

## Images in Cardiovascular Medicine



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### Conflict of Interest

The authors have no financial conflicts of interest.

# Recurrent Pericardial and Pleural Effusion due to Pericardial Pleomorphic Mesothelioma

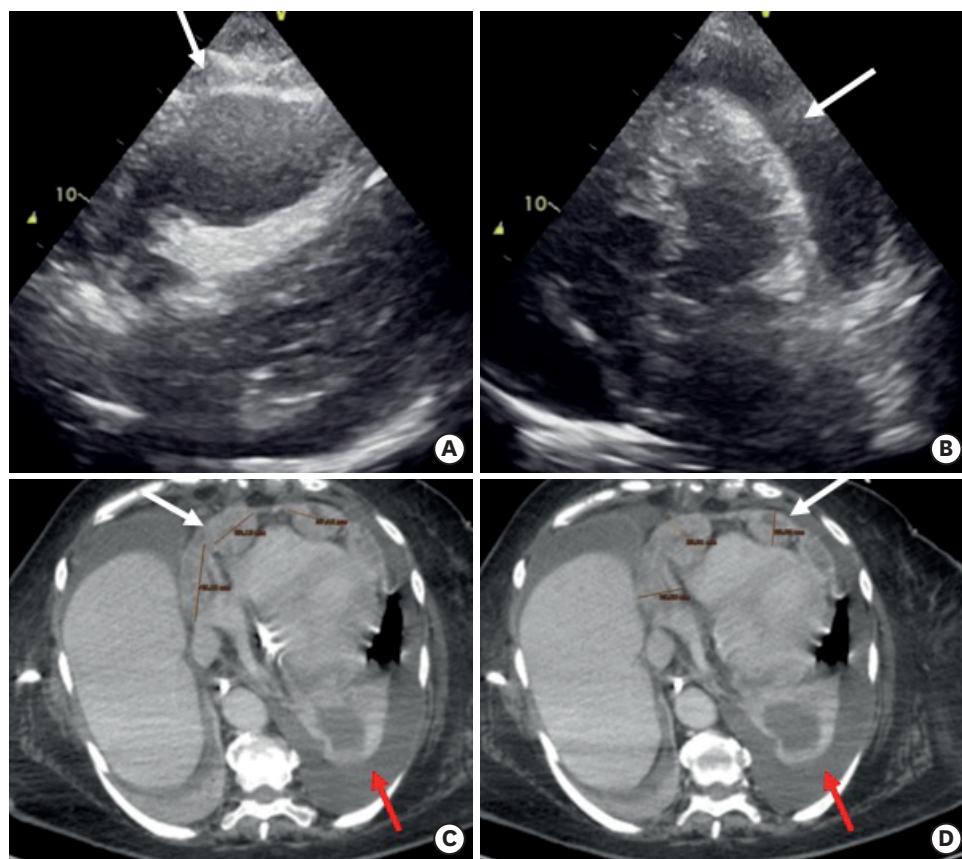
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The 73-year-old woman, arterial hypertension and diabetic, was transferred to our hospital due to chest pain, nausea and fibrinolysed left pulmonary embolism. She was unstable hemodynamic and echocardiogram showed severe pericardial effusion (**Figure 1A and B**, white arrow) and performing pericardiocentesis. She was worsening with bilateral pleural effusion so bilateral endotherapeutic drainage tubes were placed, with clinical improvement.

After 96 hours, recurrent pericardial and bilateral pleural effusion was detected. The echocardiogram confirmed severe pericardial effusion compressing the apex and right



**Figure 1.** (A, B) Echocardiogram images: severe pericardial effusion with compressing the apex and the right ventricle (white arrows). (C, D) Computerized tomography images: nodular pericardium with diameter maximum of 38 mm (white arrows) and pericardial and pleural effusion (red arrows).

# Data Sharing Statement

The data generated in this study is available from the corresponding author(s) upon reasonable request.

# Author Contributions

Conceptualization: Segura-Méndez B, Fuentes-Martín Á; Investigation: Fuentes-Martín Á; Supervision: Loucel M, Soro-García J, Cilleruelo Á; Validation: Loucel M, Soro-García J; Visualization: Segura-Méndez B, Loucel M; Writing - original draft: Segura-Méndez B; Writing - review & editing: Segura-Méndez B, Loucel M.

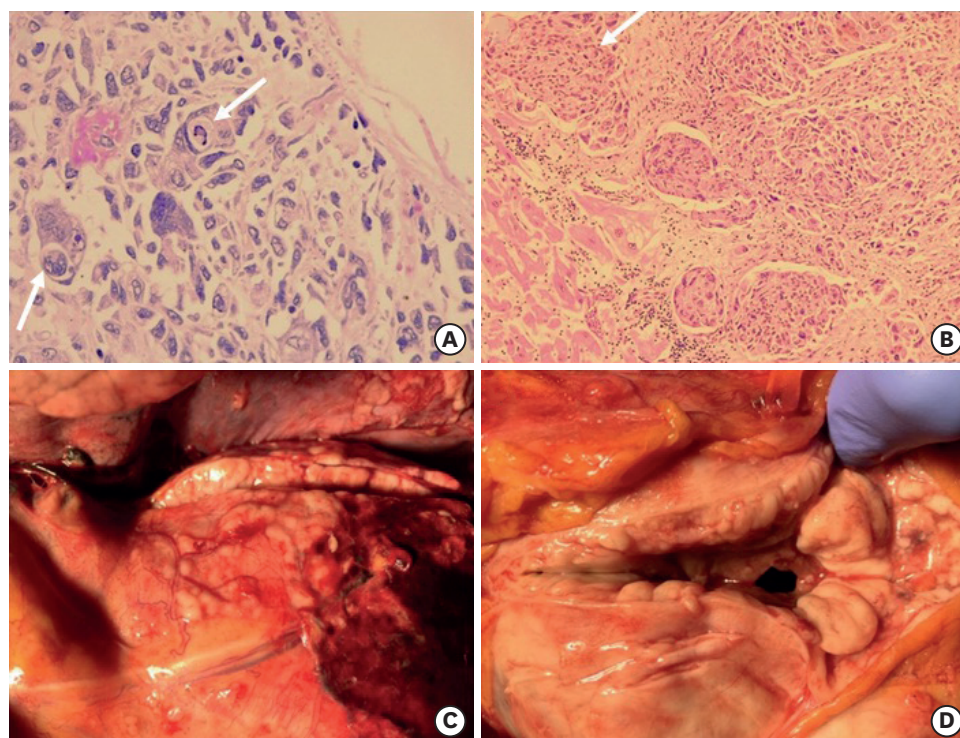
ventricle. Computed tomography showed a nodular thickening pericardium, like hyperdense nodules, with malignant appearance (**Figure 1C and D**, white arrow), and bilateral pleural effusion (**Figure 1C and D**, red arrow).

A left videothoracoscopy was showed a nodular, thickening pericardium. A biopsy and a pleuro-pericardial window were performed by videothoracoscopy. However, the patient presented refractory multiorgan failure and death in the postoperative period.

The pathologic examination demonstrated a primary pericardial pleomorphic mesothelioma with pleomorphic cells infiltrating the pericardium (**Figure 2A**, white arrows) and myocardial invasion with lymphatic spread (**Figure 2B**). It expressed vimentin, EMA, cytokeratin, AF1-3, cytokeratin-7. Cytologist was negative. Autopsy showed pericardial and myocardial invasion and thickening of both of them (**Figure 2C and D**).

Cardiac tumors are infrequent, with the incidence of pericardial mesothelioma being less than 0.002%. Pericardial pleomorphic mesothelioma is a very rare entity, related to exposure to asbestos, radiation or tuberculosis, very aggressive and with a poor prognosis. Recurrent effusion and thickening nodular pericardium in the iconography are signs from it. Non-invasive techniques aren't effective in the diagnosis of pericardial mesothelioma, requiring an immunohistochemical study of the lesion. Videothoracoscopy allows a direct biopsy of the lesion, including its excision through a minimally invasive access.

We have the familiar's consent to use the images.



**Figure 2.** (A) Pathologic examination zoom x40: pericardium with infiltration of pleomorphic cells is observed (white arrows). (B) Pathologic examination: in the upper right quadrant pericardium with infiltration of pleomorphic cells (white arrow) with progressive invasion of myocardial tissue in the lower left quadrant, in the central area there is lymphatic dissemination. (C, D) Autopsy showed invasion and thickening of the pericardium and myocardium.