CASE REPORT

CUTANEOUS METASTASES – AN UNCOMMON AND UNUSUAL MODE OF PRESENTATION OF GASTRIC CARCINOMA

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SYNOPSIS

Cutaneous and oral mucosal metastases from gastric carcinoma are very uncommon. It is even more uncommon and unusual to have a patient with gastric carcinoma whose mode of presentation is that of "skin nodule" (cutaneous metastases). We report one such patient, who was first seen in a skin clinic, then in a dental clinic, and finally was referred to a medical clinic. Current literature on cutaneous metastases of gastric carcinoma is reviewed in this case report.

Key words: Cutaneous metastases; Oral mucosal metastases; Gastric carcinoma.

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INTRODUCTION

Gastric carcinoma is a common malignancy in Singapore. It ranked second amongst cancers in males in Singapore (1). It accounts for 14% of cancers seen in Singapore Indian males (2). Common modes of presentation of gastric cancer are symptoms such as upper abdominal discomfort or pain, anorexia, weight loss, nausea and vomiting, dysphagia, haematemesis, malaena, or with signs such as anaemia, epigastric mass, hepatomegaly, ascites, cervical lymphadenopathy or manifestations of distant metastases to the lungs, bones or nervous system (3). Occasionally it may present with cutaneous non-metastatic manifestations (paraneoplastic manifestations) such as dermatomyositis, acanthosis nigricans, Trousseau's syndrome (migratory thrombophlebitis), pemphigoid and other skin lesions (4). It is rare for gastric cancer to present as cutaneous metastases. We report one such case and review the literature on this subject.

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CASE REPORT

A 63 year old Indian male first consulted a dermatologist for nodular lesions on his face, neck, upper chest and upper lip of three weeks' duration (Figure 1 & 2). These lesions had gradually increased in size, were tender and bled easily when scratched. There were no other symptoms initially. Biopsy of the skin nodules by the dermatologist revealed adenocarcinoma, most probably metas-

FIGURE 1: Metastatic skin nodules on patient's face (forehead, upper lip, cheeks).

tatic (Figure 3 & 4). Swelling of his gums was also detected then, for which he was referred to a dental surgeon. Biopsy of the swollen gum also showed metastatic adenocarcinoma (Figure 5). Upon receipt of the histology of the skin biopsy, he was subsequently referred to a physician to assist in the search for the primary site of malignancy.

On further questioning, the patient volunteered that about a week after the appearance of the skin nodules, he had anorexia and dysphagia, especially to solid food. There was a tendency to regurgitate undigested food about 5 minutes after a meal. He experienced a sensation of food being stuck at the level of the second intercostal space retrosternally. Eventually, just before admission to the Singapore General Hospital, he was able to take only small amounts of liquid diet. Weight loss and constipation were also noticed, although he was unable to quantify the amount of weight lost. There was no history of cough or dyspnoea. No other symptoms of significance were noted.

There was a past history of pulmonary tuberculosis about 20 years ago for which he received a complete course of treatment. There were no other major illness of note. He was married, with 5 children. He had been consuming alcohol daily for 40 years, and smoked about 5 cigarettes daily for the past 30 years. There was no history of ingestion of caustic acids/alkalis, either accidentally or otherwise.

Clinical examination revealed pallor and muscle wasting. The pulse was 80/min, blood pressure was 120/80 mmHg and the respiration was normal. He was afebrile. Multiple nodules were noted over his face, lower lip, neck and anterior part of the upper chest. These were fleshy and tender and showed "umbilication" (See Figure 1). The skin elsewhere was normal. Large indurated swelling of the right upper gums was also noted. No masses were palpable per abdomen. There was no malaena or cervical lymphadenopathy. Examination of the other systems was normal.

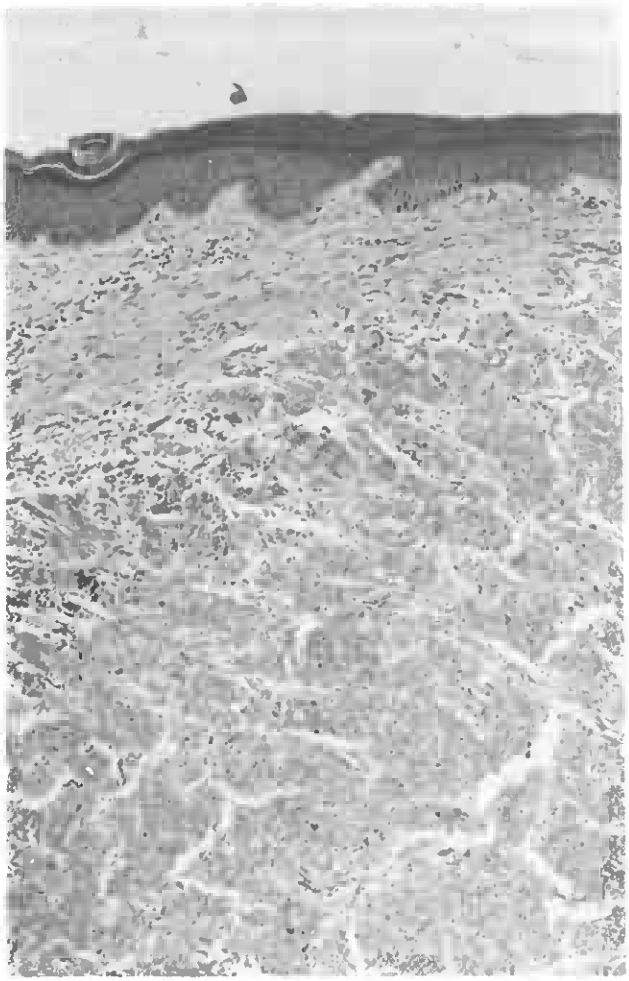

FIGURE 3: Biopsy of skin nodule showing metastatic adenocarcinoma in the dermis of the skin. H&E stain. x250.

FIGURE 2: Oblique view of patient's face showing the metastatic skin nodules.

Investigations done were:

Hb = 11.6 g/dl, TW 17000/ul (N = 93%, L = 4%, M = 2%, E = 0%)

Blood urea, serum creatinine and electrolytes: normal

Liver function test: normal

Urine microscopic examination: normal

Chest x-ray: multiple "soft" opacities in both lung fields, consistent with pulmonary tuberculosis.

Plain abdominal x-ray: normal

Sputum smear for acid-fast bacilli: positive

Laryngeal swab for TB culture: positive for *Mycobacterium tuberculosis*.

Oesophago-gastro-duodenoscopy: a large, necrotic, stenotic tumour was seen at the cardia of the stomach. Biopsies were taken and histology was that of an adenocarcinoma (See Figure 6).

The diagnoses were: 1. Carcinoma of gastric cardia with metastases to skin, gums and lip. 2. Pulmonary tuberculosis, active

His pulmonary tuberculosis was treated with isoniazid, ethambutol and intra-muscular streptomycin. Radiotherapy was given to the skin nodules. One dose each of intravenous methotrexate and 5-fluorouracil were also administered. However, his condition deteriorated rapidly, and this obviated any surgical treatment to relieve the obstruction in the lower end of the oesophagus as well as any further radiotherapy or chemotherapy. He perished two months after the first appearance of his cutaneous lesions.

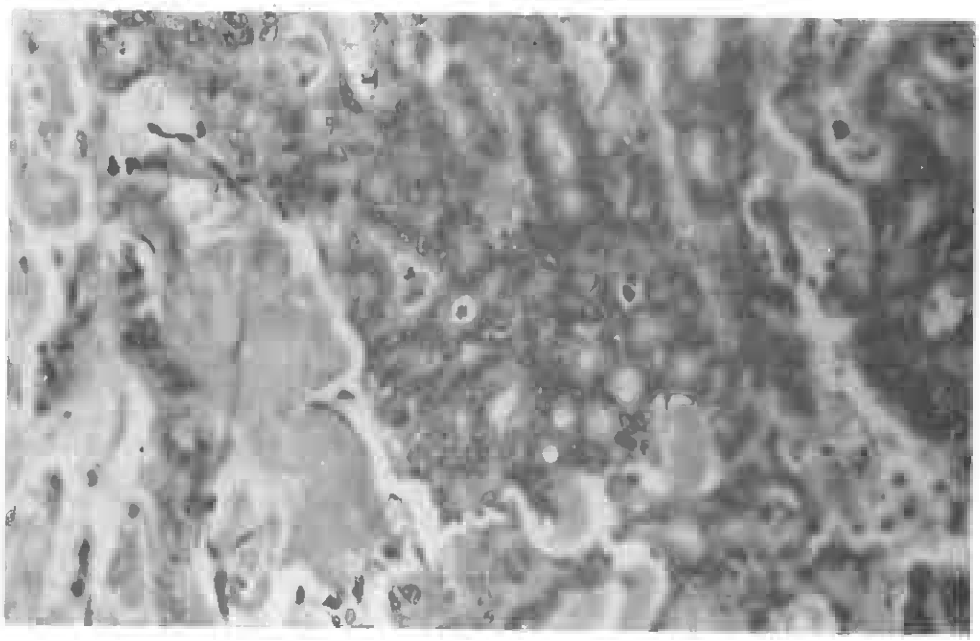

FIGURE 4:
High power view of FIG 3 showing a collection of malignant glands in the dermis of the skin. H&E stain. x1000.

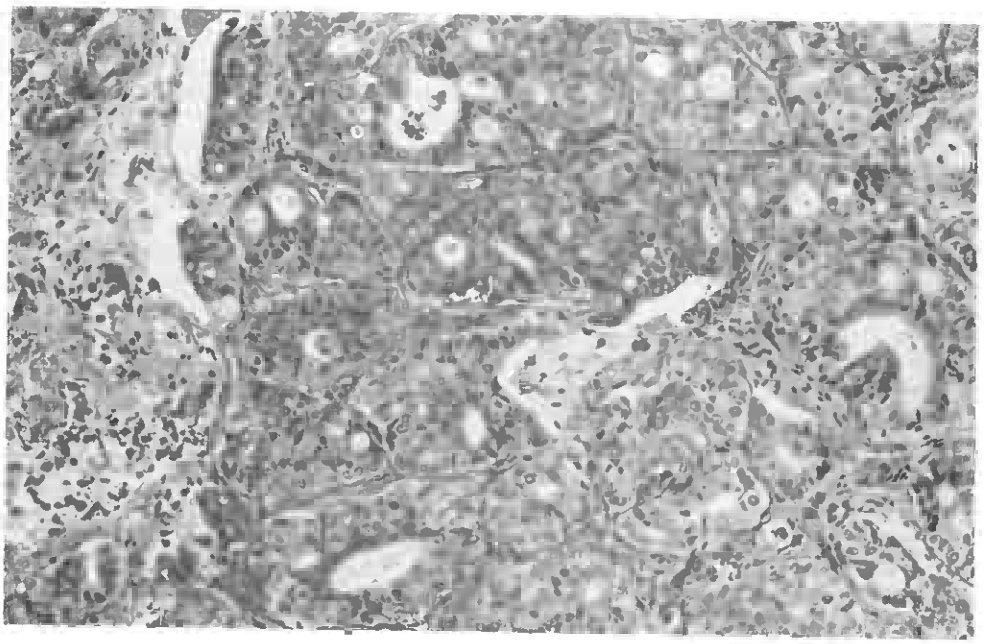

FIGURE 5:
Oral mucosal biopsy showing adenocarcinoma with well-formed glands. H&E stain. x1000.

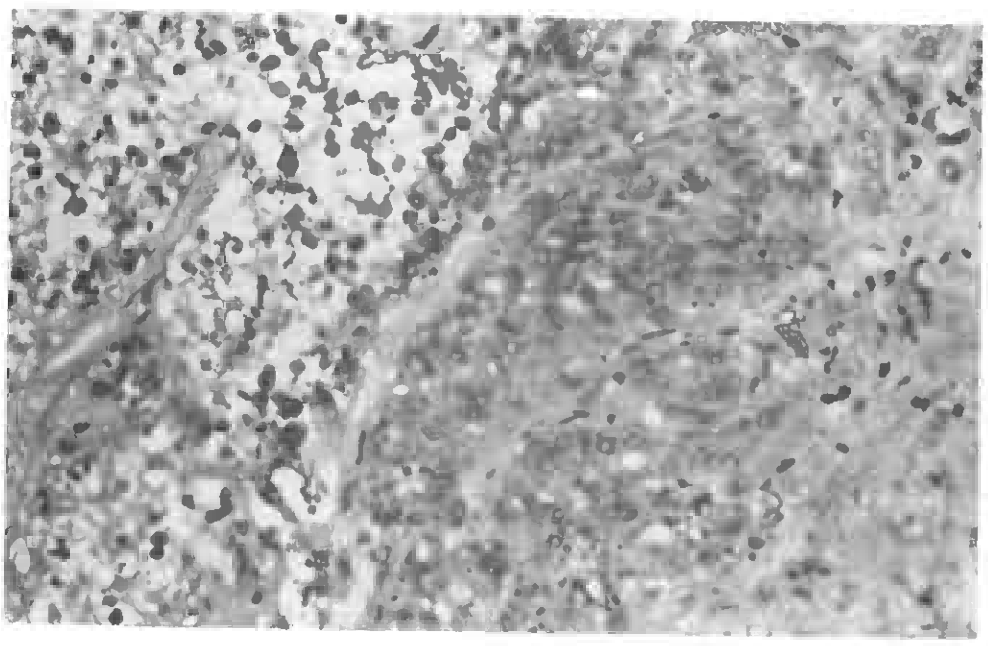

FIGURE 6:
Gastric biopsy showing adenocarcinoma on the left and ulceration on the right. H&E stain. x1000.

DISCUSSION

Carcinoma of the stomach is the second most common cancer in Singaporean males during the period 1968-1982, with an age-standardized rate of 31.6 per 100000 (from 1978-1982) (1). There were three main ethnic groups in Singapore — Chinese, Malay and Indian — with their respective age-standardized rates of gastric cancer at 43.7, 10.3 and 18.6 per 100000. Amongst Indian males in Singapore, gastric cancer is the most frequent cancer, accounting for 14% of all cancers in this group (1, 2).

Commoner modes of presentation of gastric cancer are symptoms such as upper abdominal discomfort or pain, anorexia, weight loss, nausea and vomiting, dysphagia, haematemesis, melaena, or with signs such as anaemia, epigastric mass, hepatomegaly (due to metastases to liver), ascites, cervical lymphadenopathy. At times, it may present with manifestation of distant metastases to the lungs, bones or nervous system (3, 28). Occasionally, it may also present with cutaneous non-metastatic manifestations mentioned earlier (4). Although a common cancer, cutaneous metastases resulting from a previously diagnosed gastric cancer is relatively uncommon, and cutaneous metastases as the mode of presentation is even rarer.

The incidence of cutaneous metastases from various cancers varies from 0% to 9% (5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17). In a series of 588 patients with malignancy (10), only 40 had skin metastases, out of which only 4.4% were from a gastric cancer (38% from breast, 16% from lung, 6.8% from kidney). Reingold (11) found 36 cases of skin metastases in 2300 cases of internal carcinoma who had necropsy, with only 3 having originated from the stomach. Abram's et al (12) showed that out of 119 autopsy cases of carcinoma of the stomach, only 2 (or 1.7%) had skin metastases, even though metastases were commonly seen in the abdominal nodes, peritoneum, liver, lungs and mediastinal nodes. Brady et al (13) studied 10675 patients with malignancy (all types) who presented for radiation therapy: 100 had documented skin metastases, none of which had carcinoma of stomach as the primary malignancy. Most of these skin secondaries originated from cancers of the lung, kidney and colon. In Lowe's (14) series of 120 patients with proven carcinoma of the stomach, only 2 had cutaneous spread (adenocarcinoma). In a large series of 724 cancer patients with skin metastases from the Armed Forces Institute of Pathology, reported by Brownstein and Helwig (15), only 28 cases (or 3.8%) were associated with a gastric cancer primary. In 482 males in this study, the lung (24%), colon (19%), melanoma (13%), oral cavity (12%) and kidney (6%) were the commonest primary sites; whereas in 242 females, the breast (69%), colon (9%), melanoma (5%) ovary (4%) and lung (3.7%) formed the commonest primary sites of malignancy. In the largest series yet of 7518 patients with internal cancer who were autopsied, Spencer and Helm (16) found 222 patients with carcinoma of stomach, and of these, only 10 (4.5% of all gastric cancers and 0.1% of total cases studied) had skin metastases. In general, the skin is an uncommon site for a gastric cancer to metastasise to.

Sister Mary Joseph's nodule, a metastatic nodule on the umbilicus, occuring before or after the detection of a primary gastric cancer, in not uncommon (17, 18, 19, 20). However this type of metastases is thought to occur by either adhesion of the primary tumour to the peritoneal aspect of the umbilicus or through spread of the tumour in the lymph vessels of the ligamentum teres (i.e. it is either a contiguous or lymphatic spread). On the other hand, distant cutaneous spread, occuring by blood-borne dissemination, even before the primary tumour has manifested itself, as seen in this patient of ours (with nodules on the face, lip, upper chest and gums), is rare. There are only a few reported cases of this kind in the literature. Edel (21) in 1933 studied 27 instances of cutaneous metastases from gastric cancer and found that in 9 patients (33.3%) the nodules in the skin were the means of identifying the primary source in the stomach. However, it is conceivable that some of these patients had prior gastrointestinal symptoms which might not have been pursued because of inadequate access to barium meal x-ray or endoscopic diagnosis at that time. Trinca and Willis (22) reported in 1927 a young man of 22 years who complained of vomiting and weight loss. X-rays failed to reveal any lesion in the stomach. However, a small tumour on the buttocks was excised and found to be an adenocarcinoma. Upon death, autopsy revealed a gastric cancer with metastases to the peritoneum, lymph nodes and lungs. Other somewhat similar experiences were reported by Freezer (23) and Severin (24). In Brownstein and Helwig's (15) series of 131 males with various cancers presenting with skin metastases, 9 (6.8%) were found to have a gastric cancer as primary. However, no further elaboration on these 9 cases was made, other than that in 6, the presenting skin metastasis was in the abdomen (there was no mention as to whether these were Sister Joseph's nodules). The remaining 3 had lesions on scalp (1), neck (1) and chest (1). Out of 15 females with various cancers presenting with skin metastases, 1 had a gastric primary, the majority of the rest having arisen from breast and ovarian primaries. Quite recently, in 1985, Weisner et al (25) described a case of gastric adenocarcinoma presenting as cutaneous metastases to the skin of the neck, and in 1986, Shirin (26) reported another case of gastric cancer manifested by metastases to the skin of the neck. However, there was no mention of any oral mucosal metastases in all these reports heretofore quoted.

Brownstein and Helwig (27, 28), in their excellent reviews of the subject of cutaneous metastases, have concluded that in males presenting with cutaneous metastases of poorly or moderately poorly differentiated adenocarcinoma, the lung was the more likely primary site than the gastrointestinal tract. In fact, amongst males presenting with blood-borne cutaneous metastatic adenocarcinoma, pulmonary, colorectal and renal cell carcinomas were more common as the primary than gastric carcinoma. Amongst females presenting with cutaneous metastatic adenocarcinoma, ovarian and breast carcinoma were the commoner than gastric carcinoma as the primary.

This patient of ours is interesting as well as rare, in that he presented not only with cutaneous nodules, but also with metastases to distant mucosal surfaces, viz the gums and lip. Biopsies of these lesions had confirmed metastatic adenocarcinoma. The primary tumour in this case was detected easily because of the subsequent development of dysphagia that led to the endoscopic and biopsy diagnosis of the gastric carcinoma (cardia). His condition deteriorated rapidly and he died within two months of presentation. This is in keeping with the observation in most studies which show that death usually occurs within three to four months in patients with gastric cancer who develop cutaneous metastases (11, 13, 29). Hence the appearance of skin metastases in a patient with gastric cancer is a bad prognostic sign, indicating rapid fatal termination, and precluding any viable treatment options, as in this patient.

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REFERENCES

1. Shanmugaratnam K, Lee HP, Day NE. Cancer incidence in Singapore 1968-1977. International Agency for Research in Cancer, World Health Organisation Scientific Publication No 47, 1983.
2. Lee HP. Singapore. In: Howe GM ed. Global Geocancerology — a World Geography of Human Cancers. Churchill Livingstone, 1986.
3. Braunwald E, Isselbacher KJ, Petersdorf R, Wilson JD, Martin JB, Fauci AS, Eds. Harrison's Principles of Internal Medicine. Mc Graw-Hill Book Co, 1987. Chapter 236.
4. Callen JP. Skin signs of internal malignancy. In: Callen JP, Ed. Cutaneous Aspects of Internal Disease. Yearbook Medical Publishers, 1981.
5. Gates, O. Cutaneous metastases of malignant disease. Am J Cancer 1937; 30: 718-30.
6. Beerman, H. Some aspects of cutaneous malignancy. Am J Med Sci 1957; 233: 456-72.
7. Willis R A. The Pathology of Tumours. London, Butterworth & Co, 1960: 179.
8. Winer LH, Wright ET. Uber den sekundaren (metastatischen) Hautkrebs. Klinische und Pathologische Untersuchungen. Hautarzt 1960; 11: 23-27.
9. Leu F. Les metastases cutanees des cancers visceraux, these. Universite de Lausanne, Lausanne, 1964.
10. Connor DH, Taylor HB, Helwig EB. Cutaneous metastases of renal cell carcinoma. A.M.A. Arch Pathol 1963; 76: 339-346.
11. Reingold IM. Cutaneous metastases from internal carcinoma. Cancer 1966; 19: 162-8.
12. Abrams HL, Spiro N, Goldstein N. Metastases in carcinoma. Cancer 1950; 3: 76-85.
13. Brady LW, O'Neil EA, Farber SH. Unusual sites of skin metastases. Semin Oncol 1977; 4: 59-64.
14. Lowe WC. Neoplasm of the gastrointestinal tract. Henry Kimpton Publisher, 1972.
15. Brownstein MH, Helwig EB. Metastatic tumours of the skin. Cancer 1972; 29: 1298-1307.
16. Spenser PS, Helm TN. Skin metastases in cancer patients. Cutis 1987; 39: 119-21.
17. Lombardi LE, Parsons L, Carcinoma of the umbilicus metastatic from carcinoma of the stomach. Ann Int Med 1945; 22: 290-3.
18. Clements AB. Metastatic carcinoma of the umbilicus. JAMA 1952; 150: 556-559.
19. Steck WD, Helwig EB. Tumours of the umbilicus. Cancer 1965; 18: 907-15.
20. Samitz MH. Umbilical metastasis from carcinoma of the stomach. Arch Dermatol 1975; 111: 1478-9.
21. Edel E. Uber Hautmetastasen bei mogenkarzinom. Arch Verdauungskr 1933; 53: 402-15.
22. Trinca AS, Willis RA. Primary carcinoma unsuspected by the clinician. Med J Aust 1936; 2: 222-7.
23. Freezer CRE. Case of latent carcinoma ventriculi with extensive skin metastases. Guy Hosp Rep 1927; 77: 222-8.
24. Severin S. Multiple Hautkarzinose bei Koloid Krebs des Magens. Deutsch. Med. Wschr 1926; 52: 792-793.
25. Weisner vM et al. Ungewohnliche Hantmetastasen eines Magenkarzinomsus (Unusual skin metastases of a stomach cancer). Dermatol Monatsschr 1985; 170: 336-41.
26. Shirin DF. Stomach cancer manifested by metastases to the skin of the neck. Klin Med (Mosk) 1986; 64: 144-6.
27. Brownstein MH, Helwig EB. Patterns of cutaneous metastases. Arch Dermatol 1972; 105: 862-8.
28. Brownstein MH, Helwig EB. Spread of tumours to the skin. Arch Dermatol 1973; 107: 80-6.
29. Donn F, McNeer G. Metastasis of Gastric Cancer to other organs. In: McNeer G, Pack GT. eds. Neoplasms of the Stomach. Pitman Medical Publishing Co./J.B. Lippincott Co., 1967.
30. Bravermann, IM. Skin signs of Systemic Disease. W.B. Saunders Co., 1981.