



# A case of resistant tachycardia in a child with febrile status epilepticus

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A 5-year-old girl with no medical history presented at the emergency department with febrile status epilepticus (FSE). On arrival, she presented with a generalized tonic seizure and significant tachycardia (228 bpm). The generalized tonic seizure resolved following the administration of intranasal (0.3 mg/kg)/intravenous (0.2 mg/kg) midazolam and fosphenytoin (22.5 mg/kg), although the tachycardia persisted. A 12-lead electrocardiogram revealed narrow QRS regular tachycardia (Fig. 1), and a pediatric cardiologist was consulted. Intravenous adenosine (0.2 mg/kg) was administered and a definitive diagnosis of atrial tachycardia (AT) was made (Fig. 2). The patient was admitted to the pediatric intensive care unit.

AT is a relatively common arrhythmia in children.<sup>1</sup> The electrocardiogram shows an abnormal morphology of P waves, narrow QRS, and a fluctuating RR interval. The abnormal P wave of patients with AT may not be obvious, and the administration of adenosine is effective for diagnosis: the electrocardiogram demonstrates atrioventricular block, with a constant P wave as a result of the inhibition of atrioventricular conduction by adenosine and an increase in atrial automaticity.

Tachycardia is seen in almost all cases of FSE caused by an underlying fever, infection, dehydration, or the seizure itself. Furthermore, sympathetic nervous function may be stimulated and/or trigger cardiac automaticity in patients with status epilepticus.<sup>2-5</sup> In this case, a diagnosis of AT was made on the basis of persistent tachycardia despite the cessation of the seizures. AT should be considered in patients with FSE if the tachycardia is resistant to anticonvulsive treatment.

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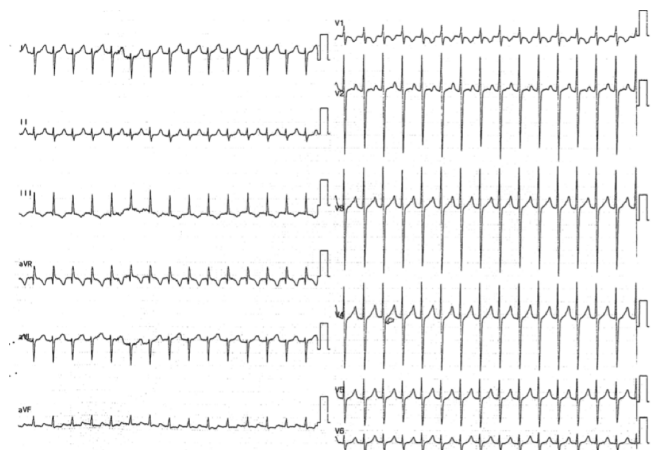
## Capsule Summary

### What is already known

*Tachycardia is seen in almost all cases with febrile status epilepticus caused by an underlying fever, infection, dehydration or the seizure itself.*

### What is new in the current study

*Atrial tachycardia should be considered in patients with febrile status epilepticus if the tachycardia is resistant to anticonvulsive treatment.*



**Fig. 1.** Twelve-lead electrocardiogram showing regular, narrow QRS tachycardia, with a heart rate of 197/min.

## CONFLICT OF INTEREST

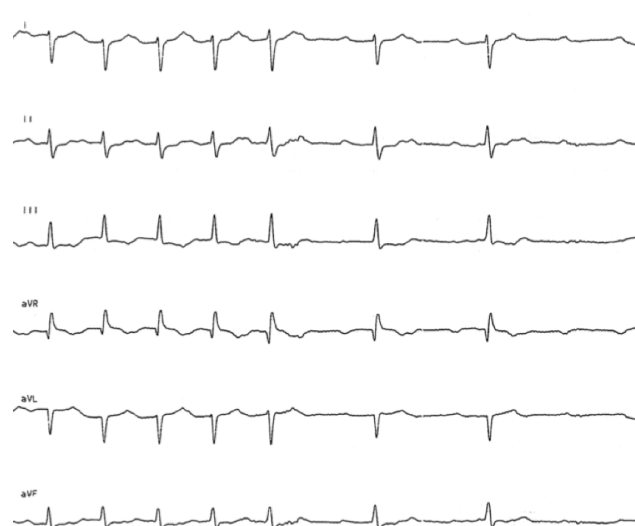
No potential conflict of interest relevant to this article was reported.

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**Fig. 2.** Twelve-lead electrocardiogram obtained during the administration of an intravenous bolus of adenosine, showing uniform P waves and AV block.

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