A Case of Childhood Cerebral Infarction Caused by Supraventricular Tachycardia and Cured with Thrombectomy

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Abstract

Cerebral infarction in children is often caused by vascular malformations such as moyamoya disease. Cerebral infarction after tachycardia is rare in children. We report a pediatric case of cerebral infarction after episodes of paroxysmal supraventricular tachycardia (PSVT) due to Wolff-Parkinson-White (WPW) syndrome, that responded to thrombus retrieval therapy. The patient was a healthy 6-year-old boy who had abdominal pain and vomiting for 6 days. He was diagnosed with WPW syndrome as he had PSVT with a pulse rate of 280 beats/min and delta wave on electrocardiography of sinus rhythm after successful antiarrhythmic therapy. Hepatomegaly was found on abdominal examination. Blood tests showed elevated BUN and features suggestive activation of fibrinolysis and elevated BNP. Chest X-ray showed cardiac dilatation (cardiothoracic ratio 67%) and pleural effusion, and echocardiography showed low systolic cardiac function, which was indicative of heart failure. On the next day of admission, impaired consciousness and right hemiparesis suddenly appeared. Brain magnetic resonance imaging revealed a cerebral infarct in the left middle cerebral artery region; therefore, the neurosurgeons were consulted, and thrombus retrieval therapy was performed within 4 hours of the onset of cerebral infarction. After the procedure, the right hemiparesis improved, and the patient was discharged without any sequelae 18 days after the onset of symptom. Cerebral infarction caused by PSVT is rare in children. It is important to know that palpitations are not easily recognized in younger children and that the duration of PSVT is reported to be 5 - 7 days. Although guidelines for thrombus retrieval therapy in children with cerebral infarction are not clear, early thrombus retrieval therapy at the onset of cardiogenic cerebral infarction may have favorable outcome and should be considered promptly.

Key words: WPW syndrome, PSVT, Heart failure, Cerebral infarction, Thrombus retrieval therapy