A Case of Postmenopausal Lymphangiomyomatosis without Signs of Aggravation in the Follow-up Period

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The patient was a 52-year-old female who was diagnosed with postmenopausal lymphangiomyomatosis (LAM). Although she was placed on a treatment of luteinizing hormone releasing hormone agonist (LHRH-A) for two months, she could not tolerate this therapy due to adverse reactions. For the subsequent 6.5 years, her clinical course was carefully monitored and the results of clinical observation, pulmonary function tests and a CT of the chest showed no clear signs of aggravation. Our literature review yielded two patients who were left untreated although their clinical progress was slow and mild. The possibility was suggested that some patients with postmenopausal LAM could be carefully observed. (Kitakanto Med J 2005 ; 55 : 161~163)

Key words : Postmenopausal lymphangiomyomatosis, observation, luteinizing hormone releasing hormone agonist

Introduction

Lymphangiomyomatosis is a rare pulmonary disorder characterized by the proliferation of smooth muscle diffused throughout the lung parenchyma. Generally, women of childbearing age are vulnerable to this disorder, although the present patient was diagnosed with LAM at the climacteric age and showed no signs of aggravation during the follow-up period of approximately 6.5 years. The observation results were confirmed by pulmonary function tests and diagnostic imaging. There seem to be some patients with LAM who can be monitored with only the clinical observation of their progress. We report the present case with some bibliographical comments.

Case Report

A 52-year-old female underwent an X-ray examination of the chest in July 1997. She was told that there was an abnormal shadow on the film and menopause was noticed. Two months later, she visited this hospital with symptoms of coughing and shortness of breath. An X-ray film of the chest, taken in the previous year,

showed no abnormal finding. She had no history of exogenous estrogen treatment, hysterectomy, respiratory disease and smoking. She worked as a clerk. The results of the pulmonary function tests conducted on the initial consultation were as follows : vital capacity (VC) 2.09 L (79.2% predicted), forced expiratory volume in one second (FEV1) 1.19 L (74.8% predicted), residual volume (RV) 2.64 L (57.6% predicted). An arterial blood gas analysis revealed that PaO₂ was 69.3 mmHg, PaCO₂ 41.7 mmHg and the pH 7.39. A chest film disclosed a netlike nodular shadow diffused over the lung fields. A CT of the chest showed multiple thin-walled cystic air spaces throughout both lungs. A transbronchial lung biopsy failed to definitely reveal the lesion and video assisted thoracic surgery was conducted in June 1997. According to the results obtained, a diagnosis of LAM was made. The tissues tested estrogen and progesterone receptor negative. The blood levels of estrogen, progesterone, follicle-stimulating hormone (FSH) and luteinizing hormone (LH) were within the normal ranges. The patient underwent a subcutaneous injection of LHRH-A (goserelin acetate) in a dose of 3.6

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mg/day every four weeks from July 1997. Two months later, this drug treatment was terminated due to general malaise. At the patient's request, she was left untreated and her clinical course was carefully observed. Her progress was checked every two months and no tendency suggesting aggravation of clinical symptoms and pulmonary functions was recognized. In March 2003, pulmonary function tests revealed VC 1.62 L (63.3% predicted), FEV₁ 0.99 L (65.1% predicted), RV 2.92 L (62.5% predicted). Although these results suggested a mild reduction, the arterial blood gas analysis revealed no significant change (PaO₂ 69.9 mmHg, PaCO₂ 35.9 mmHg, pH 7.41). Blood hormone levels were within the normal ranges and a CT scan visually showed no lesion suggesting exacerbation. The patient, who is currently monitored, has made steady progress without showing any aggravation of the clinical symptoms.

Discussion

The patient was diagnosed with LAM at the climacteric age and received treatment with LHRH-A. This drug treatment, however, was discontinued due to adverse reactions. She was left untreated and made favorable progress without showing any aggravation of symptoms. Her clinical course was carefully monitored for approximately 6.5 years. Our literature review yielded 10 patients who were diagnosed with postmenopausal LAM, including the present patient (Table 1).¹⁻⁷ We have to admit that no effective treatment has been established so far. Surgical treatment^{1,2} such as pleurodesis⁷ was reported to be effective for the patients with LAM complicated by chylothorax, while other patients were reported to respond favorably to anti-estrogen therapy⁶ or progesterone therapy.⁷ Their clinical courses were monitored for less than five years^{1,2,6,7} although those placed on hormone replacement therapy were monitored for a shorter period of less than 3.5 years.^{6,7} Some of these

Fig. 1. Chest CT (May, 1997) showing multiple thin-walled cystic air spaces throughout both lungs (upper Panel) and CT (February, 2003) showing no aggravation of emphysematous symptoms, including any increase in microcysts or fusion of cysts (lower Panel).

patients were left untreated. In these cases, however, X-ray findings and pulmonary function test results obtained at the time of the diagnostic evaluation were not compared with those obtained before the time of reporting and their change was not clarified. Accordingly, their objective data were rarely available. In one reported case, a biopsy conducted 10 years after the initial diagnostic evaluation revealed only the enhancement of the honeycombing and 15 years had passed

Table 1 Reported cases of postmenopausal lymphangioleiomyomatosis

References yrs	Age* yrs	Year	Onset of symptoms Age (yrs)	Initial management	Period of observation (yrs) [†]	Follow-up yrs	Outcome
1	69	1964	68	Thoracenteses, thoracotomy	1.5	1.5	survived
2	65	1973	57	Thoracic duct shunt	5	5	died
3	70	1980	55	No	10	10	survived
4	72	1985	60	No	<1	<1	died
5	49	1990	n.m	n.m	n.m	n.m	n.m
61	1990	n.m	n.m	n.m	n.m	n.m	n.m
6	59	1994	58	Tamoxifen	No	3.5	survived
62	1994	61	Farlutel	No	1.5	survived	
7	62	1996	62	Progesterone pleurodesis	No	3	survived
Case	52	1997	52	Goserelin acetate	6.5	7	survived

*Age=age at presentation. [†] Period of observation=period that observed under no treatment. [‡] n.m=non mentioned.

since the initial episode.³ In another reported case, a patient died of respiratory failure within one year of the diagnostic evaluation although 12 years had passed since the initial episode.⁴ In the present case, the fact that the change observed on film coincided with the climacteric age suggests the possibility that LAM occurred before menopause. An arterial blood gas analysis disclosed no remarkable changes and the CT showed no aggravation of emphysematous symptoms, including any increase in microcysts or fusion of cysts. The clinical progress appeared to be slow and mild. The significance of the treatment of LAM, especially postmenopausal LAM, has been mentioned in a limited number of reports and remains unknown. We recommend monitoring of the clinical progress as one of the options for the treatment of postmenopausal LAM, as long as the complications of chylothorax and pneumothorax,^{1,2,5,7} elevation of blood estrogen level^{5,6} and noticeable deterioration of QOL resulting from development of symptoms are not recognized. Therapeutic intervention can be introduced after the careful observation of clinical progress and the confirmation of signs suggesting aggravation.

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