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## Single Case

# Synchronous Adenocarcinoma of the Colon and Rectal Carcinoid

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## Keywords

Synchronous tumors · Adenocarcinoma of colon · Rectal carcinoid

## Abstract

Primary colonic adenocarcinoma and synchronous rectal carcinoids are rare tumors. Whenever a synchronous tumor with a nonmetastatic carcinoid component is encountered, its prognosis is determined by the associate malignancy. The discovery of an asymptomatic gastrointestinal carcinoid during the operative treatment of another malignancy will usually only require resection without additional treatment and will have little effect on the prognosis of the individual. This article reports a synchronous rectal carcinoid in a patient with hepatic flexure adenocarcinoma. We present a case of a 46-year-old Hispanic woman with a history of hypothyroidism, uterine fibroids and hypercholesterolemia presenting with a 2-week history of intermittent abdominal pain, mainly in the right upper quadrant. She had no family history of cancers. Physical examination was significant for pallor. Laboratory findings showed microcytic anemia with a hemoglobin of 6.6 g/dl. CT abdomen showed circumferential wall thickening in the ascending colon near the hepatic flexure and pulmonary nodules. Colonoscopy showed hepatic flexure mass and rectal nodule which were biopsied. Pathology showed a moderately differentiated invasive adenocarcinoma of the colon (hepatic flexure mass) and a low-grade neuroendocrine neoplasm (carcinoid of rectum). The patient underwent laparoscopic right hemicolectomy and chemotherapy. In patients diagnosed with adenocarcinoma of the colon and rectum, carcinoids could be missed due to their submucosal location, multicentricity and indolent growth pattern. Studies suggest a closer surveil-

lance of the GI tract for noncarcinoid synchronous malignancy when a carcinoid tumor is detected and vice versa.

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## Introduction

Adenocarcinoma is the most common cancer of the colon and rectum. Carcinoids are relatively rare and slow-growing neuroendocrine tumors. Rectal carcinoids are usually asymptomatic and found incidentally by rectal examination or endoscopy that is performed for another reason. Primary colonic adenocarcinoma and rectal carcinoids are very rarely known to present as synchronous tumors. Synchronous tumors are second tumors occurring simultaneously or within 6 months after the diagnosis of the first tumor. In patients with gastrointestinal carcinoid tumors, the incidence of colorectal adenocarcinoma ranges from 17 to 53% in some case series. In the vast majority of these patients, the prognosis is usually determined by the adenocarcinoma component rather than the carcinoid tumor. This article reports a synchronous rectal carcinoid in a patient with hepatic flexure adenocarcinoma.

## Case Presentation

A 46-year-old Hispanic woman with a medical history of hypothyroidism, uterine fibroids and hypercholesterolemia came to the emergency room (ER) with a 2-week history of intermittent pain in the right upper quadrant of the abdomen. She described the pain as colicky, nonradiating with no aggravating or relieving factors. She also reported two episodes of loose stools 2 days prior to the ER visit. She did not report any nausea, vomiting, hematemesis, melena, hematochezia or constipation. She also denied any change in appetite or weight. She did not undergo any abdominal surgeries in the past. There was no history of any gastrointestinal malignancies in the family. She denied using tobacco, alcohol or recreational drugs. On initial evaluation, she was noted to have pallor. Her gastrointestinal examination did not reveal any abdominal distension, palpable masses or free fluid. Laboratory evaluation revealed microcytic anemia with a hemoglobin of 6.6 g/dl. Her liver function tests and chemistry panel were within normal limits. A computed tomogram (CT) of the abdomen was done which showed a 7.5-cm-long segment of circumferential wall thickening in the ascending colon extending up to the hepatic flexure area. Flexible colonoscopy was performed under monitored anesthesia care for further evaluation that showed a hepatic flexure mass extending to the ascending colon and a rectal nodule (fig. 1a, b). Pathological findings of the mass revealed moderately differentiated invasive adenocarcinoma (fig. 2) for which the patient underwent laparoscopic right hemicolectomy. The rectal nodule on microscopic assessment showed a low-grade neuroendocrine neoplasm suggestive of carcinoid tumor (fig. 3a, b). Of the 17 lymph nodes resected during laparotomy, one was positive for metastasis, but there was vascular invasion of the tumor. The CT scan done for staging showed pulmonary nodules concerning for metastasis. The patient was started on chemotherapy with folinic acid, fluorouracil, oxiplatin (FOLFOX) and bevacizumab for management of stage IV colon cancer.

## Discussion

Multiple primary malignant tumors in a single patient are relatively rare. Based on the relevant literature review, the overall occurrence rate of multiple primary malignancies is estimated to be between 0.7 and 11%. Three diagnostic criteria have been proposed for multiple primary malignancy: (1) each tumor must present definite features of malignancy, (2) each must be distinct and (3) the chance of one being a metastasis of the other must be excluded [1]. Multiple primary cancers may be synchronous or metachronous depending on the interval between their diagnoses. Synchronous cancers are second tumors occurring simultaneously or within 6 months after the first malignancy, while metachronous multiple malignancies are secondary or subsequent cancers that develop more than 6 months after the detection of primary malignancy.

Double malignancies of the gastrointestinal tract are not uncommon, though this association most often occurs in patients with familial cancer syndromes. In a review of more than 2,000 patients, Minni et al. [2] found the incidence of a second primary malignancy in gastrointestinal tract to be around 4%. Surprisingly, the incidence of a second primary malignancy appears to be higher with carcinoid tumors than with other gastrointestinal tumors. A review of the literature by Habal et al. [3] showed an average of 17% of patients with a carcinoid being diagnosed with another primary malignancy. The most common site of the second primary malignancy in these patients was the gastrointestinal tract (large bowel, stomach, small bowel, pancreas) followed by the genitourinary tract. This association though, is less commonly seen with rectal carcinoids than with small bowel carcinoids. The actual incidence of synchronous rectal carcinoid and colorectal adenocarcinoma is unclear given the rarity of this association [4]. Our case report adds to the meager database of published literature available on this condition. The likely explanations for increase in synchronous neoplasm include genetic predisposition, growth stimulation induced by neuroendocrine factors secreted by carcinoids, failure of immunological surveillance and skewed observations reflecting the indolent growth pattern of carcinoid tumors [4, 5]. In patients diagnosed with adenocarcinoma of the colon and rectum, synchronous carcinoids could be missed due to their submucosal location, multicentricity and indolent growth pattern. They are usually detected perioperatively during surgery or during staging. Most of these patients with synchronous malignancies had no symptoms relating to the carcinoid tumor [6]. Whenever a synchronous tumor with a nonmetastatic carcinoid component is encountered, the prognosis is usually determined by the noncarcinoid counterpart in the vast majority of these patients [7].

## Conclusion

Synchronous adenocarcinoma of the colon and rectal carcinoid is a rare malignancy. Studies suggest a closer surveillance of the GI tract for noncarcinoid synchronous malignancy when a carcinoid tumor is detected and vice versa.

## Statement of Ethics

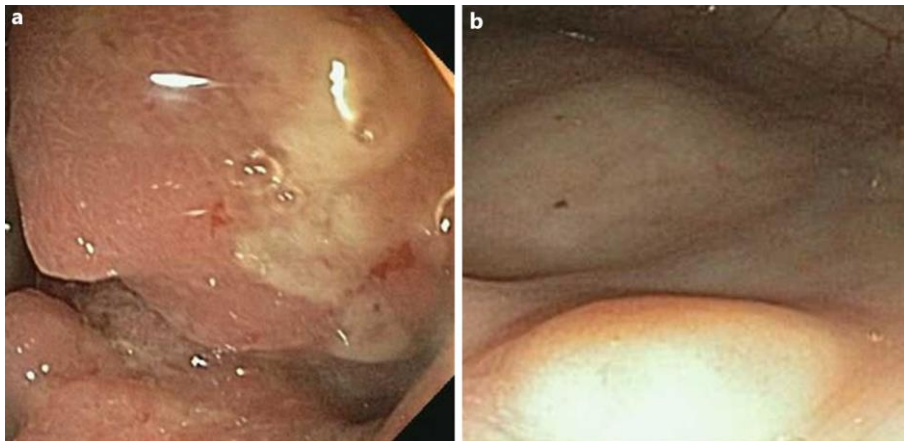
The authors have no ethical conflicts to disclose.

### Disclosure Statement

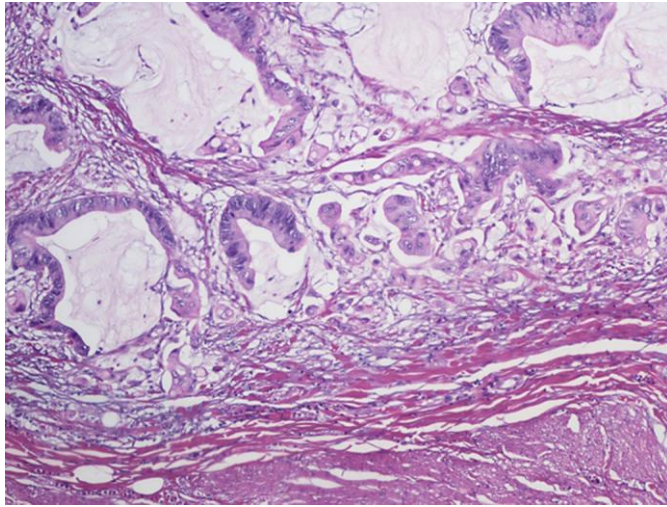
The authors have no conflicts of interest to disclose.

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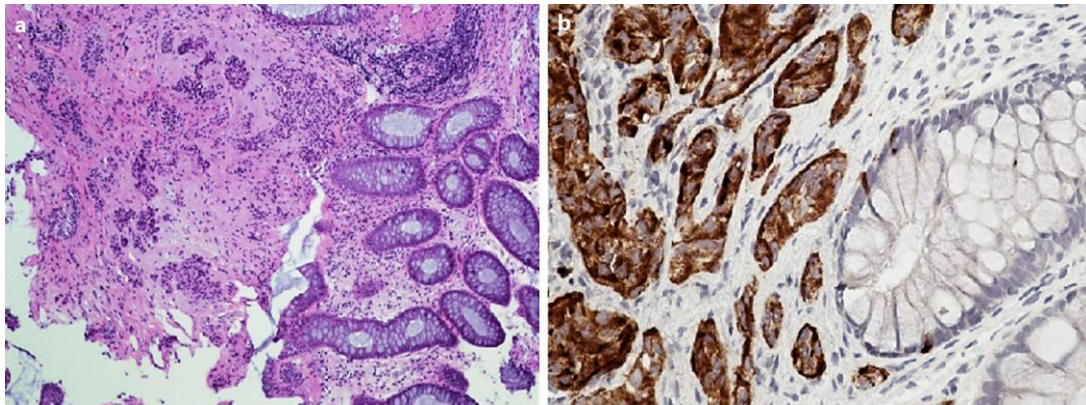
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**Fig. 1.** Hepatic flexure mass (a) and rectal nodule (b).



**Fig. 2.** Mucinous adenocarcinoma infiltrating through the submucosa into the muscularis propria. HE. High power,  $\times 400$ .



**Fig. 3. a** Rectal biopsy with neuroendocrine tumor (carcinoid). Tumor cells are arranged in groups and form acini in the submucosa. HE. Low power,  $\times 100$ . **b** Rectal biopsy with neuroendocrine tumor (carcinoid) cells strongly immunoreactive to chromogranin A. Immunohistochemical stain.  $\times 400$ .