

CLINICAL STUDY

Gastric adenocarcinoma and GIST (collision tumors) of the Stomach presenting with perforation; first report

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Abstract: Gastrointestinal stromal tumors are very rare tumors of stomach. To our knowledge there are a few reported cases of synchronous occurrence of epithelial and gastrointestinal stromal tumors of stomach. Also, tumor perforation is very rare. This is the first case of gastrointestinal stromal tumor synchronous with primary gastric adenocarcinoma presented with perforation (Fig. 1, Ref. 6). Full Text (Free, PDF) www.bmj.sk.
Key words: gastric perforation, gastric carcinoma, gastrointestinal stromal tumor.

Gastrointestinal stromal tumors (GIST) are very rare tumors of gastrointestinal tract evenly distributed between stomach and small intestine. Only 1–3 % of all stomach malignancies are GIST (1). GIST's often present with non-specific symptoms, such as nausea, vomiting, abdominal pain, gastrointestinal bleeding, and metastatic diseases. Bleeding is considered as the most common presentation of the clinical course. Symptoms depend on tumor size and location (2). Synchronous occurrence of epithelial and gastrointestinal stromal tumors (GISTs) in the stomach is uncommon (3). The literature has only few reports of this rare association and this is called collision tumors. The spontaneous perforation of gastric cancer is a rare fatal complication, occurring in 1 % of patients with gastric cancer (4).

Case report

A 78-years-old male admitted to our emergency department with a chief complain of vomiting, abdominal discomfort and pain. The pain was initially in the epigastrium and later was felt in the whole of the abdomen. Patient has a history of hypertension and has been on medication. He has no other co-morbidities. The patient was emaciated and looked dehydrated. At physical examination the patient's abdomen was distended and felt rigid and tenderness at all quadrants. Laboratory examination was normal except for, white blood cell count $15.10^3/L$, blood urea nitrogen 60 mg% and serum creatinine 1.2 mg%. Hemoglobin was 14 g/dL. Our provisional diagnosis was peritonitis due to perforation. Abdominal computerized tomography was reported as gross free gas and free fluid in peritoneum and a

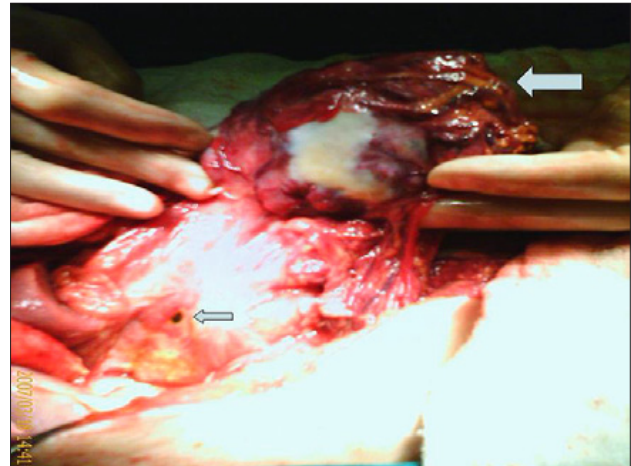


Fig. 1. GIST and perforation site can be seen.

tumoral mass appeared over 10 cm which arises from stomach. An emergency laparotomy was performed.

At operation the peritoneal cavity was filled with purulent fluid over 200cc, food debris and bilious. There was a perforation area (Fig. 1) at antrum, the superior gastric wall of stomach. At the opposite wall of perforation a large solid, mobile and regular edged tumor mass was seen. It was about 10 cm in diameter and was lying by the umbilicus. It had areas of necrosis and hemorrhages. The inferior side of the tumor was adherent to the greater omentum. After excising an adequate margin of the stomach with the tumor, the perforation site was repaired by Graham hHill procedure. The patient was discharged at the 7th postoperative 7th day.

Histopathology reported GIST with residual tumor tissue in both serosal and mucosal surface of surgical border. Tumor size was 10cm x 8cm. Immunohistochemical examination showed that the tumor cells dyed with CD117 (+++) and CD34 antibody, also positive stainings for muscle markers, have nuclear pleo-

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morphism and increased mitotic activity; all tumors were classified as GIST with malignant behavior. At control upper gastrointestinal system endoscopy, it was showed that an esophageal small papilloma and an ulcerative lesion at the incisura angularis. Were detected. The biopsies have been taken. Histopathology reported them as squamous papilloma and gastric adenocarcinoma with low differentiation. Thus, we planned another further operation was planned to remove thefor residual tumor.

During the At second operation a total gastrectomy and Roux-n-Y procedure was performed. There was neither palpable tumoral mass nor serosal infiltration observed at the stomach. We did not come cross any mMetastatic lymphadenitis was not detected. At postoperative 9th day 9 was the patient was discharged.

Pathology reported that; intramucosal adenocarcinoma at incisura angularis and GIST at the antrum of subtotal gastrectomy specimen which seemed to bes only in the muscularis mucosa. There were no any metastatic lymphoid nodes observed occurred.

Discussion

Gastro-intestinal stromal tumors are most commonly found in the stomach (40–70 %), but can occur in all other parts of the GI tract. 40 % of GISTs arise from the small intestine, and 15 % from the colon and rectum. They have also been found in the esophagus (<5 %), omentum (<5 %), mesentery, and retroperitoneum (5). The majority of GIST seems to originate from the lamina muscularis propria and, in rare cases, from the lamina muscularis mucosa. As these tumors normally do not develop in the inner layer of the gastric wall, extraluminal expansion is common and most of them are covered by intact mucosa (1). GIST's have been reported to occur synchronously with other gastrointestinal malignancies especially with adenocarcinoma (3). This types of synchronous tumors are called collision tumors. Marec et al reported that 14 % of all the GISTs and 25 % of the gastric stromal tumors developed synchronously with a second gastrointestinal

malignancy most of them being composed with adenocarcinomas (6). Maiorana et al suggested that a single carcinogenic agent might interact with two neighboring tissues, inducing the development of tumors of different histotypes in the same organ (3).

In most of literature sourcess; the collision tumors have been detected incidentally, most of them are detected by histopathological examination of the specimen due to an operation of primary gastric adenocarcinomas. In our case the primary tumor was GIST in stomach.

A patient with GIST there may behave another gastrointestinal tumor synchronously (collision tumors). Therefore, surgeons must be carefully about synchronic carcinomas of the other part of gastrointestinal tract, by the way we must require examinations like upper gastrointestinal system endoscopy and total colonoscopy for diagnosis and treatment should be performed.

References

1. Peiper M, Schröder S, Zornig C. Stromal sarcoma of the stomach – a report of 20 surgically treated patients. *Langenbeck's Arch Surg* 1998; 383: 442–446.
2. Ying-Lung Lin, Jeh-En Tzang, Chang-Kou Wei, Chih-Wen Lin. Small gastrointestinal stromal tumor concomitant with early gastric cancer. *World J Gastroenterol* 2006; 12: 815–817.
3. Maiorana A, Fante R, Cesinaro AM, Fano RA. Synchronous occurrence of epithelial and stromal tumors in the stomach. A report of 6 cases. *Arch Pathol Lab Med* 2000; 124: 682–686.
4. Ergul E, Gozetlik EO. Emergency spontaneous gastric perforations: ulcer versus cancer. *Langenbecks Arch Surg* 2009; 394: 643–646.
5. Loong HF. Gastro-intestinal stromal tumour: a review of current management options. *Hong Kong Med J* 2007; 13: 61–65.
6. Wronski M, Ziarkiewicz-Wroblewska B, Gornicka B, Cebulski W, Słodkowski M, Wasitynski A, Krasnodebski IW. Synchronous occurrence of gastrointestinal stromal tumors and other primary gastrointestinal neoplasms. *Neoplasma* 2006; 12: 5360–5362.

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