Primary Pulmonary Amyloidosis with Mediastinal Lymphadenopathy

Dohun Kim, M.D. 1, Yong-Moon Lee, M.D. 2, Si-Wook Kim, M.D. 1, Jong-Won Kim, M.D. 1, Jong-Myeon Hong, M.D., Ph.D. 1

We report a case of inadvertent hoarseness after surgery for primary pulmonary amyloidosis. A 55-year-old male was transferred to our facility due to a lung mass. Chest computed tomography revealed a solitary pulmonary nodule. Positron emission tomography–computed tomography showed fluorodeoxyglucose uptake in the main mass and in the mediastinal lymph nodes. To confirm the pathology of the mass, wedge resection and thorough lymph node dissection were performed via video-assisted thoracic surgery (VATS). No complications except for hoarseness were observed; hoarseness developed soon after surgery and lasted for 3 months. The main mass was diagnosed as amyloidosis, but this was not found in the lymph nodes. In conclusion, VATS wedge resection for peripheral amyloidosis is a feasible and safe procedure. However, mediastinal lymph node dissection is not recommended unless there is evidence of a clear benefit.

Key words: 1. Solitary pulmonary nodule 2. Amyloidosis 3. Video-assisted thoracic surgery

CASE REPORT

Primary pulmonary amyloidosis is a rare disease that can be mistaken for lung cancer [1]. Although percutaneous lung biopsy and other diagnostic modalities including positron emission tomography–computed tomography (PET-CT) can be helpful, surgical resection is required to determine the exact pathologic diagnosis [2]. Subaortic lymph nodes in particular are difficult to investigate without surgery. We herein report a case of primary pulmonary amyloidosis with mediastinal lymphadenopathy and inadvertent postoperative complications.

A 55-year-old man was transferred to the department of thoracic surgery due to a solitary pulmonary nodule in the left lower lobe (Fig. 1A). The nodule was found 3 months prior and had increased in size on follow-up chest CT, implying lung cancer. PET-CT showed subtle fluorodeoxyglucose uptake in the pulmonary nodule, but strong uptake in the mediastinal lymph node (Fig. 1B). A percutaneous lung biopsy was performed, but the results were insufficient for diagnosis. Therefore, video-assisted thoracic surgery (VATS) was performed. The pulmonary nodule was located in a major fissure and was found easily. Wedge resection was performed and the cut edge of the mass showed grayish tan-colored, firm features. The subaortic lymph node was located deep under the aorta, and careful dissection was performed to avoid injury to the vagus or recurrent laryngeal nerve (Fig. 2). Electrocautery was also limited in order to avoid thermal injury. Lymph node sampling was attempted, but thorough dissection was unavoidable because massive bleeding occurred along the cut edge of the lymph node. There were no

Departments of 1Thoracic and Cardiovascular Surgery and 2Pathology, Chungbuk National University College of Medicine
Received: July 24, 2015, Revised: August 22, 2015, Accepted: August 25, 2015, Published online: June 5, 2016
Corresponding author: Jong-Myeon Hong, Department of Thoracic and Cardiovascular Surgery, Chungbuk National University College of Medicine, 1 Chungdae-ro, Seowon-gu, Cheongju 28644, Korea
(Tel) 82-43-269-6062 (Fax) 82-43-269-6969 (E-mail) hongjm1@gmail.com
① The Korean Society for Thoracic and Cardiovascular Surgery, 2016. All right reserved.
② This is an open access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://creativecommons.org/licenses/by-nc/4.0) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.
Fig. 1. Chest CT and PET-CT of the main mass (*) and mediastinal lymph nodes (!). (A) Solitary pulmonary nodule in the left lower lobe on chest CT. (B) Pulmonary nodule and mediastinal lymphadenopathy on PET-CT. CT, computed tomography; PET, positron emission tomography.

Fig. 2. Operative view for subaortic lymph node dissection. The subaortic lymph node was dissected completely.

Unnecessary Lymph Node Dissection in Pulmonary Amyloidoma

postoperative complications, with the exception of hoarseness. Although vocal symptoms improved upon follow-up in the outpatient clinic, vocal cord palsy was still observed on postoperative day 90. In pathologic reports, amorphous eosinophilic and positive Congo red staining were found in the pulmonary nodule, consistent with amyloidosis (Fig. 3). Lymph involvement of amyloidosis was not found, but reactive hyperplasia was observed in all mediastinal lymph nodes. Further diagnostic tests to rule out systemic diseases that could lead to secondary amyloidosis (e.g., multiple myeloma) were performed. All blood tests with light chain lambda, kappa, beta 2-microglobulin, and protein electrophoresis in serum and urine were within normal limits. However, a brain magnetic resonance imaging was not performed due to patient refusal. The nodule was diagnosed as primary pulmonary amyloidosis, and regular follow-up was planned without additional treatment.

DISCUSSION

Primary pulmonary amyloidosis is a rare disease characterized by the deposition of immunoglobulin light-chain fragments [3]. Intrathoracic manifestations are broad, including tracheobronchial, parenchymal, and pleural involvement in addition to mediastinal lymphadenopathy [2,4]. Pulmonary amyloidosis can be associated with lymphoproliferative diseases such as mucosa-associated lymphoid tissue lymphoma or multiple myeloma [5]. Percutaneous lung biopsy is typically sufficient for pathological diagnosis [1,6], but surgical resection is recommended when malignancy is suspected [2,7].

Excision of the lesion is the treatment of choice due to its rare recurrence [4]. However, it remains unclear whether lymph node dissection is necessary. According to this report, lymph node dissection may be harmful in primary pulmonary
amyloidosis. Mediastinal lymphadenopathy is not a rare condition in the disease entity, but mediastinal involvement by amyloidosis is rare [8]. Careful subaortic lymph node dissection was performed, but it resulted in hoarseness lasting for 3 months. Moreover, there was no pathologic evidence that the lymph nodes were involved in amyloidosis. Therefore, mediastinal sampling or biopsy is recommended over thorough dissection in the case of primary pulmonary amyloidosis.

In conclusion, treating peripheral amyloidosis with VATS wedge resection can be an effective option, but mediastinal lymph node dissection should be done carefully.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES