Surgical Treatment of Mediastinal Aspergilloma in a Immunocompetent Patient

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Aspergillus is a common saprophytic fungi of the human airways and causes a broad spectrum of diseases, ranging from aspergilloma to invasive aspergillosis. There are few reports on mediastinal aspergilloma without any underlying pulmonary disease or immunocompromise. Herein, we report a case of mediastinal aspergilloma that we experienced and treated by thoracoscopic resection and oral antifungal medication.

Key words: 1. Mediastinal disease  
2. Video-assisted thoracic surgery  
3. Aspergillosis

CASE REPORT

A 60-year-old man was referred with radiologic abnormality. He underwent a medical examination because of cough and chest discomfort. On the chest computed tomogram (CT), a 2.7-cm cystic anterior mediastinal mass was observed (Fig. 1). The patient was an ex-smoker with a 30 pack-year history. He had no history of pulmonary tuberculosis or immunocompromising disease. The clinical impression was a benign cystic anterior mediastinal tumor such as an infected thymic cyst or cystic teratoma. Cystic degeneration of thymoma could not be excluded on the chest CT scan. We planned video-assisted thoracoscopic surgery mass excision via a right-side approach. There were multifocal adhesions over the right upper lobe and the base of the right lower lobe. A 3-cm anterior mediastinal mass was observed on the right side of the pericardium. There was dense adhesion between the mass and the anterior segment of the right upper lobe without invasion. Invasion to the innominate vein or the right phrenic nerve was not observed. The intraoperative impression was cystic teratoma. En-bloc resection was performed with thymectomy and wedge resection of the
right upper lobe. A yellowish, sticky fluid was seen in the cystic mass on exploration. Microscopic examination revealed acute-angled septated hyphae of the aspergillus (Fig. 2). Oral itraconazole was prescribed for 8 weeks after the pathologic diagnosis. Follow-up chest CT scan 1 year after the operation revealed no evidence of recurrent disease.

**DISCUSSION**

*Aspergillus fumigatus* is a common saprophytic fungi of the human airways and causes a broad spectrum of diseases. The major forms of pulmonary aspergillosis range from aspergilloma, which characterizes a relatively benign course of aspergillosis, to invasive aspergillosis, which is a fatal form of aspergillus infection [1]. It can be diagnosed by the identification of fungal hyphae on the microscopic examination or growth of fungus by culture. Invasive pulmonary aspergillosis is a serious complication of immunocompromised patients, occurring mostly in patients undergoing chemotherapy for hematologic malignancies or immunosuppressive therapy after bone marrow or organ transplantation [2,3]. Aspergilloma is a mass of fungal mycelia that usually grows in pre-existing lung cavities [4]. Many cavitary lung diseases such as tuberculosis, sarcoidosis, cavitary tumor, pulmonary fibrosis, bronchiectasis, or histoplasmosis can be complicated by aspergilloma [4]. The usual pathogenesis of aspergillosis is by dissemination from a primary site, such as the lung, or by contiguous spread [5]. Mediastinal aspergillosis can also be caused by a direct implantation of the spores into the soft tissue. Such a direct implantation can result from a rupture of the bullae into the mediastinum or a traumatic mediastinal injury [5]. There are some reports of mediastinal aspergillosis in immunocompromised patients [3,6,7]. However, as in the present case, mediastinal aspergilloma can occur in immunocompetent patients without any underlying pulmonary disease. Mediastinal aspergillosis in an immunocompetent patient without a pulmonary lesion has rarely been reported [1,8,9]. It is difficult to diagnose mediastinal aspergilloma by preoperative imaging studies. There are no definite differential radiologic characteristics of mediastinal aspergilloma and mediastinal tumors, which are a considerably more frequent disease of the mediastinum. On the CT scan, mediastinal aspergilloma looks like a necrotic mediastinal mass infiltrating into the adjacent tissues or invading other mediastinal organs [3]. Therefore, it is usually diagnosed intraoperatively or postoperatively. Mediastinal aspergilloma can be treated with a combination of surgical and medical therapy. Surgical resection is only a curative treatment for the mediastinal aspergilloma as in the case of pulmonary aspergilloma. Adjuvant antifungal therapy after surgical treatment is generally performed to treat a microscopic disease and to prevent recurrence [5,7,10,11]. We also prescribed antifungal medi-
cation to prevent fungal mediastinitis and recurrence. The outcome of the surgical treatment is generally excellent. No recurrence was reported. Our patient also had a good clinical course. However, there was a case report of a fatal course of mediastinal aspergilloma in an immunocompetent patient [1]. Septic shock was the initial clinical presentation in that case, and the patient eventually died of septic embolism. Herein, we report a case of mediastinal aspergilloma treated by thoracoscopic resection and adjuvant oral antifungal medication.

To the best of our knowledge, this is the first report about mediastinal aspergilloma in the Korean Journal of Thoracic and Cardiovascular Surgery.

CONFLICT OF INTEREST

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

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