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# MRI of malignant peripheral nerve sheath tumour in pericardial cavity

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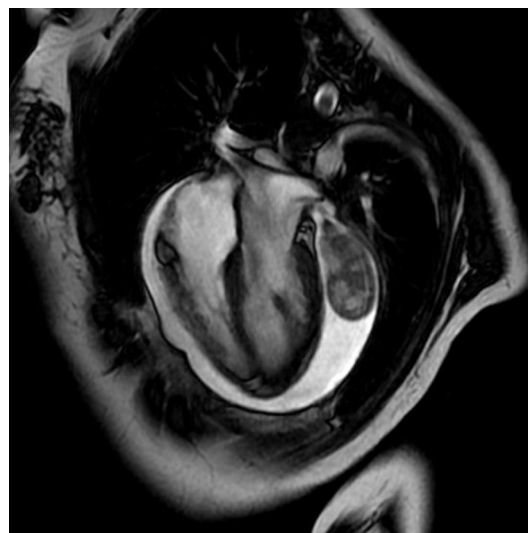
RE and TT contributed equally.

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### DESCRIPTION

Malignant peripheral nerve sheath tumour (MPNST) is a rare phenotype of soft tissue sarcoma which accounts for ~2% of all sarcomas.<sup>1</sup> It is said to be highly possible to cause recurrence and metastasis, therefore early diagnosis is important.

This report shows an MRI of MPNST in a pericardial cavity which has not been reported yet. The patient was a 30-year-old woman with a history of ulcerative colitis. She visited our hospital because of chest discomfort during inspiration and running a fever of 38°C. Transthoracic echocardiography demonstrated a mass beside the left atrium in the pericardial cavity with a lot of pericardial effusion. Since further information was needed to identify the true character of the mass immediately, we next performed a contrast-enhanced CT. It showed heterogeneously enhanced image of the mass in the pericardial cavity; however, we could not define whether the mass was a tumour or an abscess (figure 1). For further investigation, we performed an MRI and found the striking images best with Fast Imaging Employing Steady-state Acquisition (FIESTA) (figure 2). The FIESTA image of the mass, approximately 55 mm in major axis in the pericardial cavity, was heterogeneous which was constructed of a mixture of parenchyma and cyst. The mass was in contiguity with both left atrium and left ventricle; however, no invasion to the parietal and visceral pericardium, even to myocardium was found. The pericardium was thickened with a lot of pericardial effusion. From the above-mentioned FIESTA findings, the large tumour size, the heterogeneity of the tumour, the presence of intratumoral cystic lesions, the pericardial



**Figure 2** FIESTA MRI shows a large heterogeneous mass which is constructed of a mixture of parenchyma and cyst in the pericardial cavity and shows pericardial thickness with a large amount of pericardial effusion.

thickness with a large amount of pericardial effusion and the enhanced signal intensity (image not shown), we strongly suggested that the mass was a malignant tumour (ie, a sarcoma),<sup>2 3</sup> and not a benign tumour or abscess, although positron emission tomography or cytology of pericardial effusion showed no malignant findings. Then, a thoracotomy was performed for a definite diagnosis. The tumour was originated from peripheral nerve of peripulmonary artery, and tumour itself was destructed in the pericardial cavity. Moreover, intraoperative frozen section was with malignant cells, therefore an extensive resection was performed under a cardiopulmonary bypass. The final pathological diagnosis was MPNST. Since we were concerned about metastasis, post-operative chemotherapy was given for 6 months, and no recurrence has been found as of today, that is 1 year after tumour resection.

Definite diagnosis of MPNST is difficult by means of non-invasive modality only; however, MRI may



**Figure 1** Axial CT shows a heterogeneous mass localised in the pericardial cavity.

### Learning points

- ▶ Malignant peripheral nerve sheath tumour could be found in the pericardial cavity as in this case.
- ▶ MRI will give us a better suggestion than CT on the diagnosis of malignant peripheral nerve sheath tumour.



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lead us to predict whether the mass is a malignant tumour and lead us to decide whether to perform early surgical intervention as in this case. MPNST is said to be with poor prognosis, so it is very important to pay attention whenever we find such a large heterogeneous mass at any region with MRI for early therapeutic intervention.

**Contributors** RE, TT, KO and KI equally contributed to the diagnosis and to the decision-making of the early surgical intervention on this patient. RE wrote this manuscript and TT also contributed to the writing of this manuscript as a supervisor.

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