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A case of primary mediastinal Ewing's sarcoma/ primitive neuroectodermal tumor presenting with chest pain

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A 63-year-old man presented to the emergency department with acute onset chest pain that began 3 h before arrival, without dyspnea, dysphagia. Cardiac injury markers were normal. An electrocardiogram (ECG) demonstrated normal sinus rhythm. Laboratory results revealed a troponin-T level of 0,012 nanogram/mililiter (ng/mL) (range 0–0,014 ng/mL). He had a history of coronary bypass surgery. His imaging study was done via posterior-anterior chest radiography and CT angiography (Fig. 1A–D).

Diagnosis: primary mediastinal Ewing's sarcoma/primitive neuroectodermal tumor

Chest radiograph showed mediastinal enlargement at left-sided hemithorax and lining of operation material (Fig. 1A, long arrow shows mediastinal enlargement, arrowheads shows operation materials). Prompt computed tomography (CT) was ordered to rule out aortic dissection and aortic aneurysm. CT of the chest revealed a mediastinal mass which contained vascular structures, calcification. On the other hand, left internal mammary artery (LIMA) graft was pushed by the mass to the left side (Fig. 1B, arrowheads shows LIMA graft and operation materials; Fig. 1C and D, small arrow shows vascular structures and calsification). Histopathologic examination showed small round blue cell tumoral infiltration and immunohistochemical analysis revealed positive staining for CD56, CD 99 and high Ki-67 proliferation index. Based on these findings, primary mediastinal Ewing's sarcoma/primitive neuroectodermal tumor (PNET/ES) was diagnosed. PNET/ES arising from mediastinum is very rare [1,2]. In our case, initially we triple ruled out emergency conditions such as myocardial infarction, aortic dissection, aortic aneurysm. A mass arising from mediastinum was diagnosed after cross sectional imaging. We suggested that the mass caused the acute onset chest pain due to pushing the LIMA graft. It may cause blood flow deterioration from LIMA graft to cardiac vessel. After a thoracic surgery consultation via imaging findings, the tumor was considered unresectable and treatment with chemotheraphy was planned. In case of finding a mass located anterior mediastinum thymoma, posterior mediastinum neurogenic tumor should be considered as a first line diagnosis [2,3]. Although sarcomas of mediastinum are rare, thought as a differential diagnosis [1–3].

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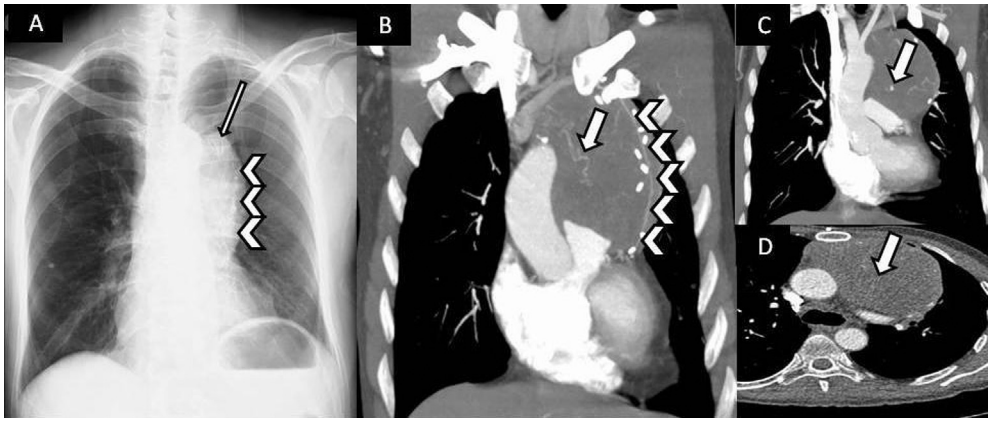

Fig. 1. Chest radiograph showed mediastinal enlargement at left-sided hemithorax and lining of operation material (Fig. 1A, long arrow shows mediastinal enlargement, arrowheads shows operation materials). CT of the chest revealed a mediastinal mass which contained vascular structures, calsification. On the other hand, left internal mammary artery (LIMA) graft was pushed by the mass to the left side (Fig. 1B, arrowheads shows LIMA graft and operation materials; Fig. 1C and D, small arrow shows vascular structures and calsification).

Conflict of interest

No conflict of interest was declared by the authors.

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