

Subpleural Intrapulmonary Lymph Node Metastasis from Colorectal Cancer

Yuji Taniguchi, MD,^{1,2} Tomohiro Haruki, MD,² Shinji Fujioka, MD,² Yoshin Adachi, MD,² Ken Miwa, MD,² and Hiroshige Nakamura, MD²

A 67-year-old male was admitted to our hospital because of pulmonary metastasis from colorectal cancer. Chest computed tomography revealed three tumor shadows just under the pleura. Because the tumors were adjacent to each other, we performed an *en bloc* pulmonary resection. Pathologically, two of the tumors were diagnosed as pulmonary metastases; the remaining tumor, however, was diagnosed as a subpleural intrapulmonary lymph node (IPLN) metastasis. Metastasis to the IPLN is rare, but when the IPLN is located adjacent to a pulmonary metastasis, as observed in this case, it may be possible. (Ann Thorac Cardiovasc Surg 2009; 15: 250–252)

Key words: subpleural intrapulmonary lymph node, metastasis, colorectal cancer

Introduction

Subpleural intrapulmonary lymph nodes (IPLNs) were first reported by Greenberg in 1961.¹ In recent years, the wide use of computed tomography (CT) has led to frequent discoveries of IPLN. They consist of benign tumors, but it is extremely difficult to distinguish them from malignant tumors using only diagnostic imaging.² We herein report a case, which we successfully treated, of pulmonary metastasis from colorectal cancer that was combined with a metastasis to the IPLN.

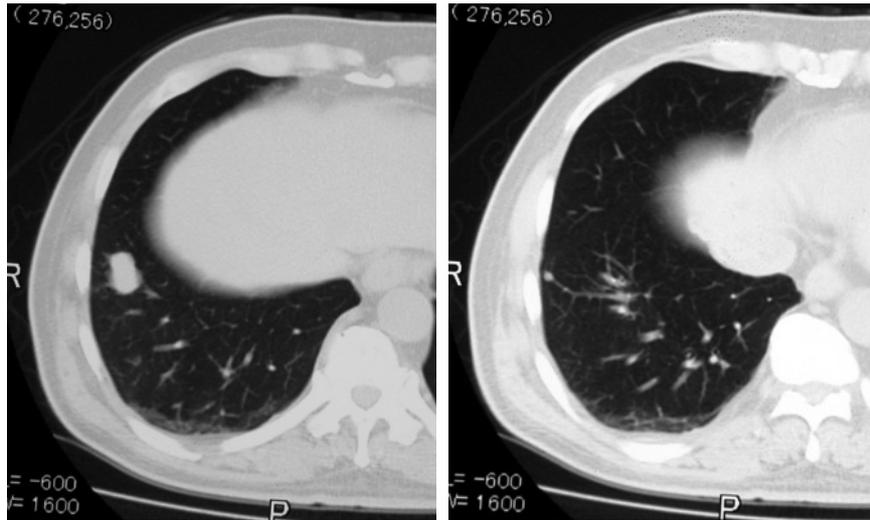
Case

A 67-year-old male had undergone a right hemicolectomy and a rectal partial resection for synchronous triple cancer of the ascending colon, transverse colon, and rectum at another hospital. The pathological staging was SS, N0,

H0, M0, P0. Three years and 5 years after the colorectal surgery, he had undergone a metastasectomy for pelvic lymph nodes metastasis and liver metastasis, respectively. He was admitted to our hospital because of suspected pulmonary metastasis 8 years after the first operation. A chest CT revealed three shadows with tumor radii of 20 mm, 8 mm, and 5 mm just under the pleura in the right lung of S8 (Fig. 1). We performed thoracoscopic surgery. During thoracoscopy, we identified only two tumors in the lung adjacent to a nodule that we believed to be the IPLN. Because the three lesions were adjacent to each other, we performed an *en bloc* partial resection of the lung. And because the hilar and mediastinal lymph nodes were not swollen, we performed no lymph node sampling. In the excised specimens, we found tumors believed to be pulmonary metastases that measured 23 × 20 mm and 10 × 5 mm, along with one that was 6 × 4 mm, which we believed to be the IPLN macroscopically. The tumor in the IPLN had a clearly defined border and contained both black and grayish white colors (Fig. 2A). Pathologically, the former two tumors were diagnosed to be pulmonary metastases from colorectal cancer. In the latter, cancer cells were found in the tissue of lymph follicles associated with the germinal center, and it was diagnosed to be a metastasis to the IPLN (Figs. 2B and 2C). The patient underwent chemotherapy at a hospital to

From ¹Operating Room Division and ²Division of Thoracic Surgery, Tottori University Hospital, Yonago, Japan

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Address reprint requests to Yuji Taniguchi, MD: Division of Thoracic Surgery, Tottori University Hospital, 36-1 Nishi-cho, Yonago, Tottori 683-8504, Japan.
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A | B

Fig. 1. Chest computed tomography showed three tumor shadows measuring 20 mm (A), 8 mm (not shown), and 5 mm (B) in the right S8.

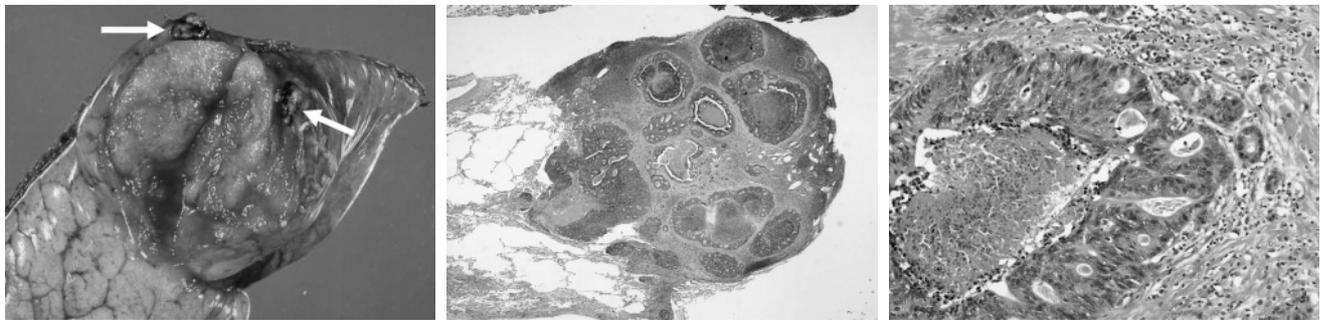


Fig. 2.

- A: In the resected specimen, pulmonary metastasis (corresponding to Fig. 1A) and a subpleural intrapulmonary lymph node (corresponding to Fig. 1B, arrows) were observed.
- B: Low magnification (hematoxylin-eosin stain) of the histopathological findings of the subpleural intrapulmonary lymph node.
- C: High magnification (hematoxylin-eosin stain) of the histopathological findings of the subpleural intrapulmonary lymph node.

A | B | C

which he had been referred after leaving our hospital, but by 6 months after surgery, the lesions had recurred at multiple stations of the right hilar lymph nodes.

Discussion

To date, there have been numerous reports of IPLN-mimicking tumors. We previously reported that it was difficult to diagnose and distinguish IPLN from intrapulmonary metastases of peripheral primary lung cancer or metastatic pulmonary tumors prior to surgery.³⁾ This report was based on the assumption that all cases of tumors in the IPLN were benign. Therefore a report of a malignant tumor in the IPLN, namely, a malignant tumor

of a primary IPLN or a metastatic pulmonary tumor to the IPLN, is rare, and to the extent of our extensive research, there has been only one case in which primary pulmonary cancer metastasized to the IPLN.⁴⁾

It is not rare to encounter pulmonary metastasis from colorectal cancer with metastasis to the hilar or mediastinal lymph nodes.⁵⁾ Moreover, the subpleural space of the visceral pleura has a large network of lymphatic channels.⁶⁾ Furthermore, metastasis in this case recurred in multiple stations of the right hilar lymph nodes about 6 months after surgery. Regarding the mechanism of metastasis to the IPLN in this case, from the above we believe that it metastasized to the adjacent IPLN through the subpleural lymph channels in a manner similar to

that of the tumor cells metastasis to the hilar or mediastinal lymph nodes through the infiltrated lymphatic vessels from the pulmonary metastasis lesion.

When an IPLN is adjacent to a pulmonary metastasis, as observed here, it is necessary to pay attention to the possibility of a metastasis in the IPLN. For pulmonary metastasis from colorectal cancer, pulmonary hilar or mediastinal lymph node metastasis is thought to be one of the important prognostic factors as well as the number of pulmonary metastases.⁷⁾ Therefore we believe that an accurate prognosis can be made by inspecting the IPLN located adjacent to a pulmonary metastasis and then searching for metastases in the IPLN.

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