

ACUTE INTESTINAL OBSTRUCTION REVEALING SYNCHRONOUS GASTROINTESTINAL STROMAL TUMOR IN A SMALL BOWEL DIVERTICULUM AND MUCINOUS ADENOCARCINOMA OF THE COLON: A CASE REPORT

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INTRODUCTION:

Gastrointestinal stromal tumors (GIST) are rare mesenchymal tumors of the gastrointestinal tract with an incidence of 1.5/100000 habitant/year [1]. They occur in adults especially in the sixth and seventh decade [2]. The concomitant association with other primary gastrointestinal malignancy has been rarely reported. Most of these publications describe gastric stromal tumors synchronous with another gastric malignancy [3].

We report a 60 year old male with synchronous mucinous adenocarcinoma of the colon and gastrointestinal stromal tumor in small bowel diverticulum.

PATIENT AND OBSERVATION:

A 60 year old male without clinical antecedents was admitted to the emergency room complaining of diffuse abdominal pain, vomiting and no evacuation either of fecal matter or of flatus. He presented rectal bleeding and constipation since one month. Physical examination revealed abdominal distension and pain to palpation. Mucocutaneous pallor was detected. Abdominal x-ray evidenced air-fluid levels (figure 1).



Figure 1: Abdominal X-ray showing the presence of air-fluid levels.

Laboratory tests showed abnormal parameters: anemia with hemoglobine of 8 g/dl, hematocrit of 26% and reticulocyte count of 26 %. The patient underwent emergency surgery. Intraoperatively, a tumor of the sigmoid colon had been detected. It was infiltrating and stenosing. On abdominal exploration, a mass in a small bowel diverticulum, 60 cm proximal to the ileocecal valve, was encountered. The mass was 5 cm in maximal diameter (figure 2). A left hemicolectomy and diverticulectomy were performed.



Figure 2: Macroscopic appearance of GIST in small bowel diverticulum.

The tumor of the colon was mucinous adenocarcinoma pT3N1 (**Figure 3**). Histo-pathological diagnosis for the tumoral diverticulum was low grade GIST (**Figure 4a and 4b**) and low risk according to Miettinen and Lasoto's scheme. Mitotic count was 3 per 50 high power fields.

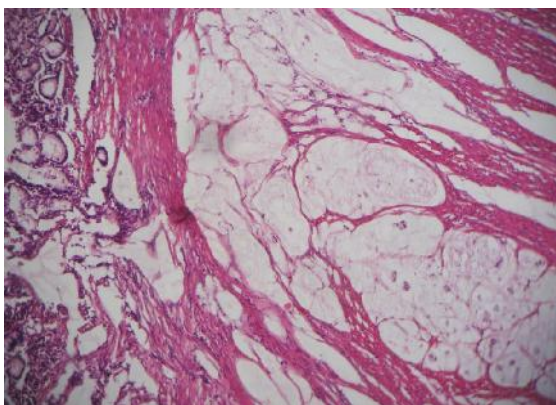


Figure 3: Mucinous adenocarcinoma of the sigmoid (HE stain, ob. x 20).

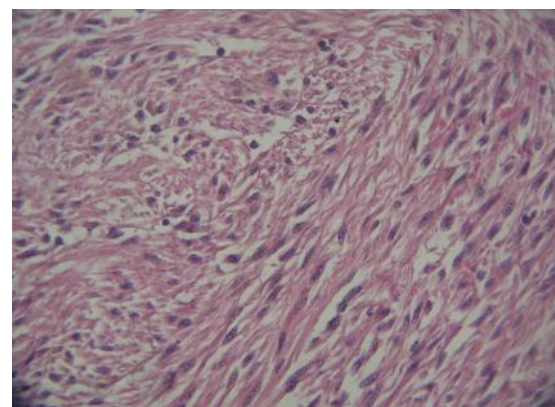


Figure 4: Fusiform low grade GIST
(a) Invasion of submucosa of small intestine from GIST (HE stain, ob. x 10). (b): The GIST was composed of fascicles of spindle cell with no atypia (HE stain, ob. x 40).

The immunohistochemistry indicated strong staining for ckit/CD117 (**figure 5**) and CD34 (**figure 6**) while the expression of smooth muscle actin, desmin and S100 protein were negatives.

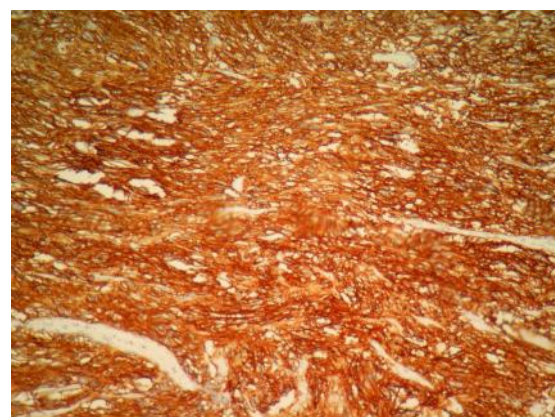


Figure 5: GIST: strong positive CD117 immunostaining (ob. x 40).

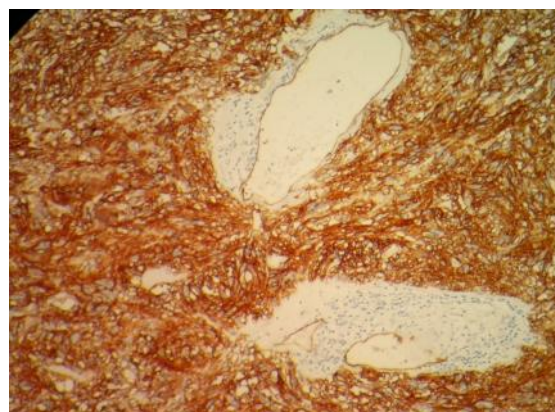


Figure 6: GIST: CD 34 positivity (ob. x 40).

DISCUSSION:

GISTs are the most common mesenchymal tumors of the gastrointestinal tract [4]. This group of tumors represents about 0.1 to 3% of all gastrointestinal neoplasms. Most of them are located in the stomach and small intestine [5]. They usually develop in a sporadic form. However, familial occurrence has also been reported [4].

The diagnosis is based on morphology and immunohistochemistry. CD117 is positive in 95%, CD34 in 40%-50%, smooth muscle actin in 20%-30%, S100 protein and desmin in 10% of cases [6]. Surgery is typically the first step in the treatment of GISTs. Recurrences, metastatic disease or unresectable tumors can be treated with Imatinib [7].

GISTs have been reported to occur synchronously with adenocarcinoma, lymphoma and carcinoid [3]. The simultaneous occurrence of GIST and adenocarcinoma is uncommon [4]. In a series of 200 cases of GISTs, studied by Urbanczyk et al, synchronous tumors were present in seven patients including one adenocarcinoma of the colon [8]. Coexisting GISTs are usually detected incidentally during gastrointestinal surgery for carcinoma [9]. The etiology of this association is still unknown, but some theories exist:

- The hypothesis that the association is due to a simple coincidence particularly in areas with high rate of digestive cancer is proposed [10].
- A possible explanation is represented by the metallothioneins which protects against DNA damage, apoptosis, cell survival, angiogenesis and oxidative stress [11]. Metallothioneins have been reported to be down regulated in some type of cancers including stomach and colorectal locations, liver and central nervous system [12]. This theory is supported by nucleolar expression of metallothioneins in GISTs [13].
- The development of these tumors may involve common carcinogenic agent. Sigimura and al [14] revealed that enteral nitrosoguanidine produces adenocarcinoma in rats. In contrast, simultaneous exposure to both nitrosoguanidine and acetylsalicylic acid causes synchronous development of both gastric cancer and leiomyosarcoma [15].

CONCLUSION:

The limited number of these cases cannot confirm the existence of a common factor in tumorigenesis of these different tumors. Further studies are needed to clarify the possible association.

Competing interests:

The authors declare that they have no competing interests.

Authors' contributions:

AJ and AE contributed to the conception and design of the manuscript. AJ, KZ and FZ analyzed and interpreted the patient data regarding the disease. ZB and NM were major contributors in writing the manuscript. AJ carried out the histology and immunohistochemistry examination. All authors read and approved the final manuscript.

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