Arch Jpn Chir 58(4), 360～367, Juli, 1989

症　　例

A Case of Concomitant Association of Duodenal Carcinoma and Jejunal Carcinoma with Cerebral Metastasis

Masaaki Miyamoto, Takaaki Sudo, Masao Kawamura, Ryuji Shobu, Hideaki Bessho and Takeshi Kuyama

Second Department of Surgery, Kinki University School of Medicine, Osaka, Japan
(Director: Prof. Dr. Takeshi Kuyama)
Received for Publication, Apr. 7, 1989.

Abstract

A case of concomitant association of primary suprapapillary and jejunal carcinomas with cerebral metastasis is reported. A 42-year-old woman was admitted to our hospital complaining of melena. Preoperative endoscopy and abdominal angiography showed primary suprapapillary carcinoma, and brain CT showed a highdensity mass in the right parietal lobe causing involuntary movement of the left upper extremity. During surgery another tumor was revealed in the jejunum about 80 cm from the Treitz' ligament. These were removed surgically and examined histologically.

Introduction

Primary small intestinal cancer is rare, accounting for only 1-3% of all cancers of the digestive tract in Japan[4]. Distant metastasis is observed primarily in the lung and liver. To our knowledge, there is only one reported patient with cerebral metastasis without lung or liver metastasis[5] In this paper, we report a case in which a patient with primary carcinomas of the suprapapilla and jejunum had metastasis to the right parietal lobe and in whom synchronous double carcinoma was thought to have occurred.

Case Report

The patient was a 42-year-old female who noticed bloody stools. At the age of 27, she had developed pulmonary tuberculosis, which improved after treatment.

Present disease: Bloody stools and anemia (hypochromic microcytic) appeared in April, 1985. Though she visited a local hospital, no abnormalities were detected, and only the anemia was treated with drugs. In June, occasional periomphalic pain and involuntary movement of

Key words: Primary small intestinal cancer, Cerebral metastasis from small intestinal cancer, Synchronous double carcinoma.
索引語：原発性小腸癌，小腸癌脳転移，同時性重複癌
Present address: Second Department of Surgery, Kinki University School of Medicine, 377-2 Ohno-Higashi, Osakasayama-City, Osaka, 589, Japan.

the left upper extremity developed, and she was admitted to the medical department of another hospital for close examination. Endoscopy was performed to identify the cause of the bloody stools and abdominal pain, and a diagnosis of suprapapillary carcinoma was made. She was admitted to our department of Surgery.

Physical findings on admission: She was 162 cm in height and 48 kg in weight and fairly well-nourished. Her blood pressure was 108/50, and her pulse rate was 78/minute. Anemia was observed in the eyelids and bulbar conjunctivae. Tenderness was present around the omphalos, but not mass was palpable, and no muscular defense was observed. The left upper limb was weak, and occasional involuntary movement was observed.

Laboratory findings on admission: Peripheral blood analysis revealed anemia with a hemoglobin count of (Hb) of 8.3 g/dl and a hematocrit of 26.6%. The stool was strongly positive for occult blood. The α-fetoprotein (AFP) and carcinoembryonic antigen (CEA) levels were normal. However, HBs antigen was (+), HBs antibody was (−), HBe antigen was (−), and HBe antibody was (+). Biochemical examinations and chest and abdominal X-rays in the standing position showed no abnormalities.

Endoscopy: A Borrmann 2 type-like well-delineated concave lesion was observed in the inferior lateral wall of the descending part of the duodenum. In the fundus, a dark red elevation, suggestive of exposed blood vessels, and partial oozing were observed (Fig. 1).

Abdominal angiography: The superior mesenteric artery (SMA) showed a serrated narrowing of 7 cm area, about 5 cm from the site of the origin, and lymph node swelling was evident. The middle colic artery could not be seen. In addition, in the peripheral portion of the superior pancreaticoduodenal artery, stains probably due to extravasation and mucosal images

Fig. 1 Gastroenterological endoscopy shows Borrmann 2 type-like well-delineated concave lesion.

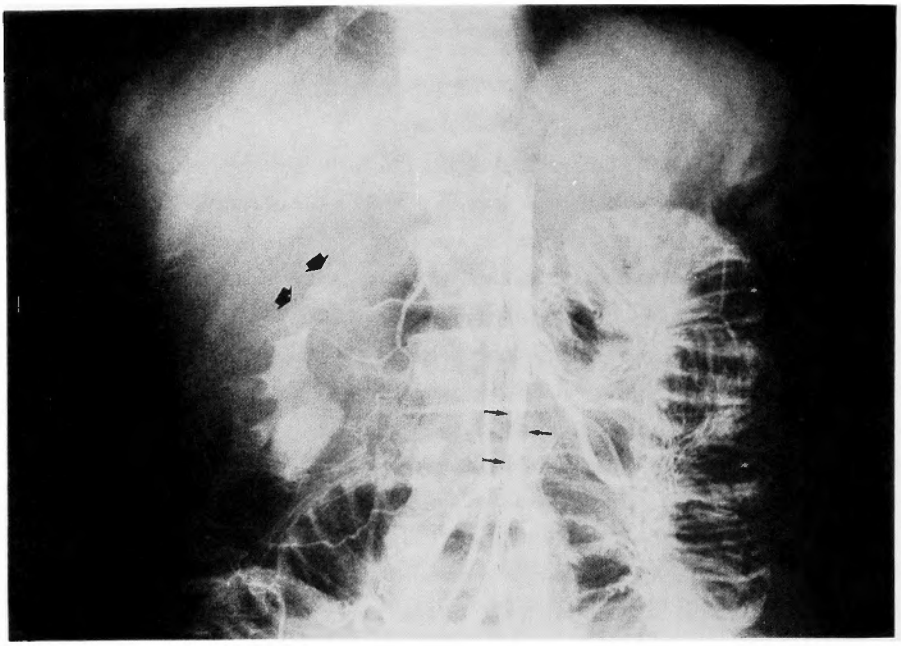

Fig. 2 Selective angiographic examination of the superior mesenteric artery shows a serrated narrowing (small arrow) and stain (large arrow).

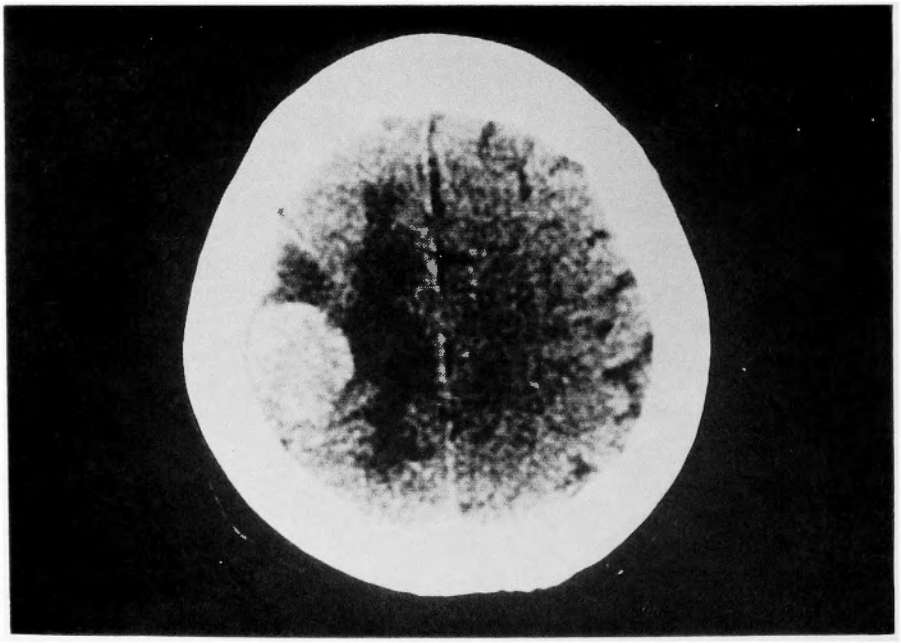

Fig. 3 Brain computed tomography shows a high-density mass accompanied by perifocal edema in the right parietal lobe

were observed (Fig. 2).

Abdominal ultrasonography (US): The internal echoes in the liver were regular, and no apparent space occupied lesion (SOL) was observed. The gallbladder, pancreas, and spleen showed no abnormalities.

Brain computed tomography (CT): There was a high-density mass accompanied by perifocal edema in the right parietal lobe (Fig. 3).

Surgical findings: Under a preoperative diagnosis of primary suprapapillary carcinoma, a transverse incision was made in the upper abdomen. Though small amounts of ascites were present, no macroscopic metastasis to the liver and peritoneum was observed. The tumor was located in the superior duodenal flexure about 8 cm from the pyloric ring. In addition, an examination of the intestine revealed another tumor (about 3 cm in diameter) causing narrowing at a site in the jejunum about 80 cm from the Treitz' ligament. Whether this jejunal tumor

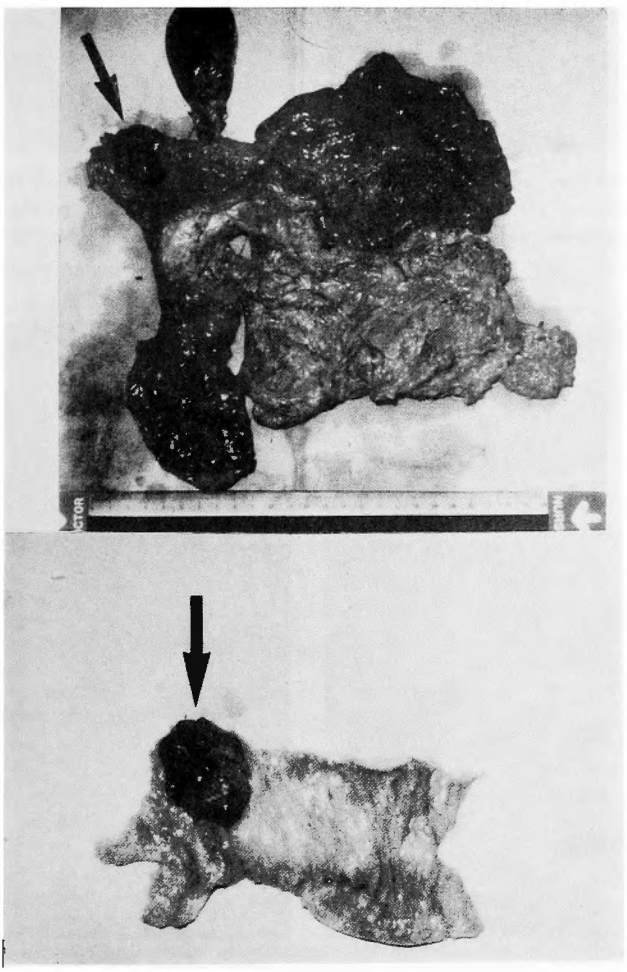

Fig. 4 Resected specimen. the upper part: suprapapillary carcinoma (arrow). the lower part: jejunal carcinoma (arrow).

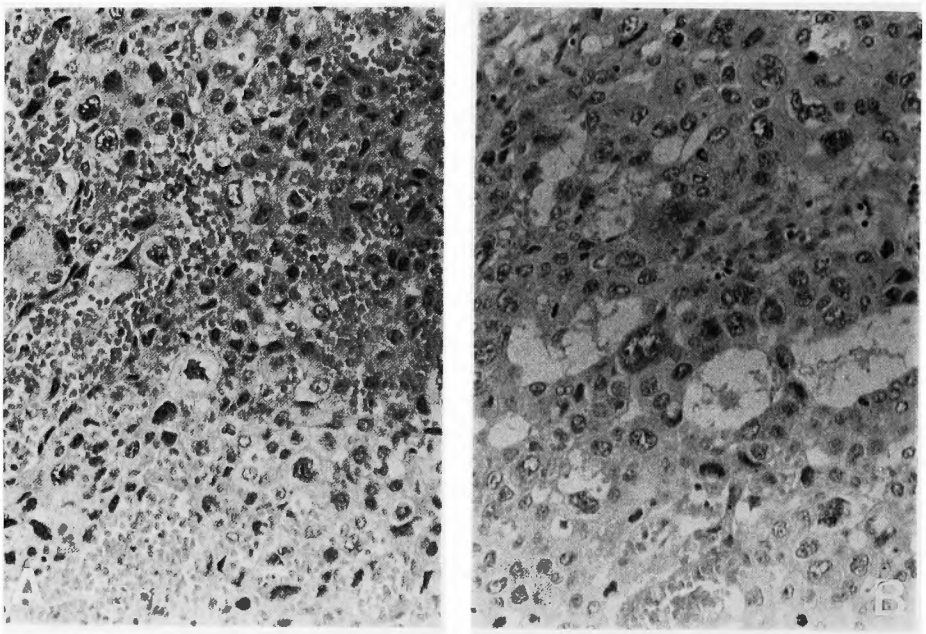

Fig. 5 Microscopic appearance: A. (suprapapillary carcinoma) shows undifferentiated carcinoma. (H. E. ×100). B. (jejunal carcinoma) shows poorly differentiated adenocarcinoma. (H. E. ×100).

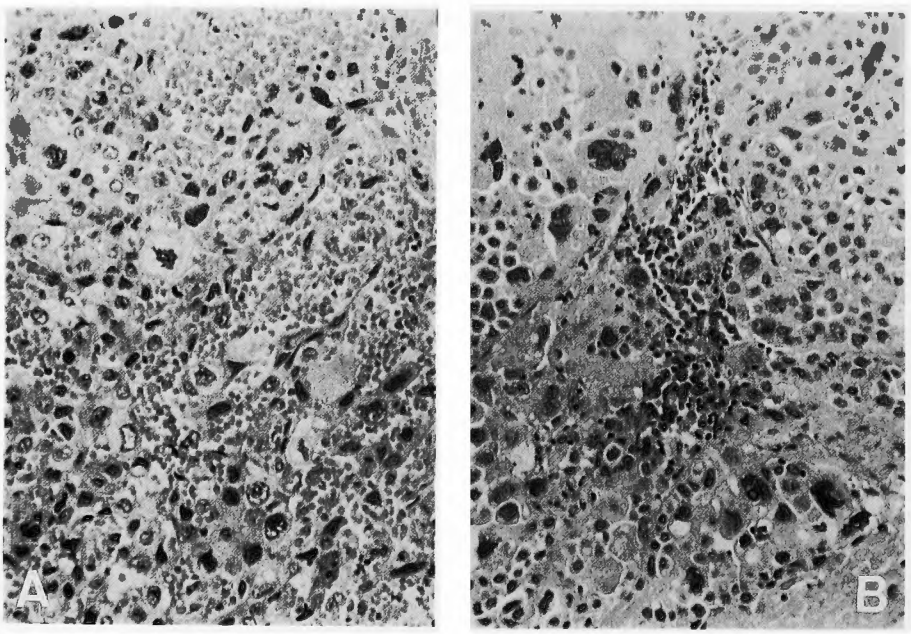

Fig. 6 Microscopic appearance: A. (suprapapillary carcinoma) shows undifferentiated carcinoma. (H. E. ×100). B. (brain tumor) shows undifferentiated carcinoma. (H. E. ×100).

was double carcinoma or intratubal or portal metastasis of the suprapapillary carcinoma was not macroscopically clear, but lymph nodes suggestive of metastasis were observed in the mesentery of this site. A pancreatoduodenectomy was performed with modified Child's reconstruction, and about 15 cm of the intestinal tube with the tumor as the center was simultaneously resected including the mesentery. The remaining intestinal tubes were anastomosed end-to-end.

Resected specimen and pathological findings: The suprapapillary tumor (3.0 × 3.0 cm) was a Borrmann 2 type, nearly circular carcinoma. The jejunal tumor (4.0 × 2.5 cm) was also a Borrmann 2 type carcinoma (Fig. 4). Pathologically, the suprapapillary carcinoma was undifferentiated carcinoma of the duodenum, extending to the proper muscular layer (Pm). Lymph node invasion and venous invasion were not found. The jejunal tumor was poorly differentiated adenocarcinoma of the small intestine (Fig. 5).

Postoperative course: The patient was transferred to the neurosurgical department, and the metastatic cerebral tumor was resected. The tumor was pathologically undifferentiated carcinoma (Fig. 6). She was discharged, though complete paralysis of the left upper limb and paresis of the left lower limb remained. However, she died 11 months and 24 days after the operation. An autopsy was not performed.

Discussion

Primary malignant tumors of the small intestine are rare, accounting for only 0.3-4.9% of all malignant tumors of the digestive tract, and about 38% of them are carcinomas[4]. Of the carcinomas of the small intestine, 75% are duodenal carcinomas. Since most of the duodenal carcinomas are located in the papilla, and pancreatoduodenectomy is performed for carcinomas of this site, duodenal carcinomas are frequently classified into jejunal and ileac carcinomas. The following reasons are considered to be the root to the very low incidence of tumors of the small intestine though this organ accounts for about 75% of the entire digestive tract in length and about 90% in the luminal surface area: 1) The small intestine has no fixed flexion, and the contents of food pass rapidly with only slight stagnation. Therefore, the time of contact with initiators and promotors of carcinogenesis is short. 2) Since the number of intestinal bacteria is low, the amount of carcinogens metabolized and produced by intestinal bacteria is small. 3) The small intestine is rich in lymphatic tissue, and the concentrations of immunoglobulins, especially IgA, are high. Therefore, an internal defense mechanism is present. 4) Benzpyrene hydroxylase which detoxifies carcinogens is observed at high concentrations in the small intestine[1,2].

MARTIN[3] has reported abdominal pain, bloody stools and iron deficiency anemia as the major clinical symptoms and signs of primary small bowel tumors and observed these manifestations in only 1 of 25 patients. Of these patients, those with bloody stools alone, frequently had benign tumors. However, those with both bloody stools and abdominal pain had malignant tumors. Our patient showed all three symptoms and signs, thus suggesting malignancy.

In hematogenous metastasis of small bowel tumors, liver or lung metastasis is likely to occur before cerebral metastasis due to the possible role of these organs as filters. Only

cerebral metastasis was present in this patient. SUZUKI[6] has described that tumor cells that invade the blood are injured by blood flow elements while circulating for a considerably long period and are degenerated and die, but there is a constant chance of extravasation, that is, a possibility of proliferation and metastasis during this period.

The metastatic cerebral lesion was pathologically an undifferentiated carcinoma. This was consistent with the histological image of the suprapapillary carcinoma, suggesting cerebral metastasis. To our knowledge, our patient is the second reported patient with cerebral metastasis from primary carcinoma of the small intestine.

SAWADA et al.[4] reported the incidence of synchronous double carcinoma of the small intestine to be 15-20% in patients with a primary malignant tumor of the small intestine and suggested abnormalities in the immune system or endogenous defense mechanisms. In our patient, the tumor was an undifferentiated carcinoma with no acinar formation on tendency of differentiation. The jejunal carcinoma was a poorly differentiated adenocarcinoma with an atypical tubular structure but poor acinar differentiation. Neither tumor caused emboli in the vessels, excluding the possibility of vascular metastasis. Therefore, based on the sizes of the tumors, their distance, and different histological types, synchronous double carcinoma was considered.

This paper was presented at the 75th Annual Meeting of the Japanese Society of Gastroenterology, March, 1989 (Yokohama City).

References

1) Ikeguchi M, Kaneko T, Tamura H, et al: Clinicopathological study of eight cases of primary malignant tumors of the small intestine. Tottori Igaku **14**: 182-188, 1986. (in Jpn)
2) Lowenfels AB: Why are small-bowel tumors so rare? Lancet **1**: 24-26, 1973.
3) Martin LF: Small bowel tumors; a continuing challenge. Southern Med J **73**: 981-985, 1980.
4) Sawada T, Muto T, Kusama S: Primary tumors of the small intestine. Gastroenterological Surgery **4**: 499-505, 1981.
5) Shimizu T, Hiraoka H, Tanida O, et al: A case of primary carcinoma of the jejunum associated with intussusception and cerebral metastasis. J Jpn Soc Clin Surg **48**: 1869-1973, 1987. (in Jpn)
6) Suzuki K: A Quantitative study on the transpulmonary passage of tumor cells with special references to the mechanism of metastasis formation. Fukushima Igaku **18**: 99-109, 1968. (in Jpn)

和文抄録

脳転移を伴う原発性十二指腸乳頭上部癌と空腸癌の同時性重複癌の1例

近畿大学医学部第2外科学教室
（主任：久山　健教授）
宮本　正章，須藤　峻章，河村　正生
菖蒲　隆治，別所　偉光，久山　　健

原発性小腸癌はまれな疾患であり，また，その遠隔転移に関しても，肝転移，肺転移が主であり，脳転移に関しては，著者らの検索した範囲では，内外の文献を通じ1例の報告例があるのみである．さらに，小腸癌同士の同時性重複癌も極めてまれであり，その報告例もほとんど無い．われわれは，右頭頂葉に転移を伴い同時性重複癌が考えられた原発性十二指腸乳頭上部癌と空腸癌の1例を経験したので報告する．症例は，42歳，女性で，主訴は血便である．術前の上部消化管内視鏡検査および腹部血管造影検査にて，上十二指腸角直下外側壁に存在する原発性十二指腸乳頭上部癌と診断された．そして，同時に存在した左上肢の不随意運動の原因精査のため施行された頭部 CT 検査で，右頭頂葉に孤立性の高吸収域が発見され，さらに，腹部手術中にトライツ靱帯より約 80 cm の空腸に存在する別の腫瘍も発見された．これら3部位の腫瘍は手術により摘除され，病理組織学的検査により，脳転移を伴う原発性十二指腸乳頭上部癌と空腸癌の同時性重複癌と診断された．小腸癌同士の同時性重複癌に脳転移を伴った報告としては，世界最初の報告例である．