Recurrence of gastric cancer in the transverse colon 10 years after gastrectomy

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A patient with gastric carcinoma which recurred as a solitary colonic metastasis 10 years after gastrectomy is reported. The patient was a 52-year-old man who had undergone total gastrectomy and pancreatico-splenectomy (Appleby's procedure) for Type 5 gastric carcinoma. Histologic examination showed poorly differentiated adenocarcinoma invading the gastric wall to reach the serosal surface (se) with limited lymph node metastases (to n1 nodes). He remained well until 10 years after surgery, when he developed epigastric pain and abdominal distention. Physical examination revealed a 10-cm-mass in the upper abdomen. Barium enema showed a circumferential stenosis at the midpoint of the transverse colon. Endoscopy showed that the colonic mucosa was edematous and featured an irregular cobblestone pattern, that was suggestive of submucosal infiltration.

Under the working diagnosis of recurrent gastric cancer, transverse colectomy was performed. Histologic examination revealed poorly differentiated adenocarcinoma that was very similar to the gastric carcinoma resected 10 years earlier. Although the tumor was transmural, it was more extensive at the serosal surface and the mucosa was intact. Judging from the mode of extension, this case was diagnosed as solitary recurrence of gastric carcinoma in the transverse colon from a microscopic tumor focus.

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It is not rare to encounter colonic involvement by gastric cancer associated with peritoneal dissemination or as a result of direct extension of the primary tumor. However, although the pattern of metastasis is diverse, localized metastasis of gastric cancer to the colon is very rare¹⁾. We report a case of gastric cancer recurrence in the transverse colon at 10 years after extended radical surgery.

Case report

A 52-year-old man underwent total gastrectomy for gastric carcinoma in April 1976 (R2 node dissection and Roux-en-Y anastomosis) with Appleby's procedure²⁾, in which the body and tail of the pancreas, the spleen, and the common hepatic artery were resected en bloc together with the surrounding connective tissue. The tumor consisted of two ulcerative lesions on the lesser curvature in the middle part of stomach and was macroscopically classified as Type 5 carcinoma (Fig.1). Histologic examination revealed that it was a poorly differentiated adenocarcinoma which had reached the serosal surface (se, INF gamma). Lymph node metastases were confined to the n1 group ; no.1 group of the right cardiac nodes (2/7 nodes) and no.3 group of the lesser curvature nodes (1/9 nodes)³⁾ (Fig.2). Blood vessels and

Fig.1 The resected stomach with two small ulcerative lesions on the lesser curvature of the mid-portion of the stomach
Macroscopically this was diagnosed as Type 5 carcinoma.

lymphatics were also invaded by the tumor (v1 and ly2, respectively). The postoperative course was uneventful except for cholecystitis in 1976 and diabetes mellitus in 1979. Epigastric pain, abdominal distention and a change in bowel habits developed in June 1986. He was referred to our facility for further evaluation of a colonic stenosis that was found on a barium enema study ordered by the family doctor.

Physical examination on admission revealed a poorly nourished patient with a localized tender mass in the mid-abdomen. The mass was 10cm in diameter and

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Fig.2 Histologic appearance of the resected gastric tumor. Poorly differentiated adenocarcinoma is seen to be invading through the gastric wall (se). (HE stain, $\times 400$)

Fig.4 Endoscopy shows complete obstruction of the transverse colon and edematous mucosa, which features an irregular cobblestone pattern

Fig.3 A barium enema reveals circumferential stenosis at the midpoint of the transverse colon

Fig.5 The resected specimen of the transverse colon, showing marked thickening of the bowel wall with intact mucosa

was only slightly mobile. Laboratory test results were unremarkable except for electrolyte abnormalities and hyperglycemia. A repeat barium enema showed complete obstruction at the midpoint of the transverse colon (Fig.3), and the mucosal surface distal to this site had a macronodular configuration. Colonoscopy showed that the mucosa at the stenosis was irregularly macronodular and edematous without any erosions or ulceration (Fig.4). Malignant cells were not detected by biopsy. Although a definite diagnosis was not made, exploratory laparotomy was performed to relieve the obstruction.

At operation, a 10-cm mass was found at the midpoint of the transverse colon, with part of the small intestine adherent to it. This lesion was resected. The mucosal surface of the resected transverse colon was edematous, partly macronodular, and partly amorphous. The cut surface revealed marked thickening of the muscular and serosal layers (Fig.5). Histologic examination showed poorly differentiated cancer cells invading the subserosa and extending to the submucosa with the mucosal layer being intact. These findings were suggestive of invasion from outside the colon (Fig.6). Cancer cells were detected in the oral margin of the surgical specimen (ow (+)), but the anal margin was free of tumor (aw (-)). On the basis of the pattern of invasion and the strong histologic similarity of the tumors, this lesion was diagnosed as a metastasis from the gastric carcinoma resected 10 years previously. The patient died of the disease at 16 months after the second operation.

Fig.6 Histologic appearance of the resected colon
Irregularly shaped tumor cells were scattered without forming glands, infiltrating the serosal region more markedly than the mucosa, which remained intact.
The tumor cells were very similar to the gastric cancer resected 10 years earlier (Fig.2). (HE stain, X400)

Discussion

Approximately 80% of recurrent gastric carcinomas occur within 5 years after surgery⁴⁾. In our previous study, most recurrences after curative surgery occurred within 3 years (86.5%), and those that recurred after 5 years were either Stage II (75%) or Stage III (25%), with 60% of late recurrences being local⁵⁾.

Although solitary metastasis of gastric carcinoma to the colon is relatively rare, it is noteworthy that 40% of such cases present between 5 and 10 years after surgery. Only two cases, including ours, have presented more than 10 years after the initial surgery⁶⁾. The primary tumors were macroscopically Borrmann Type 3 cancer located in the mid-portion of the gastric body, and histologic examination revealed poorly differentiated adenocarcinoma that reached the serosal surface (se) with limited lymph node metastasis to an n1 group^{1, 7)}. The transverse colon was the most frequently involved site (in five out of six cases, including ours), probably due to the presence of the greater omentum and the proximity of the colon to the stomach.

Imada has demonstrated that microscopic foci of peritoneal dissemination on the greater and lesser omentum are not rare and that disseminated metastasis can also arise from metastatic lymph nodes, if the capsule is ruptured by tumor invasion⁸⁾. As our patient was in stage III due to the s2 factor³⁾ at the time of initial surgery, it is likely that the metastasis arose from a small disseminated focus, although the possibility of hematogenous or lymphatic metastasis cannot be excluded. Our previous work on the lymphatic

drainage of the stomach using activated charcoal has revealed that deposits in the greater omentum which are morphologically similar to peritoneal dissemination can arise from lymphatic spread.

The serosal invasion and limited lymph node metastasis without vascular or lymphatic involvement at the primary tumor site as well as the extensive infiltration of cancer cells in the subserosa of the secondary lesion, suggest that this lesion arose from a few cancer cells disseminated locally to the colonic wall^{7, 9)}. In order to detect such small foci on the omentum, methylene blue staining of the resected specimen may be useful¹⁰⁾, but the clinical significance of such findings in predicting late metastases remains to be elucidated. These lesions have to be distinguished from linitis plastica colon carcinoma¹¹⁾, which often resembles a metastatic lesion. Although linitis plastica of the colon more frequently involves the rectum and sigmoid colon, this cannot be a definite criterion for making a differential diagnosis. In contrast the mode of intramural extension of the lesion may provide a key to the diagnosis.

Although it is not common to find a resectable recurrence after radical gastrectomy, long-term follow-up is necessary to detect recurrences originating from localized microscopic dissemination, which can present even 10 years after the initial surgery.

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PAM療法が13.8%, MVP療法が19.0%であった。肺癌の大部分をしめる腺癌と扁平上皮癌についてプロトコル別に有効率をみると、腺癌に対してPV療法は14.8%, MVP療法は17.6%であり、扁平上皮癌に対してPV療法は23.8%, MVP療法は42.1%であり、特に扁平上皮癌に対するMVP療法の有用性が示唆された。retrospectiveに臨床効果との相関性が評価可能な26症例のうち観察期間の短い症例を除く24例の臨床相関性はtrue positiveが4例, true negativeが15例, false negativeが5例であった。以上より鶏卵法の肺癌に対する臨床での併用化学療法の予測率は79.2%であった。

〔考 察〕 肺癌は比較的早期から遠隔転移を生じやすいという臓器特異性があり、予後の改善には術後の全身化学療法の併用が不可欠である。したがって、肺癌の個々の症例に対して有効な術後の多剤併用化学療法が選択できる抗癌剤感受性試験法が開発されれば、肺癌の治療成績の向上に大きく貢献できると考えられる。本研究は、臨床に即した多剤併用化学療法を評価できる感受性試験法として*in vivo*鶏卵法の基礎的な検討を行い、臨床効果との相関性を検討した。鶏卵法を用いた感受性試験法は、短期間に効果判定が可能であり、試験成功率も高く、肺癌に対する多剤併用療法が的確に評価可能である。

さらに、臨床効果の予測率が高く、再現性も良いことから、有用な抗癌剤感受性試験であると考えられた。

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胃癌の直接浸潤または腹膜播種による横行結腸再発はけっしてまれではないが、横行結腸への孤立性再発は非常にまれである。今回筆者らは、胃癌根治術後10年目に横行結腸に孤立性の再発をきたした1例を経験したので報告する。

症例は52歳の男性で、1976年に胃癌に対してAppleby手術を施行した。肉眼的にはM領域症小弯を中心とした潰瘍性病変であり、組織学的には低分化腺癌でse, n1であった。術後経過は非常に順調であったが、1986年満腹感を主訴に近医を受診し、注腸検査にて横行結腸の狭窄を指摘され当科を受診した。大腸内視鏡検査では、狭窄部位粘膜は浮腫を伴った不規則な多数の結節を呈していたが、潰瘍性病変は認められなかった。また、生検では悪性組織は得られなかった。確定診断つかないも狭窄部位切除の目的で手術を施行した。開腹所見では、横行結腸の中央部に約10cmの腫瘤を認め、横行結腸切除術を施行した。標本の粘膜面は浮腫状を呈しており、一部に結節を形成していた。組織学的には漿膜下を中心に低分化腺癌を認め、癌細胞は粘膜下にまで達していたが粘膜面は正常であり、結腸外から浸潤してきたものと考えられた。また、癌組織所見が前回の胃癌組織と非常に類似しており、以上より胃癌術後10年目に横行結腸再発をきたした症例と診断した。

胃癌の再発は約80%が術後5年以内にかかるといわれ

ており、筆者らの施設でも、86.5%が治療切除後3年以内に起こっている。

胃癌の大腸への孤立性転移という形での再発例はまれであり、筆者らの症例を含めて検討してみると、約40%のものは5年以上経過してから再発しており注目すべき点である。また、肉眼型はBorrmann3型で、胃体中部に存在するものが多く、進達度はすべてssγあるいはseとps(+)の症例である。この症例はse, n1であり、大腸への転移経路としては腹膜播種がもっとも考えられるが、血行性、リンパ行性に起こった可能性も否定しきれない。また、linitis plastica型の大腸癌との鑑別も必要である。ただこの型のものは圧倒的に直腸、S状結腸に発生するものが多く、横行結腸という部位、腸管壁内の癌の進展形式などより、筆者らの症例は胃癌の孤立性転移と考えられた。

胃癌術後再発例において、切除できる症例は多くはないが、10年経過してから再発を確認し切除できる症例もあり、手術後長期にわたる経過観察は非常に重要であると思われた。