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Rectal Submucosal Tumor-Like Pulmonary Metastatic Carcinoma: A Case Report

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Rectal Submucosal Tumor; Rectal metastatic Cancer; Small Cell Lung Cancer; Colonoscope; Ultrasound Colonoscopy

1. Abstract

Reports of small cell lung cancer with rectal metastasis are relatively rare. This article reports a case in which a rectal metastatic lesion was incidentally discovered during colonoscopy screening, leading to a final diagnosis of advanced small cell lung cancer. The rectal lesion was found during colonoscopy screening, but was not visualized on subsequent contrast-enhanced CT examination. This reminds clinicians that when a submucosal tumor is found during gastrointestinal endoscopy, the condition should be fully evaluated to avoid misdiagnosis or blind endoscopic treatment. At the same time, it provides more clinical and endoscopic data for understanding the lesion changes that can be formed when small cell lung cancer metastasizes to the rectum.

2. Introduction

Reports of small cell lung cancer with rectal metastasis are relatively rare. This article reports a case in which a rectal metastatic lesion was incidentally discovered during colonoscopy screening, leading to a final diagnosis of advanced small cell lung cancer. The rectal lesion was found during colonoscopy screening, but was not visualized on subsequent contrast-enhanced CT examination. This reminds clinicians that when a submucosal tumor is found during gastrointestinal endoscopy, the condition should be fully evaluated to avoid misdiagnosis or blind endoscopic treatment. At the same time, it provides more clinical and endoscopic data for understanding the lesion changes that can be formed when small cell lung cancer metastasizes to the rectum.

3. Case Description

A 60-year-old man underwent screening colonoscopy at the outpatient clinic, which revealed a hemispheric mucosal elevation measuring approximately 0.8 cm located about 5 cm from the anal verge in the rectum. The top of the lesion was slightly depressed with mild redness and covered by a small amount of white exudate. The remaining mucosa was relatively smooth and similar to the surrounding mucosa. Under near-focus observation with Narrow Band Imaging (NBI), the glandular structures at the depressed top disappeared, with sparse irregular microvessels visible. At the margin of the depression, the glandular structures were partially disorganized, with a few irregular microvascular structures observed. A submucosal lesion was considered (Figure 1A-C). He was admitted to the Department of Gastroenterology for further endoscopic ultrasonography (EUS), and if necessary, undergoing endoscopic submucosal dissection (ESD) procedure. EUS revealed that the rectal lesion originated from the submucosal layer, appearing as a hypoechoic lesion with relatively homogeneous internal echogenicity (Figure 1 D). The lesion locally extended upward, breaching the mucosal layer, with the largest cross-section measuring approximately 8.6 x 5.2 mm. A biopsy was performed concurrently for pathological evaluation. Routine pathological and immunohistochemical (IHC) results indicated: rectal neuroendocrine carcinoma, considered metastatic small cell carcinoma possibly of pulmonary origin. Investigation of the respiratory system was recommended. IHC results: CgA (+), CD56 (+), SYn (+), Pan-CK (+), CD45 (-), Ki67 (70%), TTF-1 (+), NapsinA (-), P40 (-), P63 (-) (Figure 2). Tumor marker results showed neuron-specific enolase (NSE) > 370 ng/ml (reference range: 0–16.3) and carcinoembryonic antigen (CEA) 135 ng/ml (reference range: 0–5). To identify the primary lesion and assess the condition, enhanced CT scans of the chest, upper and lower abdomen, and pelvis were performed. The scan revealed a mass in the right hilum, with poorly defined

borders, measuring approximately 28 x 26 mm (Figure 3), suggestive of lung cancer, multiple nodules in the right lung, suspicious for intrapulmonary metastases; multiple heterogeneous enhancing lesions in the liver and multiple enlarged lymph nodes in the mediastinum, para-aortic region, and hepatic hilum, suggestive of metastasis. Based on the patient's tumor markers, enhanced CT scans of the chest and abdomen, and the pathological results of the rectal biopsy, the final diagnosis was: malignant lung tumor (small cell lung cancer, extensive stage), secondary malignant tumor of the rectum, secondary malignant tumor of the liver, secondary malignant tumor of the mediastinal lymph nodes, and secondary malignant tumor of the abdominal lymph nodes. No endoscopic treatment was performed for the rectal elevated lesion, and the patient was transferred to the Department of Respiratory Medicine for further treatment. From November 2023 to June 2024, the patient received a total of 8 cycles of EP regimen combined with immunotherapy: Etoposide 50mg IV D1-3 + Cisplatin 30mg IV D1-3 + Adebrelimab 1200mg IV D1, every 3 weeks. And due to disease progression with the development of brain metastases, the patient passed away 11 months after diagnosis.

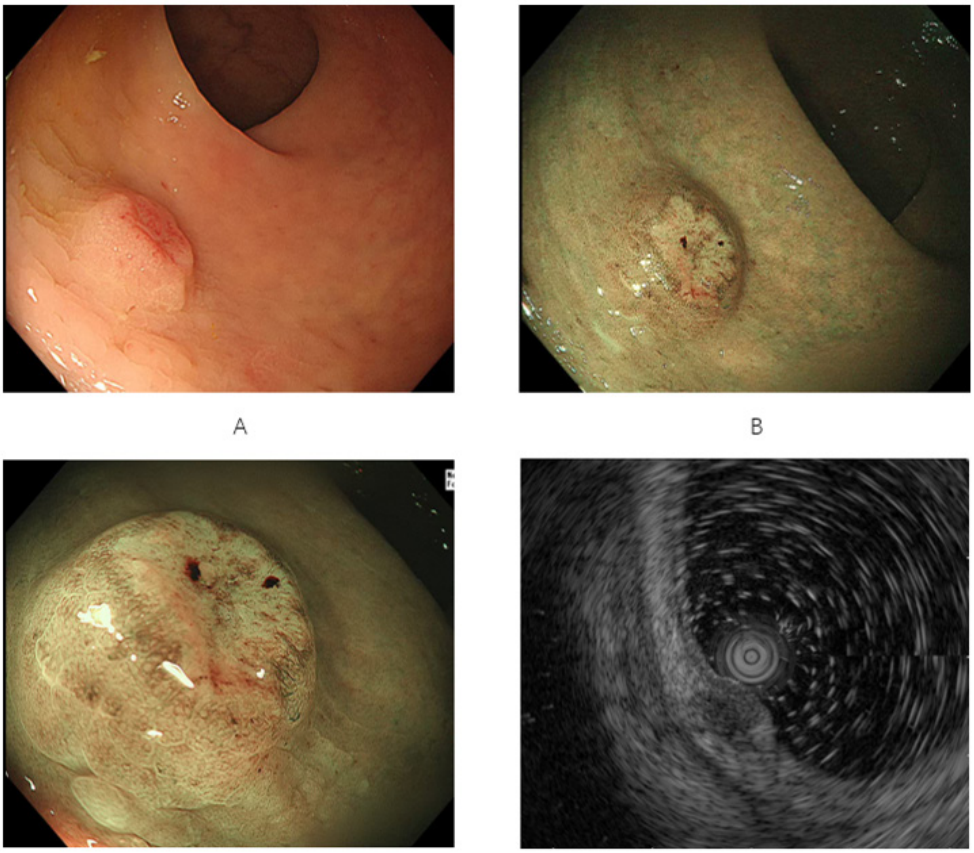


Figure 1: Colonoscopy and Endoscopic Ultrasound Images of a Rectal Submucosal Tumor-like Lesion. (A) A hemispherical elevated lesion measuring about 0.8 cm was observed in rectum using white light imaging. (B、C) Under NBI observation, the depressed area at the top showed loss of glandular structure with sparse, irregular microvessels. (D) EUS revealed that the rectal lesion originated from the submucosal layer, appearing as a hypoechoic lesion with relatively homogeneous internal echogenicity.

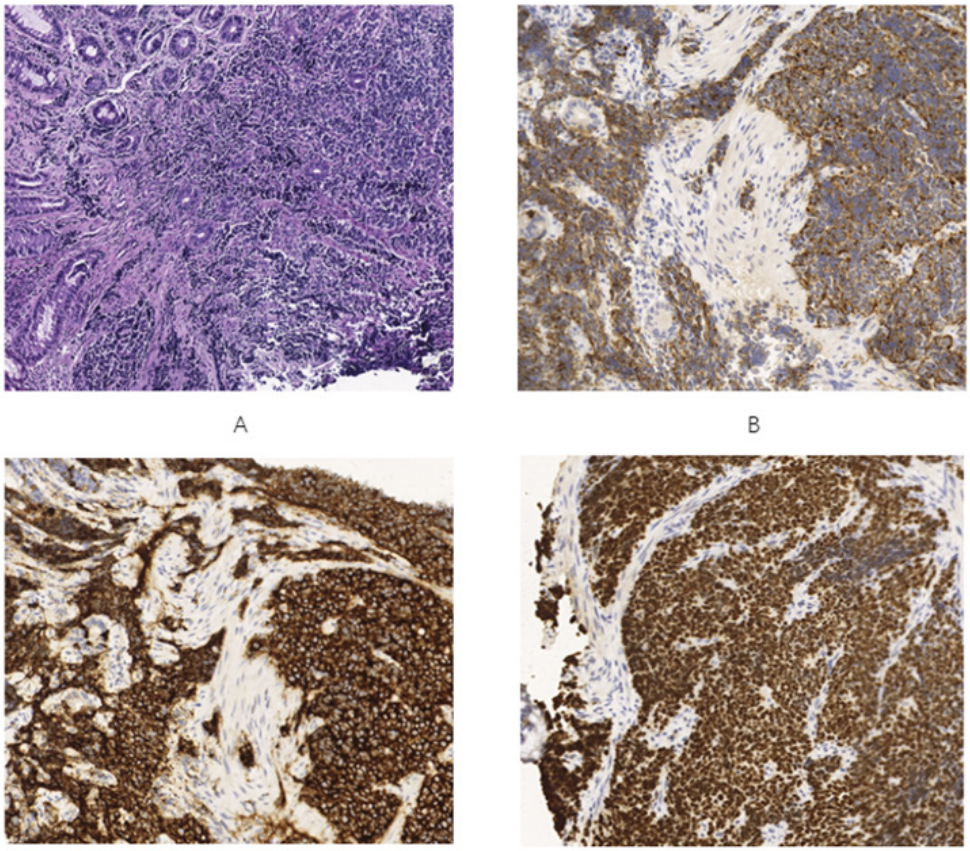


Figure 2: Pathological biopsy images of the rectal submucosal tumor-like lesion. (A) HE staining (10x magnification). (B) Immunohistochemical marker CgA (positive, 20x magnification). (C) Immunohistochemical marker SYn (positive, 20x magnification). (D) Immunohistochemical marker TTF-1 (positive, 20x magnification).

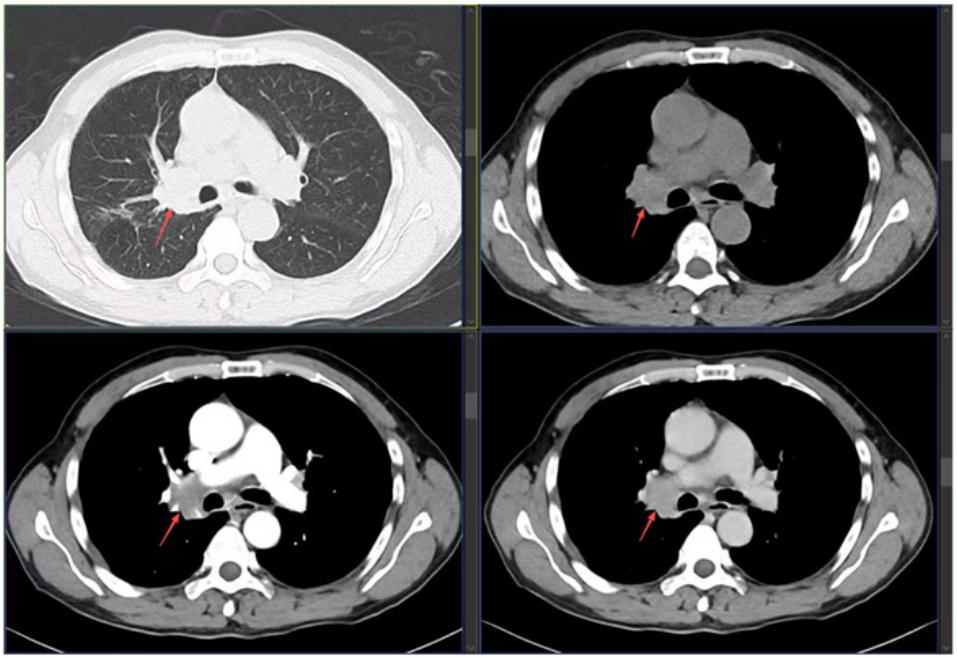


Figure 3: Contrast-enhanced Chest CT. The arrow indicates a right hilar mass, consistent with lung cancer.

4. Conclusions

Small cell lung cancer (SCLC) is a highly invasive neuroendocrine tumor characterized by rapid growth, early metastasis, and poor prognosis. At the time of diagnosis, distant metastasis has often already occurred, with common sites including the liver, lymph nodes, bones, and brain [1]. Gastrointestinal (GI) metastasis is relatively uncommon. The clinical incidence of GI metastasis from lung cancer is approximately 0.19% to 1.70%[2, 3], while autopsy studies reveal a much higher incidence, ranging from 11.9% to 16.2% [4-6]. This indicates that GI metastasis from lung cancer is not as rare as clinical diagnosis suggests. It may often be asymptomatic or present with atypical symptoms, making clinical diagnosis challenging. Reports of primary SCLC with rectal metastasis are exceedingly rare. A PubMed search identified only two reported cases of SCLC with rectal metastasis in the English literature [5, 7]. In one case, it was discovered incidentally during a PET-CT scan for staging the primary SCLC [7]. In the other, it was found one year after lung cancer surgery when the patient developed anal pain and hematochezia during defecation [5]. This article reports a case in which a rectal metastatic lesion was incidentally discovered during screening colonoscopy, ultimately leading to a diagnosis of advanced small cell lung cancer. The rectal lesion did not present as an occupying lesion or abnormal enhancement on contrast-enhanced CT evaluation, which may be related to its relatively small size. The purpose is to remind clinicians that when a submucosal tumor is found during gastrointestinal endoscopy, it is necessary to combine white-light endoscopy, chromoendoscopy, endoscopic ultrasound, and endoscopic biopsy to fully evaluate the condition, help clarify the origin and nature of the lesion, and avoid misdiagnosis or blind endoscopic treatment, as well as to provide more clinical and endoscopic data for understanding small cell lung cancer with rectal metastasis.

5. Disclosure

The authors report no conflict of interest.

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