

Synchronous Ileal Stromal Tumor (GIST) and Colonic Adenocarcinoma

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Abstract

Synchronous existence of gastrointestinal stromal tumor and colonic adenocarcinoma was rarely reported. We describe an 84-year-old female presenting with abdominal pain and obstipation followed by vomiting for 3 days. There was intermittent abdominal pain of 8 months' duration. Plain abdominal film revealed marked dilatation of the intestine proximal to the descending colon. An annular tumor was radiologically and endoscopically demonstrated in the splenic flexure of the colon. Computed tomographic scans of the abdomen had an incidental finding of a 5-cm tumor mass in the ileum. After surgical resection of both tumor lesions, the colon tumor lesion was pathologically proven to be a well-differentiated adenocarcinoma (Duck's stage C2) and another tumor from the ileum showed positive reactivity to CD 117 immunohistochemical staining consisting with gastrointestinal stromal tumor. The patient was discharged on the 18th hospital day and subsequently underwent chemotherapy (Ufur containing 100 mg Tegafur and 224 mg Uracil). (J Intern Med Taiwan 2009; 20: 260-263)

Key Words : Gastrointestinal stromal tumor, Colon cancer, CD 117

Introduction

Gastrointestinal (GI) stromal tumors are now considered the most common mesenchymal tumors in the GI tract. Although currently commonly diagnosed, little is known about their association with other GI tumors. Synchronous occurrence of mesenchymal tumors and other primary GI malignancies has been rarely reported in the literature. We report an unusual case with coexistence of ileal stromal tumor and colon

adenocarcinoma successfully treated surgically.

Case Report

An 84-year-old woman with a history of hypertension presented with abdominal pain and obstipation followed by vomiting for 3 days. The patient had intermittent abdominal pain of 8 months' duration. Physical examination revealed pale conjunctivae, diffuse tenderness and distention of the abdomen which was tympanitic to

percussion. Abnormal laboratory findings included hemoglobin 5.7 g/dl (normal range 12-16 g/dl), carcinoembryonic antigen 10.5 ng/ml (normal < 3.0 ng/ml) and positive stool occult blood. An abdominal radiograph showed marked dilatation of the transverse colon and small intestine (Fig. 1). A barium enema revealed an 'apple-core' lesion in the splenic flexure of the colon (Fig. 2). Colonoscopy revealed a circumferential tumor lesion with significant narrowing in the same area of the colon, resulting in difficulty to advance the scope. Biopsy specimens taken from the colon tumor showed adenomatous change with focal severe dysplasia. Computed tomographic scans of the abdomen demonstrated irregular thickening of the wall of the splenic flexure of the colon and an incidental finding of a 5.0-cm tumor mass in the ileum (Fig. 3). Blood transfusion with packed red blood cells was done. At laparotomy left hemicolectomy and regional lymph-node dissection were carried out. There was also a bulging mass measuring 5.6 cm x 4.0 cm x 3.5 cm in size at 80 cm proximal to the ileocecal valve, which was resected with end-to-end anastomosis. Surgical specimens were pathologically proven to be a well-differentiated adenocarcinoma for the colon tumor lesion and resected lymph nodes (Duck's stage C2), but negative reactivity to CD 117 immunohistochemical study. The ileal mass was positive for CD 117 immunohistochemical staining (Fig. 4). The patient was discharged on the 18th hospital day and subsequently underwent chemotherapy.

Discussion

GI stromal tumors coined by Mazur and Clark in 1983 are relatively common tumors thought to arise from interstitial cells of Cajal of the GI tract¹. The majority of GI stromal tumors occur in the stomach (60%-70%) and small intestine (20%-30%). Less than 10% are found in the esophagus, rectum, colon, mesentery, omentum and



Fig.1. Plain film of the abdomen showing marked dilatation of the transverse colon and the small intestine.



Fig.2. Barium enema showing a narrowing segment in the splenic flexure of the colon (arrow) and dilatation of the proximal colon.

retroperitoneum². Immunohistochemically, GI stromal tumors stain positively for CD 117 (c-Kit), CD 34, and neuron-specific enolase. The positive staining for CD 117 is essential for the diagnosis of



Fig.3. Computed tomographic scan of the abdomen showing a tumor mass in the ileum (arrow).



Fig.4. Immunohistochemical studies for surgical specimens taken from the bulging mass of the ileum showing positive for CD 117 (arrow) (X40).

GI stromal tumor³.

GI stromal tumors have been reported coincident with other GI tumors, such as gastric adenocarcinoma^{4,5}, mucosa-associated lymphoid tissue lymphoma⁶, Burkitt lymphoma⁷ and colorectal cancer⁸. The concomitant GI stromal tumor is usually discovered incidentally during surgery, endoscopy or radiographic studies performed for other malignancies^{9,10}. Reports of synchronous GI stromal tumors and colorectal cancers are quite rare¹¹. Various hypotheses have been proposed regarding the simultaneous

development of GI stromal tumor and colorectal adenocarcinoma. It is not known whether or not this association is a simple incidental coexistence or whether the two lesions are connected by a causal relationship, such as gene mutations or a single carcinogenic agent resulting in the development of tumors. The genetic makeover of these two tumors has been thoroughly investigated. During progression from normal colonic epithelium to adenoma and carcinoma, several major genetic alterations occur¹². Two major pathways have been identified in sporadic colorectal cancer: chromosomal instability in up to 85% of the total cases, and microsatellite instability in the remaining 15%¹¹. Interestingly, none of the most commonly involved genes in colorectal carcinogenesis (APC, DCC, p53, K-ras, DNA mismatch repair genes) have been identified to be associated in the development of GI stromal tumors. Rather, the vast majority of GI stromal tumors are associated with mutations of the proto-oncogene *c-Kit*, a tyrosine kinase receptor essential during embryonic development and postnatal life. The presence of a *c-Kit* mutation in a wide variety of human malignancies including chronic myeloid leukemia and GI stromal tumor, germ cell tumors, small cell lung carcinoma, neuroblastoma, melanoma, ovarian carcinoma, and breast carcinoma was identified¹³. Although deregulated expression of *c-Kit* has been described in colorectal cancer¹³, there is the lack of evidence of a key role of *c-Kit* in the development of colorectal cancer. Further investigations are needed to identify the causal relationship between GI stromal tumors and colorectal cancers.

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同時合併迴腸間質瘤及大腸癌：病例報告

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摘 要

同時合併胃腸道間質瘤及大腸直腸癌在臨床上較少被報導。我們報告一例84歲女性病患因3天腹痛及便秘之後併有嘔吐之情形而入院。之前有8個月間歇性腹痛之病史。腹部X光呈現小腸和橫結腸及近端之大腸部份有擴大之現象，鉬劑灌腸及大腸鏡檢查發現一環狀腫瘤在大腸之脾臟轉彎處。另外腹部電腦斷層意外發現另一5公分腫瘤在迴腸處。經由開刀，術後病理組織切片結果發現大腸腫瘤為一分化良好的腺癌，而迴腸腫瘤經免疫生化染色(CD117)証實為胃腸道間質瘤。病人症狀完全改善在住院第18天出院且之後接受常規大腸癌化學治療。