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Case Report

Synchronous Rectal Adenocarcinoma and Incidental Colonic Gastrointestinal Stromal Tumor Followed by Early Local Recurrence: A Case Report

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ABSTRACT

Background: Synchronous occurrence of colorectal adenocarcinoma and gastrointestinal stromal tumour (GIST) is uncommon. The incidental identification of a small spindle-cell lesion in a colorectal resection specimen can create a diagnostic challenge and requires distinction from other gastrointestinal mesenchymal neoplasms. We describe a patient with rectal adenocarcinoma and an incidental small colonic-wall GIST identified at definitive surgery, followed by early local recurrence of the rectal adenocarcinoma.

Case Presentation: A 70-year-old man presented with a rectal mass and significant weight loss. Endoscopic biopsy demonstrated moderately differentiated rectal adenocarcinoma. He received long-course neoadjuvant chemoradiotherapy with capecitabine and subsequently underwent ultra-low anterior resection with coloanal anastomosis and diverting ileostomy. The resection specimen showed a residual approximately 3-cm moderately differentiated adenocarcinoma extending through the muscularis propria into perirectal soft tissue, with treatment effect. Proximal, distal and circumferential margins were free of tumour, and all 17 regional lymph nodes were negative, yielding a pathological stage of ypT3N0. A separate approximately 1-cm spindle-cell lesion in the colonic wall showed bland fascicular spindle cells and was positive for CD117 and DOG1, with a Ki-67 index of approximately 1–2% and a mitotic rate of 0–1 per 5 mm [2]. supporting GIST with very low-risk features. The ileostomy was closed in December 2025. In February 2026, an ulceroproliferative lesion developed near the anal verge. Subsequent PET-CT demonstrated intensely FDG-avid circumferential thickening of the lower rectum and anal canal with presacral and mesorectal nodal uptake, without distant FDG-avid disease. Repeat biopsy in July 2026 confirmed recurrent rectal adenocarcinoma.

Conclusion: This case highlights the importance of meticulous examination of colorectal resection specimens for incidental second primary neoplasms and the value of CD117 and DOG1 in characterising small spindle-cell lesions. It also demonstrates that margin-negative, node-negative resection does not eliminate the risk of early local recurrence in rectal adenocarcinoma with residual ypT3 disease after neoadjuvant treatment. Integrated pathological, endoscopic and radiological surveillance is therefore essential.

Keywords: rectal adenocarcinoma; gastrointestinal stromal tumour; GIST; synchronous neoplasms; CD117; DOG1; local recurrence; case report

INTRODUCTION

Rectal adenocarcinoma is a major gastrointestinal malignancy for which treatment is determined by local stage, tumour location, circumferential resection margin considerations and metastatic status. Contemporary management of locally advanced rectal cancer commonly incorporates neoadjuvant therapy followed by definitive surgical resection. Although multimodality treatment has reduced local failure rates, recurrence remains clinically important and may occur despite apparently adequate treatment and margin-negative resection [1].

Gastrointestinal stromal tumours are mesenchymal neoplasms of the gastrointestinal tract with characteristic KIT and/or PDGFRA-driven biology. They most often show spindle-cell, epithelioid or mixed morphology, and immunohistochemistry is central to diagnosis. CD117 and DOG1 are particularly useful markers in the evaluation of suspected GIST [2-4].

The synchronous occurrence of GIST with another gastrointestinal malignancy has been described, but the combination remains uncommon. Previous reports have documented synchronous GIST and colorectal adenocarcinoma at different gastrointestinal sites, including small bowel, stomach and sigmoid colon [5-9]. A recent case report specifically described synchronous rectal adenocarcinoma and sigmoid GIST, further confirming that this anatomical combination is rare but recognized [10].

The present case is notable for the incidental discovery of a very small spindle-cell GIST in the colorectal resection specimen of a patient treated for rectal adenocarcinoma, followed by early local recurrence of the rectal primary. The case underscores two separate pathological issues: recognition and appropriate classification of an incidental GIST, and interpretation of subsequent recurrent disease as recurrence of the rectal adenocarcinoma rather than progression of the incidental spindle-cell tumour.

CASE PRESENTATION

Patient information and initial presentation

A 70-year-old man presented with a rectal mass and significant weight loss. Endoscopic evaluation demonstrated a large fungating rectal growth approximately 6 cm from the anal verge, covered by white necrotic slough and bleeding on touch. Biopsy was performed.The initial histopathological assessment included superficial fragments of rectal mucosa showing dysplastic glands in a background of mixed inflammatory infiltrate and ulceration. A subsequent punch biopsy reported established moderately differentiated adenocarcinoma of the rectum, with glandular and cribriform architecture, moderate nuclear pleomorphism and hyperchromatic nuclei (Fig.1)

The patient received long-course neoadjuvant chemoradiotherapy with capecitabine, completed. Following reassessment, he underwent ultra-low anterior resection with coloanal anastomosis and diverting ileostomy.

The resection specimen demonstrated residual moderately differentiated adenocarcinoma (Fig,2) measuring approximately 3 cm in greatest dimension. The tumour invaded through the muscularis propria into the perirectal soft tissue. A treatment effect was present, with evident tumour regression but residual tumour exceeding isolated single cells or small groups, consistent with a partial pathological response. The proximal, distal and radial/circumferential resection margins were free of tumour. Lymphovascular invasion and perineural invasion were not identified, and tumour budding was reported as low. Seventeen regional lymph nodes were examined and were negative for metastatic deposits. The final pathological stage was ypT3N0.

During examination of the specimen, a separate well-circumscribed spindle-cell lesion (Fig.3.1) measuring approximately 1 cm was identified in the colonic wall. It was composed of bland spindle cells arranged in fascicles, with minimal nuclear pleomorphism. Significant necrosis and increased mitotic activity were not identified (Fig

3.2). Immunohistochemistry showed tumour-cell positivity for CD117 (Fig.4) and DOG1. The Ki-67 proliferative index was approximately 1–2%, and the mitotic rate was reported as 0–1 per 5 mm²(fig.5). The findings supported a spindle-cell GIST.. On contemporary modified NIH criteria, a completely resected GIST measuring less than 2 cm with no more than 5 mitoses per 5 mm² falls within the very-low-risk category [3,4].

Postoperative course and recurrence

The postoperative course was satisfactory. The diverting ileostomy was closed. Histopathological examination of tissue from the ileostomy closure site showed mild nonspecific inflammatory changes without granuloma or tumor. During subsequent follow-up, the patient developed recurrent symptoms. Sigmoidoscopy demonstrated an ulceroproliferative growth approximately 3 cm from the anal verge involving the posterior rectal wall, raising suspicion of recurrent lower rectal carcinoma. Histopathological assessment was suggestive of adenocarcinoma.

MRI demonstrated a long-segment irregular polypoidal mass involving the lower rectum, with mesorectal involvement and regional lymphadenopathy. The supplied imaging record also described involvement of the mesorectal fat and mild involvement of the mesorectal fascia. PET-CT performed, after ultra-low anterior resection, showed intensely FDG-avid heterogeneous circumferential mural thickening involving the lower rectum and anal canal, extending for approximately 6 cm with maximum mural thickness of approximately 2.3 cm and reaching the anal verge (SUVmax 23.8). Multiple FDG-avid presacral and mesorectal lymph nodes were present, with a reported SUVmax of approximately 4.5. No FDG-avid distant metastatic disease was identified in the surveyed regions.

A repeat biopsy obtained demonstrated an infiltrating malignant glandular tumour with irregular glandular architecture, nuclear pleomorphism, increased mitotic activity and areas of necrosis. The findings were consistent with recurrent rectal adenocarcinoma. The patient underwent examination under anaesthesia and biopsy and subsequently referred for further oncological management.

Diagnostic Assessment

The principal diagnostic challenge was the incidental spindle-cell lesion identified away from the dominant rectal adenocarcinoma. Morphologically, the lesion consisted of bland spindle cells arranged in fascicles and was clearly distinct from the epithelial malignancy. The differential diagnosis for a gastrointestinal spindle-cell lesion includes GIST, smooth-muscle neoplasms, schwannoma and other mesenchymal tumours. The combination of morphology with CD117 and DOG1 positivity supported GIST [2,3].

The small size, very low mitotic activity and absence of significant necrosis supported an indolent risk profile. Current GIST guidelines recommend reporting tumour site, size, histological subtype, mitotic rate per 5 mm², necrosis, tumour rupture, margins, and relevant immunohistochemical and molecular findings [3,4]. In the present case, the available records document size, spindle-cell morphology, mitotic rate, Ki-67 index, CD117 and DOG1, but do not document CD34, SMA, desmin, S100 or molecular testing.

The later pelvic lesion was assessed by endoscopy, MRI and PET-CT and ultimately confirmed histologically as recurrent adenocarcinoma. This histological confirmation is important because the patient had a synchronous mesenchymal neoplasm at the time of primary surgery; the recurrence therefore required distinction from GIST recurrence or another spindle-cell process.

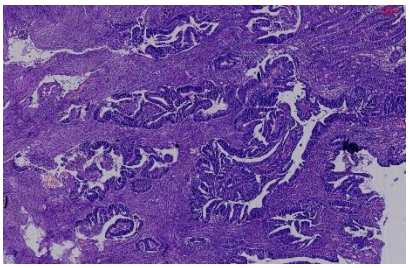

Figure 1: Punch biopsy reported showing moderately differentiated adenocarcinoma with glandular and cribriform architecture (H and E, X10)

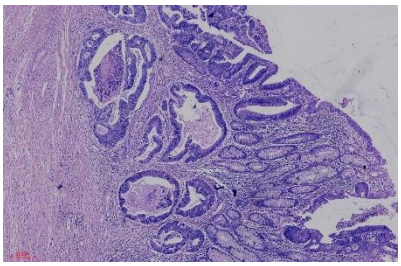

Figure 2: The resection specimen showing residual moderately differentiated adenocarcinoma (H and E.X40))

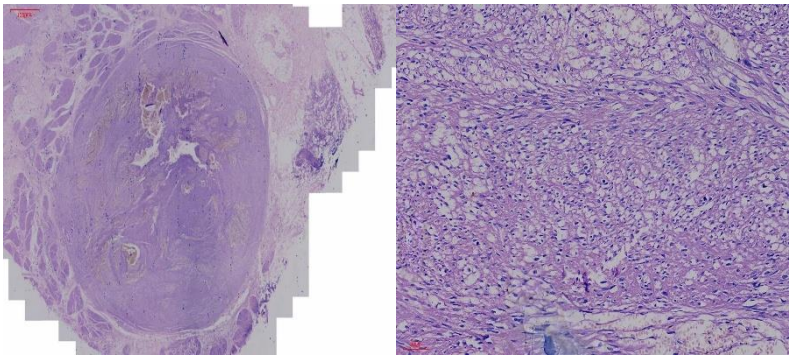

Figure 3.1 and 3.2: Separate well-circumscribed spindle-cell lesion **(Figure 3.1)** composed of bland spindle cells arranged in fascicles, with minimal nuclear pleomorphism **(Figure 3.2)**

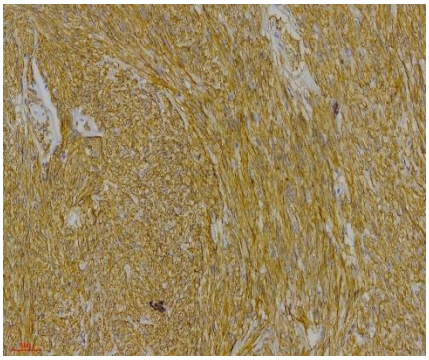

Figure 4: Immunohistochemistry showed tumour-cell positivity for CD117 (IHC X40)

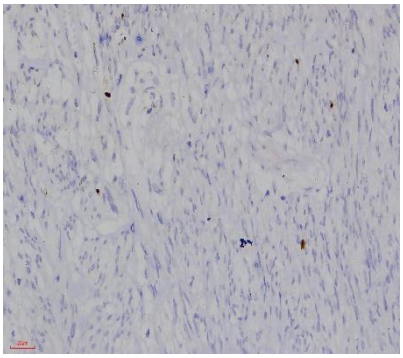

Figure 5: Immunihistochestry showing low Ki-67 positivity in tumour cells (IHC, X40)

DISCUSSION

Synchronous primary gastrointestinal neoplasms are uncommon, and the coexistence of GIST with colorectal adenocarcinoma is particularly unusual. Wronski et al. identified synchronous GIST and another primary gastrointestinal malignancy in 4 of 28 patients with primary GIST (14%) in their institutional series; the accompanying malignancies included colon adenocarcinoma, although the synchronous GISTs in that series were gastric [5]. Du et al. subsequently reviewed 286 patients with primary GIST and identified 47 patients with synchronous digestive tract malignancies, including seven with colorectal carcinoma [6]. These series indicate that the phenomenon is recognised but heterogeneous, with most reports involving GISTs and carcinomas at different gastrointestinal sites.

Several individual case reports have further described synchronous GIST and colorectal adenocarcinoma. Melis et al. reported two cases of colorectal adenocarcinoma with synchronous small-bowel GIST and investigated c-KIT expression to explore possible biological links between the tumours.[7] Kumar et al. described two cases of synchronous GIST and colorectal adenocarcinoma and emphasised the diagnostic and therapeutic implications of recognising two separate primary malignancies [8]. Kosmidis etal. reported synchronous colorectal adenocarcinoma with a GIST arising in a Meckel diverticulum [9]. More recently, Al-Bitar et al. reported synchronous rectal adenocarcinoma and sigmoid GIST in an 85-year-old woman; the rectal tumour was pT3N0 and the 3.5-cm sigmoid GIST was low risk [10]. The present case differs in the very small size of the incidental GIST and, importantly, in the subsequent early local recurrence of the rectal adenocarcinoma.

The pathological recognition of the incidental spindle-cell tumour was central to this case. GIST is typically diagnosed through an integrated assessment of morphology, anatomical site and immunophenotype. CD117 is expressed in the great majority of GISTs, while DOG1 provides an important complementary marker and is particularly useful in difficult or KIT-negative cases [2,11]. The combination of CD117 and DOG1 positivity in a morphologically compatible spindle-cell lesion therefore provides strong diagnostic support. The supplied specimen showed both markers to be positive, while the low mitotic rate and absence of significant necrosis supported a low-proliferative lesion.

Risk terminology deserves precision. Contemporary guidance recommends reporting mitotic activity as the number of mitoses per 5 mm^2 rather than relying on a fixed number of high-power fields because microscope field size varies [3,4]. A GIST measuring less than 2 cm with no more than 5 mitoses per 5 mm^2 is categorized as very low risk under the modified NIH system[3,4].Thus, the approximately 1-cm lesion in this patient is best described as having very-low-risk features if that system is applied. This distinction is unlikely to change the central message of the case, but it is important for publication-quality pathological terminology.

The second major feature is the early recurrence of the rectal adenocarcinoma. The primary tumour had several favourable pathological characteristics: proximal, distal and circumferential margins were negative; lymphovascular and perineural invasion were not identified; tumour budding was low; and all 17 examined lymph nodes were negative. Nevertheless, residual tumour extended through the muscularis propria into perirectal soft tissue, resulting in ypT3N0 staging, and the response to neoadjuvant treatment was partial rather than complete. Current rectal cancer guidance emphasises multidisciplinary management and careful surveillance after treatment because recurrence can occur despite curative-intent resection [1].

The recurrence in this patient was identified approximately seven months after ileostomy closure and approximately seven months after definitive resection, with endoscopic evidence followed by cross-sectional imaging and histological confirmation. PET-CT demonstrated a highly FDG-avid lower rectal and anal canal lesion with regional nodal uptake but no distant FDG-avid metastases. The subsequent biopsy established recurrent adenocarcinoma. The clinical course therefore supports local/regional recurrence of the rectal primary rather than recurrence of the incidental GIST.

The case also illustrates the importance of examining the entire colorectal resection specimen rather than concentrating solely on the dominant carcinoma. Small incidental GISTs may be clinically silent and can be discovered only on systematic pathological examination. Their recognition prevents an incidental spindle-cell lesion from being misclassified as a metastatic deposit, sarcomatoid carcinoma or another mesenchymal neoplasm. Conversely, the later development of a pelvic mass in a patient with a history of two synchronous tumours should not be assigned to either tumour without appropriate morphological and immunohistochemical confirmation.

A limitation of the present case is that the supplied records do not include complete baseline clinical, radiological, molecular or immunohistochemical data. In particular, the exact colonic segment from which the GIST arose, its margin status, CD34/SMA/desmin/S100 results, KIT/PDGFRA mutation status and the complete MRI report are not available in the materials provided. The recurrence is nevertheless well supported by endoscopic, radiological and repeat histopathological findings.

CONCLUSION

Synchronous rectal adenocarcinoma and an incidental colonic-wall GIST is an uncommon pathological finding that requires careful evaluation of the entire resection specimen. In this patient, the small spindle-cell lesion was morphologically bland and CD117/DOG1 positive, supporting a very-low-risk GIST, while the dominant rectal adenocarcinoma was ypT3N0 after neoadjuvant therapy and surgery. The subsequent early local recurrence was histologically confirmed as recurrent rectal adenocarcinoma. The principal lesson is that an incidental second gastrointestinal neoplasm should be independently characterised and that negative margins and node-negative disease do not eliminate the need for close surveillance of rectal cancer.

Learning points

- Systematic examination of the entire colorectal resection specimen may reveal an incidental second primary neoplasm.
- CD117 and DOG1 are highly useful complementary markers for confirming GIST in a compatible spindle-cell lesion.
- Mitotic activity should be reported per 5 mm², and GIST risk terminology should be aligned with a recognised risk-stratification system.

- A small, very-low-risk GIST should not be assumed to explain subsequent pelvic recurrence when the recurrent lesion has a different morphology and is histologically confirmed as adenocarcinoma.
- Early local recurrence of rectal adenocarcinoma may occur despite margin-negative, node-negative resection; structured multidisciplinary surveillance remains essential.

Declarations

Conflict of interest: None

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