Electrocardiographic recognition of the epicardial origin of ventricular tachycardias English Spanish and Portuguese

1. ***The pseudo delta wave, ≥34 ms has a sensitivity of 83% and a specificity of 95%,***
2. ***The intrinsicoid deflection time, R-Wave Peak Time or Ventricular Activation Time in V2, ≥85 ms has a sensitivity of 87% and a specificity of 90%,***
3. ***The shortest RS complex an RS complex duration of ≥121 ms has a sensitivity of 76% and a specificity of 85%***

I. ***La presencia de onda pseudo delta, ≥34 ms tiene una sensibilidad del 83% y una especificidad del 95%.***

II. ***Tiempo de deflexión intrinsicóide, R-wave Peak Time o tiempo de activación ventricular en V2, ≥85 ms tiene una sensibilidad del 87% y una especificidad del 90%.***

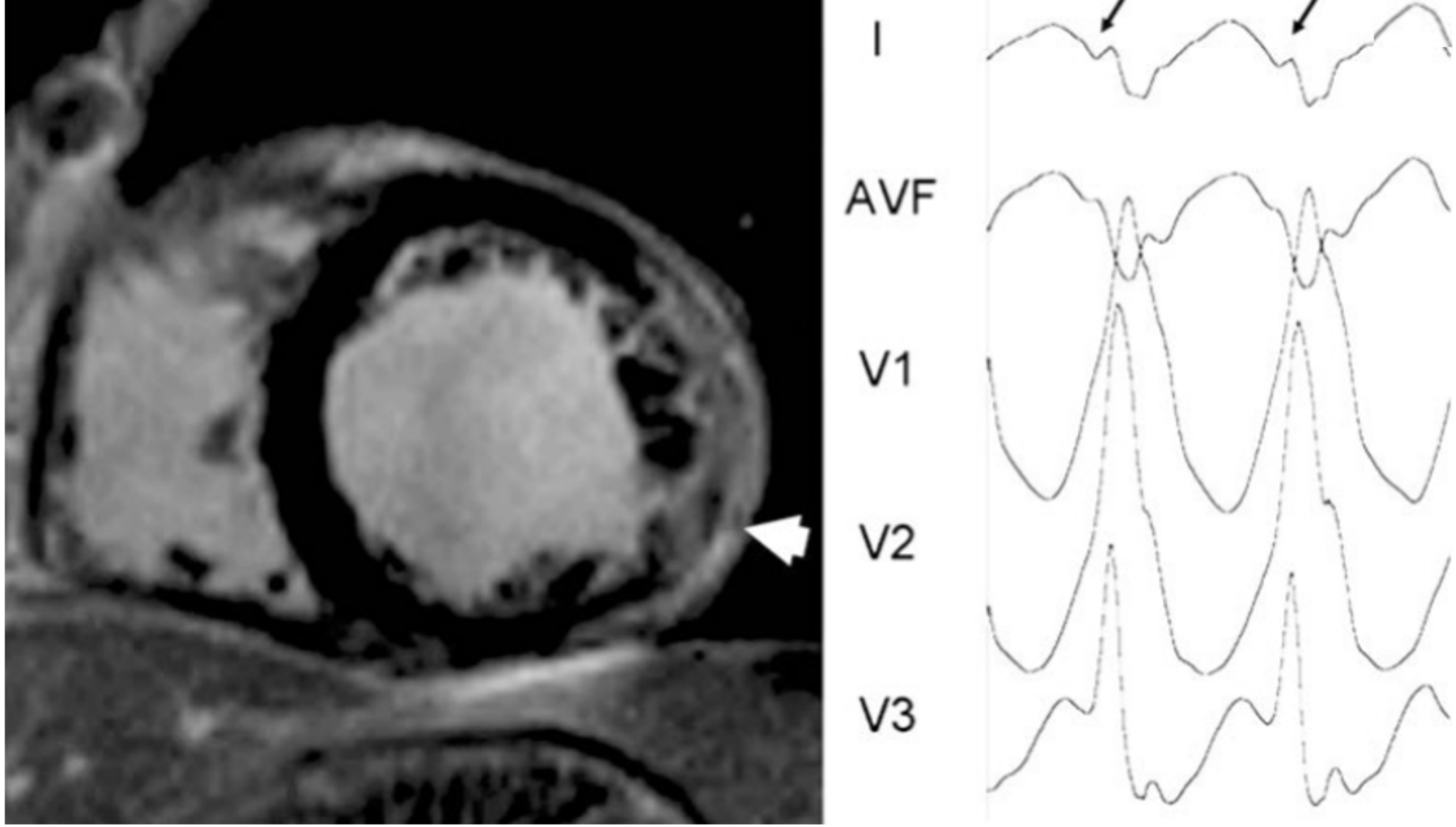
III. ***La duración de intervalo de un complejo RS más corto de ≥121 ms tiene una sensibilidad del 76% y una especificidad del 85%.***

a. ***A presença de uma onda pseudo delta, ≥34 ms tem uma sensibilidade de 83% e uma especificidade de 95%,***

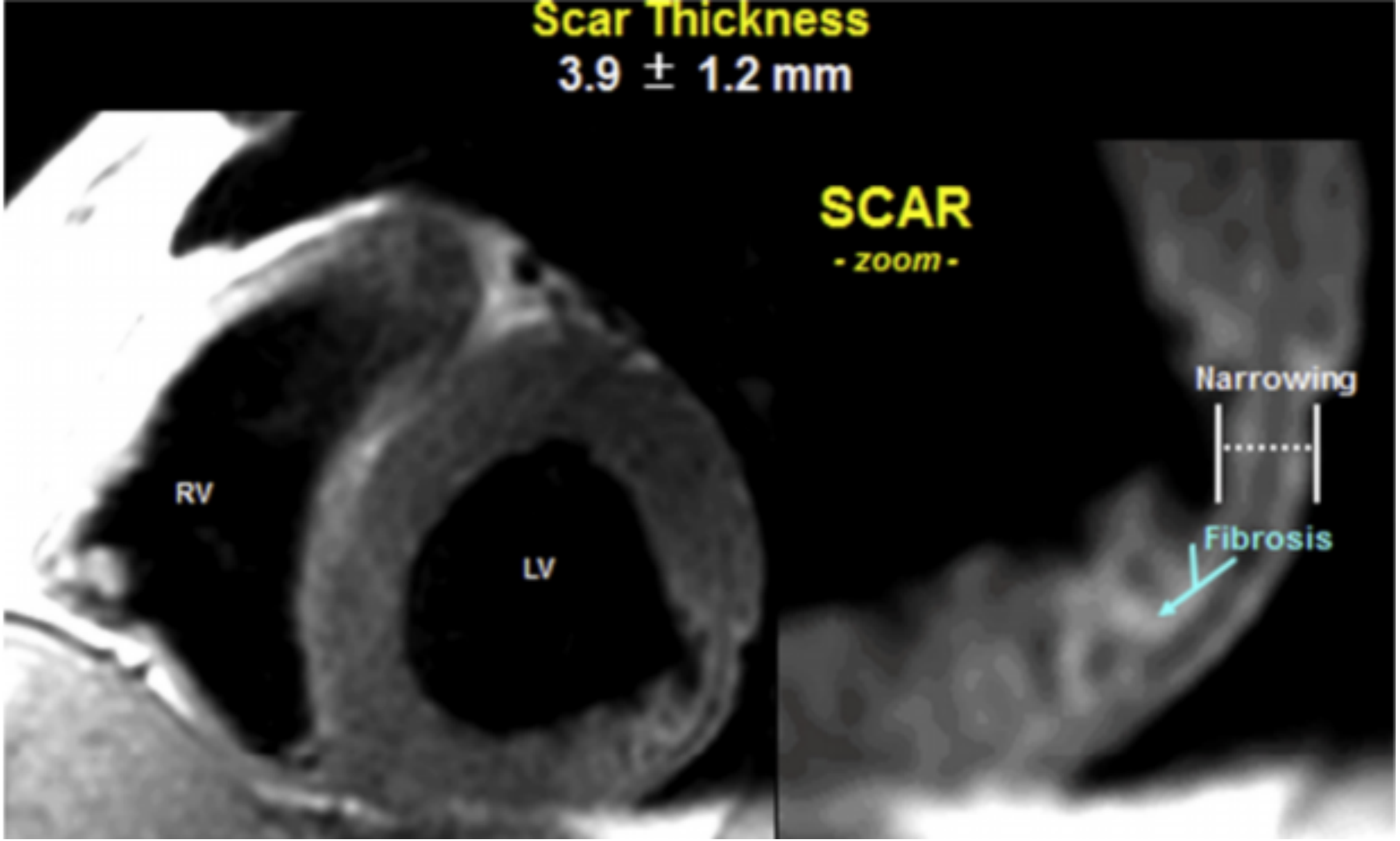
b. ***O tempo de deflexão intrinsecoide, R-Wave-Peak Time ou Tempo de ativação ventricular em V2, ≥85 ms tem uma sensibilidade de 87% e uma especificidade de 90%,***

c. ***O complexo RS mais curto uma duração complexa de RS ≥121 ms tem uma sensibilidade de 76% e uma especificidade de 85%***

1. **Berruezo A1, Mont L, Nava S, Chueca E, Bartholomay E, Brugada J.Electrocardiographic recognition of the epicardial origin of ventricular tachycardias. Circulation. 2004 Apr 20;109(15):1842-7. DOI: 10.1161/01.CIR.0000125525.04081.4B**



Epicardial VT in nonischemic cardiomyopathy. Left panel shows short axis view of contrast-enhanced cardiac magnetic resonance from a patient with non-ischemic cardiomyopathy. An extensive area of hyperenhancement is observed in the lateral wall of the left ventricle (white arrow). Right panel shows the ECG of the clinical VT. Q waves (lead I, black arrows) represent the initial forces of the ventricular activation going from epicardium to endocardium.



CMR image showing an area of scar in the inferolateral left ventricular wall with associated narrowing and fibrosis.

Electrocardiographic criteria proposed for the identification of epicardial VTs.

Reference	Underlying heart disease	Limitations	Technique	ECG criteria
Berruezo A et al2004.	CAD 72% IDCM 28%	RBBB VT	Pace mapping and clinical VT	Pseudodelta wave ≥34 ms Intrinsicoid deflection V2 ≥85 ms Shortest RS complex ≥121 ms
Daniels DV, 2006.	No SHD	Described for LVOT VT	Clinical VT	Precordial maximum deflection index ≥0.55
Bazan V, 2007. **Valles E, 2010**	NICM	Absence of Q wave in sinus rhythm	Pace mapping and clinical VT	Q wave in lead I for anterolateral epi VT Q wave in inferior lead for inferior epi VT
Bazan V. 2006	CAD: 2, IDCM: 4, ARVC: 2, No SHD: 5	No tested in ARVC VTs. Absence of Q wave in sinus rhythm	Pace mapping in RV	Q wave in lead I / QS in lead V2 for anterior epi RV VT Q wave in leads II, III, and aVF is inferior epi RV VT

1. **Berruezo A1, Mont L, Nava S, Chueca E, Bartholomay E, Brugada J.Electrocardiographic recognition of the epicardial origin of ventricular tachycardias. Circulation. 2004 Apr 20;109(15):1842-7. DOI: 10.1161/01.CIR.0000125525.04081.4B**

2. **Daniels DV1, Lu YY, Morton JB, Santucci PA, Akar JG, Green A, Wilber DJ.. Idiopathic epicardial left ventricular tachycardia originating remote from the sinus of Valsalva: electrophysiological characteristics. catheter ablaion.and identification from the 12-lead electrocardiogram. Circulation . 2006; 113(13):1659–66. DOI: 10.1161/CIRCULATIONAHA.105.611640**
3. **Bazan V1, Gerstenfeld EP, Garcia FC, Bala R, Rivas N, Dixit S, Zado E, Callans DJ, Marchlinski FE. Site-specific twelve-lead ECG features to identify an epicardial origin for left ventricular tachycardia in the absence of myocardial infarction.eart Rhythm. 2007 Nov; 4(11):1403-10. DOI: 10.1016/j.hrthm.2007.07.004**
4. **Vallès E1, Bazan V, Marchlinski FE.ECG criteria to identify epicardial ventricular tachycardia in nonischemic cardiomyopathy.Circ Arrhythm Electrophysiol. 2010 Feb;3(1):63-71. doi: 10.1161/CIRCEP.109.859942**
5. **Bazan V1, Bala R, Garcia FC, Sussman JS, Gerstenfeld EP, Dixit S, Callans DJ, Zado E, Marchlinski FE. Daniels DV,, et al. Idiopathic epicardial left ventricular tachycardia originating remote from the sinus of Valsalva: electrophysiological characteristics. catheter ablaion.and identification from the 12-lead electrocardiogram. Circulation . 2006; 113(13):1659–66.**
6. **Fernández-Armenta J, BerruezoA How to Recognize Epicardial Origin of Ventricular Tachycardias?Curr Cardiol Rev. 2014 Aug; 10(3): 246–256.doi: 10.2174/1573403X10666140514103047**
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