Fulminant heart failure due to giant cell myocarditis affecting the left ventricle

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Case report

A 56-year-old woman, previously healthy, was hospitalized after an episode of ventricular tachycardia (VT) in the course of infection. In view of the fulminant course of heart failure the patient was connected to an extracorporeal membrane oxygenation (ECMO) system. After 3 weeks of treatment with ECMO the patient received a heart transplant. A histopathological examination of the tissues of the explanted heart revealed giant cell myocarditis. The patient was treated with immunosuppression based on induction therapy followed by a standard regimen with steroids. Currently, the patient remains in good general condition with a left ventricular ejection fraction of 60%.

Key words: fulminant heart failure, giant cell myocarditis.

Abstract

A 56-year-old woman, previously healthy, was hospitalized after an episode of ventricular tachycardia in the course of infection. In view of the fulminant course of heart failure the patient was connected to an extracorporeal membrane oxygenation (ECMO) system. After 3 weeks of treatment with ECMO the patient received a heart transplant. A histopathological examination of the tissues of the explanted heart revealed giant cell myocarditis. The patient was treated with immunosuppression based on induction therapy followed by a standard regimen with steroids. Currently, the patient remains in good general condition with a left ventricular ejection fraction of 60%.
Discussion

Giant cell myocarditis is a rare disease with a poor prognosis [3, 4]. It leads to progressive congestive heart failure, with ventricular arrhythmias not treatable by pharmacology or ablation. Some patients have symptoms resembling acute myocardial infarction or complete heart block. The diagnosis is made on the basis of the histological image.

In that case the heart biopsy should be taken earlier, although it is not always crucial. Due to a lack of strong signs of inflammation or any other reason explaining the fulminant course, the wrong diagnosis of tachyarrhythmic cardiomyopathy was made. It was followed by first-

Figure 1. Holter ECG: atrial fibrillation with fast ventricular rate

Figure 2. ECG: arrows show: sinus beats (SR), supraventricular beats (SB), episodes of non-sustained VT (nsVT)

Figure 3. Histopathological examination: specimens from the wall of the left ventricle and interventricular septum — image of giant cell (GC) myocarditis with areas of fresh and degradable organization with the formation of fibrous scar (FS) tissue
step treatment with implantation of a pacemaker. During that surgery electrical parameters in the septum were not fully proper because of giant cells in the left ventricle and septum. In the case of lack of a left ventricle assist device (LVAD) only ECMO before heart transplantation can help.

Ninety percent of patients die within a few weeks or have a heart transplantation, which is the best chance to save the patient’s life. The disease process develops in around 30% of grafted hearts and it can be stopped by immunosuppressants including steroids.

Conflict of interest

The authors declare no conflict of interest.

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