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CLINICAL IMAGE

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A unique case of bilateral ventricular infiltration by lung adenocarcinoma with paraneoplastic hypereosinophilia

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Key message
Existence of poorly differentiated tumour cells or paraneoplastic hypereosinophilia indicates extensive disease progression and poor prognosis in patients with malignancy. When these conditions are present, it is necessary to consider the possibility of intracardiac metastasis even in cases of lung adenocarcinoma.

KEYWORDS
adenocarcinoma, cardiac metastasis, hypereosinophilia, lung cancer, pembrolizumab

CLINICAL IMAGE

An 83-year-old male, presenting with gradually worsening left upper extremity mobility over the past 1 month, was referred to our department. Magnetic resonance imaging revealed a 10-mm mass in the right frontal lobe, while chest computed tomography scan demonstrated a 50-mm irregular mass in the right upper lobe (Figure 1A). Ultrasound-guided percutaneous lung biopsy revealed lung adenocarcinoma. Two weeks later, the patient was admitted to our hospital due to worsening general weakness. Blood examination showed a marked increase in eosinophil count of 17.5×10^9/L. Transthoracic echocardiography revealed a mobile tumour mass attached to the papillary muscle base of the left ventricle and right ventricular septum (Figure 1B–E). Intracavitary metastasis was suspected, as the mass in the right ventricle showed a cystic structure identical to the metastatic mass in the right chest wall. Despite treatment with pembrolizumab, the patient expired on day 13. While direct invasion or pericardial metastasis is common in lung cancer, reports of intracavitary metastasis are limited.[1] In this case, the presence of poorly differentiated tumour cells (partially vimentin-positive, spindle-shaped sarcoma-like tumour cells) and the existence of paraneoplastic hypereosinophilia indicate highly aggressive disease progression.[2] In such cases, the possibility of intracavitary metastasis should be considered.

AUTHOR CONTRIBUTIONS

Masaaki Iwabayashi: Writing – original draft. **Takahiro Masuda, Kosuke Tokushige and Hiroko Jinno**: Resources. **Kimihide Tada**: Supervision.

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

The authors declare that appropriate written informed consent was obtained for the publication of this manuscript and accompanying images.

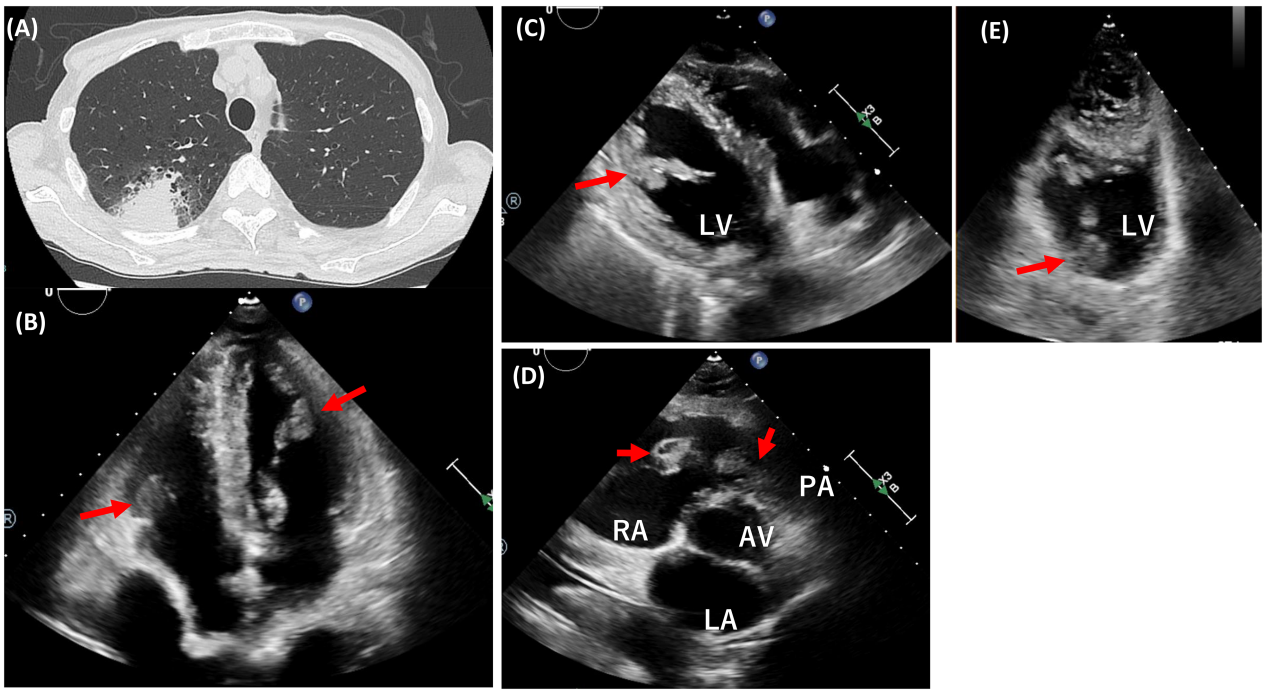

FIGURE 1 (A) Computed tomography scan showing an irregular 50-mm mass in the right upper lobe of the lung. (B) Four-chamber view of the transthoracic echocardiogram demonstrating a mobile tumour mass (arrow) present in both ventricles. (C) Tumour mass (arrow) attached to the left ventricular endocardium. (D) Tumour mass (arrow) in the right ventricle extending into the pulmonary artery and causing outflow obstruction. (E) Short-axis view of the left ventricle. AV, atrioventricular valve; LA, left atrium; LV, left ventricle; PA, pulmonary artery; RA, right atrium.

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