Korean J Thorac Cardiovasc Surg 2018;51:220-222 □ CASE REPORT □
ISSN: 2233-601X (Print) ISSN: 2093-6516 (Online) https://doi.org/10.5090/kjtcs.2018.51.3.220

Surgical Treatment of Primary Pulmonary Myopericytoma

Jeong Min Mun, M.D., Jong In Kim, M.D., Taek Yong Ko, M.D., Sung Dal Park, M.D.

Department of Thoracic and Cardiovascular Surgery, Kosin University Gospel Hospital, Kosin University College of Medicine

Myopericytoma is a benign tumor that occurs in soft tissues. Myopericytoma in the lungs is very rare. We report the case of a 63-year-old woman presenting with cavitary masses in the left lung and multiple tiny nodules in both lungs. She underwent surgery, and a histological examination revealed primary pulmonary myopericytoma.

Key words: 1. Myopericytoma
2. Multiple pulmonary nodules

Case report

A 63-year-old woman was referred to Kosin University Gospel Hospital for multiple pulmonary nodules in both lungs. She had no clinical symptoms. Her medical history included diabetes mellitus, hypertension, and brain infarction, and she had undergone a hysterectomy due to leiomyoma of the uterus. The patient denied any positive family history. The physical examination findings showed no apparent abnormalities. All the laboratory data were within normal limits, except for the white blood cell count, which showed mild leukocytosis (11,000/mm^3). Chest computed tomography (CT) revealed 2 cavitary masses in the left lung with multiple tiny nodules (Fig. 1). Bronchoscopy showed mild mucosal edema of the segmental bronchus in the left upper and lower lobes. Bronchial washing cytology results were negative for malignancy, tuberculosis, and fungal infection. Video-assisted thoracoscopic surgery (VATS) lung biopsy was performed, followed by VATS left lower lobectomy and upper wedge resection. In gross pathology, a relatively well-defined, rubbery mass (4.5×2.7×2.5 cm) was identified in the left lower lobe of the lung. The cut surface of the tumor ranged from white to tan and pink in color and was fleshy and solid, containing cleft-like dilated spaces. In the left upper lung lobe, a cystic lesion (2×1×1 cm) was identified, without a distinct solid mass-forming boundary (Fig. 2A). Microscopic examination of the solid and cystic masses showed that they were composed of ovoid to spindle cells, concentrically arranged around vessels. The nuclei were oval, and the cytoplasm was eosinophilic and plump with indistinct borders. Nuclear pleomorphism, increased mitotic activity, and necrosis were absent (Fig. 2B). The patient was discharged on the 13th postoperative day without any complications. A chest CT scan conducted 30 months after surgery demonstrated no change in the pulmonary nodules and no recurrence. She was followed for 34 months after discharge.

Discussion

Myopericytoma is a benign disease that occurs in soft tissue. In 1998, the term 'myopericytoma' was adopted by Granter et al. [1] to describe benign tu-

Received: September 25, 2017, Revised: November 9, 2017, Accepted: November 13, 2017, Published online: June 5, 2018

Corresponding author: Jong In Kim, Department of Thoracic and Cardiovascular Surgery, Kosin University Gospel Hospital, Kosin University College of Medicine, 262 Gamcheon-ro, Seo-gu, Busan 49267, Korea
(Tel) 82-51-990-6466 (Fax) 82-51-990-3066 (E-mail) charlie822@empas.com

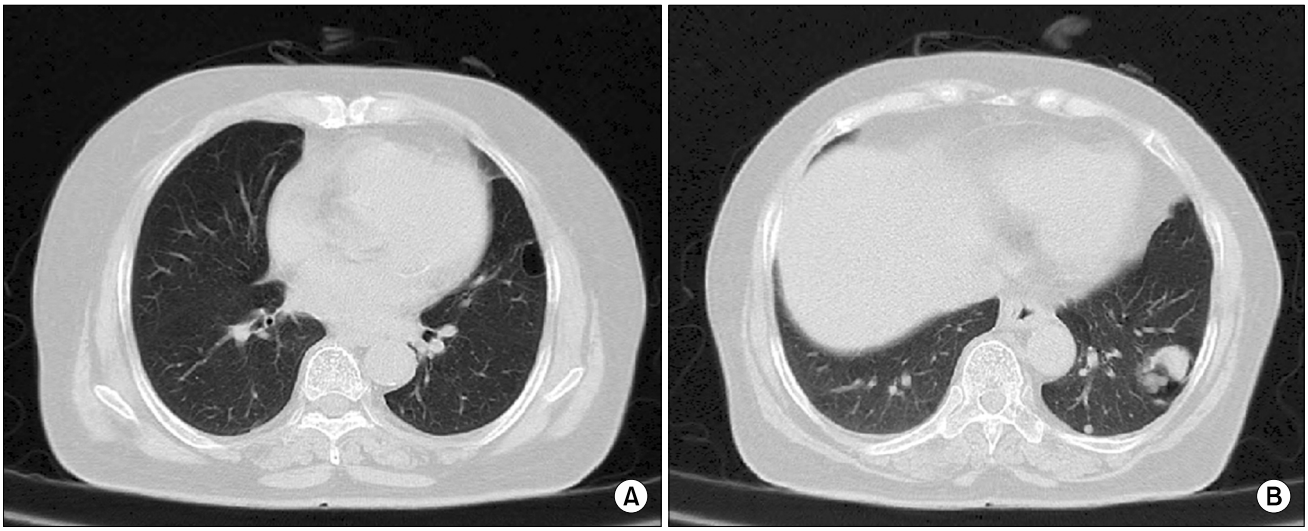

Fig. 1. (A) A low-attenuation cavitary mass-like lesion (1.8×1.9 cm) in the left upper lobe. (B) A homogeneous enhanced nodule and cavitary mass-like lesion (3.5×4 cm) in the left lower lobe, and a tiny nodule in the posterior basal segment of the left lower lobe.

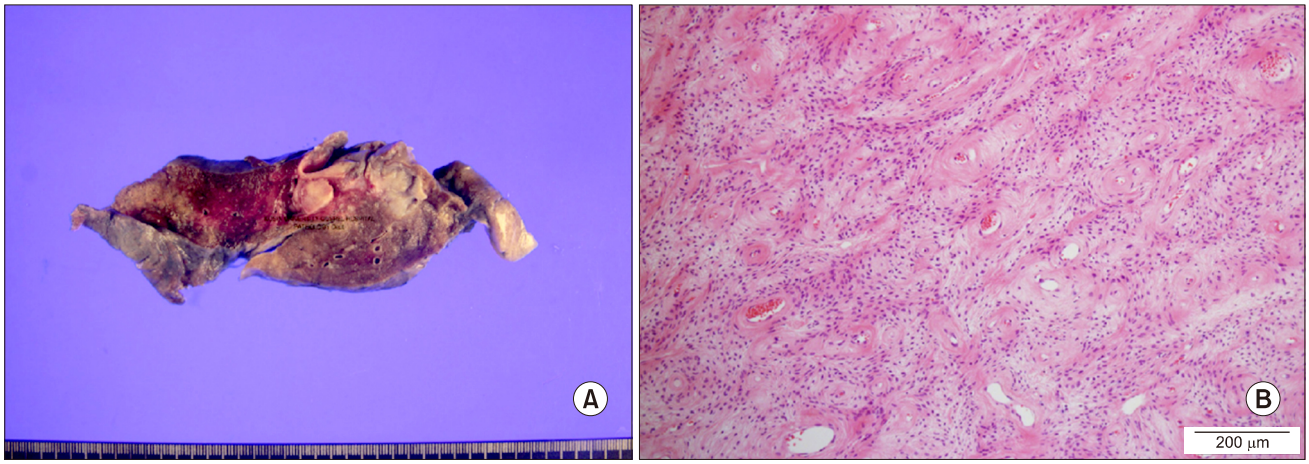

Fig. 2. (A) Grossly, a relatively well-defined, rubbery mass (4.5×2.7×2.5 cm) was identified in the left lower lobe of the lung. The cut surface of the mass was white to tan to pink, fleshy, and solid with cleft-like dilated spaces. In the left upper lobe of the lung, a cystic lesion (2×1×1 cm) was identified without a distinct solid mass-forming lesion. (B) Histopathologic findings of pulmonary myopericytoma, with a concentric perivascular proliferation of ovoid to spindle cells. The tumor cells exhibited bland nuclei and eosinophilic, myoid cytoplasm (H&E stain, ×100).

mors that have striking concentric perivascular spindle cell proliferation with a distinct pattern of differentiation into perivascular myoid cells. They described 3 morphologies that developed into a spectrum of tumors seen in the myopericytoma category: myofibromatosis, archetypal myopericytoma, and glomangiopericytoma [1]. In the pathologic and genetic categorization in the 2002 World Health Organization classification of soft-tissue tumors, myopericytoma is classified as an independent type of angiopericytoma [2]. Its histologic features include a concentric perivascular distribution of ovoid, tubular, spindled, and/or oval-to-spindle shaped cells with eosinophilic cytoplasm and a myoid appearance [3]. Because of its morphological similarities to a perivascular myoid neoplasm, myopericytoma may be under-recognized by surgical pathologists. It occurs in a wide range of age groups starting in the second decade of life, is consistently reported to occur more often in males, and usually presents as single or multiple subcuta-

neous nodules. A few cases of multi-centeredness in the limbs have been reported [4]. Mentzel et al. [5] reported 54 cases of myopericytoma. According to their report, the most prevalent site was the lower extremity (26 cases), followed by the upper extremity (16 cases), the head and neck region (4 cases), the trunk (2 cases), and unknown sites (5 cases). Myopericytoma mostly affects the skin (dermis or subcutis) and soft tissues of the extremities, and rarely affects the lungs, with only 2 such cases reported to date [5,6].

Because of the asymptomatic characteristics of myopericytoma, especially in the respiratory system, it is often diagnosed incidentally during radiological examinations. Bronchial washing or sputum analysis can distinguish myopericytoma from pulmonary infectious disease. Myopericytoma involves peripheral enhancement, usually when vascular lesions are severe and the tumor is necrotic. The lesion can appear as a single round, oval, or irregular shape and can be solitary or multiple. Because this radiologic pattern is similar to that of tuberculosis or aspergilloma, a differential diagnosis should be made to distinguish among these possibilities, especially if small nodules are present in both lungs [7]. Although there are limitations due to the small number of cases, these masses mainly take the clinical form of benign tumors, and recurrence or metastasis is uncommon [8]. However, as the size of the tumor can greatly increase over time, early resection is recommended [7]. In a case of pulmonary myopericytoma reported by Song et al., a patient who received conventional care after surgical resection made a full recovery without any symptoms at a 3-year follow-up visit [6]. Our patient showed no recurrence or metastasis for 34 months after surgical treatment. Because myopericytoma in the lungs is very rare, and there is therefore no established set of procedures for treatment and surgery, the probability of a malignant pattern in other organs still exists (although it is low), and the size of the mass can rapidly increase over time. Thus, early surgical treatment is recommended to prevent recurrence or metastasis. More research on pulmonary myopericytoma is needed.

Conflict of interest

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

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