



Pulmonary Metastasis of Colorectal Cancer 18 Years after Primary Tumor Resection: A Case Report

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Abstract

Colorectal cancer is a commonly diagnosed cancer and a major cause of cancer-related morbidity and mortality worldwide. Surgical resection has become the standard therapy for both primary-tumor and resectable metastasis and has improved survival. Several monitoring strategies are used for patients who have received curative intended surgery. However, most clinical practice involves monitoring patients for approximately 5 years after surgery because the majority of cases of recurrence and metastasis occur during this period. Here, we report a rare case of a patient with colon cancer who had pulmonary solitary metastasis 18 years after primary tumor excision.

Keywords: Colorectal cancer; Pulmonary metastasis; Primary Tumor Resection

Introduction

Colorectal Cancer (CRC) has become the third most commonly diagnosed cancer worldwide and is the second leading cause of cancer-related death [1]. Surgical resection of the primary tumor is the standard procedure at present, and a 5-year survival rate of 90% can be achieved for early-stage CRC [2]. However, recurrence is possible, even in early-stage cases, and regular surveillance is crucial to early detection and treatment. According to several trials, 80% of recurrence is observed in the first 3 years after resection, and approximately 95% of recurrence is observed in the first 5 years [3-5]. Because of these statistics, we closely monitor patients in the first 5 years after resection. Several patients have presented with metastasis 5 years or more after surgery. CRC recurrence more than 10 years after surgery is extremely rare, and studies on this topic are scarce.

Case Presentation

A 77-year-old woman came to our outpatient department for an incidental finding of a nodule in the upper-right lobe of the lung during a routine health checkup. She denied having major systemic diseases and symptoms such as cough, chest pain, and abdominal pain. Her medical history revealed that she had undergone an operation for colon cancer 18 years prior, but the pathology report was not available. Because of the long time since her previous colon cancer treatment, we did not correlate the finding of the lung mass to colon cancer. However, because malignancy was suspected on the basis of the image finding, we suggested surgery and discussed it with the patient.

Consent to surgery was obtained, and video-assisted thoracoscopic surgery with segmentectomy and mediastinal lymph node dissection was performed. To our surprise, the final pathology report revealed a metastatic adenocarcinoma.

Immunohistochemical studies of the tumor cells revealed positive staining for CK20, CDX2, and SATB-2 (Figure 1) and negative reactivity for CK 7 and TTF-1 (Figure 2). The findings of the immunohistochemical studies were sufficient for a diagnosis of pulmonary metastasis from CRC.

We further investigated the case through a positron emission tomography scan and colonoscopy, which revealed only a polypoid lesion with mild FDG uptake at the rectum. Polypectomy was performed, and the pathology revealed a tubulovillous adenoma.

During follow up, we suggested adjuvant chemotherapy for the patient. She could not tolerate the side effects of capecitabine, even in oral form. Regular monitoring is ongoing, and she has been disease free for 10 months.

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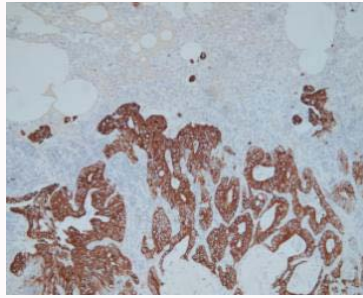
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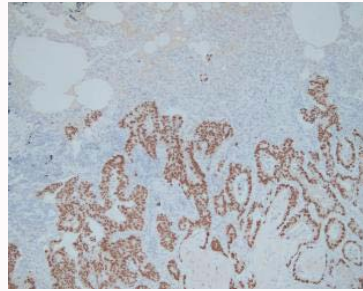
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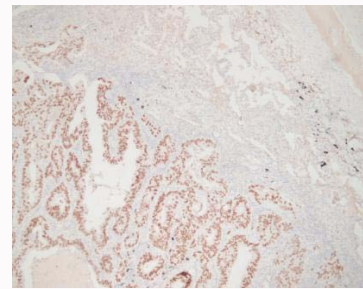
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A. CK 20 immunohistochemistry staining



B. CDX2 immunohistochemistry staining



C. SATB-2 immunohistochemistry staining

Figure 1:

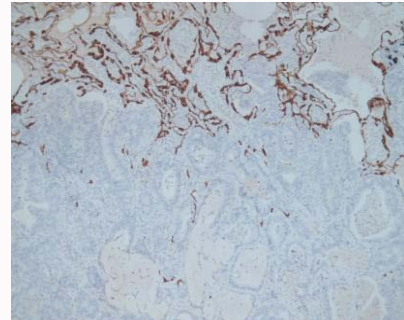
Discussion

Surveillance after colorectal surgery is essential for detecting cancer recurrence early and is considered a distinct stage of CRC treatment. By using a multimodal approach, we aim to improve quality of life, disease-free survival, and overall survival.

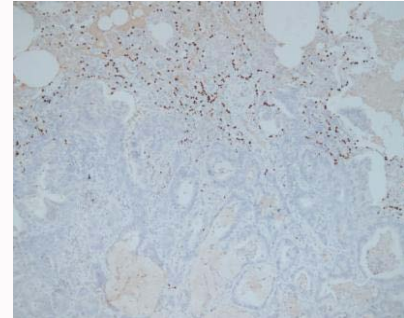
However, reaching a consensus regarding aspects of surveillance strategies, such as the length of follow up, is difficult [6]. One study indicated that surgical treatment of recurrence with curative intent was more common in an intense follow-up group than in a minimal follow-up group, with an absolute difference in the rate of detection of treatable recurrence of 8%; this finding highlights the benefit of intense follow-up strategies.

The follow-up interval is a controversial topic. Because 80% of recurrence is observed in the first 3 years after surgical resection and some studies have observed that 95% of cases of recurrence occur in the first 5 years [3-5], various follow-up guidelines- such as those of the National Comprehensive Cancer Network, American Society of Clinical Oncology, and European Society of Medical Oncology -are used. We strive to follow various guidelines and recommendations to detect resectable local and metastatic disease [7,8] despite the controversies regarding the optimal strategy for surveillance.

In this particular case, surveillance could not be applied. Most



A. CK 7 immunohistochemistry staining



B. TTF-1 immunohistochemistry staining.

Figure 2:

recurrence is observed within 5 years of primary tumor excision. Recurrence 7 to 10 years after primary tumor treatment is extremely rare, and recurrence 18 years after primary tumor excision is even rarer.

We have attempted to explain this unusual case as an extremely long doubling time of the tumor, leading to the late onset of metastasis and long disease-free interval. As proposed by Poullisa et al., the early onset of metastasis, a short doubling time, and a short disease-free interval are associated with poor outcomes [9]. In this case, the long disease-free interval without local recurrence in our case can be best explained by the rarity of the biology nature.

Conclusion

We herein present a rare case as a reminder that in cases of suspicious pulmonary nodules in patients with underlying disease with CRC, clinicians should always consider a differential diagnosis of pulmonary metastasis, regardless of the length of the interval.

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