

Narrow-QRS Tachycardia: Supraventricular or Fascicular Ventricular Tachycardia?

Taquicardia con QRS estrecho: ¿taquicardia supraventricular o ventricular fascicular?

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These are the images of an electrophysiological study performed to a female patient with history of ischemic left ventricular dysfunction, with an old non-viable inferolateral myocardial infarction and recurrent episodes of narrow-QRS tachycardia.

Figure 1 A shows baseline ECG with sinus rhythm and left bundle branch block. Figure 1 B reveals ventricular complexes with right bundle branch block in couplets and triplets, as well as an episode of narrow-QRS tachycardia with the same polarity as in those previously described, and AV dissociation, suggestive of narrow tachycardia of ventricular origin.

Figure 2 A shows the electrophysiological study performed inserting two catheters into the His bundle area and the high RV using a femoral approach. A sinus beat is observed, as it presents His deflection and normal HV interval, followed by four repetitive monomorphic ventricular responses resembling tachycardia, since the His deflection is not easily recognizable because it is overlapped with the ventricular electrogram, as well as a dissociated atrial activity. A sinus beat with prolonged AH interval caused by hidden conduction is detected following the last ventricular beat.

Figure 2B reveals the induction of ventricular tachycardia of more than 220 ms duration from high RV with two extrastimuli, which stops spontaneously.

The case illustrates posterior fascicular ventricular tachycardia in a female patient with structural heart disease, which is infrequent since it occurs mostly in subjects with a healthy heart. It is characterized by QRS complex duration <140-150 ms and rapid initial forces (RS interval of 60-80 ms), morphology of right bundle branch block, and axis to the left, suggesting that the circuit outflow is in the posteroinferior septum. Capture and fusion beats, as well as atrioventricular dissociation may be present and are suggestive of ventricular tachycardia rather than supraventricular tachycardia. The QRS predominantly positive in L1 indicates that the origin is in the posterior mid-septum, while an isodiphasic or negative QRS implies an apical origin.

Verapamil is the first-line treatment. Due to its excellent prognosis, long-term treatment will depend on the severity and frequency of symptoms. Catheter ablation is recommended when symptoms are severe and drug therapy is ineffective.

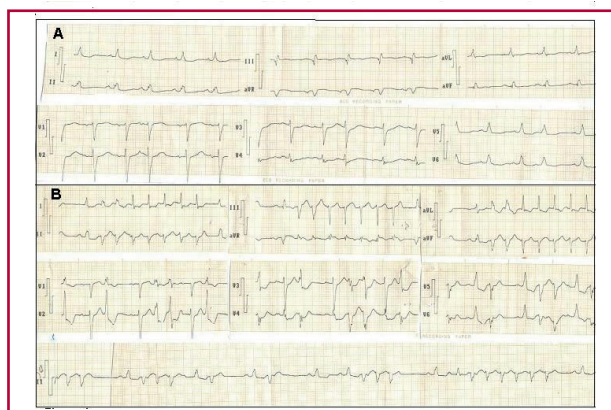


Fig. 1. See text for description

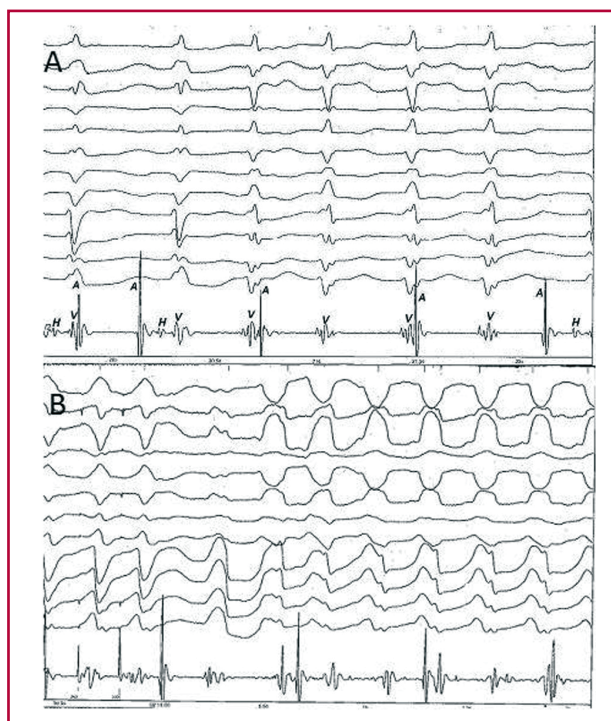


Fig. 2. See text for description

Conflicts of interest

None declared (See authors' conflicts of interest forms on the website/ Supplementary Material).