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ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Md Moshiur Rahman, MBBS, Assistant Professor, Department of Neurosurgery, Holy Family Red Crescent Medical College Hospital, Dhaka 1000, Bangladesh. dr.tutul@yahoo.com

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CASE REPORT

Inflammatory cutaneous metastases originating from gastric cancer: A case report

Lei Tian, Zhi-Bin Ye, Yun-Lei Du, Qiao-Fang Li, Li-Ya He, Hong-Zhen Zhang

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Lei Tian, Qiao-Fang Li, Li-Ya He, Hong-Zhen Zhang, Department of Oncology, Hebei General Hospital, Shijiazhuang 050051, Hebei Province, China

Zhi-Bin Ye, Department of Gastrointestinal Surgery, Hebei General Hospital, Shijiazhuang 050051, Hebei Province, China

Yun-Lei Du, Department of Emergency, Hebei General Hospital, Shijiazhuang 050051, Hebei Province, China

Corresponding author: Hong-Zhen Zhang, PhD, Chief Physician, Department of Oncology, Hebei General Hospital, No. 348 Heping West Street, Shijiazhuang 050051, Hebei Province, China. 931848183@qq.com

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

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.

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INTRODUCTION

Gastric cancer (GC) is a highly heterogeneous disease, and the typical sites of metastasis are the liver, lung, bone, and the peritoneum[1]. Cutaneous metastasis of GC is extremely rare, occurring in 0.2% to 1% of cases[2-4]. Cutaneous metastasis usually occurs in the late stage but sometimes appears as the first manifestation[5-9]. Single or multiple nodules are the most common clinical presentations[1,2,5-7,10-12]. 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.

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

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

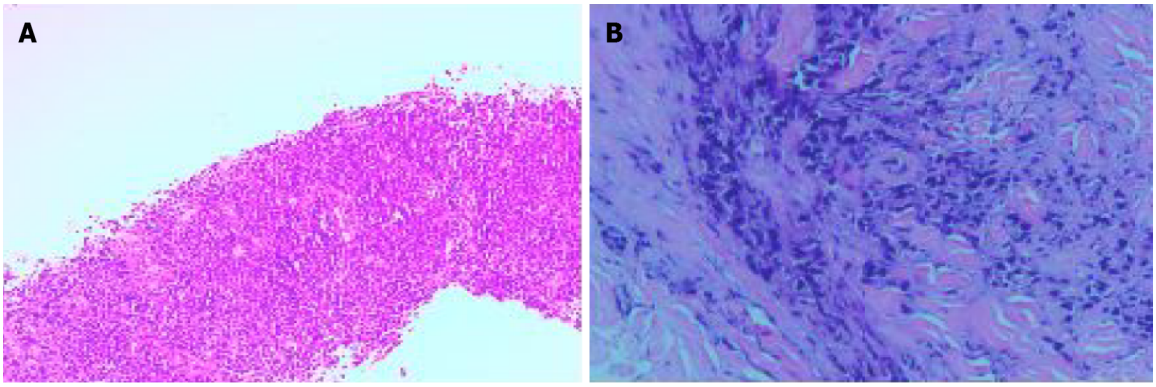

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Figure 1 Pathological findings. Pathological examination revealed poorly differentiated adenocarcinoma. A: Biopsy of cervical lymph node; B: Skin biopsy of the chest wall.

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[3,13,14], usually originating from breast cancer, lung cancer and colorectal cancer[13,15]. Approximately 70% of cutaneous metastases in women are caused by breast cancer[16]. 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[2,3,5,13,17], and signet-ring cell carcinoma has a greater tendency[2-5,17].

The mechanisms of cutaneous metastasis are complex and incompletely understood. Some potential mechanisms include hematogenous, lymphatic, direct invasion and surgical implantation[5,15]. Chemokines and their receptors have been demonstrated to be involved in cutaneous metastasis, but previous findings are still controversial[14]. 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[1,5,10,11]. Less frequently, they appear like sclerodermoid or inflammatory lesions[2,3,4,9]. In most cases, the latter two manifestations gradually develop from nodules[2,4]. 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[7,11]. Extended survival can be achieved by complete resection of cutaneous metastases when other lesions are well controlled[11]. Sometimes, surgical resection is performed as palliative treatment to relieve symptoms, such as pain[7].

Table 1 Thirteen cases of cutaneous metastases of gastric cancer

Ref.	Year	Age	Sex	Site	First symptoms	Type	SRC	Resection	Prognosis
Yao *et al*[2]	2023	61	M	Groin, scalp, thigh	No	Nodular, inflammatory, sclerodermoid	Yes	No	Unknown
Pliakou *et al*[3]	2022	42	M	Abdomen, hemithorax, back	No	Inflammatory	Yes	No	Died 4 mo later
Bajoghli *et al*[5]	2022	44	M	Face, trunk, upper limbs	Yes	Nodular	Yes	No	Unknown
Şahin *et al*[10]	2021	81	F	Abdomen	No	Nodular	Unknown	No	Died 5 d later
Demircioğlu *et al*[4]	2021	53	F	Abdomen, thigh	No	Inflammatory	Yes	No	Died 7 mo later
He *et al*[1]	2019	69	M	Armpit	No	Nodular	Unknown	No	Unknown
Koyama *et al*[11]	2019	89	M	Armpit	No	Nodular	No	Yes	Over 6 yr
Kirchberger[6]	2018	91	M	Chin	Yes	Nodular	Unknown	No	Died 1 mo later
Namikawa *et al*[7]	2017	59	M	Chest wall	Yes	Nodular	No	Yes	Died 6 mo later
Gündüz *et al*[12]	2017	57	F	Face, neck, shoulders	No	Nodular	Yes	No	Unknown
Ahmad *et al*[8]	2015	49	F	Scalp, face, upper limbs, shoulder, back, chest	Yes	Nodular	No	No	Unknown
Kaur *et al*[9]	2015	55	M	Abdomen	Yes	Sclerodermoid	Yes	No	Unknown
Arslan *et al*[17]	2014	52	M	Face, scalp	Yes	Nodular	Yes	No	Unknown

M: Male; F: Female; SRC: Signet-ring cell.

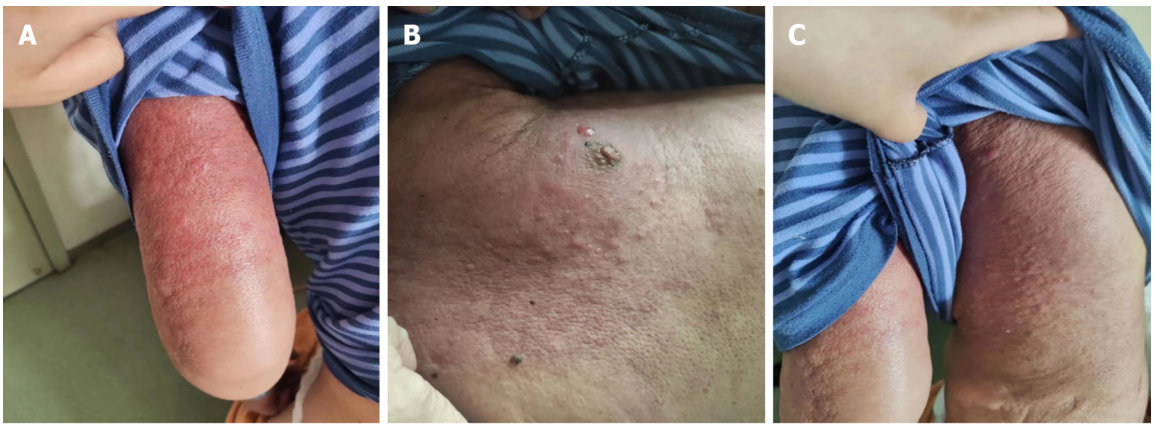

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Figure 2 Cutaneous metastases from gastric cancer. The extensive skin redness and swelling, accompanied by skin thickening and scattered small nodules. This image is published with the patient's guardian consent. A: Left upper limb; B: Left chest wall; C: Left back.

Cutaneous metastasis in GC is generally a sign of poor prognosis[6,10], and the average survival time ranges from 1 to 28 wk in patients with cutaneous metastasis of GC[3,4,7,10]. Compared to nodular forms, inflammatory lesions might mean a worse survival[4]. 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.

FOOTNOTES

Author contributions: Tian L and He LY provided clinical care for the patient; Tian L and Ye ZB wrote the manuscript; Li QF and Du YL were the attending consultant, Zhang HZ reviewed the final draft of the manuscript; all authors contributed to the writing, editing, and review of the manuscript.

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ORCID number: Lei Tian 0000-0001-8097-3301; Li-Ya He 0000-0001-6135-8960; Hong-Zhen Zhang 0000-0003-3226-9744.

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