattered nodules gradually appeared (Figure 2). A skin biopsy was obtained from the left chest wall 7 wk later, and pathological assessment revealed poorly differentiated adenocarcinoma. Immunohistochemical staining showed CK7 (+),

Villin (+), CK20 (weak+), CDX2(-), GATA-3(-), GCDFP-15(-), Mammaglobin (-) (Figure 1B), consistent with metastatic GC.

### **FINAL DIAGNOSIS**

The patient was diagnosed with cutaneous metastases of GC.

### **TREATMENT**

He received hospice care due to the low ECOG performance.

### **OUTCOME AND FOLLOW-UP**

Unfortunately, the patient died 7 d later after the diagnosis of cutaneous metastasis.

### **DISCUSSION**

Cutaneous metastasis occurs in 0.7%-9% of patients with internal cancers<sup>[3,13,14]</sup>, usually originating from breast cancer, lung cancer and colorectal cancer<sup>[13,15]</sup>. Approximately 70% of cutaneous metastases in women are caused by breast cancer<sup>[16]</sup>. There are few reports on the cutaneous metastasis of GC. We found 13 cases in the PubMed database between 2014 and 2023 (Table 1). The most common site of cutaneous metastasis in GC is around the umbilicus and mainly occurs in males<sup>[2,3,5,13,17]</sup>, and signet-ring cell carcinoma has a greater tendency<sup>[2-5,17]</sup>.

The mechanisms of cutaneous metastasis are complex and incompletely understood. Some potential mechanisms include hematogenous, lymphatic, direct invasion and surgical implantation<sup>[5,15]</sup>. **Chemokines and their receptors have been demonstrated to be involved in** cutaneous metastasis, but previous findings are still controversial<sup>[14]</sup>. Hematogenous spread is the most likely manner of metastasis in our case due to the widespread nature of metastases.

Cutaneous metastases of GC mainly manifest as nodules or masses<sup>[1,5,10,11]</sup>. Less frequently, they appear like sclerodermoid or inflammatory lesions<sup>[2,3,4,9]</sup>. In most cases, the latter two manifestations gradually develop from nodules<sup>[2,4]</sup>. In this case, we first

observed the inflammatory lesions, followed by sclerodermoid lesions and nodules. To our knowledge, this form of progression has not been reported before. The most common site for cutaneous metastasis in GC is the abdomen, known as “Sister Mary Joseph Nodules”, while lesions of the chest wall, back and upper limbs were involved in this case. After being treated for lymphangitis and lymphedema, his symptoms did not alleviate. The diagnosis was not confirmed until a skin biopsy was taken 7 wk later.

Generally, cutaneous metastasis from GC implies that the tumor is inoperable and systemic therapy is needed. So far, only a few cases of resection have been reported<sup>[7,11]</sup>. Extended survival can be achieved by complete resection of cutaneous metastases when other lesions are well controlled<sup>[11]</sup>. Sometimes, surgical resection is performed as palliative treatment to relieve symptoms, such as pain<sup>[7]</sup>.

Cutaneous metastasis in GC is generally a sign of poor prognosis<sup>[6,10]</sup>, and the average survival time ranges from 1 to 28 wk in patients with cutaneous metastasis of GC<sup>[3,4,7,10]</sup>. Compared to nodular forms, inflammatory lesions might mean a worse survival<sup>[4]</sup>. Our patient died 7 d later after the diagnosis.

## **CONCLUSION**

In conclusion, more attention should be paid to patients with GC who present with any skin lesions. If necessary, a skin biopsy specimen should be obtained to make an accurate and prompt diagnosis.

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SIMILARITY INDEX

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