Successful rescue of intractable VT after primary coronary intervention of very late stent thrombosis by extracorporeal membrane oxygenation

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Extracorporeal membrane oxygenation (ECMO) is a form of percutaneous cardiopulmonary support which can deliver reliable temporary circulatory support not only for severe heart failure but also refractory ventricular arrhythmia. We report the case of a 47-year-old male with intractable ventricular tachycardia who was successfully resuscitated using ECMO. The patient had a history of myocardial infarction, which was treated with percutaneous coronary intervention (PCI) 2 years previously. After maintenance of dual antiplatelet therapy over 22 months, clopidogrel was stopped. Two weeks later after discontinuation of clopidogrel, he developed acute myocardial infarction due to very late stent thrombosis. Primary PCI was done. Within 48 hours after successful PCI, ventricular tachycardia (VT) with hemodynamic instability was developed. Despite of multiple successful cardioversions, VT was recurrently developed. With transcutaneous cardioversion, amiodarone and lidocaine were maintained but they were not effective. The VT might be secondary to myocardial infarction or reperfusion injury. We performed over one hundred times of cardioversions within the 24 hours. We diagnosed him as intractable VT and decided the ECMO application for circulatory support. The ECMO was maintained for 7 days. Under the ECMO support, VT was not developed and his vital sign turned stable. His left ventricular ejection fraction improved from 31% to 35% after 7-days ECMO support. After weaning of ECMO support, he remained hemodynamically stable. He was discharged without any significant problems. He remains symptom-free on regular follow-up. Cardiogenic shock due to intractable VT could be an indication for ECMO support. Immediate establishment of ECMO provides circulatory support for spontaneous correction of reversible causes of sustained VT.

Aortic Regurgitation from Right Coronary Cusp Prolapse Associated with Ventricular Septal Defect in Adult

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Ventricular septal defect is most common type of congenital heart disease. It can be associated with various complication such as pulmonary stenosis, pulmonary hypertension, aortic regurgitation and right ventricular outlet obstruction. Aortic regurgitation complicating VSD is more common in young man. Aortic regurgitation is an acquired lesion seen more with subarterial defects than with perimembranous defects. It results from deficiency or hypoplasia of the conal septum that leads to abnormal apposition in diastole and prolapse of the poorly supported noncoronary or right coronary cusp through the VSD into the right ventricle. This results in distortion of the aortic valve and progressive aortic regurgitation. Aortic regurgitation often increases in severity with age and indicates a worse prognosis. So appropriate timing of surgical repair is important. Echocardiography is the noninvasive choice of diagnostic tool with an excellent detection rate. It also provides accurate hemodynamic assessment and can evaluate severity of aortic regurgitation. We experienced the aortic regurgitation in patient, who was performed surgical repair successfully, with right coronary cusp prolapse complicating subarterial type VSD thorough echocardiographic evaluation.

Key words: Ventricular septal defect, Aortic valve prolapse, Aortic regurgitation