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Case Report

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A Case of Localized Malignant Mesothelioma Mimicking an Anterior Mediastinal Tumor

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1. Abstract

Localized malignant mesothelioma mimicking an anterior mediastinal tumor is rare. In the present case of a localized mediastinal tumor adjacent to the pericardium, a differential diagnosis was radiologically and pathologically important while taking mesothelioma into consideration.

2. Clinical Image

A 55-year-old Japanese woman was admitted to our hospital with edema in the lower extremity. There was no previous medical history of cancer or cardiopulmonary disease and she had a light smoking habit. A history of asbestos exposure was unknown. Chest X-ray showed an enlarged cardiac shadow with bilateral pleural effusion. Heart failure was temporarily diagnosed. Within a few days after the administration of a diuretic, pleural effusion was almost completely resolved; however, the enlarged cardiac shadow persisted with the expansion of the mediastinal shadow to the right side. Computed tomography (CT) revealed a huge anterior mediastinal mass measuring 120 × 75 × 70 mm with massive pericardial effusion. The mass was mildly enhanced on contrast-enhanced CT (Figure 1). These images showed that the mass developed adjacent to the heart, mediastinal pleura, left brachiocephalic vein, trachea, and sternum, while distinctly pressing the right ventricle to the caudal side, the superior vena cava to the right side (arrow), and ascending aorta to the left side (arrow). The mass showed homogenously mild enhancement (*) with pericardial involvement and massive pericardial effusion (**). Magnetic resonance imaging (Figure 2) revealed a huge anterior mediastinal solid mass with pericardial involvement, showing slightly heterogeneous enhancement (*). The solid mass consecutively extended into the pericardial space with massive pericardial effusion (arrow). Positron emission tomography showed localization of the lesion without dissemination (Figure 3). The results of blood examinations were unremarkable; serum levels of carcinoembryonic antigen, pro-gastrin releasing peptide, squamous cell carcinoma antigen, alpha-fetoprotein, human chorionic gonadotropin, interleukin 2 receptor, and the anti-acetylcholine receptor antibody were within normal ranges. Surgical biopsy of the mass was performed using diagnostic video-assisted thoracoscopy via the right pleural cavity. No abnormalities were observed in the right pleural cavity, except for mediastinal prominence due to the mass. A cytological examination using yellow pleural effusion was negative. Mass specimens were obtained through the mediastinal pleura. Malignant epithelioid mesothelioma was diagnosed based on the findings of a histopathological examination of biopsy specimens. Tumor cells were immunohistochemically positive for calretinin, D2-40, AE1/AE3, CK5/6, and WT1, and negative for TTF-1, MOC31, Napsin A, and p40 protein.

Localized malignant mesothelioma mimicking an anterior mediastinal tumor is extremely uncommon. Only a few similar cases have been reported to date[1-4]. These cases of mesothelioma occurred in the pericardium [1,2] or mediastinal pleura [3,4]. The site of origin

of the present case was unknown; however, based on the findings of radiological images and thoracoscopy of the right pleural cavity, this tumor was considered to originate from the pericardium. In the present case of a localized mediastinal mass adjacent to the pericardium or mediastinal pleura, a differential diagnosis was radiologically and pathologically important while taking mesothelioma into consideration.

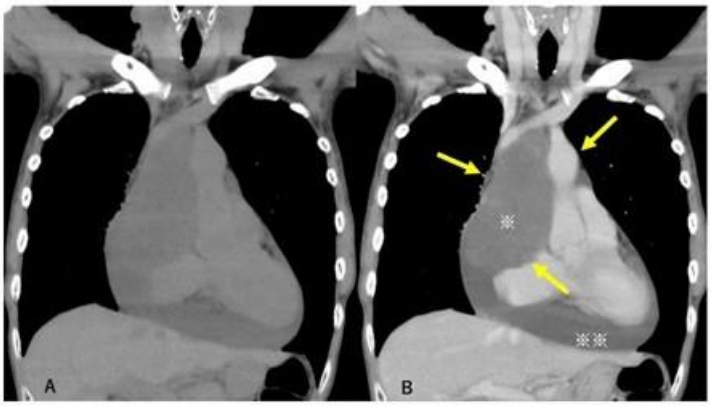

Fig. 1

Figure 1: Plain computed tomography (CT) (A) and contrast-enhanced CT (B) images

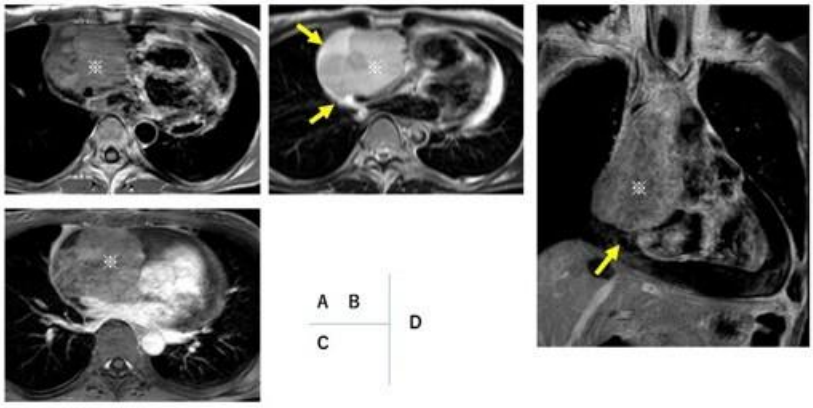

Fig. 2

Figure 2: Magnetic resonance imaging (MRI)
T1-weighted (A), T2-weighted (B), contrast-enhanced fat-suppressed T1-weighted (C) and contrast-enhanced T1-weighted (D) images.

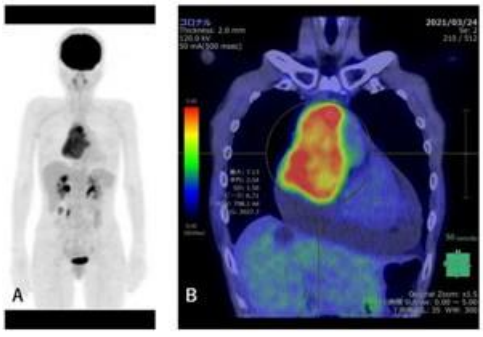

Fig. 3

Figure 3: Positron emission tomography (PET) images
MIP (maximum intensity projection, A) and PET-CT fusion (B) images.

3. Disclosure Statement

Appropriate written informed consent was obtained for the publication of this case report and accompanying images

4. Author Contribution Statement

Masahiko Higashiyama made a substantial contribution to the writing of the manuscript. Takashi Nojiri performed specimen biopsy. Masayoshi Inoue and Junko Takahama contributed to the radiological diagnosis and Amane Yamauchi to the pathological

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