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Case Report

Concurrent small bowel gastrointestinal stromal tumor and colonic adenocarcinoma in an elderly patient: a case report

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ABSTRACT

We report here the case of a 68-years-old man with synchronous small bowel gastrointestinal stromal tumor (GIST) and colonic adenocarcinoma, an occurrence reported infrequently in the literature. The patient was found to have these 2 separate malignancies while undergoing surgical evaluation for constipation, abdominal pain and rectal bleeding. Contrast-enhanced CT and colonoscopy diagnostic evaluations revealed a mass in the colon causing near obstruction. The surgical management included subtotal colectomy for the colonic adenocarcinoma and resection of the small bowel GIST. Histopathologic examination confirmed a spindle cell GIST (low grade (G1)) and a well-differentiated colonic adenocarcinoma. This case highlights the need for careful and comprehensive evaluation for synchronous malignancies, particularly so in geriatric patients and potential pathogenic mechanisms for multiple primary tumors and respective management approaches. Optimal outcomes with resection require long-term follow-up, including radiologic surveillance and adjuvant therapy.

Keywords: Colonic adenocarcinoma, Gastrointestinal stromal tumor, Multiple primary malignancies, Synchronous tumors, Small bowel neoplasm

INTRODUCTION

A rare small bowel GIST incidentally detected in a colon cancer surgery for an elderly male patient represents an unusual diagnostic and therapeutic dilemma. This case highlights the significance of meticulous preoperative assessment, especially in elderly individuals who might have multiple primary neoplasms. GISTs are rare tumor type of mesenchymal origin derived from the interstitial cells of Cajal, which control autonomous movements in the gastrointestinal tract, account for 0.1–1% of all gastrointestinal malignancies and are most commonly diagnosed in patients 55 to 65 years of age, with a very slight male predominance.[1] GISTs mainly occur inside the stomach with a frequency of 50–60% while affecting the small intestine secondary with a 30–40% frequency. They are uncommon in the oesophagus (<5%) and less common in the colon and rectum (5–10%). GISTs can occasionally develop outside of the gastrointestinal tract, usually in the retroperitoneum, omentum or mesentery.[2] It's interesting to note that up to 33% of GIST cases have been documented to co-exist with other primary tumours, creating a special therapeutic challenge.[3] The third most common malignant tumour in the world, colorectal cancer (CRC) primarily affects elderly people. Because of their increased vulnerability to cancer, elderly people are the main group impacted by colorectal cancer.[4] Despite this advancement in diagnostic modalities, synchronous tumors of CRC and GIST are under-reported, creating major diagnostic and therapeutic challenges.[5] We report here for the first time to our knowledge a co-existing small intestinal GIST and

colorectal adenocarcinoma. The simultaneous presence of these two different primary tumors raises diagnostic difficulties and questions about potential common pathobiological mechanisms and best therapeutic management.[6] We present a case report of an elderly patient with small bowel GIST and colonic adenocarcinoma attempting to highlight an infrequent event of synchronous tumours and resourcefully illustrate possible aetiological links and management considerations.

CASE REPORT

A 68-year-old man with a history of hypertension was evaluated in the emergency department for constipation, lower abdominal pain and rectal bleeding for 4 days. Other symptoms included nausea and anorexia. Noteworthy, the patient had not experienced any episodes of vomiting, hematemesis, fever, weight loss or night sweats. The patient had a medical history of benign prostatic hyperplasia (BPH) and chronic hepatitis B virus (HBV) infection. He had no surgical history and denied smoking, drinking alcohol or taking illicit drugs. And there was no significant family history of pathology, especially no history of cancer.

On exam, the patient was alert, oriented and hemodynamically stable. On abdominal examination, a soft, lax, distended abdomen was noted without tenderness or guarding. No lymph nodes were palpable. Other findings from the physical examination were benign. Laboratory tests showed elevated liver enzymes and hyperbilirubinemia, as indicated by elevated total and direct bilirubin levels. These abnormalities were likely secondary to the chronic HBV infection and not directly related to malignancies. A complete blood count was within normal limits and a hepatitis panel was positive. Also performed was assessment of Tumor markers, including carcinoembryonic antigen (CEA) and carbohydrate antigen 19-9 (CA 19-9) and both markers were within normal limits.

Initially, a contrast-enhanced computed tomography (CT) scan of the abdomen showed 65 mm of segmented colonic wall thickening with an apple-core appearance in the distal transverse colon and splenic flexure suspicious for a malignancy. This finding was associated with moderate luminal narrowing and proximal colonic dilatation containing fecal material. There were also findings of regional mesenteric fat stranding and a few small mesenteric lymph nodes. There was also a 30 mm annular colonic lesion seen in the middle transverse colon with proximal colonic dilatation and pertinent regional fat stranding. Fluid collections were absent, while all other abdominal viscera were unremarkable. After the CT scan the decision was to do a colonoscopy to further examine and confirm the findings. The procedure was unfortunately incomplete because of an obstructive stenosis at the splenic flexure that held up the complete passage of the scope.

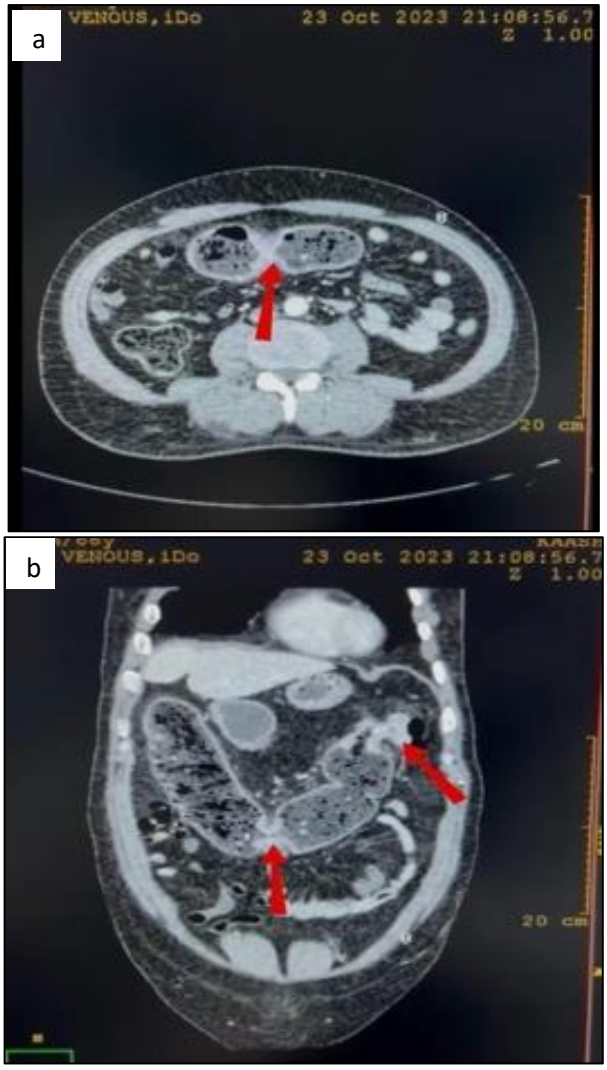

Figure 1: (a) CT scan of abdomen with contrast in axial, in coronal (b) colonic wall thickening, mass at splenic flexure.

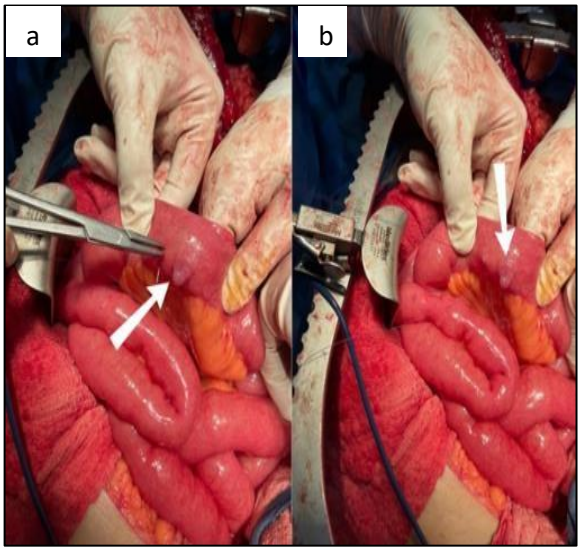

Figure 2 (a, b): Incidental finding during the laparotomy within small bowel.

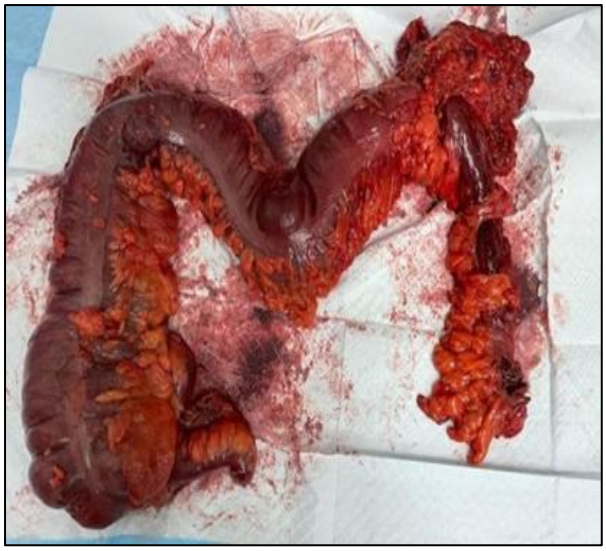

Figure 3: Overview of the colon after laparotomy extend to subtotal colectomy and ileo- sigmoid anastomosis.

Procedure details

In light of these results, an exploratory laparotomy was performed. A colonic tumour near the splenic flexure generating obstruction with proximal dilatation was confirmed by intraoperative observations, a palpable mass in the middle transverse colon. During the procedure, an incidental finding of an exophytic mass measuring 1×2 cm was discovered in the mid-jejunum. A subtotal colectomy was performed, involving colon mobilization, the ileocolic, right colic and middle colic arteries, as well as other pertinent vascular pedicles, were ligated. The cecum, ascending colon, transverse colon, splenic flexure, descending colon and terminal ileum were all removed during the treatment. An ileosigmoid anastomosis was created using a tension-free, end-to-end stapled technique, reinforced with absorbable sutures and verified for integrity and hemostasis.

Subsequently, the jejunal mass was excised via wedge resection. The resulting defect was repaired primarily in a transverse fashion using a secure two-layer closure with absorbable sutures. Inspection confirmed the absence of leakage or bleeding. Both specimens were sent for histopathological evaluation. Histopathological analysis of the resected specimens confirmed the presence of two distinct neoplastic processes, each with unique characteristics. Highlighting the diagnostic challenge posed by synchronous tumors. The small bowel lesion was determined to be a low grade (G1) spindle cell GIST. This tumour, which was 2 cm in size, was found in the small intestine. It showed no signs of necrosis and a low mitotic rate of two mitoses per 50 high-power fields (HPF) and no evidence of necrosis. There was no treatment effect as the patient did not receive presurgical therapy and the risk assessment indicated no high-risk features. Immunohistochemical analysis, performed using the ventana ultra machine, revealed positive staining for DOG1 and CD117, along with weak positivity for SMA. These findings suggest low mitotic activity, indicative of a less aggressive tumor behavior.

In contrast, the colon mass, resected via subtotal colectomy, was diagnosed as a well-differentiated adenocarcinoma (G1). This lesion was located in the transverse colon and had a greatest dimension of 7.5 cm. According to histopathological analysis, the tumour spread into the subserosal fat via the muscularis propria. Importantly, no macroscopic tumor perforation, lymphovascular invasion or perineural invasion was observed. The tumor arose from a tubulovillous adenoma and showed no treatment effect, as presurgical therapy was not administered. Margins were negative for invasive carcinoma and all seventeen examined regional lymph nodes were free of tumor involvement (0/17). No tumor deposits were identified and the pathologic stage was determined to be pT3 N0.

Long-term follow-up is planned for the patient to monitor for metastases or recurrence. To find any metastatic disease, surveillance will involve contrast-enhanced CT images of the chest, abdomen and pelvis. In terms of treatment, the patient will undergo adjuvant chemotherapy with 5-fluorouracil, with only follow up for the GIST due to low risk of recurrence.

DISCUSSION

The concurrent occurrence of small bowel gastrointestinal stroma tumor and colonic adenocarcinoma: diagnostic and management insights

This case serves to underscore challenging considerations in the presence of multiple malignancies and the clinical implications residing in the simultaneous diagnosis of very rare, but fatal in their oncology, gastrointestinal anomalies highlighting the importance of clinical reflection and multidisciplinary management in this special patient population.

Diagnostic challenges

The incidental finding of small bowel GIST in a patient undergoing surgery for colonic adenocarcinoma underscores the need for comprehensive pre-operative assessment and intra-operative vigilance. Although CRC is most common malignancy in older population, but coexistence of synchronous GIST is rare and often neglected.[7] This finding illustrates that clinicians should consider multiple primary neoplasms as a possibility, particularly in the setting of patients with non-specific gastrointestinal symptomology.

Epidemiological and pathological background

The association between GIST and CRC is rare and few cases have been reported in the literature. GISTs

comprise 0.1-1% of gastrointestinal malignancies and arise from interstitial cells of Cajal, with oncogenic driver mutations occurring in the KIT or PDGFRA genes. These tumors primarily afflict people in their 50s and 60s, while CRC is the third most frequent malignancy and tends to affect the elderly population.[8] The simultaneous presentation of these two distinct tumor types in our patient is particularly noteworthy and may suggest a potential link between their pathogenesis or shared risk factors.

Small bowel GISTs, while less common than gastric GISTs, are associated with poorer prognoses and increased risk of gastrointestinal bleeding.[9,10] Additionally, emergency surgeries are more frequently required in small intestine GIST cases, often due to perforation.[2] Their detection often occurs incidentally or during emergency surgeries, underscoring the importance of histopathological evaluation.[11,12] As in our case, where the GIST was discovered during exploratory laparotomy performed for nearly obstructed colonic cancer. Colorectal adenocarcinoma is the third leading cause of cancer-related deaths globally, with its development driven by complex host-environment interactions.[13] In colorectal cancer, histological grade has been demonstrated to be a stage-independent predictive predictor.[14]

Potential pathogenic mechanisms

The concurrent occurrence of GIST and CRC raises intriguing questions about their pathogenesis. Three hypotheses dominate current research.

Coincidental occurrence

The most accepted view suggests these tumors arise independently, reflecting the natural incidence of malignancies in aging populations, with no direct cause-and-effect link.[15]

Carcinogen exposure

Shared environmental exposures may activate oncogenic pathways in both epithelial and mesenchymal cells, contributing to tumor development.[16,17]

Shared genetic mutations

Although speculative, certain genetic alterations may predispose patients to both GISTs and adenocarcinomas, necessitating further investigation.[18,19] Notably, adenocarcinomas of the gastrointestinal tract are the most frequently reported neoplasms associated with GIST, accounting for up to 38% of second primary tumors.[6,15] This aligns with our case, where a colonic adenocarcinoma was found in association with a GIST.

These theories point to a complex set of factors that could contribute to the development of multiple cancers alongside GISTs. However, the exact mechanisms behind this phenomenon are still not fully understood.

Management and follow-up

The management of synchronous malignancies requires a tailored approach. In this case, the simultaneous resection of both tumors subtotal colectomy for CRC and wedge resection for the GIST was appropriate given the intraoperative findings. However, the optimal approach may vary depending on the size, location and stage of each tumor.[20]

Surgery is the primary treatment for resectable GISTs, while Imatinib is reserved for cases of recurrence, metastases or unresectable tumors, as it inhibits KIT and PDGFR tyrosine kinases. Prognosis is influenced by factors such as tumor size, mitotic index, necrosis, infiltration and metastatic disease.[21,22] In our case, the GIST was small and resectable, making surgery sufficient for treatment. Because there are no prospective studies defining the best follow-up plans and techniques for resected GIST, different guidelines have different recommendations. For radiologic surveillance, the National Comprehensive Cancer Network recommends abdomino-pelvic CT scans every three to six months for three to five years, followed by yearly scans for primary GIST that has been fully removed.

Similarly, the European Society for Medical Oncology acknowledges that there are no clear-cut guidelines, but suggests adjusting follow-up plans according to risk variables such tumour location, size and mitotic index.[23] Postoperative care should comprehensively address both malignancies, incorporating regular imaging and tumor marker assessments to monitor for recurrence or metastasis. Long-term surveillance plans must be individualized, taking into account patient age, tumor characteristics and overall health.[24]

Implications for elderly patient care

This case emphasizes how crucial it is to treat older individuals with a thorough diagnostic and treatment approach. Investigation for other tumours shouldn't be hindered by the existence of one cancer. Furthermore, age alone should not deter aggressive surgical management when clinically indicated. The rarity of synchronous GIST and CRC warrants further research to explore potential genetic or molecular links between these tumor types. Investigating screening and surveillance strategies for patients with one primary gastrointestinal malignancy may improve early detection of synchronous or metachronous tumors.

CONCLUSION

This report adds to the limited literature on synchronous GIST and CRC, emphasizing the need for meticulous preoperative evaluation, intraoperative examination and

tailored postoperative management strategies. As diagnostic capabilities evolve and the population ages, clinicians must remain vigilant for multiple primary neoplasms in patients presenting with gastrointestinal symptoms.

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REFERENCES

1. Gama JM, Oliveira RC. Mesenchymal tumors of the gastrointestinal tract—beyond GIST: a review. Gastrointest Disord. 2024;6(1):257-91.
2. Lopez Gordo S, Bettonica C, Miró M, Estremiana F, Aranda H, Farran L. Gastric and small intestine GIST: results of 156 cases in 20 years. J Gastrointest Cancer. 2022;3:1-9.
3. Agaimy A, Wünsch PH, Sobin LH, Lasota J, Miettinen M. Occurrence of other malignancies in patients with gastrointestinal stromal tumors. Semin Diagn Pathol. 2006;23:120-9.
4. Wang Q, Shen K, Fei B, Wei M, Xie Z. Nomogram for predicting occurrence and prognosis of liver metastasis in elderly colorectal cancer patients: a population-based study. Front Oncol. 2024;13:1295650.
5. Hussein MRA, Alqahtani AS, Mohamed AM. A unique coexistence of rectal adenocarcinoma and gastric antral gastrointestinal stromal tumor: a case report and minireview. Gastroenterol Res. 2021;14(6):340.
6. Diamantis A, Samara AA, Symeonidis D. Gastrointestinal stromal tumors (GISTs) and synchronous intra-abdominal malignancies: case series of a single institution's experience. Oncotarget. 2020;11(52):4813-21.
7. Kumar K, Rowsell C, Law C, Ko YJ. Coexistence of gastrointestinal stromal tumour and colorectal adenocarcinoma: two case reports. J Gastrointest Oncol. 2011;2(1):50-4.
8. Wang YP, Li Y, Song C. Metachronous multiple gastrointestinal stromal tumors and adenocarcinoma of the colon: a case report. Oncol Lett. 2014;8(3):1123-6.
9. Group EESNW. Gastrointestinal stromal tumors: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2012;23(7):49-55.
10. Yang Z, Wang F, Liu S, Guan W. Comparative clinical features and short-term outcomes of gastric and small intestinal gastrointestinal stromal tumors: a retrospective study. Sci Rep. 2019; 9(1):10033.
11. Fernández JA, Olivares V, Gómez-Ruiz AJ. Additional malignancies in patients with gastrointestinal stromal tumors (GIST): incidence, pathology and prognosis according to a time-of-occurrence-based classification. Clin Transl Oncol. 2019;21:646-55.
12. Dundas SA, Slater DN, Wagner BE, Mills PA. Gastric adenocarcino-leiomyosarcoma: a light, electron microscopic and immunohistological study. Histopathology. 1988;13:347-50.
13. Ibrahim KO, Anjorin AS, Afolayan AE, Badmos KB. Morphology of colorectal carcinoma among Nigerians: a 30-year review. Niger J Clin Pract. 2011;14:432-5.
14. Compton CC. Colorectal carcinoma: diagnostic, prognostic and molecular features. Mod Pathol. 2003;6:376-88.
15. Diamantis A, Bouliaris K, Christodoulidis G. Gastrointestinal stromal tumors and synchronous intra-abdominal malignancies: review of the literature. J BUON. 2018;23:1573-9.
16. Casali PG, Blay JY; ESMO/CONTICANET/EUROBONET Consensus Panel of Experts. Gastrointestinal stromal tumors: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2010;21(5):98-102.
17. Liu SW, Chen GH, Hsieh PP. Collision tumor of the stomach: a case report of mixed gastrointestinal stromal tumor and adenocarcinoma. J Clin Gastroenterol. 2002;35:332-4.
18. Cohen A, Geller SA, Horowitz I. Experimental models for gastric leiomyosarcoma. The effects of N-methyl-N'-nitro-N-nitrosoguanidine in combination with stress, aspirin or sodium taurocholate. Cancer. 1984;53:1088-92.
19. Liszka Ł, Zielińska-Pajak E, Pajak J, Gołka D, Huszno J. Coexistence of gastrointestinal stromal tumors with other neoplasms. J Gastroenterol. 2007;42:641-9.
20. Adesunkanmi AO, Olasehinde O, Ndegbu CU. Rectal gastrointestinal stromal tumor: an unusual presentation of an uncommon pathology (a case report). Pan Afr Med J. 2021;39:234.
21. Corless CL, Fletcher JA, Heinrich MC. Biology of gastrointestinal stromal tumors. J Clin Oncol. 2004;22:3813-25.
22. Neves LR, Oshima CT, Artigiani-Neto R, Yanaguibashi G, Lourenço LG, Forones NM. Ki67 and p53 in gastrointestinal stromal tumors – GIST. Arq Gastroenterol. 2009;46:116-20.
23. Casali PG, Blay JY, Abecassis N. Gastrointestinal stromal tumors: ESMO-EURACAN-GENTURIS Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2022;33:20-33.
24. Heo YJ, Lee JY. A case report of successfully treated metachronous gastrointestinal stromal tumor and colon cancer. Kosin Med J. 2023;38(1):60-5.

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