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IMAGES IN CARDIOLOGY

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Bridge to recovery in a patient with Churg–Strauss myocarditis by long-term percutaneous support with microaxial blood pump

Allergic granulomatous angiitis depicts the pathological basis of the so-called Churg–Strauss syndrome, an autoimmune process characterised by asthma or allergic rhinitis, symptomatic vasculitis and prominent eosinophilia. The myocardium is affected in two-thirds of cases, associated with a mortality rate >50% when the lung or gastro-intestinum is afflicted.

We report the case of a 25-year-old male patient who was referred to our institution owing to dyspnoea and angina pectoris. Chest radiography showed bilateral alveolar infiltrates. The admission nuclear magnetic resonance scan showed a diffuse left ventricular ejection fraction (LVEF) of 30%, and diffuse late enhancement of myocardium 15 minutes after

contrast dye (arrow, panel A). Besides increased troponin levels there was an eosinophilia of 50% in the blood cell count. Within the next 2 days, the LVEF worsened to <10%. Endomyocardial and colon biopsies showed eosinophilic granulomas, confirming the diagnosis of Churg–Strauss syndrome. Treatment comprising methyl prednisolone and cyclophosphamide was started. Owing to increasing blood lactate levels despite inotropic medication, we decided to implant an intra-aortic balloon pump (IABP). Organ hypoperfusion worsened further, as indicated by increasing lactate levels. The patient was intubated and mechanically ventilated, with development of pulmonary oedema (Killip class IV).

A microaxial blood pump (Impella Recover LP 2.5) was implanted through the left femoral artery after removal of the IABP (panel B). We set the pump speed to maximum, generating a blood flow of 2.5 l/min from the left ventricle to the ascending aorta. Blood lactate concentration decreased from 8.0 mmol/l to 1.4 mmol/l within 12 hours of circulatory support.

We were able to wean the patient from the microaxial blood pump within 6 days after implantation. No signs of leg ischaemia occurred during that period. The patient was discharged from the intensive care unit after 13 days, and from hospital after another 3 weeks, with an LVEF of 45%. This case demonstrates the ability of microaxial blood pumps to support patients with severe cardiogenic shock sufficiently if other measures, such as inotropic drugs and IABP, fail.

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