



# Combination of echocardiography and emergency endomyocardial biopsy for suspected myocarditis in the cardiovascular emergency medical care

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Received: 17 December 2020 / Revised: 10 February 2021 / Accepted: 22 February 2021  
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## Abstract

Myocarditis is a fatal inflammatory disease of myocardium, diagnosed with clinical and histopathological findings by endomyocardial biopsy (EMB). Myocarditis has a variety of clinical presentations and a dynamic and sometimes rapid process of severity. Echocardiography plays an important role in the management of myocarditis because it has noninvasiveness and portability. Once acute myocarditis is suspected by an echocardiography, pathological information should be required as early as possible. In our cardiovascular center, emergency EMB suspecting myocarditis was performed in 19 cases (1.3%) among consecutive 1469 cases ( $70.1 \pm 12.6$  years old, male 67.5%) undergoing emergency coronary angiograms from April 2014 to September 2017. Hematoxylin–eosin stain of the biopsy specimens were prepared with microwave-accelerated histoprocessing within 3–5 hours after EMB for rapid pathological diagnosis of myocarditis. We reviewed the value of emergency echo-EMB combination leading to the early decision making of intensive care, corticosteroids and proper mechanical circulatory support prior to the possible sudden collapse in patients with myocarditis.

**Keywords** Myocarditis · Echocardiography · Endomyocardial biopsy · Cardiovascular emergency