A 75 year-old man underwent right hemicolecctomy for colon cancer 3 yrs and 6 months ago, followed by chemotherapy with capecitabine. One year and 10 months later, solitary liver metastasis was resected. Five months later, a bulky mediastinal mass of 6 cm in diameter was detected by chest computed tomography and he was referred to our department. The tumor was successfully extirpated by videothoracoscopy-assisted right axillary approach. Histopathology disclosed poorly-differentiated tubular adenocarcinoma and diagnosed as metastatic mediastinal lymph node from the colon cancer. He was discharged on the day 5 and alive without disease 13 months after the mediastinal surgery.

Keywords: metastases, mediastinal tumor, surgery, colorectal cancer

Introduction

Solitary and large lymph node metastasis in the middle mediastinum from colorectal cancer without pulmonary metastasis is very rare and only two resected cases were reported in the English literature.1,2) Here in, we report a case of solitary large mediastinal lymph node metastasis due to colorectal cancer, developed after the resections of double primary colon cancer and liver metastasis, successfully treated by videothoracoscopy-assisted surgery.

Case Report

A 75 year-old asymptomatic man was referred to our department for bulky mediastinal mass. He was diabetic and underwent right hemicolecctomy for simultaneous two colon cancers each in the ascending and transverse colon, respectively, 3 years and 6 months ago. Both lesions invaded into subserosal layers and involved mesenteric lymph nodes, thus both were diagnosed as stage 3A diseases for each. Capecitabine was introduced as adjuvant chemotherapy. One year and 10 months later, solitary liver metastasis was detected. Lateral segmentectomy of right hepatic lobe was carried out and followed by chemotherapy with combination of 5-fluorouracil, leucovorin, and oxaliplatin. However, unconsciousness was eventually occurred during the injection, thus, the chemotherapy was ceased. Five months later, a bulky mediastinal mass was detected by chest computed tomography (Fig. 1), then the patient was referred to our department for extirpation of the mediastinal tumor. Fluoro-2-deoxy-D-glucose positron emission tomography did not reveal any other abnormal accumulation else mediastinal mass with 11.57 of the sum of the maximum standard uptake values (Fig. 2). Serum levels of carcinoembryonic antigen and carbohydrate antigen 19–9 were 6.7 ng/mL (Cut off, 5.0 ng/mL) and 50.1 U/mL (Cut off, 37 U/mL), respectively. First, the right pleural cavity was explored by videothoracoscopy. The tumor was fully-covered with intact mediastinal pleura, compressing the superior vena cava antero-laterally. A 6 cm access window was
added on the right lateral thorax via the 4th intercostal space. The azygos vein was transected to get a better view. The tumor was carefully dissected from the adjacent organs, including the trachea, the right main bronchus, and the superior vena cava, and finally from the pericardium of the ascending aorta and the arch. The tumor was then extirpated successfully by usual maneuvers of superior mediastinal dissection in lung cancer surgery. The tumor was macroscopically diagnosed to be an enlarged pretracheal mediastinal lymph node of approximately 6 cm in diameter. The patient was uneventfully discharged on the day 5. Histopathology disclosed poorly-differentiated tubular adenocarcinoma with focal staining of CK20 and CDX2, without staining of CK7 and thyroid transcription factor-1, and diagnosed as metastatic mediastinal lymph node from the colon cancer. The patient is alive without recurrent disease 13 months after the mediastinal surgery, although he did not received any further chemotherapy.

Discussion

Virchow lymph node metastasis is commonly found in patients with colorectal cancer, however, mediastinal lymph node metastasis is very rarely seen and only 4 cases could be found in the English literature.1-4 Moreover, its successful treatment by surgical extirpation was reported only in 2 cases. One patients were reported in the middle mediastinum like our presented case,1 and the one was in the posterior mediastinum.4 The rest two cases were only diagnosed by mediastinoscopy.2,3 In the resected case with posterior mediastinal metastasis, the possible pathway of the lymphatic spread was by the thoracic duct.4 However, in cases with middle mediastinal metastasis including our presented case, the tumor sites were para- or pretracheal regions and were not near the thoracic duct.1,2 To our knowledge, lymphatic pathway to the middle mediastinum from the colon is still unclear. Moreover, prognosis of the surgically-treated patients with solitary large mediastinal lymph node metastasis is also unknown. Therefore, the optimal treatment for patients with the solitary mediastinal metastasis, such as surgical resection or chemotherapy, is also controversial. Recent advance in chemotherapy for patients with advanced colorectal cancer may lead the frequency of systemic, especially mediastinal metastatic disease. We need more accumulation of the cases to establish optimal strategy in treatment of such rare disease.

Conclusion

Solitary bulky lymph node metastasis due to colorectal cancer is rare. However, surgical treatment does
not seem to be contraindication according to the few reported cases.

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**Disclosure Statement**

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**References**