Case report

Pseudoaneurysm of the left ventricle after isolated pericarditis and Staphylococcus aureus septicemia

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Abstract

Left ventricular pseudoaneurysm after isolated pericarditis as a result of Staphylococcal septicemia is very rare. A case of a very young patient is described. Diagnosis is made by echocardiography. Immediate surgical resection of the pseudoaneurysm is the therapy of choice.

Keywords: Left ventricular pseudoaneurysm; Pericarditis; Staphylococcus aureus septicemia; Surgical treatment

1. Introduction

Pseudoaneurysm of the left ventricle is an unusual entity. Most pseudoaneurysms develop following myocardial infarction, in association with trauma or after cardiac surgery [1]. The occurrence of left ventricular pseudoaneurysms after isolated pericarditis as a result of Staphylococcal septicemia is an absolute rarity. A few adult cases have been reported in literature, but no cases in children [2–4]. The present report describes a case of a pseudoaneurysm of the left ventricle in a 2-year-old girl with pericarditis due to Staphylococcus aureus septicemia. The left ventricular pseudoaneurysm was successfully resected.

2. Case report

A 2-year-old-girl was referred to a local hospital with recent chicken-pox, fever, chills, cough and tachypnea. She had no medical history. The plain chest X-ray revealed bilateral bronchopneumonia. Cardiac examination was unremarkable. C-reactive protein values were 300 µg/l and Staphylococcus aureus was identified in blood cultures. Treatment consisted of intravenous flucloxacilline and gentamicine. After a few days the patients condition deteriorated and the repeat chest X-ray showed massive cardiac enlargement. Pericarditis was suspected and the patient was referred to our clinic. At admittance there was tachypnoe and tachycardia with weak heart sounds, paradox pulse and enlarged liver 5 cm below the costal margin. Echographic examination revealed pericardial effusion and signs of tamponade, but no signs of endocarditis. Through a subxiphoidal incision the pericardium was opened. The pericardium was thickened and 140 ml of serofibrinous fluid was evacuated. However, cultures of the pericardial fluid were sterile. The condition of the patient improved, but the fever remained and the initial antibiotics were continued. Ten days after the evacuation of the pericardial fluid echocardiography revealed a large pseudoaneurysm of the left ventricle (Fig. 1).

Electrocardiography and coronary angiography showed no abnormalities. A few hours later the patient underwent emergency cardiac surgery. During surgery using extracorporeal circulation a 3 × 2 cm aneurysmal sac communicating with the left ventricle was resected. The perforation of the left ventricle was closed directly with running suture. The post-operative course was uneventful and the girl remains asymptomatic ever since. Echocardiography 3
months after surgery showed no residual abnormalities. Three months after surgery our patient was fully recovered. At 6 months follow-up the patient is doing well.

3. Discussion

Left ventricular pseudoaneurysm after isolated pericardi-
tis as result of Staphylococcal septicemia is very rare. Only a hand full of adult cases have been reported in literature [2–4]. The incidence is unknown. Pseudoaneurysms develop from either a non-transmural or a transmural rupture of the myocardium which usually results in acute hemothorax, tamponade and sudden death [5]. However if the pericardium remains intact and fibrous adhesions are present, as is the case in pericarditis, the rupture can be contained by the inflamed and thickened pericardium. However, the wall of the pseudoaneurysm is composed of inflamed pericardium and fibrous tissue, often with mural thrombus, making it prone to rupture [5]. We assume that the pericardial inflammation in our patient spread to the myocardium which resulted in a rupture contained by the thickened pericardium [2,4]. Rupture of the myocardial wall forming a pseudoaneurysm can also be the result of bacterial endocarditis or multiple myocardial abscesses, but echocardiography did not indicate these in our case [2]. Diagnosis can be made by echocardiography as described in our patient. Echocardiography demonstrates the blood flow in the pseudoaneurysmal sac (Fig. 2). Considering the high risk of expansion and rupture of the pseudoaneurysm, treatment consists of immediate surgical resection of the pseudoaneurysm after the diagnosis is made [2,4,5]. In summary, we described a very young patient with a pseudoaneurysm of the left ventricle after isolated pericarditis as result of staphylococcus septicemia. Diagnosis was made by echocardiography. Immediate surgical resection of the pseudoaneurysm is the therapy of choice. Three months after surgical treatment the patient was fully recovered. At 6 months follow-up the patient is doing well.

References