Recurrent occurrence of ventricular tachycardia after extubation undergoing bile duct resection, Roux-en-Y hepaticojejunostomy in young patient

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Introduction: Arrhythmia is a common complication that can occur during surgery and is sometimes a serious complication that can be life threatening. Arrhythmia occurring during surgery are mostly benign and improve without special treatment, but sometimes life threatening and poor vital signs may require immediate antiarrhythmic or electrotherapy. In some cases, permanent arrhythmia may require continued treatment after surgery.

Methods: A 28-year-old man(height 156.3 cm, weight 60.5 kg) undergoing bile duct resection, Roux-en-Y hepaticojejunostomy due to cholelithiasis with cholecystitis, choledocholithiasis. He diagnosed mental retardation level 2. Pre-operation laboratory test is normal except liver function test(AST 64, ALT 141). And electrocardiography shows heart rate 57 bpm, sinus rhythm, first degree AV block and echocardiography shows LVEF 67%, normal echo. When we prepared extubation after finishing operation, oxygen saturation was low at 85%. So we started manual ventilation for oxygenation and saturation was increased at 100%. When we extubated endotracheal tube, his ECG changed NSR to monomorphic VT. Firstly we considered that is PSVT and infused adenosine 6mg twice and 12mg once. But arrhythmia was continuous and vital sign changed unstable. Finally we performed reintubation and defibrillated at 200J. After defibrillation, arrhythmia converted normal sinus rhythm. We transferred the patient to the ICU and evaluated further to see if the patient had heart problems.

Result: The patient attempted extubation several times in ICU, but failed with repeated VT every time. We tried echocardiography after operation and consulted with a cardiologist. The result of echocardiography is normal. The cardiologist concluded that arrhythmia is idiopathic VT due to catecholamine surge, and recommended to use a esmolol. Finally we tried to extubate after sedation using dexmedetomidine and beta-blocker, and succeeded.

Conclusion: During anesthesia, a wide variety of arrhythmias can occur and VT is one of the arrhythmias that can be life threatening and requires immediate attention. Ventricular tachycardia during anesthesia can be caused by various causes. We struggled to find a cause of VT in the patient. But there was no structural and functional abnormalities in the patient's heart. His ECG pattern is a monomorphic VT with LBBB. Moreover VT usually occurs in irritating conditions such as light anesthesia or extubation. So we concluded that patients VT pattern is idiopathic VT. Idiopathic VT can occur in young patients without underlying disease. Therefore, an anesthesiologist should be familiar with the diagnosis and treatment of an idiopathic VT, so that if a monomorphic VT occurs during anesthesia in a young healthy patient, it should be able to be treated appropriately without embarrassment.