Gastric carcinoma is a common malignancy worldwide. Advanced stages of the disease may result in metastases to many other organs of the body. However, colonic metastases are rare. We describe a patient with gastric carcinoma and symptoms of weight loss and an elevated serum level of carcinoembryonic antigen (CEA). The pathologic diagnosis was based on histologic examination of endoscopic biopsy and polypectomy specimens. This report describes the endoscopic features of the colonic metastases from the gastric carcinoma.

**Key Words:** gastric carcinoma, colonic metastases, flat elevated lesion

**Case Presentation**

A 41-year-old male, married, senior high-school teacher suffered from abdominal fullness, anorexia, and 4 kg weight loss within 6 months. On August 2, 2002, he visited the outpatient department of a Taipei National Insurance Health Clinic, when an elevated serum level of CEA (117 ng/mL; normal, 0–4 ng/mL) was observed. He was referred to Taipei Municipal Jen-Ai Hospital for further survey. Abdominal ultrasound revealed a marked thickness (≤ 1.6 cm) in the gastric body wall that suggested gastric cancer (Figure 1). Esophagogastroduodenoscopy revealed giant folds occupying the whole gastric body and poor expansion of the stomach. Histologic examination of biopsy specimens from the giant fold demonstrated poorly differentiated adenocarcinoma with signet ring-cell differentiation. Total colonoscopy revealed five or six discrete flat elevated lesions in the distal transverse, descending, and sigmoid colons. These lesions were characterized by a clear margin of 3–5 mm in diameter and erosions on the tips. Polypectomy specimens demonstrated signet ring-cell carcinoma, which was histologically similar to the specimens taken from the gastric lesion. We conclude that this was a rare case in which gastric signet ring-cell carcinoma had metastasized to the colon in the form of flat elevated lesions, combined with rapid and wide lymphatic spread to the thorax and abdomen in a clinical course as short as 46 days.
Colonic metastases from gastric carcinoma

Total colonoscopy revealed five or six discrete flat elevated lesions located in the distal transverse, descending, and sigmoid colons. These lesions had clear margins and were 3–5 mm in diameter with erosions on the tips (Figure 4). Histologic examination of polypectomy specimens demonstrated signet ring-cell carcinoma, which was similar to the specimen taken from the stomach (Figure 5). An upper gastrointestinal series demonstrated poor distension of the gastric body and a fixedly widened angle indicating scirrhous gastric cancer. Abdominal computed tomography (CT) with intravenous contrast medium revealed diffuse thickening of the gastric wall at the cardia, fundus, and upper body, a soft tissue-density mass in the lesser omentum, and an obliterated fat plane around the pancreatic body, indicating gastric carcinoma with local invasion to the lesser omentum and pancreatic body (Figure 6).

On August 13, the patient underwent left supraclavicular lymph node biopsy and metastatic adenocarcinoma was found. Abdominal ultrasound examination on August 22 revealed gastric cancer with pancreatic involvement, left hydronephrosis with hydroureter, ascites, right pleural
effusion, and para-aortic lymphadenopathy. Chest CT on August 29 showed bilateral pleural effusion, collapse of the left lower lung, and multiple mediastinal lymphadenopathy. Chemotherapy with high doses of 5-fluorouracil and leucovorin (HDFL) was given on September 3 without any observed side effect. However, chemotherapy was discontinued on day 8 due to leukocytosis and infection. Respiratory distress was noted on September 17. The next day, the patient died of respiratory failure.

**DISCUSSION**

In 1965, Laurèn characterized two major histologic types of gastric carcinoma, intestinal and diffuse [1]. The patterns of metastases from the two types of gastric carcinoma are different. The diffuse carcinoma shows a wider dissemination than the intestinal type. In addition, peritoneal metastases, lymphatic permeation of the lungs, and Krukenberg tumors are more commonly found in diffuse cases [2]. On the other hand, the intestinal type of carcinoma involves the liver more commonly and extensively. Intestinal metastases are rarely reported from gastric adenocarcinoma. Primary gastric tumors with intestinal metastases are mostly of the scirrhous type and poorly differentiated, with or without signet ring-cell differentiation [3–6]. Such metastases are frequently associated with peritoneal seeding but rarely involve the liver.

The most common form of secondary neoplastic involvement of the bowel is peritoneal seeding, which generally originates from ovarian carcinoma. Hematogenous dissemination infrequently occurs in cases found in the small bowel [7], but usually originates from breast carcinoma [8,9], lung carcinoma, and melanoma [10]. It may present as segmental stricture [3,4], mimicking granulomatous colitis [6], or advanced tumor [10]. Most often, the characteristic finding on CT is target-like, concentric bowel-wall thickening.
Figure 5. Histologic views of colonoscopic polypectomy. Signet-ring carcinoma cells infiltrate in mucosa and form small nodules in the submucosa. The adjacent colonic crypts are entirely normal. Original magnification: (A) $\times 20$; (B) $\times 40$; (C) $\times 100$. (Hematoxylin & eosin.)

Figure 6. Computed tomography scan of the abdomen. Diffuse thickening of the gastric wall at the cardia, fundus, and upper body is clearly visible.
involving multiple long segments. The sites of metastases in most cases are the ascending colon and rectum [11]. Polypoid colonic metastases usually result from melanoma [12] or spindle-cell renal carcinoma [13]. Polyps can often be identified and may be indistinguishable from ordinary mucosal polyps.

Three cases of multiple colonic metastases from poorly differentiated gastric adenocarcinoma, presenting as colonic polyposis, have been reported [14–16]. Our case appeared to be a rare one of gastric signet ring-cell carcinoma with metastases to the colon in the form of multiple flat elevated lesions.

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胃癌轉移至大腸以多發性扁平隆起病灶來表現
—病例報告

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胃癌是全世界常見的癌症。胃癌末期常常轉移至身體其他器官，然而轉移至大腸卻很少發生。我們報導一例以腹脹及體重減輕為主要的胃癌病例，此病人血清 CEA 值上升，上消化道內視鏡檢查顯示胃體部充滿巨大腫瘤，病理切片顯示為 signet ring 狀分化不良性胃腺癌，全大腸鏡檢查發現有横結腸、降結腸及乙狀結腸散佈著 5-6 個不連續扁平隆起病灶，病灶的大小約為 3-5 公厘頂端有糜爛且界限明顯，病灶切除病理報告為分化不良性腺癌，類似胃的病理切片報告。總結此病例為 signet ring 狀分化不良性胃腺癌併罕見扁平隆起病灶的大腸轉移，之後併發快速淋巴轉移至胸腔及腹腔，病程只有 46 天即去世。

關鍵詞：胃癌，大腸轉移，扁平隆起病灶

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