

Atrioventricular reentrant tachycardia inducing ventricular fibrillation

I just read a paper published in the latest issue of the Journal entitled 'A novel mechanism of sudden infant death syndrome during atrioventricular reentrant tachycardia: a case report' by Dr Mori and coworkers.¹

Although the diagnosis of atrioventricular reentrant tachycardia (AVRT) at a cycle length of 232 ms has been assumed for explaining the regular narrow QRS tachycardia present on all electrocardiogram tracings available, the authors did not provide the electrophysiologic confirmation of this mechanism. However, they wrote that ventricular fibrillation occurred after 12 min of tachycardia while the rate remained unchanged. Did they have the chance to record any atrial activity during this period of time that could have supported the AVRT mechanism?

It would also be of interest to know if there was any relation between the occurrence of tachycardia and the anaesthesia

the baby received or the introduction of the catheters; in addition, what was the patient's haemodynamic tolerance during the 12 min of tachycardia before ventricular fibrillation occurred?

Finally, was a congenital coronary anomaly ruled out? Was genetic testing considered?

In summary, as reported by others,^{2–6} this case confirms that supraventricular tachycardia may exceptionally have a potentially lethal outcome. In addition, in patients with AVRT and manifest WPW syndrome, ventricular fibrillation may develop regardless the antegrade properties of the accessory pathway.

References

- Mori H, Sumitomo N, Tsutsui K, Nabeshima T. A novel mechanism of sudden infant death syndrome during atrioventricular reentrant tachycardia: a case report. *Eur Heart J Case Rep* 2022;**6**:ytac240. doi:10.1093/ehjcr/ytac240
- Hays LJ, Lerman BB, DiMarco JP. Nonventricular arrhythmias as precursors of ventricular fibrillation in patients with out-of-hospital cardiac arrest. *Am Heart J* 1989;**118**:53–57. doi:10.1016/0002-8703(89)90071-9
- Wang YS, Scheinman MM, Chien WW, Cohen TJ, Lesh MD, Griffin JC. Patients with supraventricular tachycardia presenting with aborted sudden death: incidence, mechanism and long-term follow-up. *J Am Coll Cardiol* 1991;**18**:1711–1719. doi:10.1016/0735-1097(91)90508-7
- Timmermans C, Smeets JL, Rodriguez LM, Vrouchos G, van den Dool A, Wellens HJ. Aborted sudden death in the Wolff-Parkinson-White syndrome. *Am J Cardiol* 1995;**76**:492–494. doi:10.1016/S0002-9149(99)80136-2
- Brembilla-Perrot B, Marcon O, Chometon F, Bertrand J, Terrier de la Chaise A, Louis P, Belhakem H, Blangy H, Claudon O, Selton O, Khaldi E, Sadoul N, Beurrier D, Abbas M, Andronache M, Abbas M, Zhang N. Supraventricular tachyarrhythmia as a cause of sudden cardiac arrest. *J Interv Card Electrophysiol* 2006;**16**:97–104. doi:10.1007/s10840-006-9042-4
- Choi NH, Silver ES, Liberman L. Supraventricular tachycardia without preexcitation as a cause of sudden cardiac arrest in pediatric patients. *Pediatr Cardiol* 2022;**43**:218–224. doi:10.1007/s00246-021-02720-z

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