

Facial Cutaneous Metastases of Gastric Signet-ring Cell Carcinoma: Resection and Reconstruction as a Palliative Surgical Treatment Option

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Abstract. *Background:* Cutaneous metastases of gastric signet-ring cell gastric carcinoma are very rare. Our following case report highlights the need for careful clinical examination and skin biopsy of newly developing scar-like or erythematous skin lesions in patients with a known history of malignant disease in order to prevent diagnostic and therapeutic delay. *Case Report:* A 68-year-old male patient presented with two slightly painful, erythematous, facial skin lesions (chin and forehead) 2 years after gastrectomy for a signet-ring cell gastric carcinoma. The patient complained of intermittent neuropathic pain in the area of the mental nerve. A biopsy of both skin lesions demonstrated metastasis of signet-ring cell gastric carcinoma. Following discussion within the multidisciplinary tumor board, palliative surgical excision was recommended for this patient. Both skin lesions were resected and the large defect in the chin region was primarily closed by a cervical skin transposition flap. *Conclusion:* The presented case report of a patient with a known history of malignancy illustrates that newly developing erythematous skin lesions may be suspicious for cutaneous metastases. Palliative surgical interventions may play a role even in an advanced disease stage.

Cutaneous metastases of solid tumors occur with variable frequency, with reported incidence rates from 0.7% to 9.0% (1, 2). A meta-analysis of patients with visceral malignancies

revealed an incidence of skin metastasis of 5.3% (3). Lookingbill *et al.* reported a frequency of 10% in a retrospective study of 4,020 patients (4), with cutaneous metastasis being the first clinical sign of occult carcinoma in 7.8% (5, 6). They often present as newly erupting papules, nodules, or tumors, mostly erythematous or scar-like. However, these lesions may also mimic erysipelas-like manifestations or allergic contact dermatitis (7, 8). The final diagnosis is based on histopathological examination. Cutaneous metastases are described clustered in carcinomas of the breast, lung, colon, rectum, kidney, head and neck, and gastrointestinal tract (9-14). The majority of cutaneous metastases are described in patients with advanced disease stage, but metastases may also occur as the initial manifestation of an occult primary tumor (15). Cutaneous metastases to the facial skin are described in fewer than 0.5% of patients with metastatic malignancies (4).

The following report presents a clinical case of a patient with cutaneous metastasis to the facial skin of gastric signet-ring cell carcinoma (GSRC). We describe the therapeutic options for cutaneous metastases, considering the prognosis in the presence of known underlying metastatic disease. This equally emphasizes the need for adequate clinical assessment and early diagnostic workup of asymptomatic skin lesions, especially in patients with a history of known malignancy.

Case Report

A 68-year-old male patient presented to the Department of Oral and Maxillofacial Surgery in December 2016 for a newly developing erupting, erythematous skin lesion of the right chin region (Figure 1) and another nodular skin lesion on the left forehead. The patient complained of intermittent neuropathic pain in the area of the mental nerve. An incisional biopsy of the chin lesion revealed a cutaneous metastasis of a GSRC. Anamnestically, the patient had undergone gastrectomy in May 2014 for GSRC (pT4 pN0 (0/19) G3 V1 L1 Pn1 R0). In December 2016, parietal

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Figure 1. Erythematous skin lesion diagnosed as cutaneous metastasis from gastric cancer.

pleurectomy and pleurodesis with talc were performed after a diagnosis of pleural carcinomatosis.

Because of the new cutaneous metastases, local resection of the metastatic lesion as a palliative treatment concept was recommended, considering his overall prognosis for metastatic gastric cancer. In January 2017, resection of both cutaneous metastases was performed under general anesthesia. Tumor resection in the chin region resulted in a skin defect of 5×4 cm (Figure 2A and B). The skin defect was closed primarily by dissecting a cervical rotational flap (Figure 2C). The histological report described skin metastasis of GSRC in both locations, forehead and cheek (Figure 3A and B). The neoplastic nature of the skin infiltrates was proven by histochemistry (periodic acid Schiff staining) and immunohistochemistry (staining for cytokeratins). The postoperative course was uneventful with uncompromised wound healing (Figure 4) and resulted in hospital discharge on day 4. Postoperatively, palliative chemotherapy was initiated in January 2017. In March 2017, the patient died of his tumor disease with progressive metastasis.

The Ethics Committee decided that no ethical approval was required for publication of this report, however, during hospital admission, the patient gave his consent for publication.

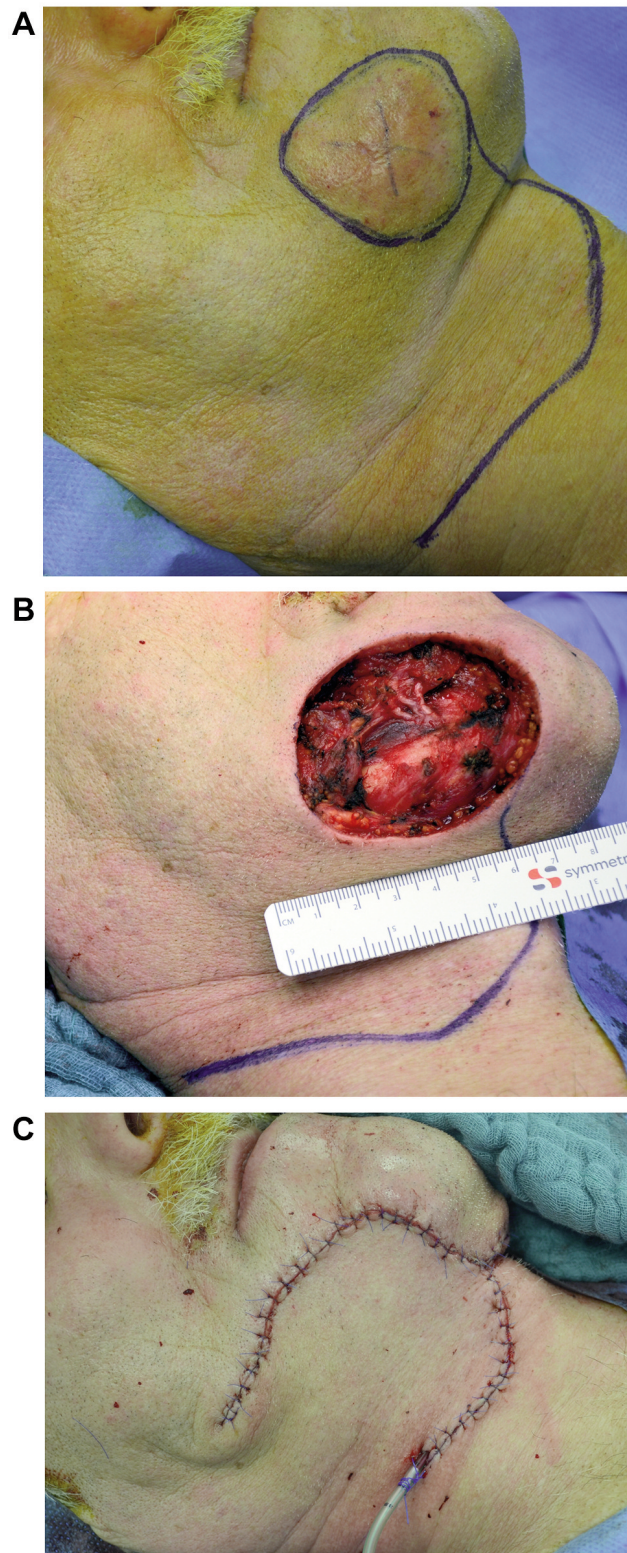


Figure 2. A: Outline of skin incision for resection of cutaneous metastasis and reconstruction. B: Skin defect of right chin region following resection of cutaneous metastasis. C: Immediate postoperative result following defect closure using a cervical rotation flap.

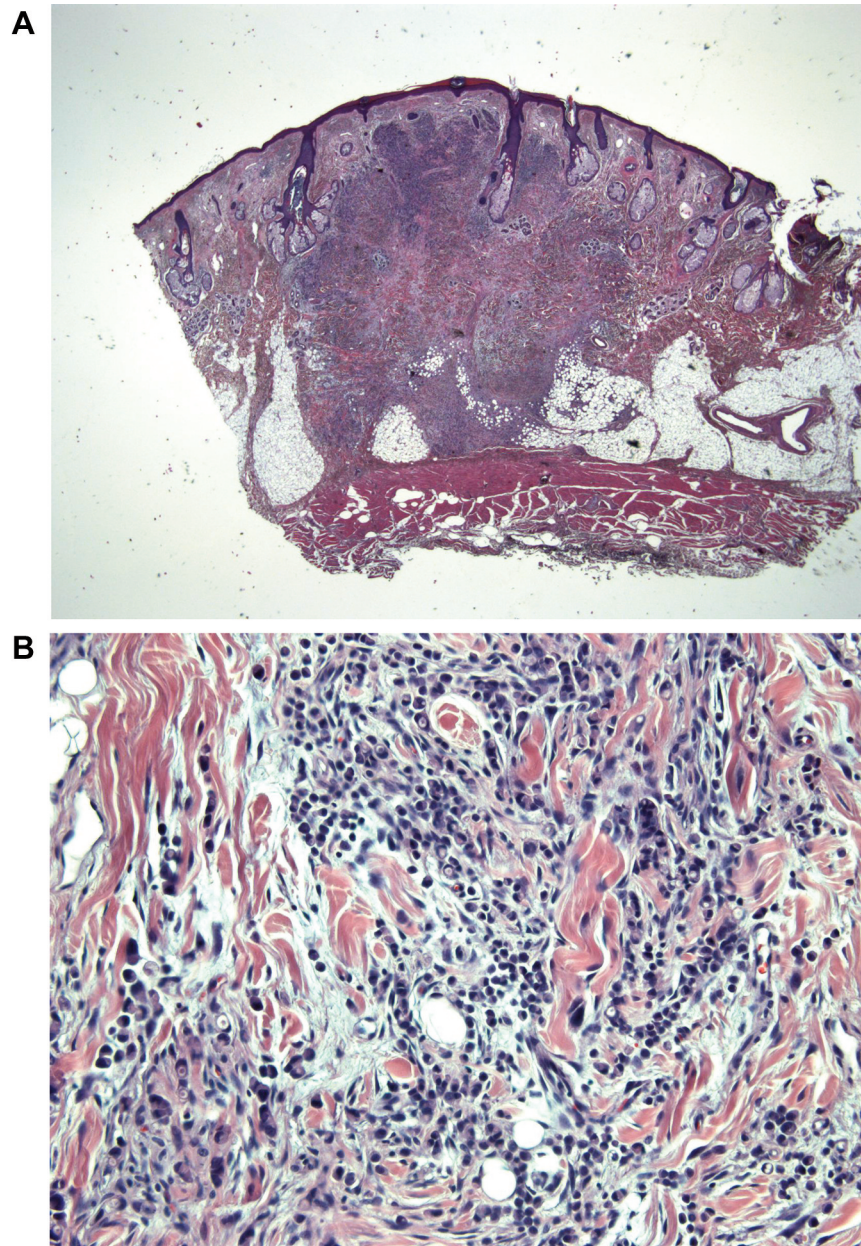


Figure 3. A: Overview of the histopathological slide (from the smaller skin nodule). There is a faintly demarcated nodule in the dermal and subcutaneous tissue representing tumor cells of the signet-ring cell carcinoma (from the gastric primary). hematoxylin and eosin, $\times 10$. B: Higher magnification revealed tumor cell infiltrate in the dermal fibrous tissue consisting of typical signet-ring cells, with some eccentric and hyperchromatic only slightly enlarged tumor cell nuclei and large intracytoplasmic vacuoles representing accumulations of mucin. Hematoxylin and eosin (HE), $\times 200$.

Discussion

Cutaneous metastasis from primary cancer is generally indicative of late-stage disease because patients are likely to have other concomitant sites of metastasis. Newly developing ulcerative or subcutaneous skin lesions are highly suspicious in patients with a known history of cancer (13).

Advanced GSRC is commonly considered to have a poor prognosis and inferior chemosensitivity compared to other types of gastric cancer (16). In general, it has often been recommended that patients diagnosed with cutaneous metastasis should undergo surgical resection of the skin lesion even as a palliative treatment option (2, 13, 17). Due to the fact that our patient complained of the so-called 'numb-chin syndrome' with



Figure 4. Postoperative follow-up at 4 weeks, showing uncompromised wound healing.

intermittent neuropathic pain, palliative surgery seemed to be a valuable option knowing that many cutaneous metastases show rapid progression with bleeding and ulceration.

In view of different treatment modalities such as surgery, chemotherapy and radiotherapy for cutaneous metastasis, the final treatment decision should also be based on prognosis and clinical symptoms (18).

Even though cutaneous metastasis carries a poor prognosis, palliative surgical excision may be a valuable option in selected patients to achieve adequate symptom relief and improved quality of life. In such situations, regional skin flaps play an important role in restoring resulting larger skin defects following ablative surgery (19).

Cutaneous metastases are most reported in patients diagnosed with cancer of the lung, breast, colon, renal cell carcinoma and melanoma (15). Cutaneous metastases of GSRC are very rare, with a reported incidence of 0.8-1.0% (1, 5).

Our clinical presentation should remind clinicians that newly developing skin lesions in patients with a known history of cancer are likely to be cutaneous metastases that require expedient diagnosis and initiation of treatment.

Conflicts of Interest

The Authors declare no conflicts of interest.

Authors' Contributions

AME contributed to the collection of data, conceptualization and revising the article. WB contributed to the selection of histo-

pathological data and slides. Both Authors read and approved the final article.

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