

## ECG Contest

## Response to ECG, March 2018



## Respuesta al ECG de marzo de 2018

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In view of the electrocardiographic and echocardiographic findings, the correct response is option 4. Broad QRS tachycardia with left bundle branch block morphology and left axis deviation is suggestive of a Mahaim-type right accessory pathway (Figure), although this is rare in pediatric patients. The last episode remitted with vagal maneuvers, and it was possible to stop the atrioventricular node or accessory pathway tachycardia, as these tachycardias show atrioventricular nodal properties. The association between Mahaim fibers and the Ebstein anomaly of the tricuspid valve has been described previously.<sup>1,2</sup> The diagnosis was confirmed by electrophysiological study. The pathway was located in the lateral zone of the tricuspid annulus and radiofrequency ablation was successfully performed.

Option 1 can be ruled out because this tachycardia typically corresponds to the inferior axis and is not usually associated with structural heart disease.

Option 2 can be ruled out because this tachycardia does not usually abruptly resolve.

The tachycardia of option 3 usually presents with right bundle branch block and corresponds to the superior axis.

Mahaim fibers show exclusively anterograde decremental conduction and connect the right atrium with the bundle of His or right ventricle, although other sites have been reported.<sup>1</sup>

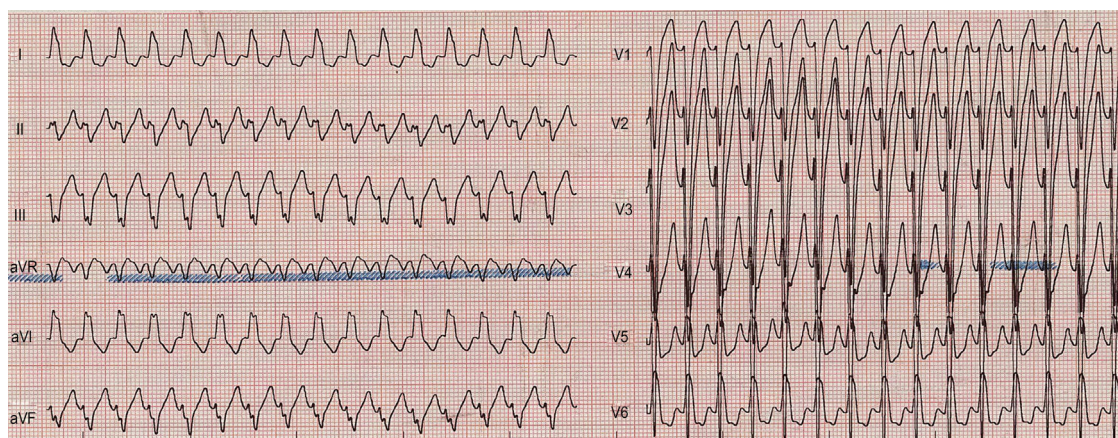


Figure.

## REFERENCES

1. McClelland JH, Wang X, Beckman KJ, et al. Radiofrequency catheter ablation of right atriofascicular (Mahaim) accessory pathways guided by accessory pathway activation potentials. *Circulation*. 1994;89:2655–2666.
2. Ergul Y, Akdeniz C, Kiplapinar N, Tuzcu V. Successful cryoablation in Mahaim tachycardia in a child with Ebstein's anomaly. *Pediatr Cardiol*. 2013;34:1890–1895.

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