

Huge pneumopericardium with irreversible dilatation of the pericardial sac after cardiac tamponade

Rozległa odma osierdziowa z nieodwracalnym poszerzeniem jamy osierdzia po odbarczeniu tamponady

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An 86-year-old female patient was referred to the Department of Cardiology in order to drain a pericardial effusion (Fig. 1). The diagnosis had been made in a suburban general hospital by echocardiography confirmed by computed tomography (CT) (Fig. 2). The maximum thickness of fluid layer was 63 mm. On admission, our patient reported significant peripheral oedema and difficulty in swallowing associated with periodic vomiting for two years. For the past two months, she had suffered from breathlessness, even after slight effort or eating, which intensified in the evening. Those symptoms progressively worsened. Only oedema of the limbs decreased after pharmacological treatment for heart failure. On admission, the jugular veins were distended up to 1.5 cm. The manubrium and sternal angle were protuberant. The apex beat was diffuse, hyperdynamic and displaced laterally and inferiorly. Cardiac rhythm was irregular, average heart rate was 70/min and blood pressure was 167/52 mm Hg. Heart sounds were loud and muffled with a systolic-diastolic murmur over the aortic valve. The liver was enlarged to 4 cm below the costal arch. There was no swelling of the lower limbs. An electrocardiogram showed atrial fibrillation and features of left ventricular (LV) hypertrophy (despite massive pericardial effusion, the QRS complex amplitude was not diminished). On echocardiography, up to 40 mm of pericardial fluid was seen around the whole heart with features of right heart compression. Moreover, there was stenosis and insufficiency of the aortic valve, as well as cardiac hypertrophy of all walls, with the LV wall slightly enlarged. The inferior wall was hypokinetic and the ejection fraction was about 55%. We also observed 'swinging heart': features of right heart collapse, intermediate movement of the interventricular septum and moderate pulmonary hypertension. A pericardiocentesis was performed through a subxiphoid approach, removing 1,500 mL of serous fluid. Laboratory tests of the collected material excluded a bacterial (also TBC), viral or malignant aetiology. After ten hours, on physical examination, a splash was heard on auscultation and tympanic sounds on percussion. Echocardiography revealed numerous artefacts from the pericardium and swirly air bubbles in the pericardial fluid (up to 14 mm). Routine chest X-ray (Fig. 3) showed the presence of air and fluid in the pericardial sac, confirmed by CT (Fig. 4). Nonetheless, the patient's condition significantly improved from the time of the pericardiocentesis. We noted an increasing volume of fluid without reduction of pericardial emphysema. The patient was still stable but in the absence of improvement, a pericardial suction drain 32 F was inserted by a cardiac surgeon. In cardiac magnetic resonance (CMR) imaging performed seven days after the operation, pericardial emphysema and 4–5 mm thick inflexible pericardium with symmetrical contrast enhancement was noted, possibly indicating long-term pericarditis. Amyloidosis was excluded. The heart moved to a posterior position, towards the area previously occupied by pericardial fluid. After CMR, drainage was removed. The patient was discharged in stable condition with a diagnosis of chronic exudative pericarditis and heart failure with a recommendation for further cardiac monitoring including echocardiography. X-ray performed on the day of discharge (Fig. 5).



Figure 1. X-ray performed at admission



Figure 2. Chest computed tomography performed after admission X-ray



Figure 3. Chest X-ray taken after pericardiocentesis. The pericardium separated from the heart by the air present in pericardial sac and fluid levels

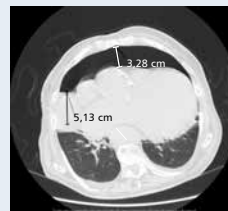


Figure 4. Computed tomography performed after pericardiocentesis. The air separates the pericardium lamina



Figure 5. Chest X-ray performed on the day of discharge

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