

CURSO DE ELECTROCARDIOGRAFÍA BÁSICA

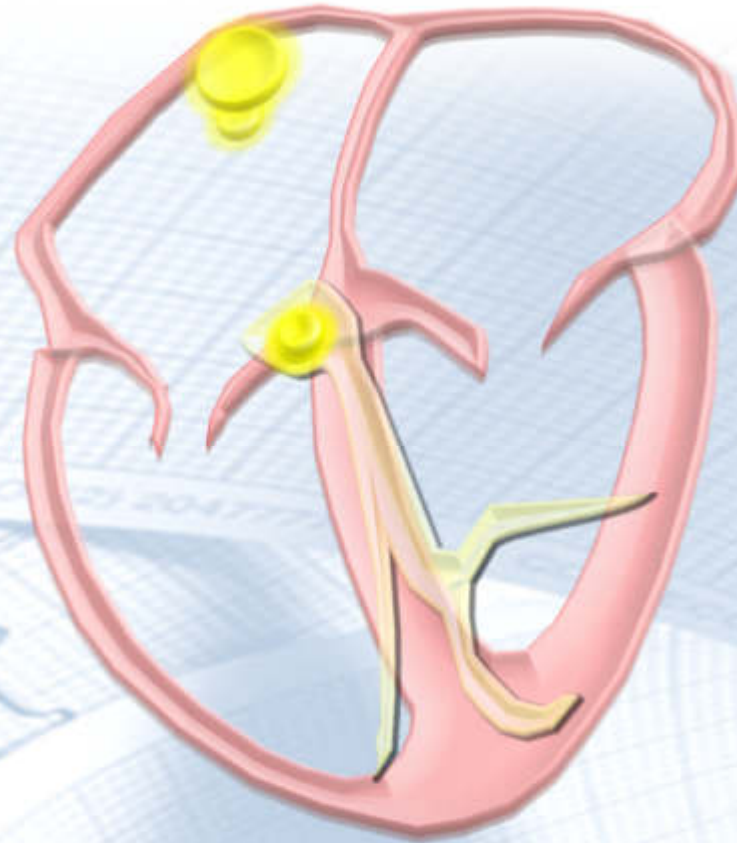
Crecimiento de cavidades

NOVIEMBRE 2022



Víctor M. Puebla Rojo
Servicio de Cardiología

Correlación fenómenos eléctricos-ECG



Crecimiento de cámaras cardíacas

LAS AURÍCULAS



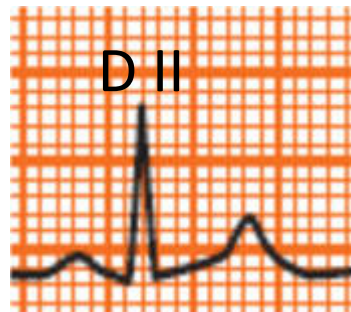
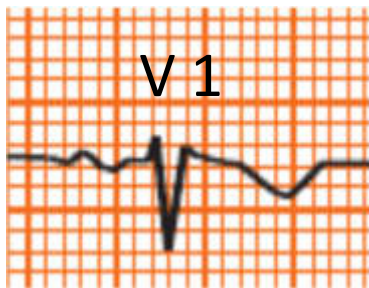
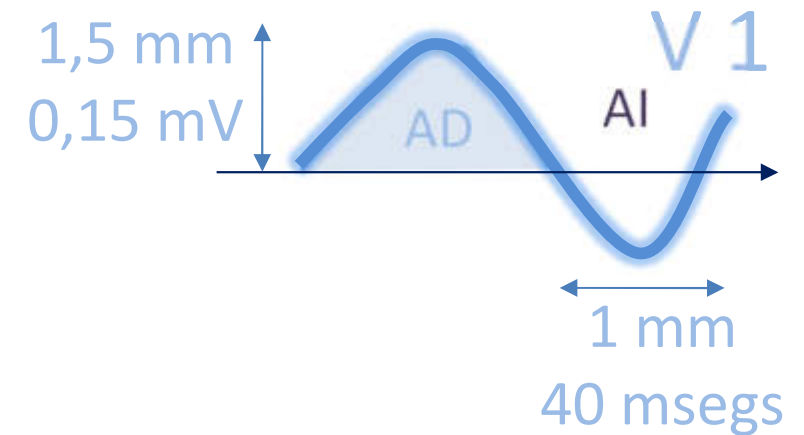
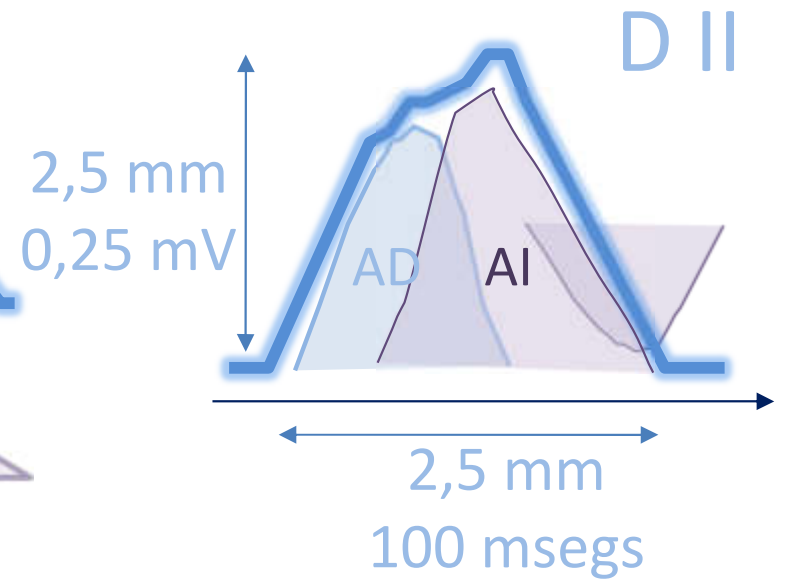
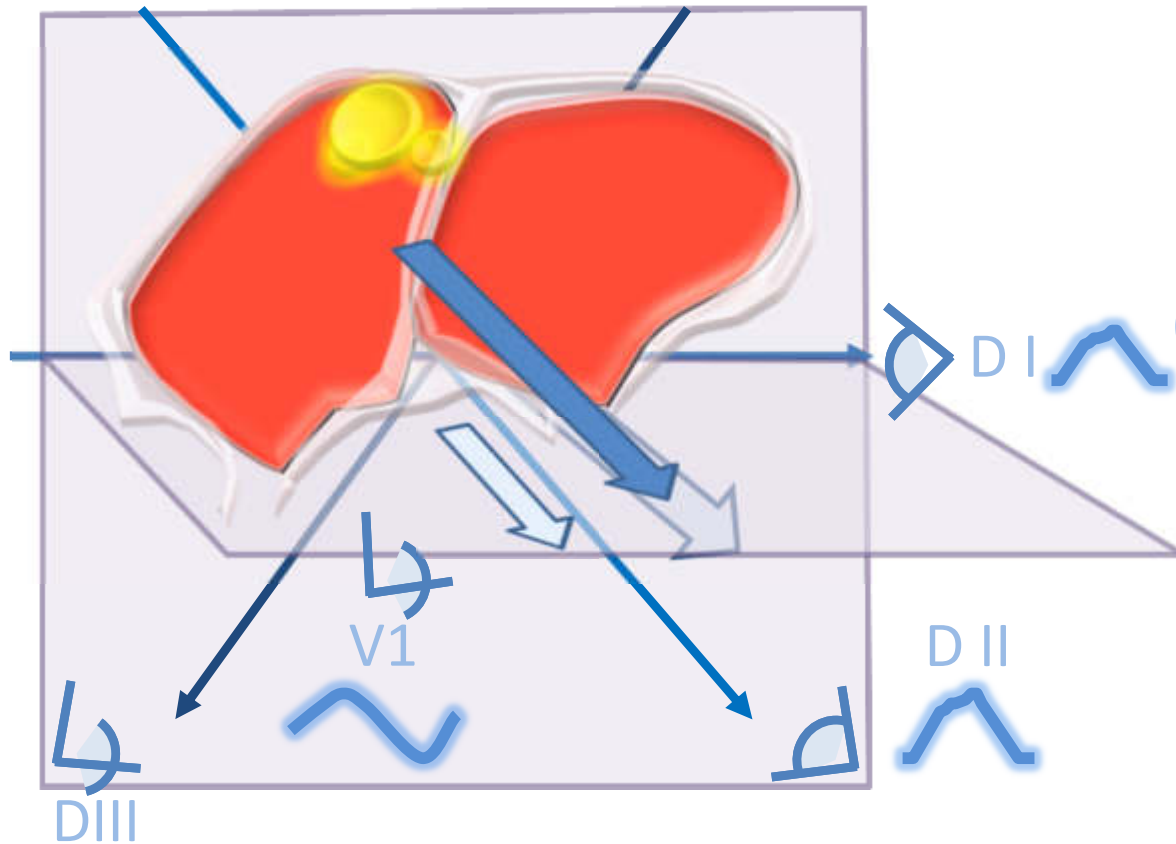
SE DILATAN

LOS VENTRÍCULOS



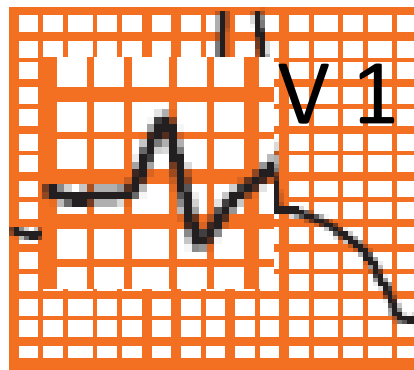
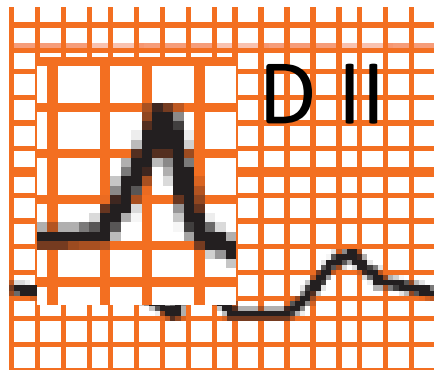
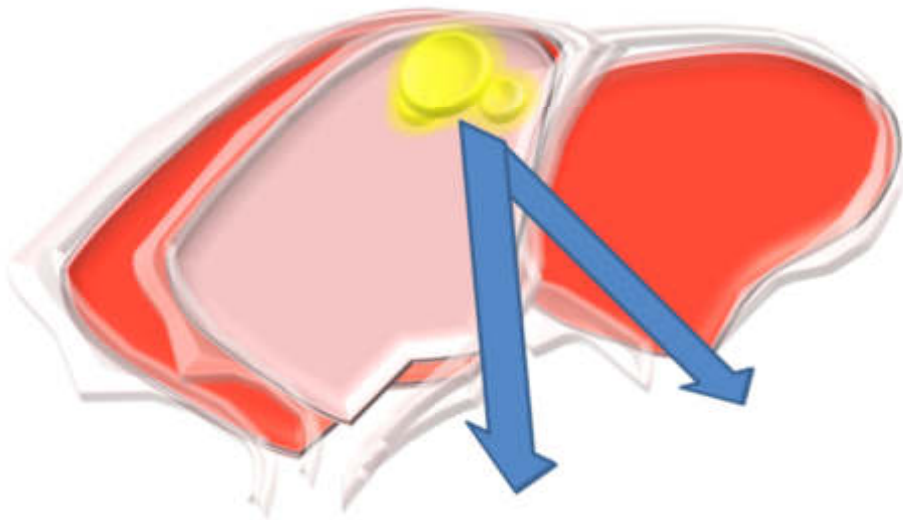
**SE HIPERTROFIAN
y/o DILATAN**

La onda P normal



Crecimiento de aurícula DERECHA

Cuestión de ALTURA



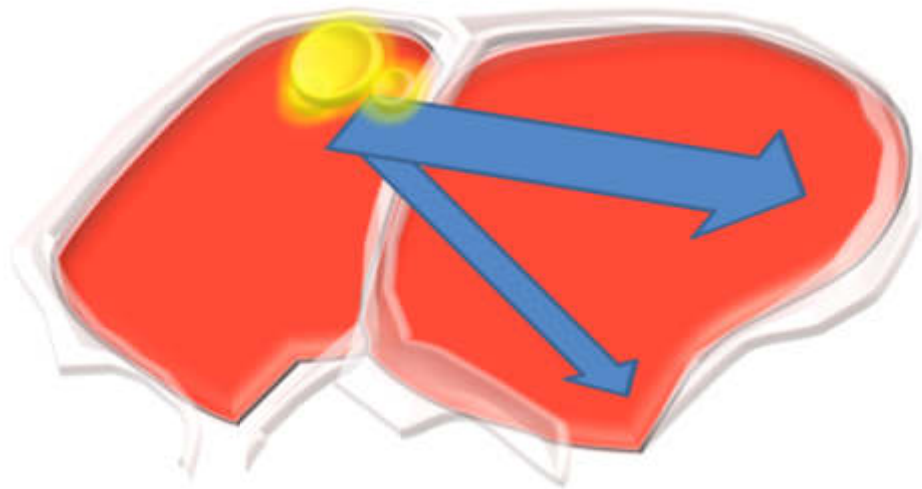
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segs

Crecimiento de aurícula IZQUIERDA

Cuestión de ANCHURA



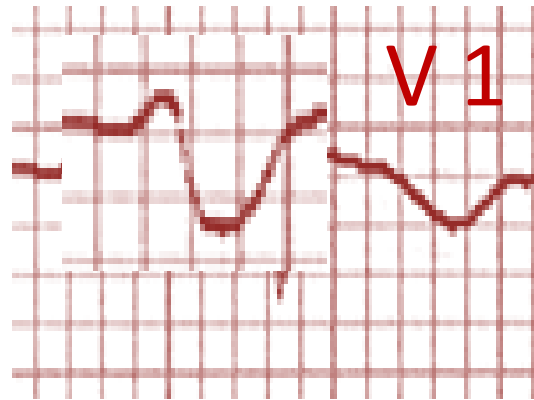
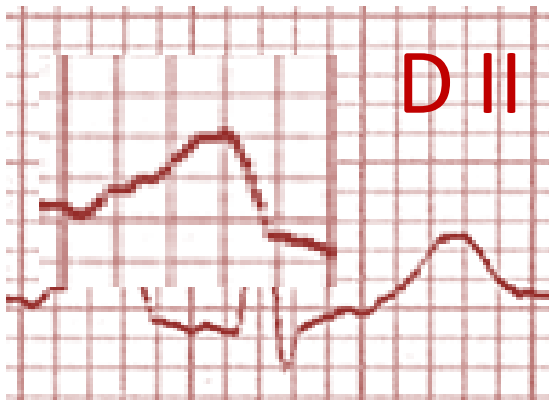
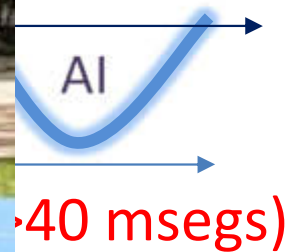
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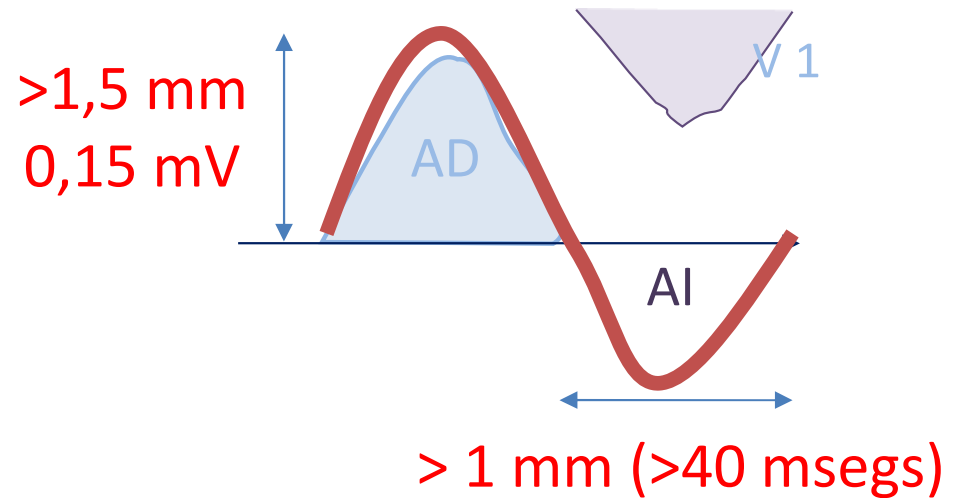
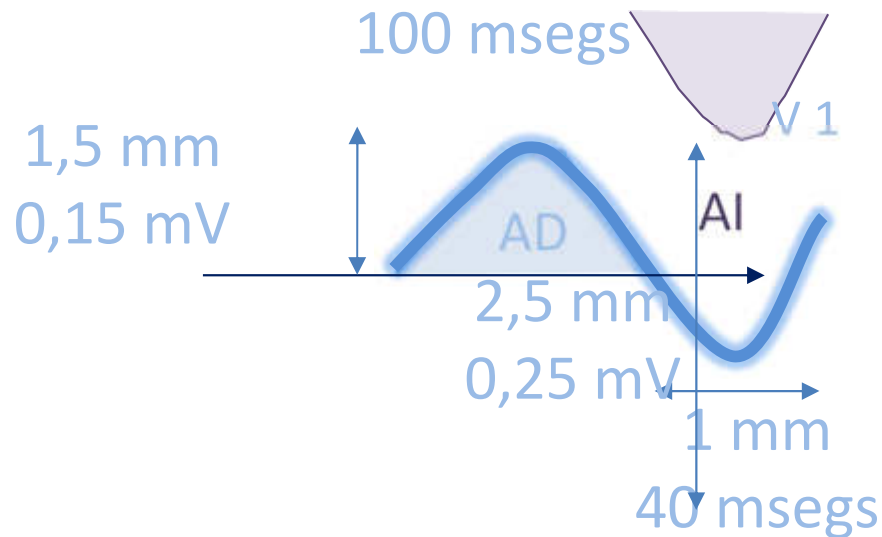
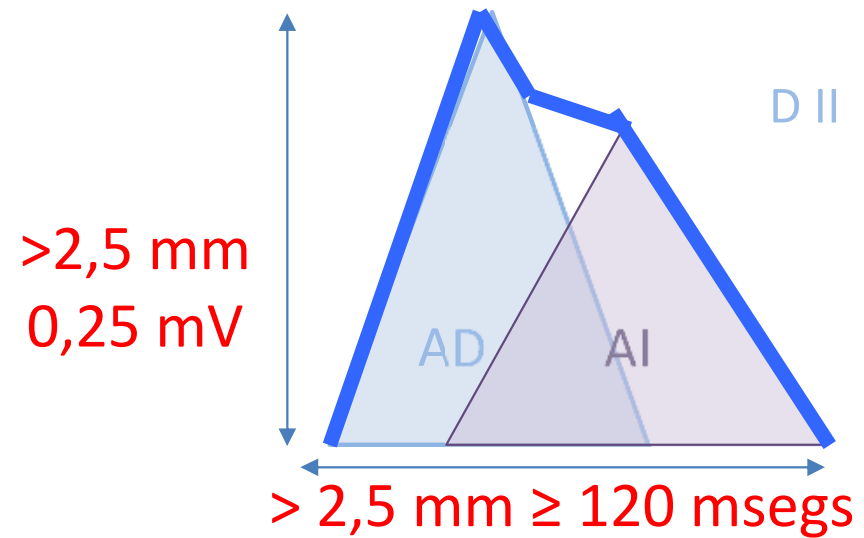
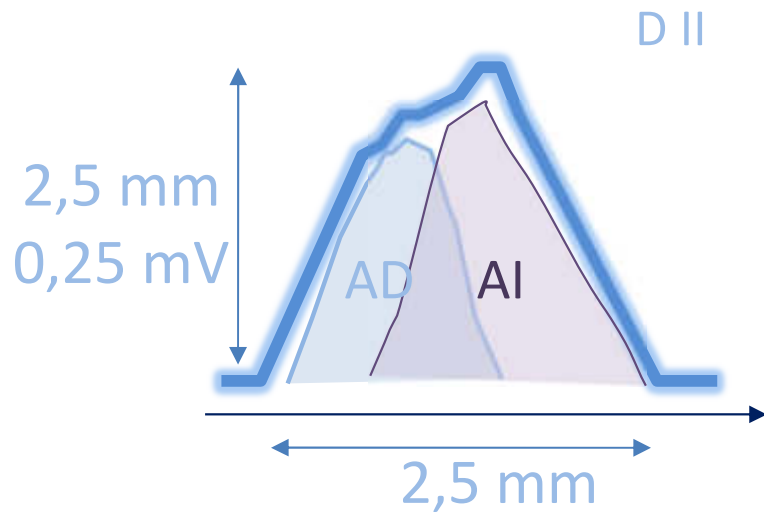
D II



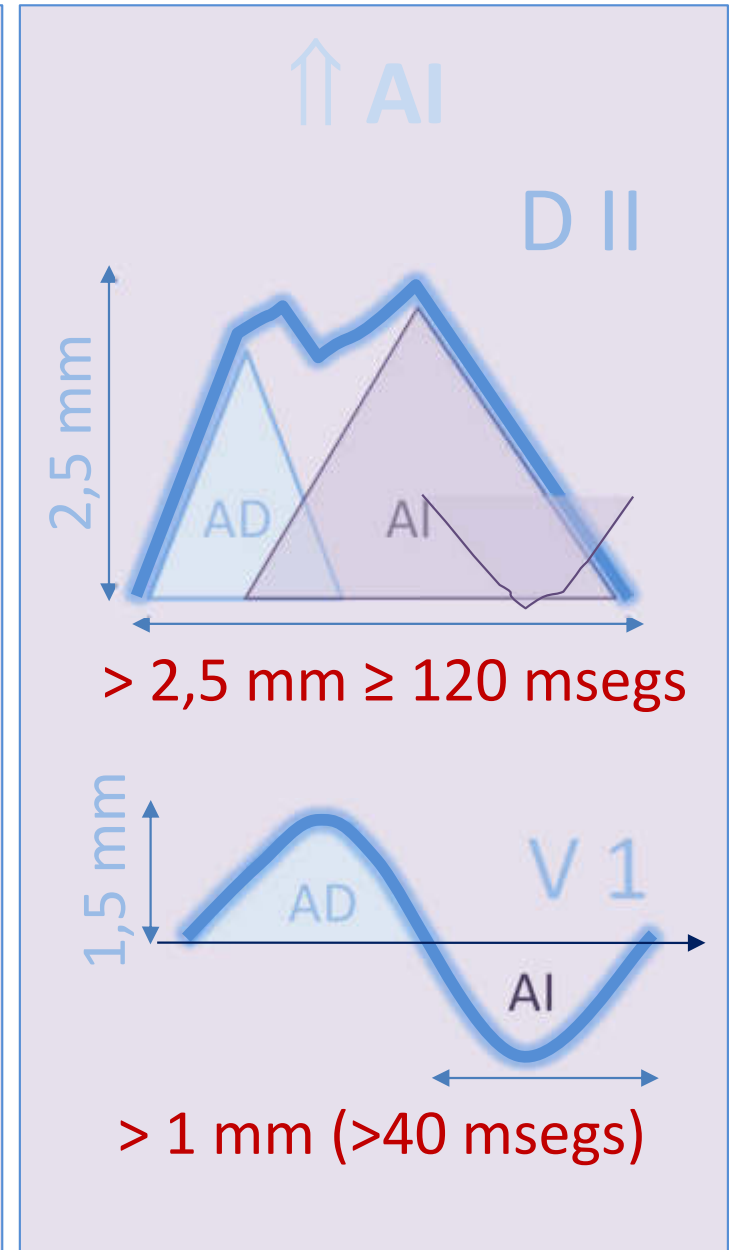
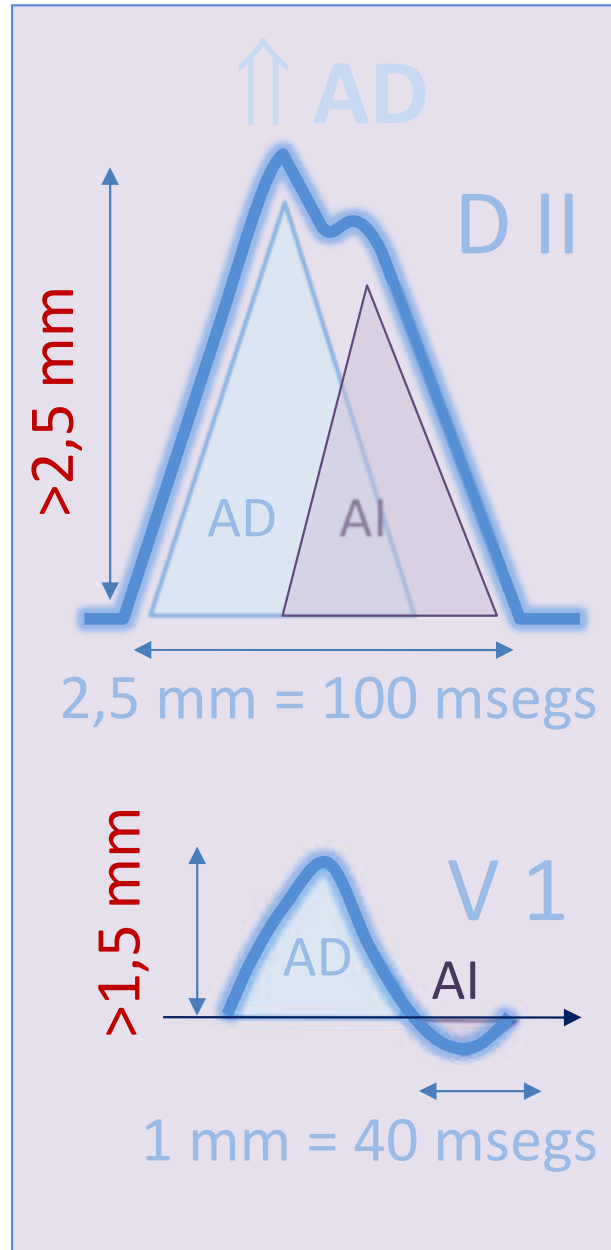
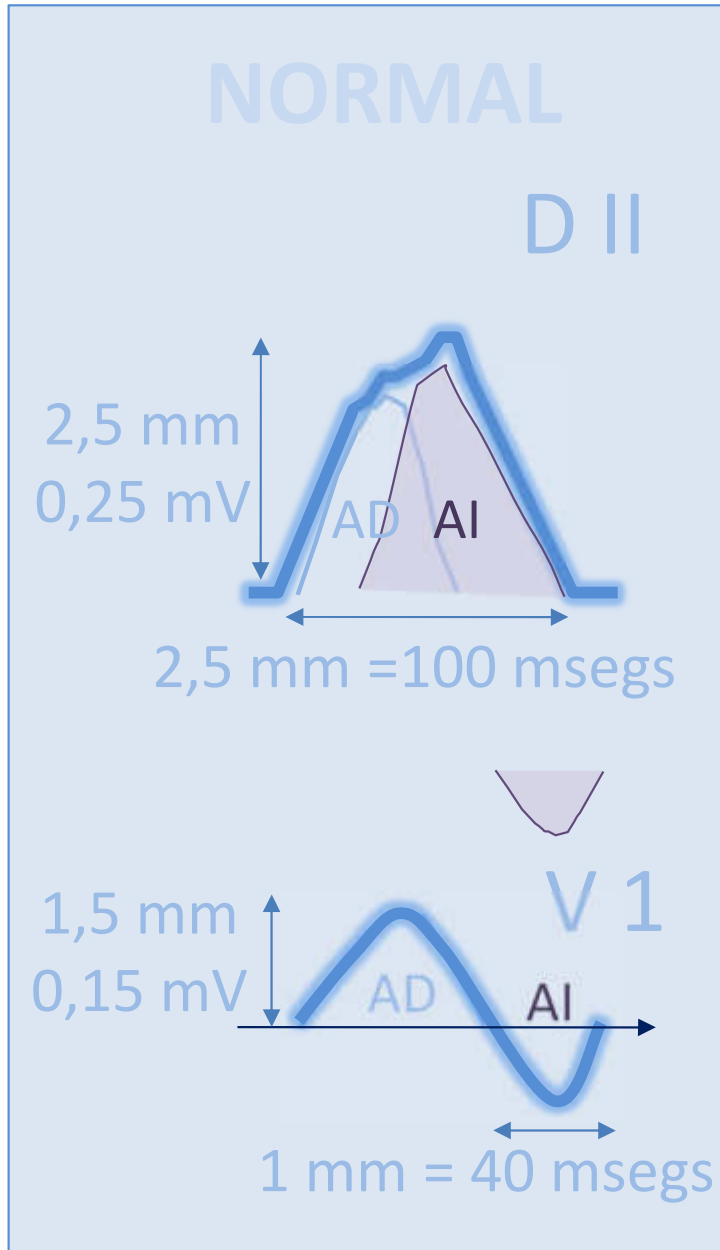
V 1



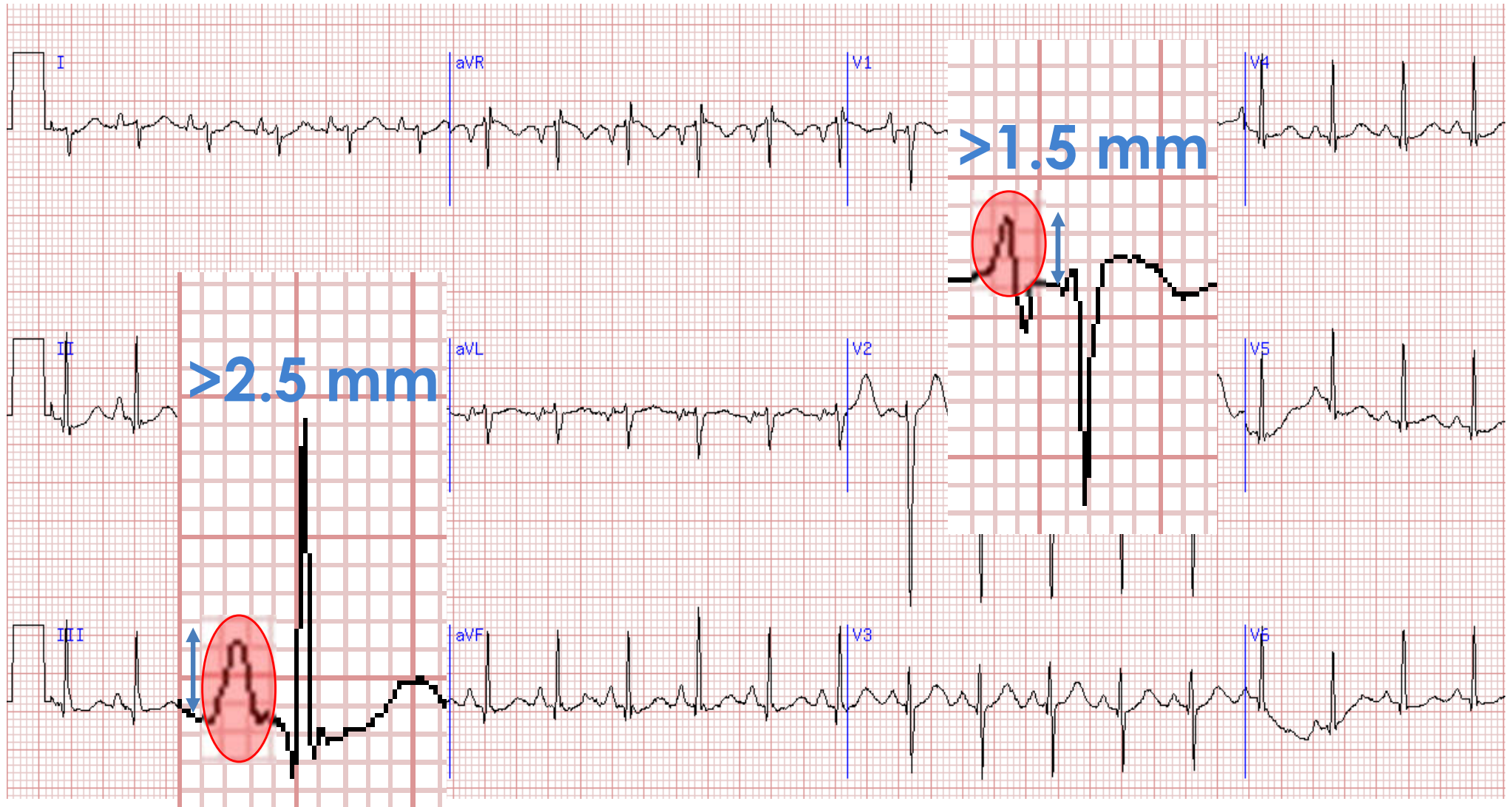
Crecimiento biauricular



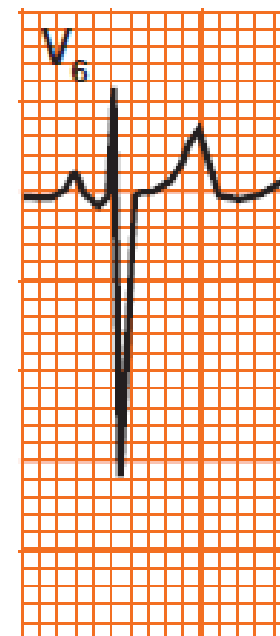
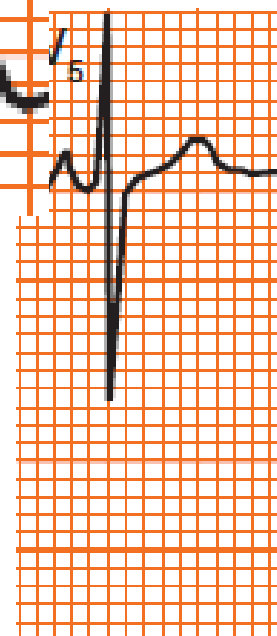
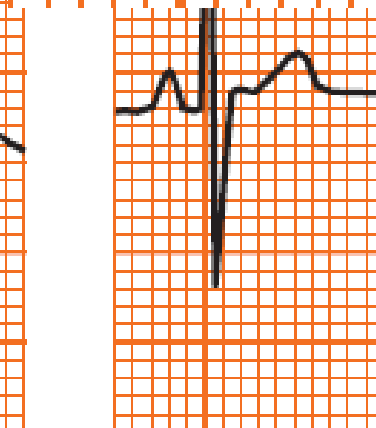
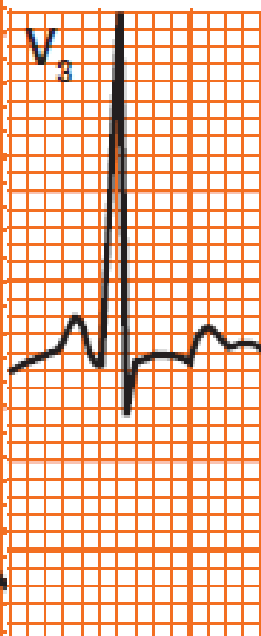
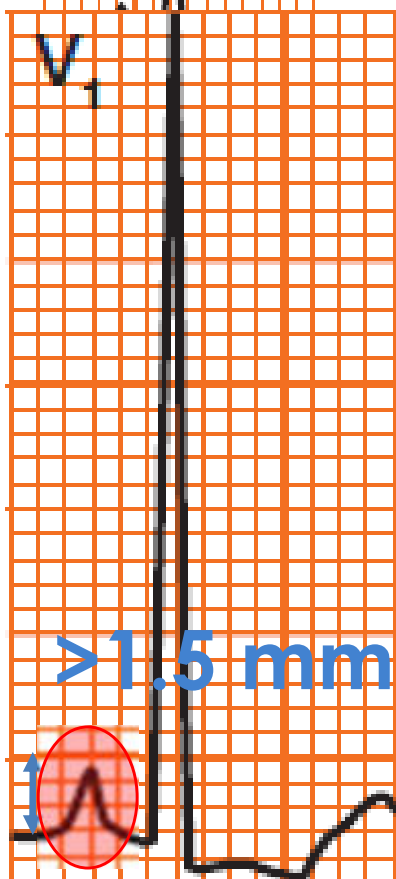
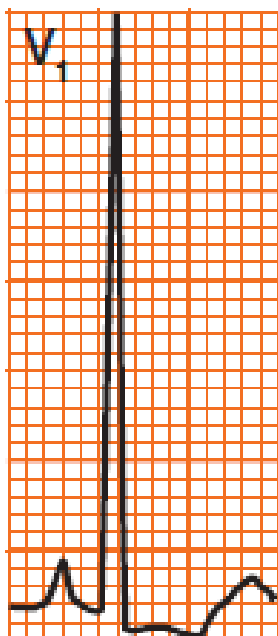
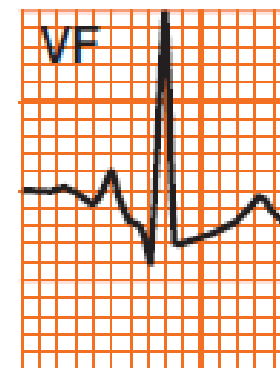
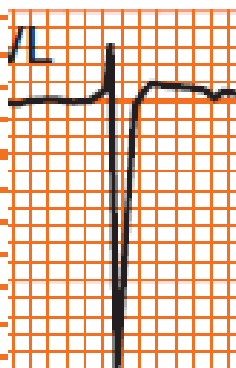
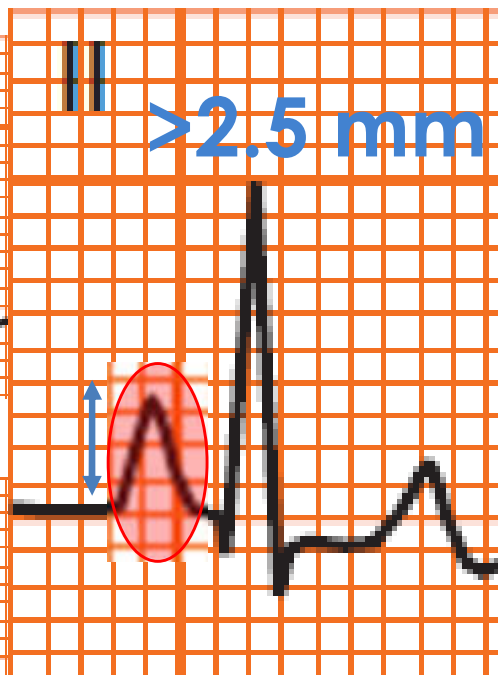
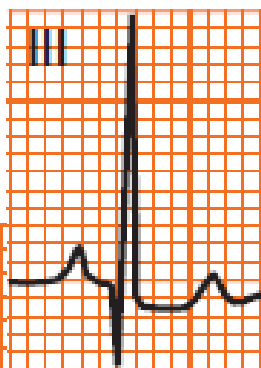
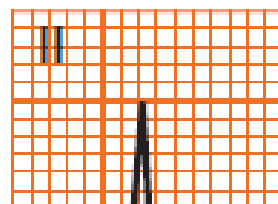
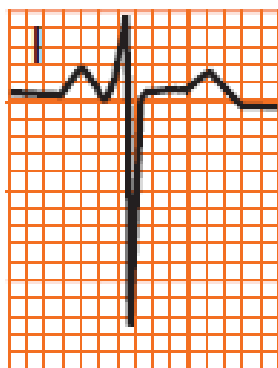
En resumen...



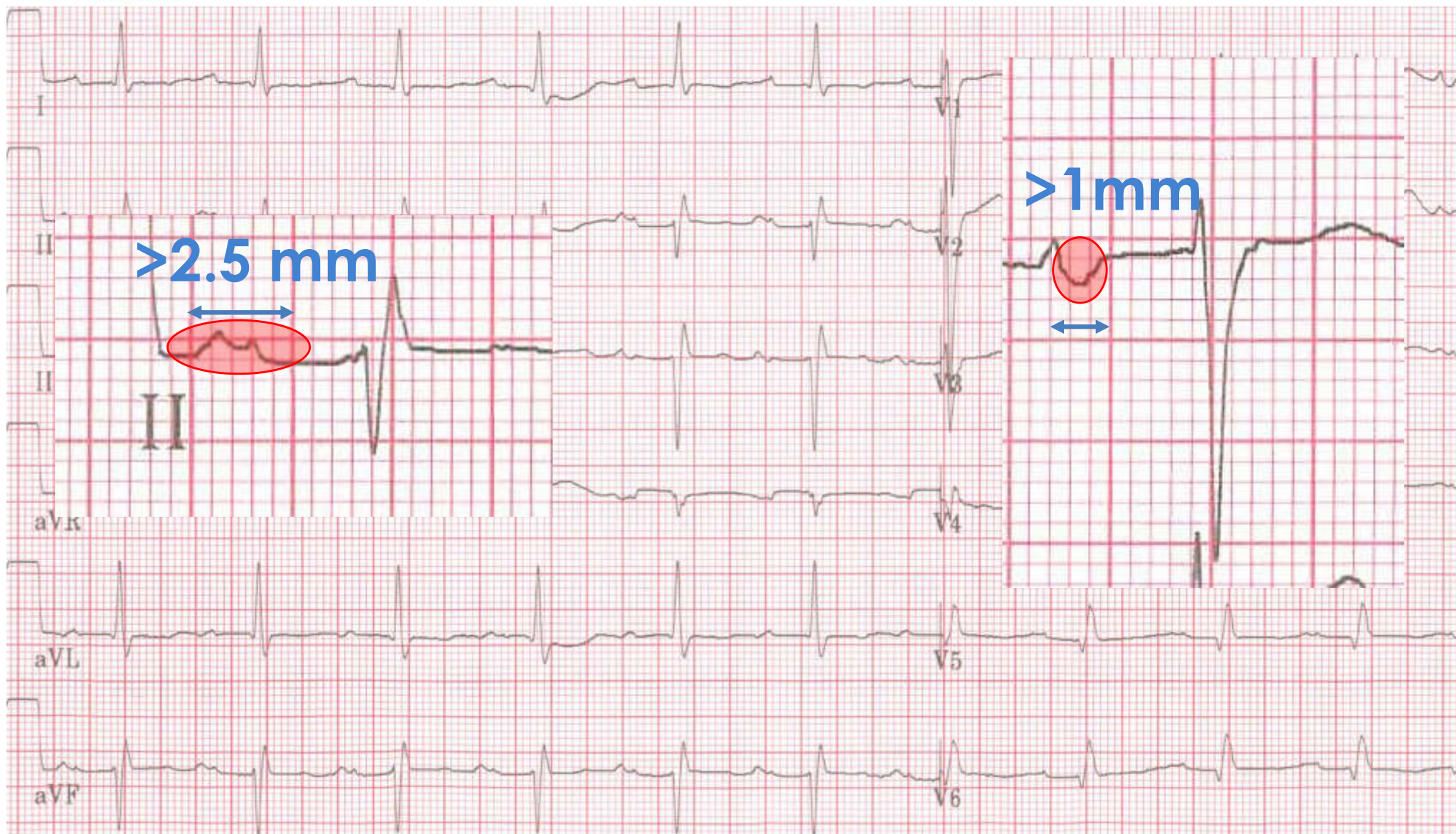
Un poco de práctica...



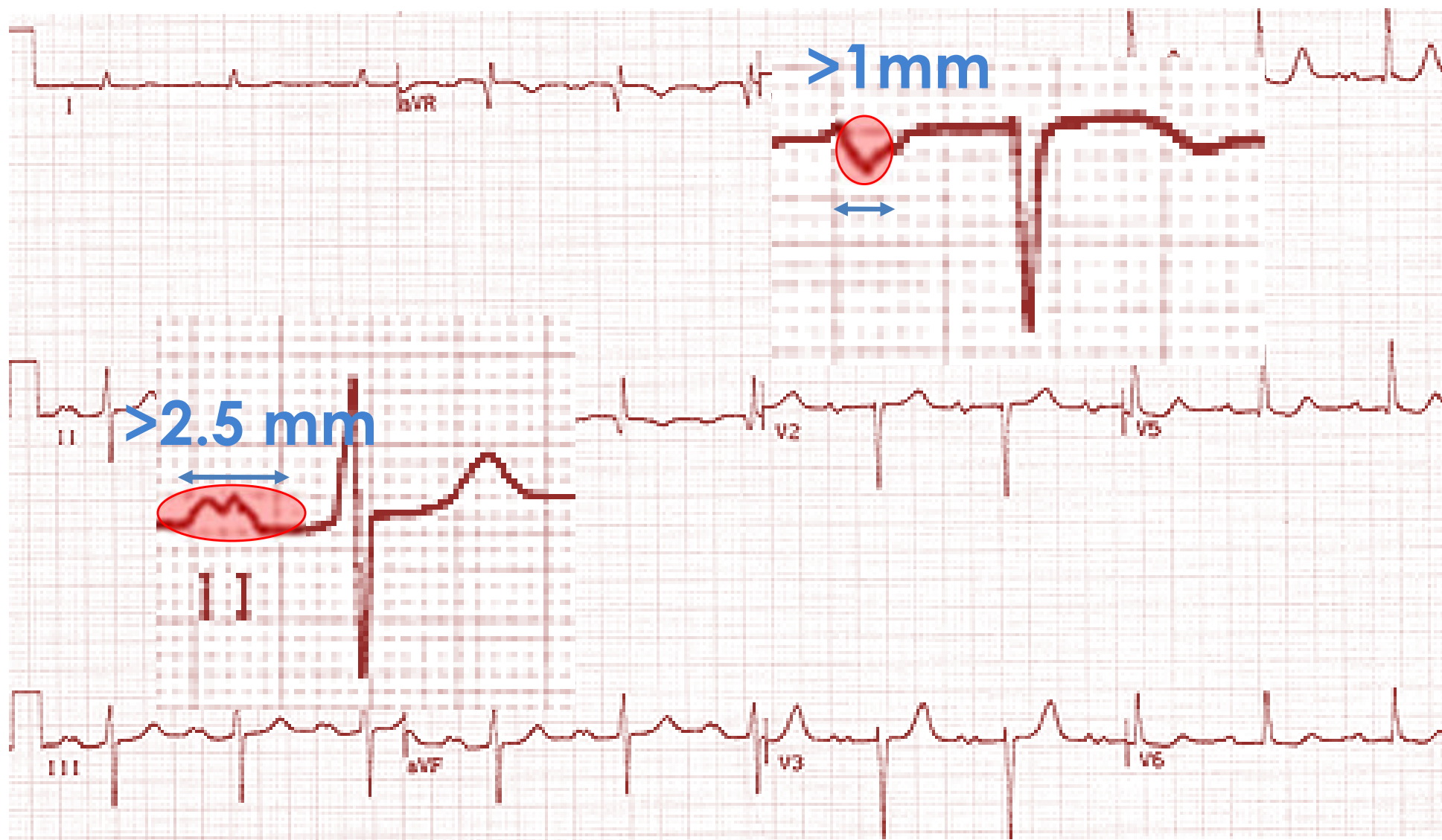
Más práctica...



Más práctica...



Más práctica...



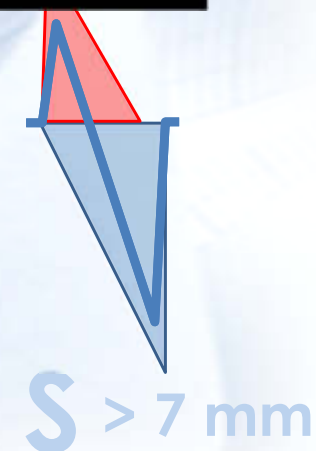
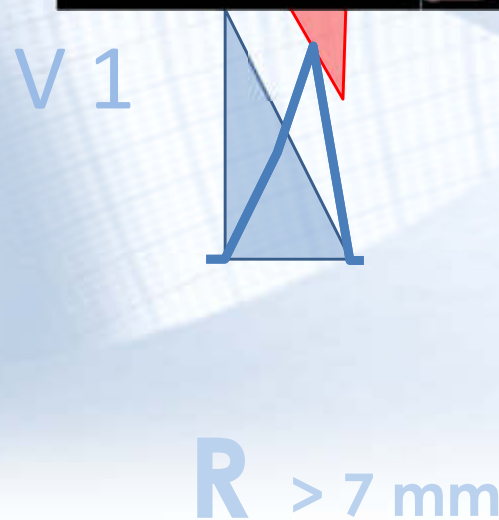
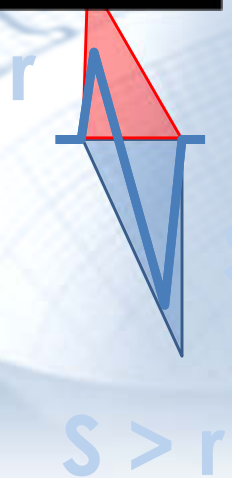
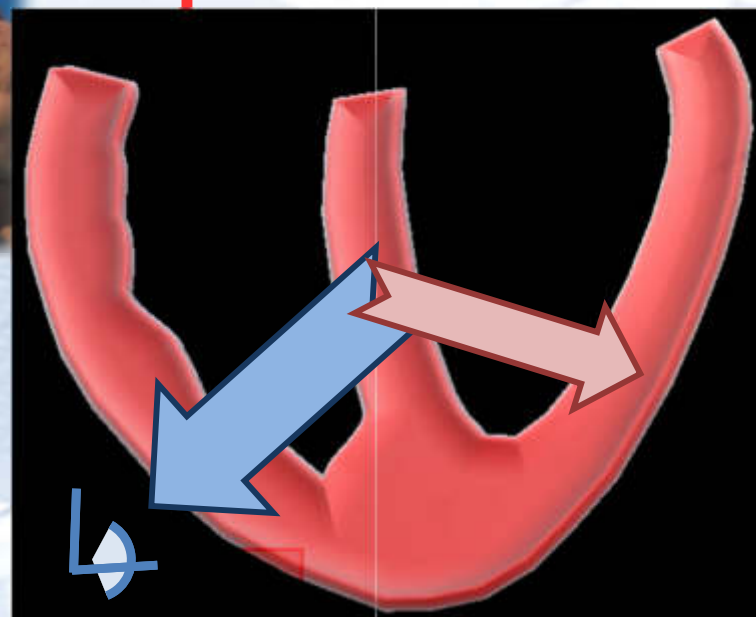
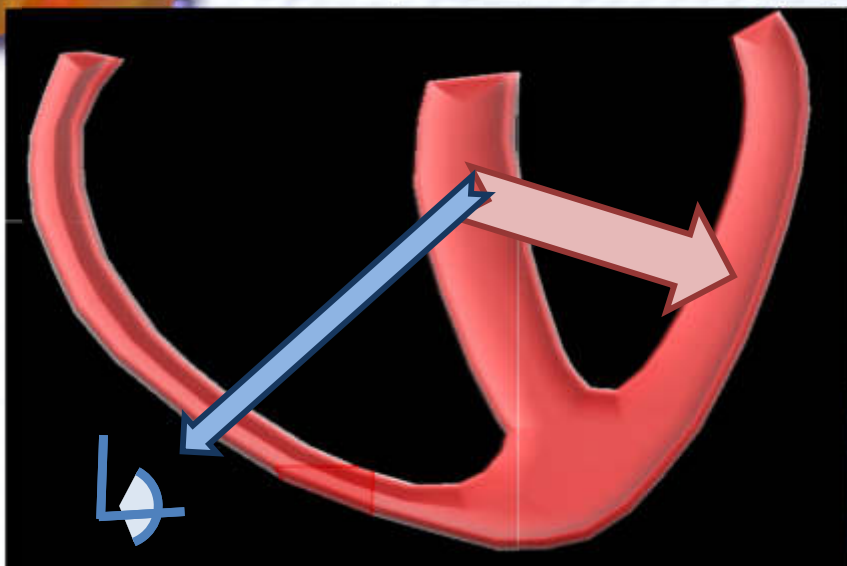
Activación de los ventrículos



Crecimiento de VD

Dilatación VD

Hipertrofia VD



Crecimiento de VD

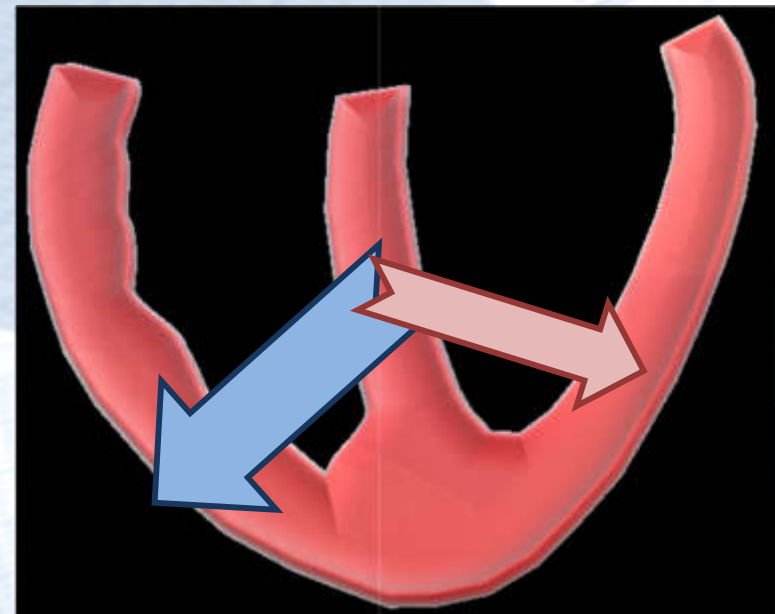
R/S en V1 ≥ 1 o ≤ 1 en V6

R V1 ≥ 7 mm

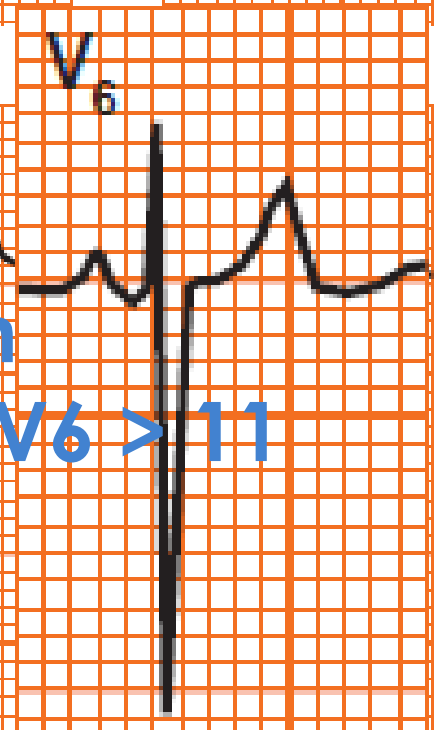
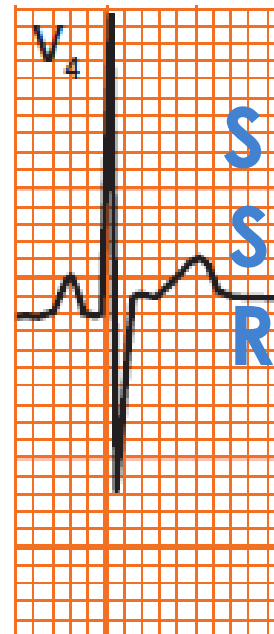
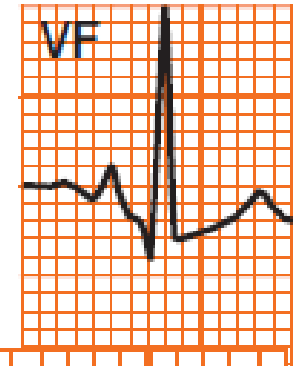
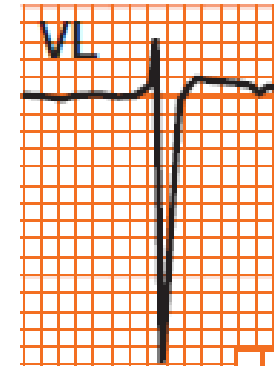
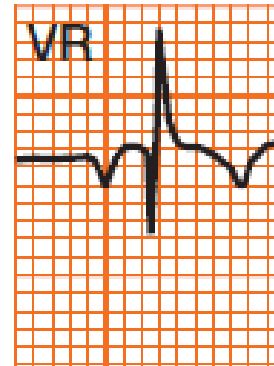
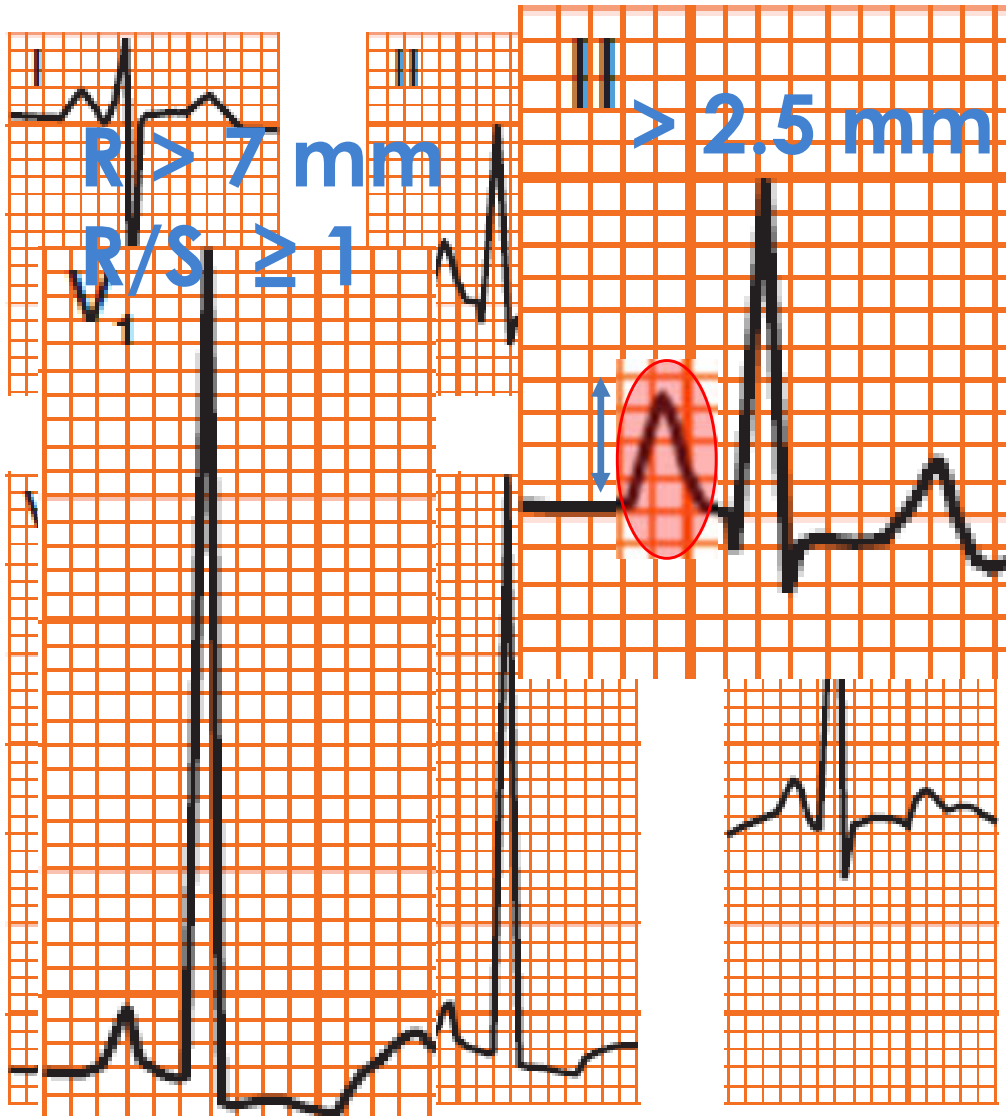
R de V1 + S de V6 > 11 mm

Inversión T en V1-V3

Desviación del eje hacia la derecha ($\geq + 100^\circ$)

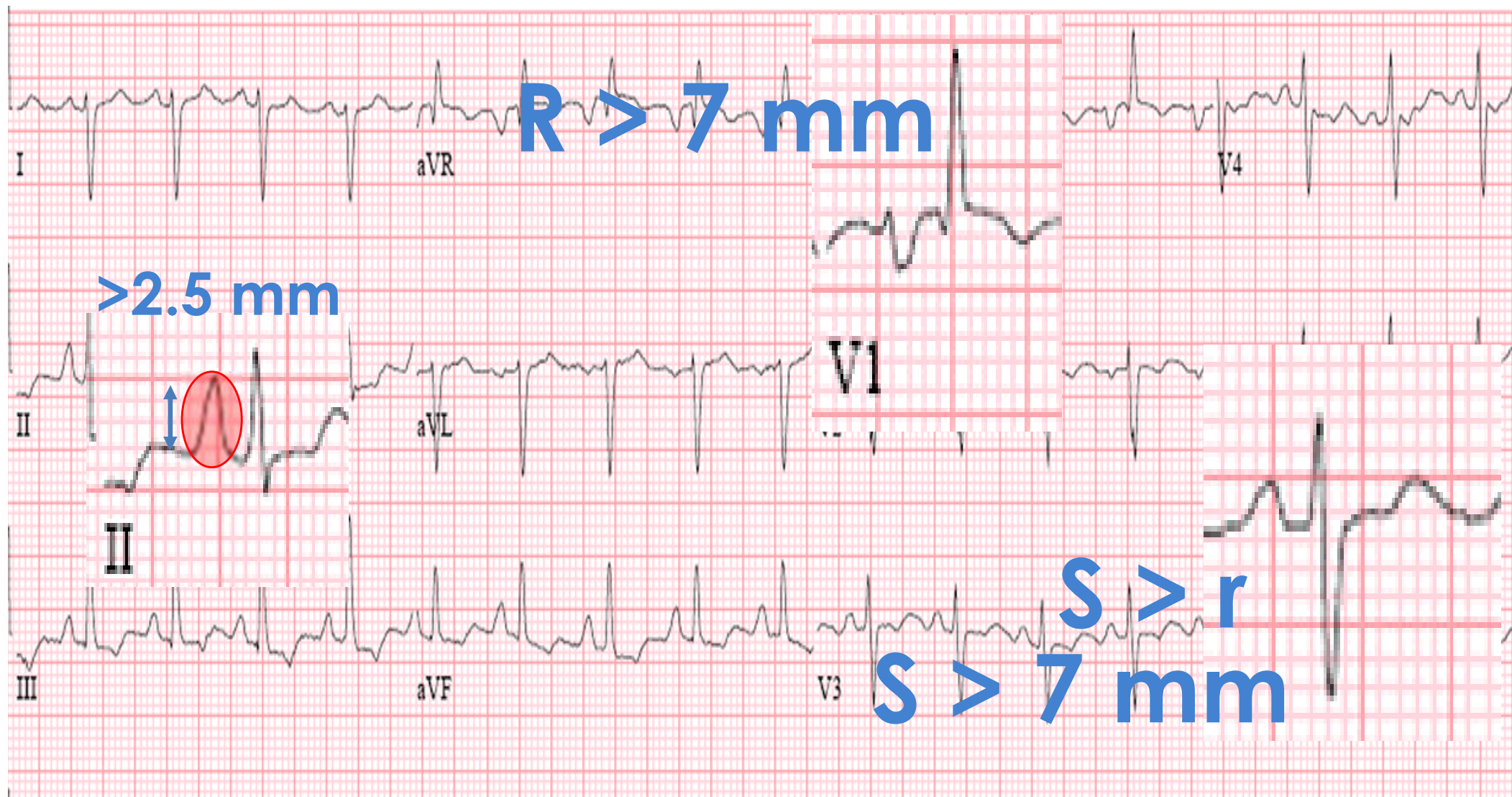


Pasamos a la práctica...

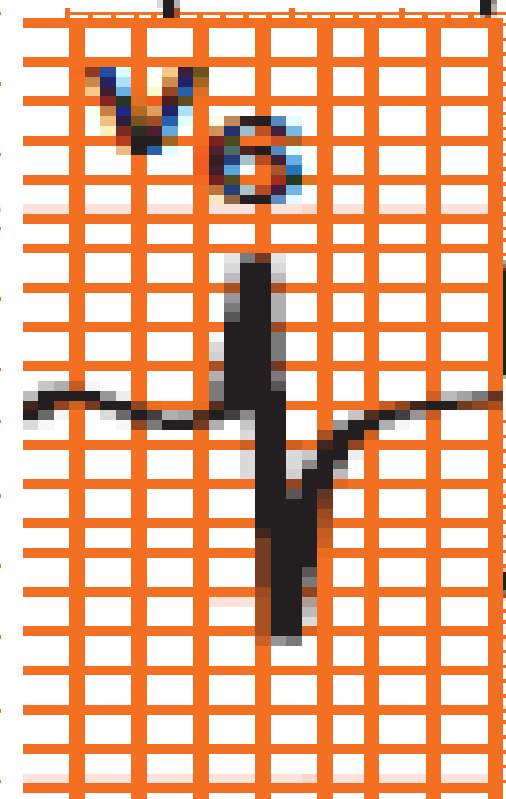
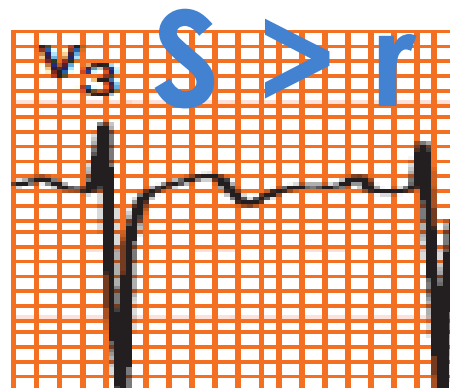
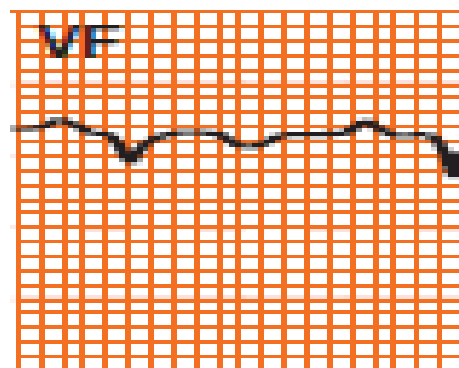
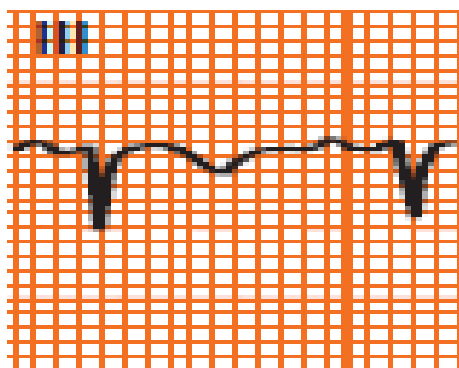
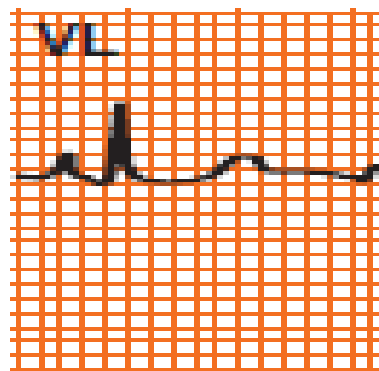
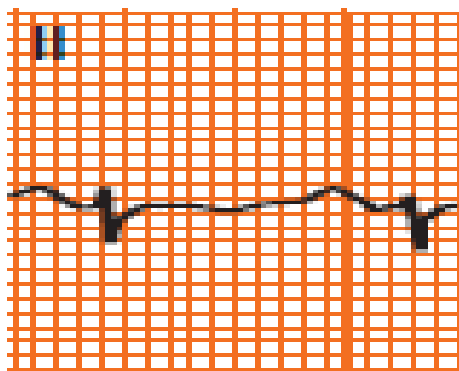
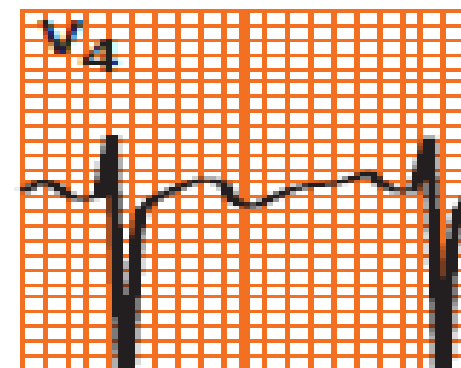
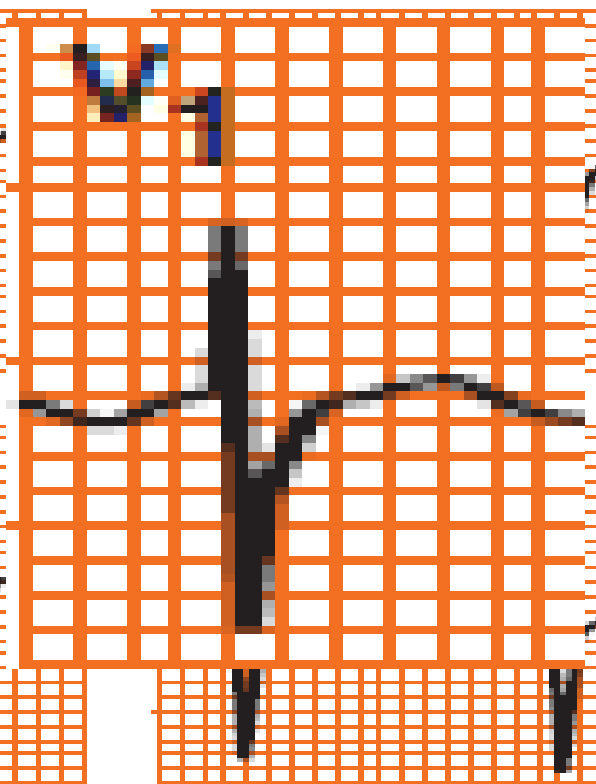
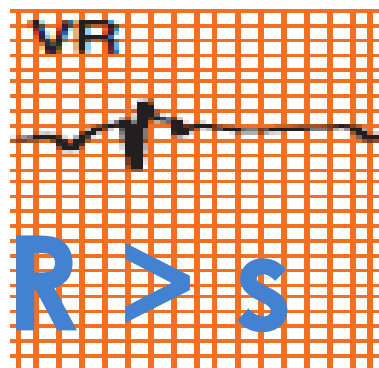
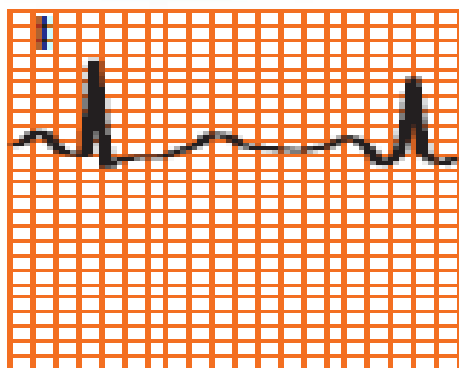


$S > r$
 $S > 7 \text{ mm}$
 $R V1 + S V6 > 11$

Más práctica...

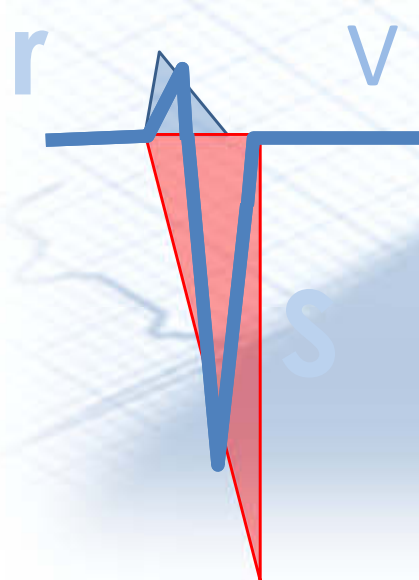


Más práctica...



Crecimiento de VI

Hipertrofia y Dilatación



Crecimiento de VI

Criterios diagnósticos

$R V5 + S V1 \geq 35 \text{ mm}$ (Sokolow-Lyon)

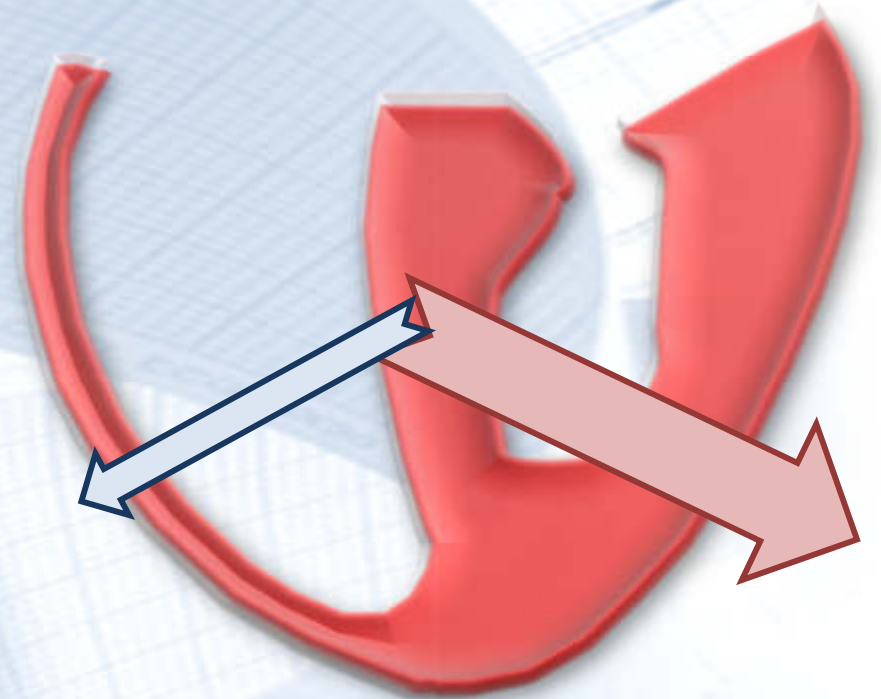
$R \text{ máxima} + S \text{ máxima} \geq 45 \text{ mm}$ (precordiales)

$R V5 \geq 26 \text{ mm}; R V6 > R V5$

$R I \geq 14 \text{ mm}; R aVL \geq 12 \text{ mm}; R aVF \geq 21 \text{ mm}$

$R I + S III \geq 25 \text{ mm}$ (Gubner-Ungerleider)

$R aVL + S V3 > 28 \text{ mm} \text{ ♂ } > 20 \text{ mm} \text{ ♀}$ (Cornell)



Crecimiento de VI

Criterios de Romhilt-Estes

SIGNO	PUNTOS
<p>1. Amplitud de los complejos QRS:</p> <p>1.A. Onda R o S ≥ 20 mm en las derivaciones de las EE.</p> <p>1.B. SV1 o SV2 ≥ 30 mm.</p> <p>1.C. RV5 o RV6 ≥ 30 mm.</p>	<p>3</p>
<p>2. Segmento ST:</p> <p>Si presenta patrón de sobrecarga VI con el vector del segmento ST-T opuesto al vector medio del QRS.</p> <p>2a) sin digital.</p> <p>2b) con digital.</p>	<p>3</p> <p>1</p>
<p>3. Crecimiento auricular izquierdo (fuerza de P terminal ≥ 1 mm con una duración $\geq 0,04$ segundos).</p>	<p>3</p>
<p>4. Desviación anormal del eje a la izquierda (positivo si desviación eje eléctrico QRS es -30 o mayor)</p>	<p>2</p>
<p>5. Duración QRS (positivo si duración $\geq 0,09$ segundos)</p>	<p>1</p>
<p>6. Deflexión intrinsecoide (positivo si la deflexión de V5 o V6 es $\geq 0,05$ segundos)</p>	<p>1</p>

HVI si puntuación ≥ 5 , probable si = 4

Crecimiento biventricular

CVI + eje derecho (≥ 90).

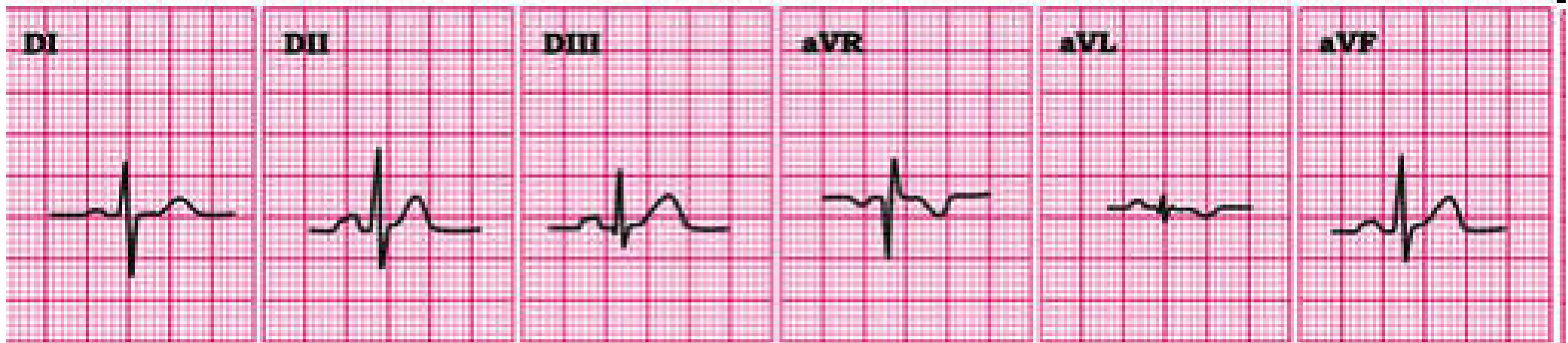
CVD + eje izquierdo ($\geq - 30$).

Inversión de la onda T en todas las precordiales y/o ensanchamiento QRS ($\geq 2,5$ mm – 10 segundos).

Complejos isodifásicos en derivaciones plano frontal y V2-V5 (fenómeno de Katz-Wachtel).

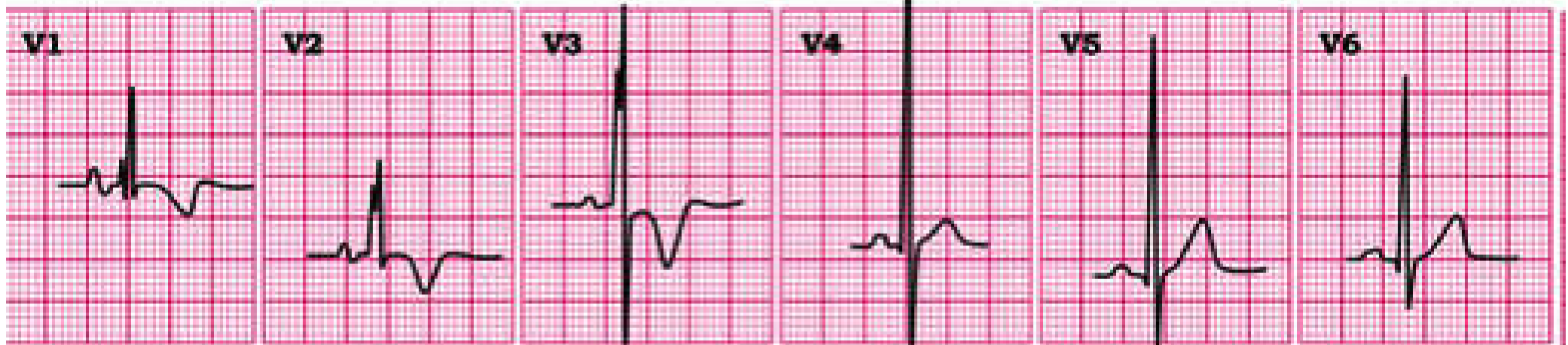
Unos ejemplos...

Crecimiento biventricular

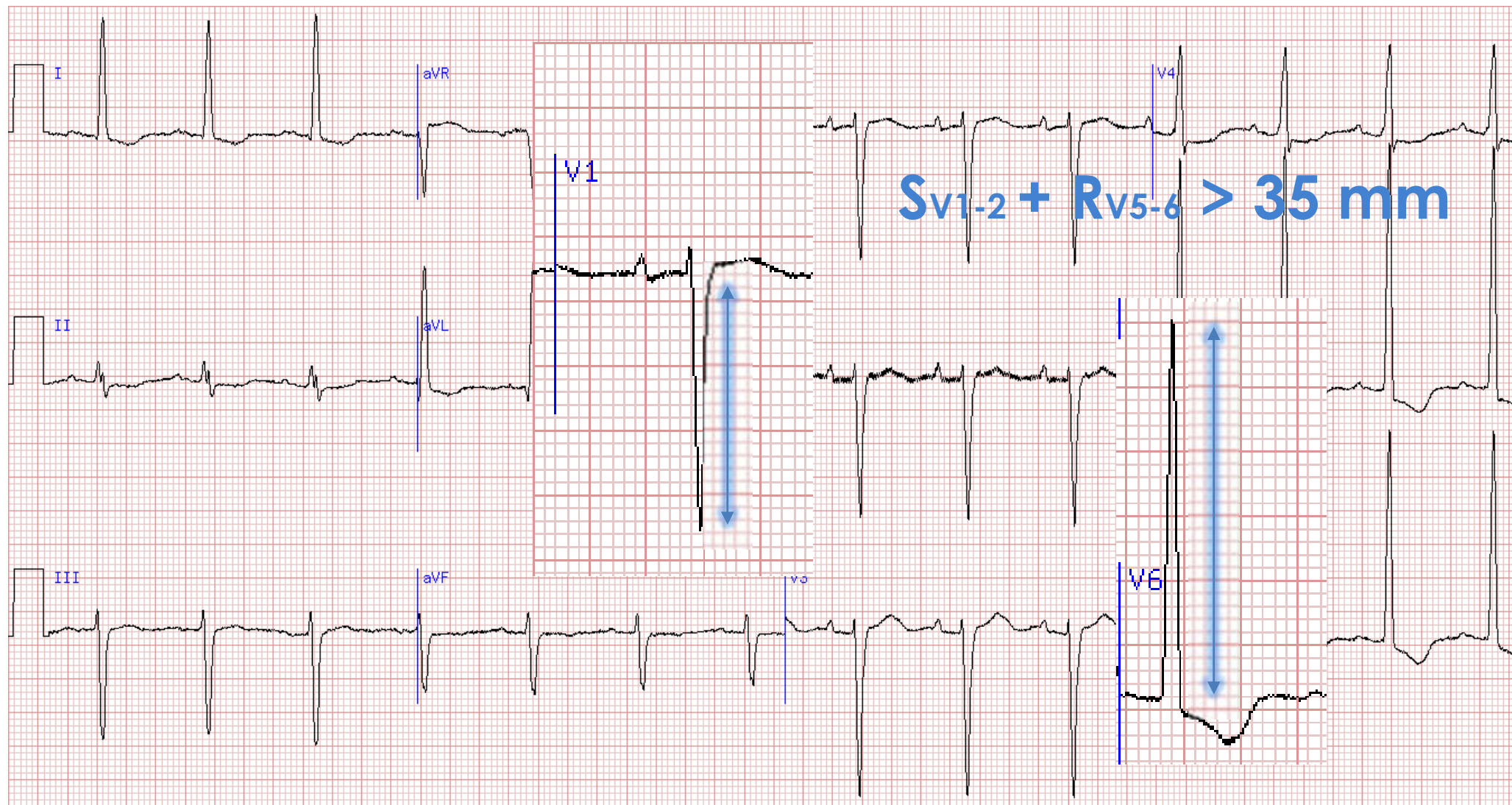


Eje + 90°

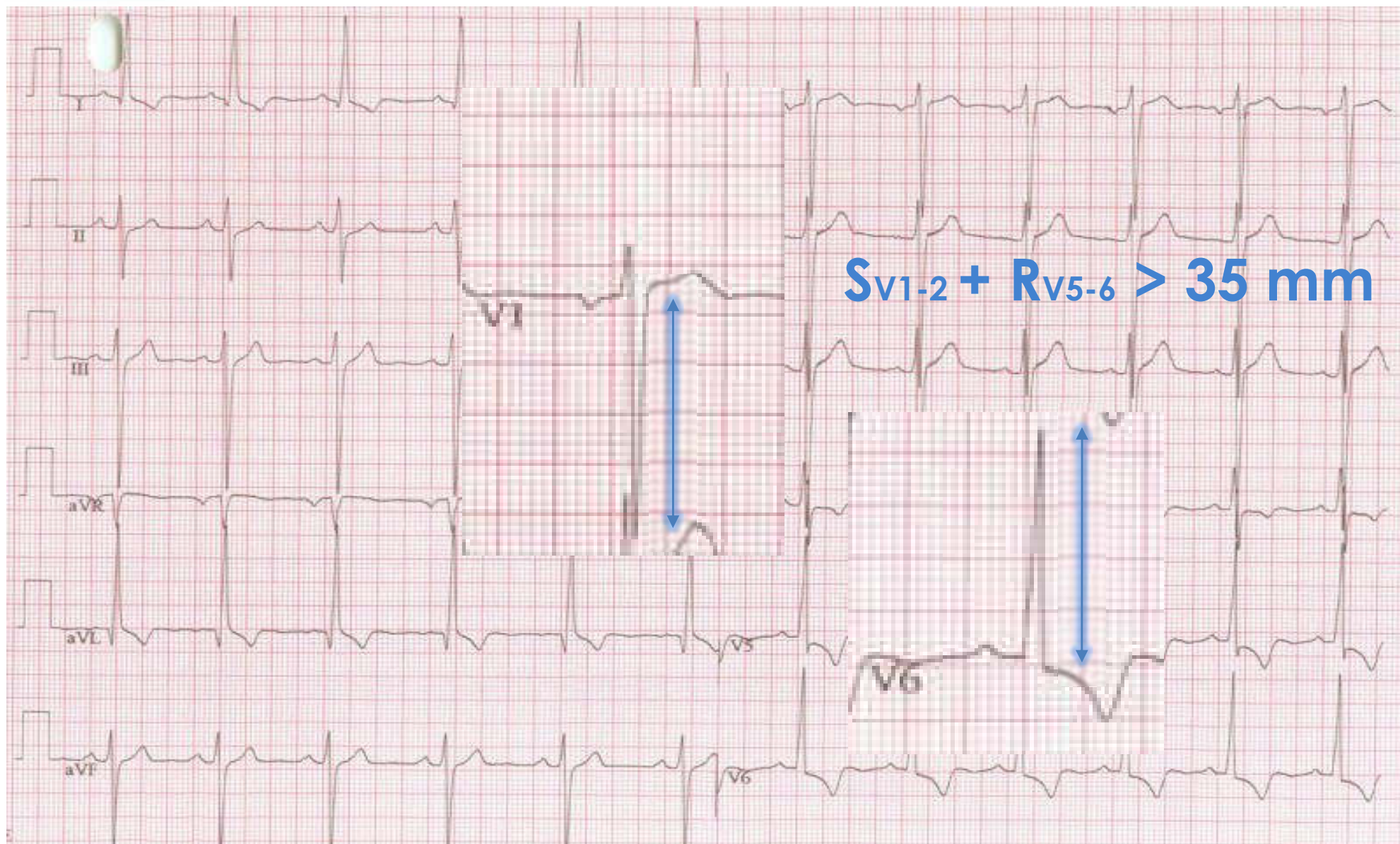
$R_{V5} > 26 \text{ mm}$



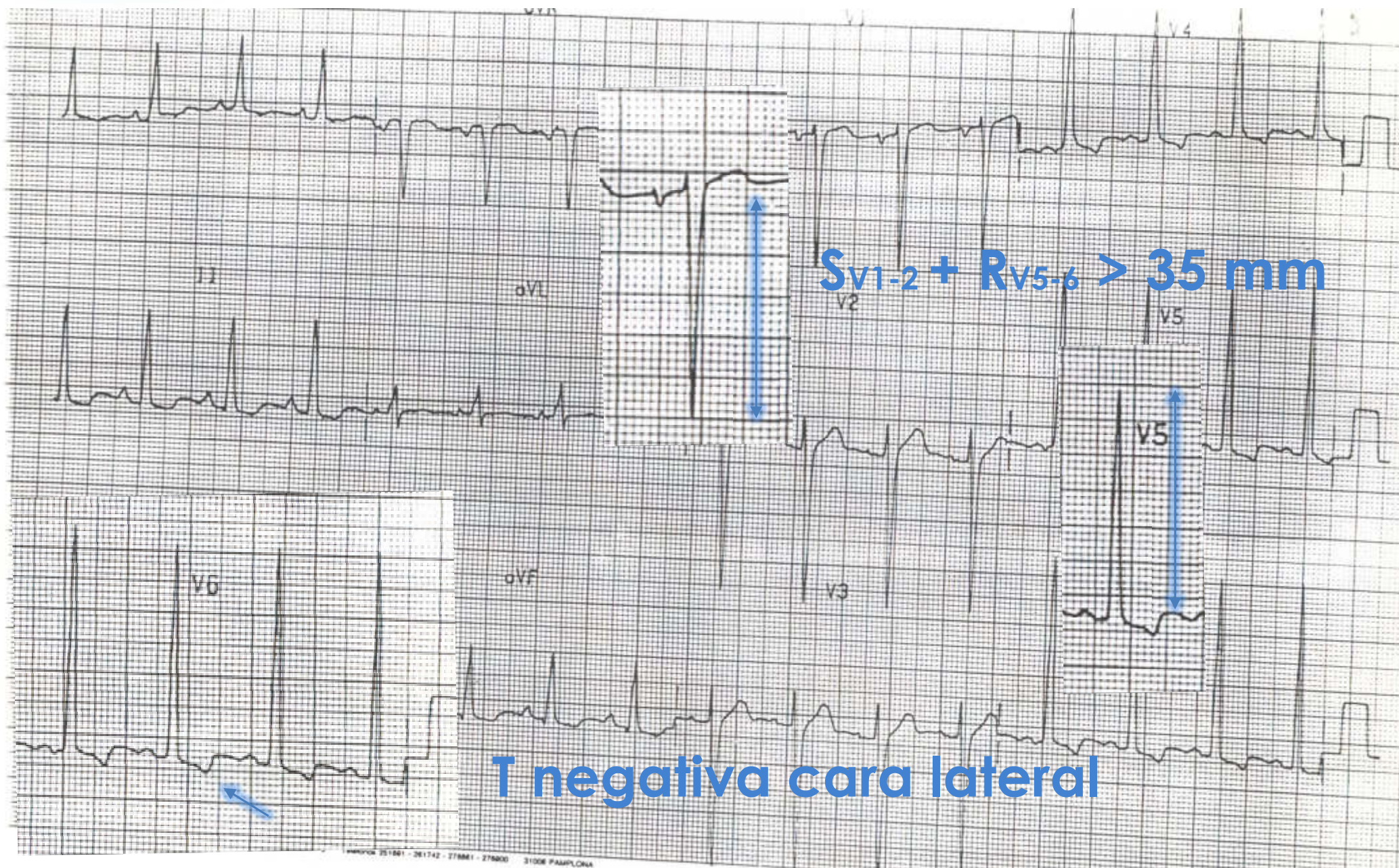
Unos ejemplos...



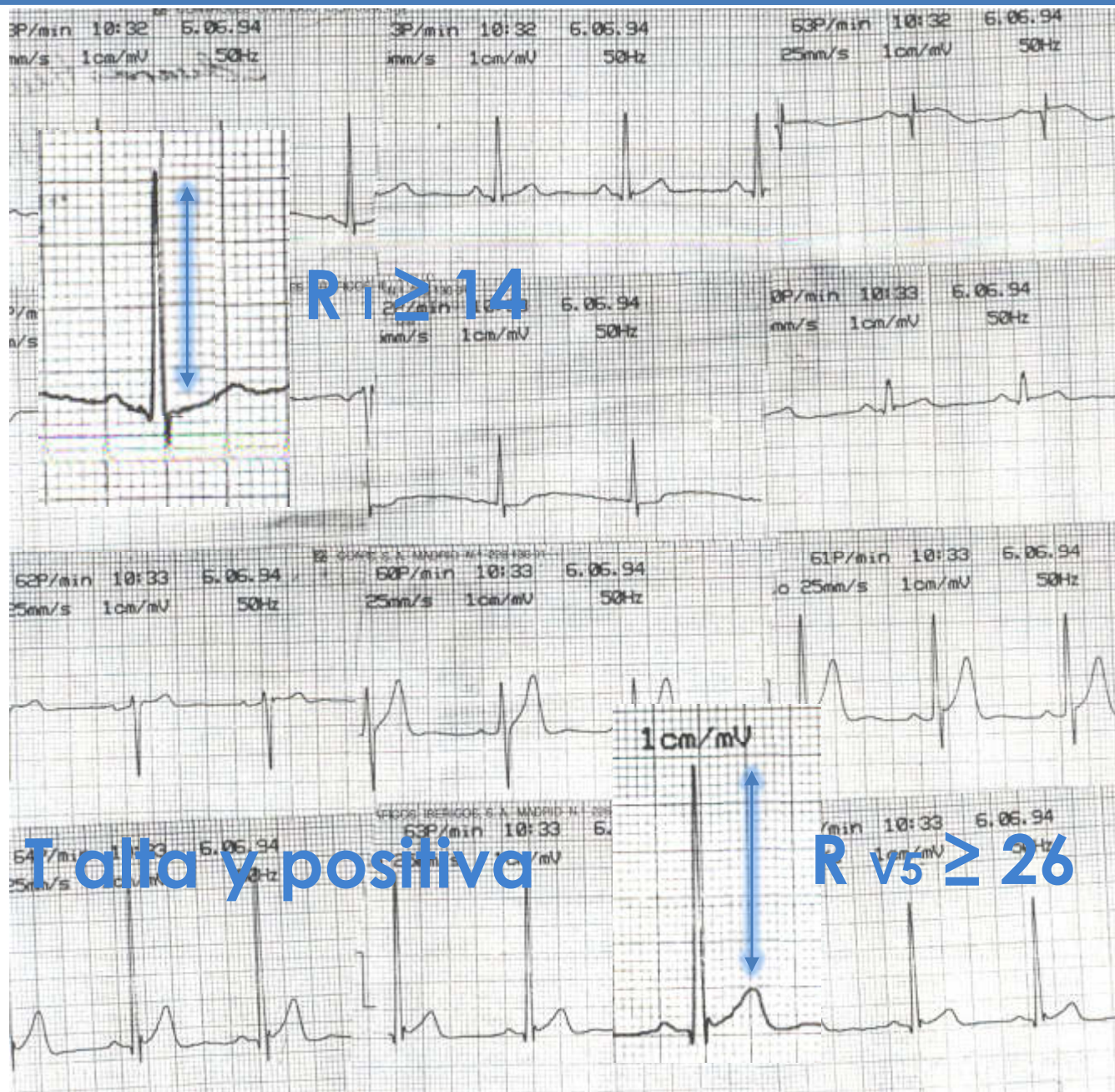
Uno más...



Uno más...



Uno más...

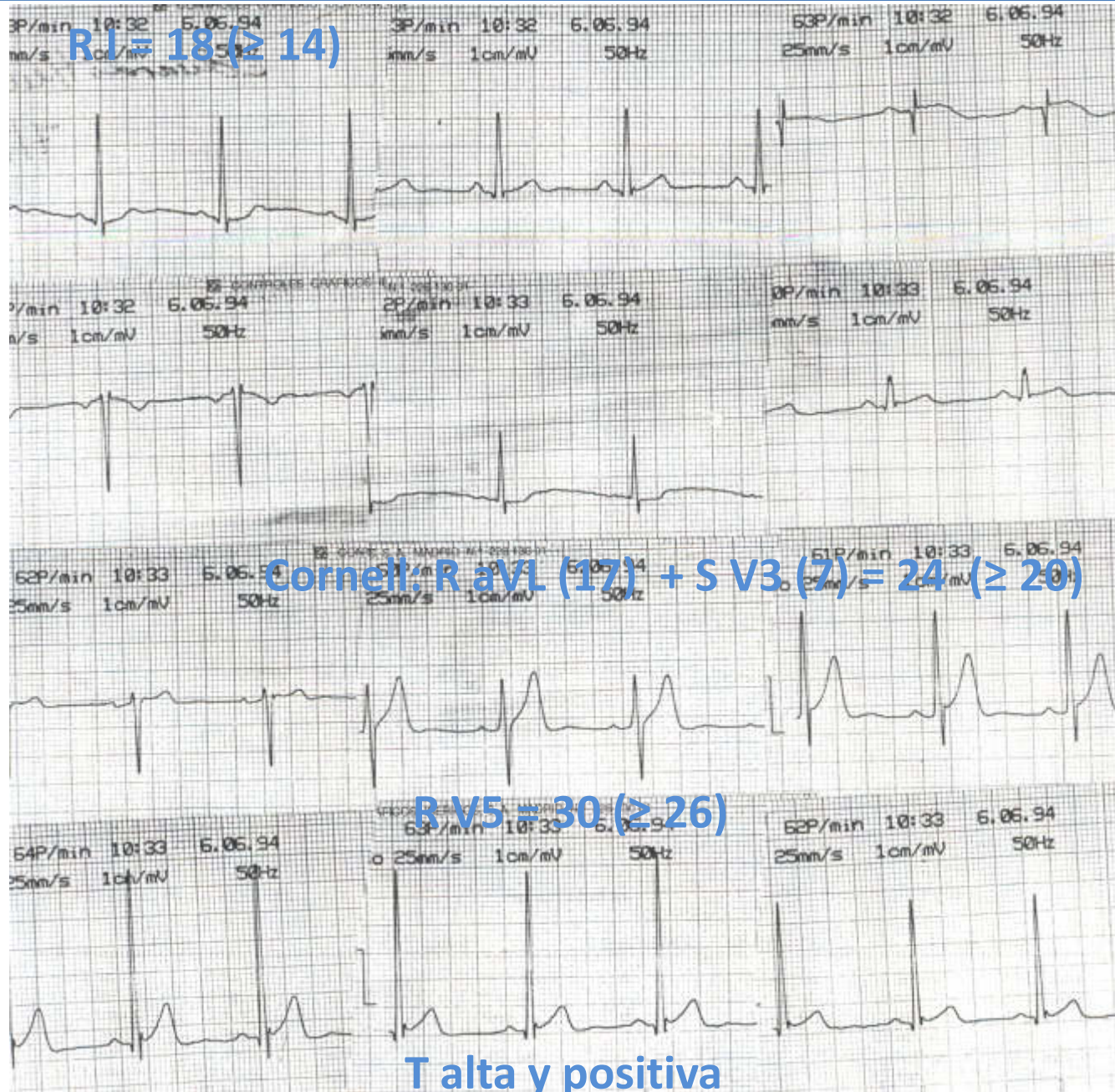


T alta y positiva

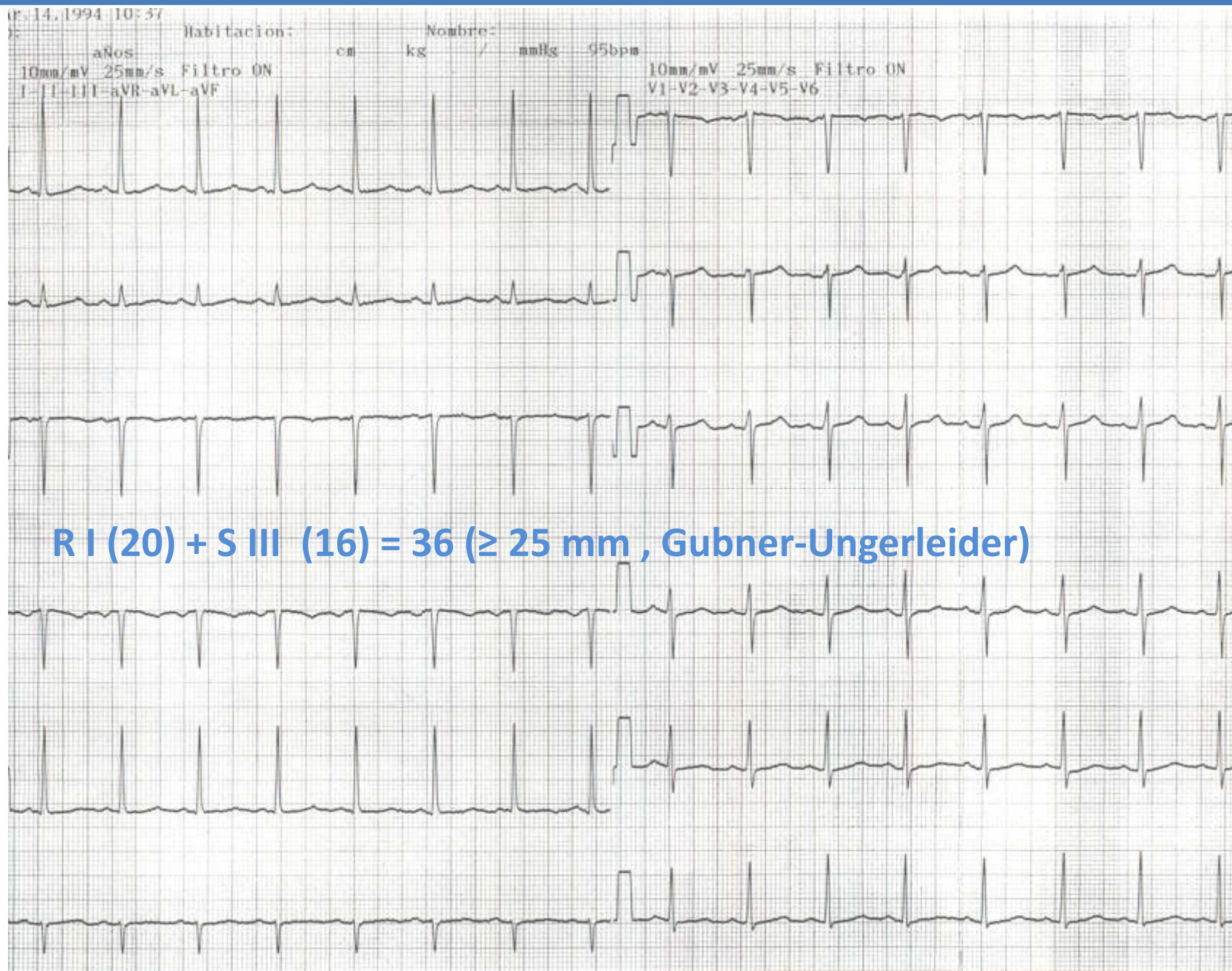
$R_I \geq 14$

$R_{V5} \geq 26$

Uno más...

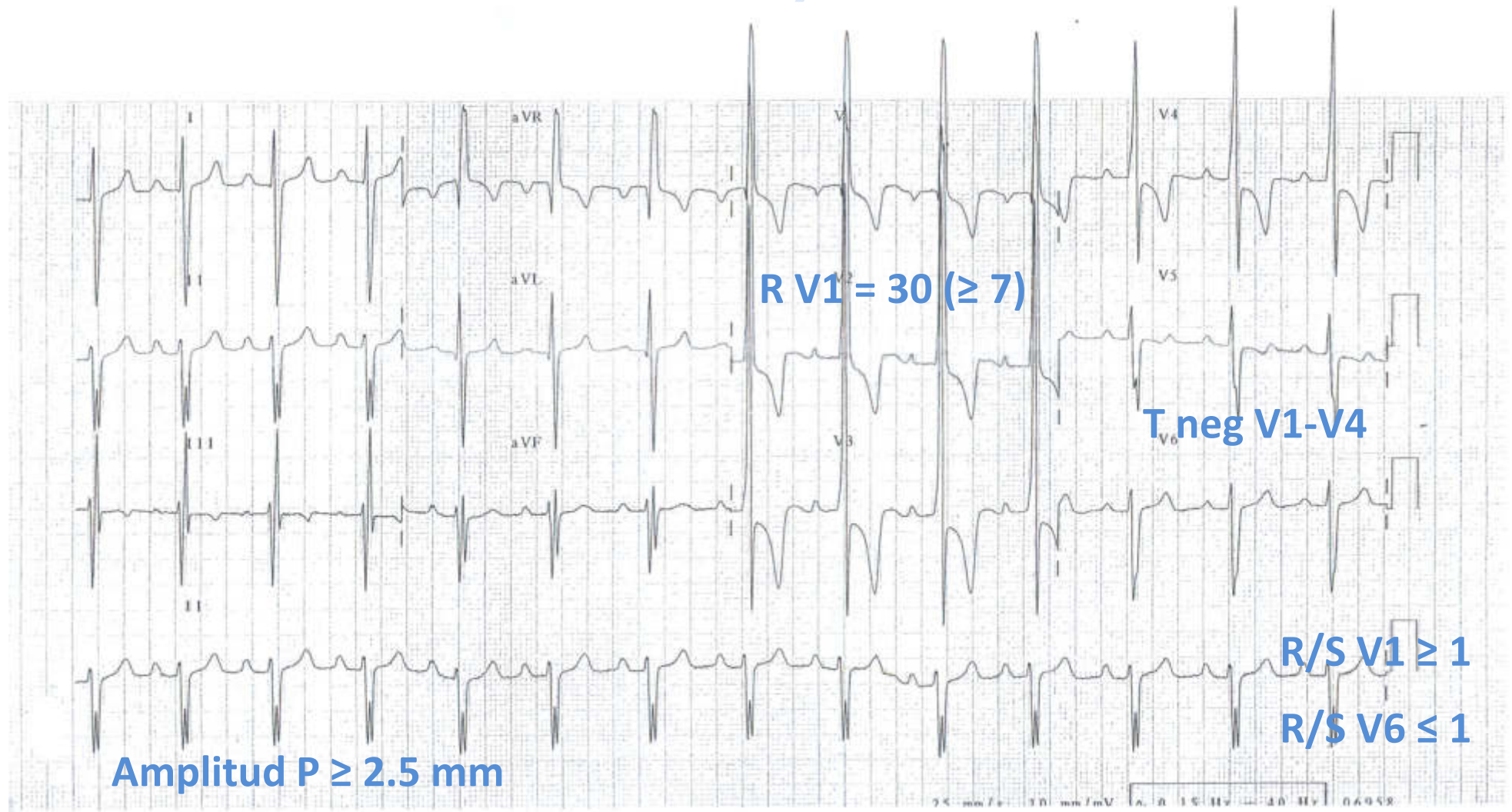


Uno más...

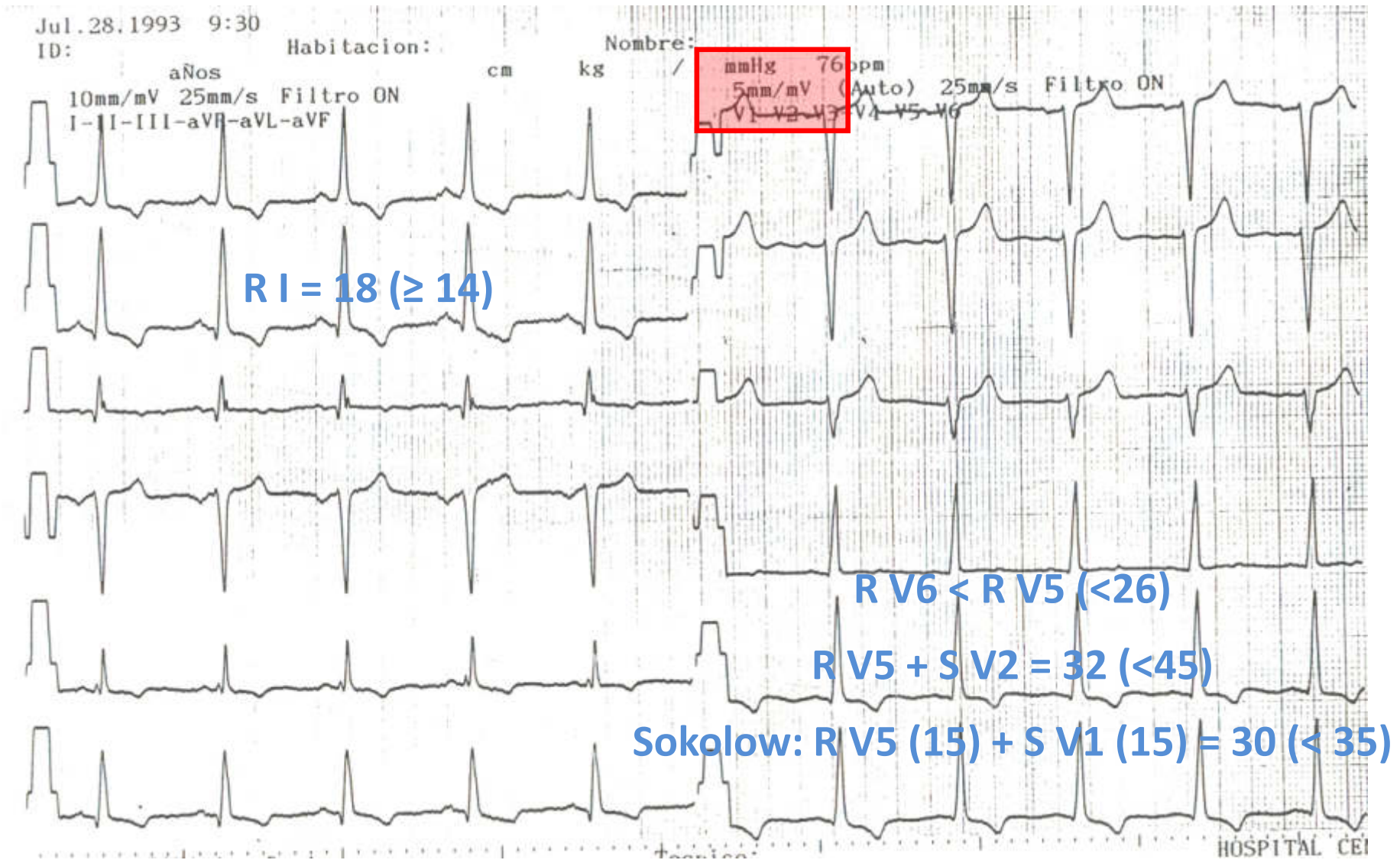


Uno más...

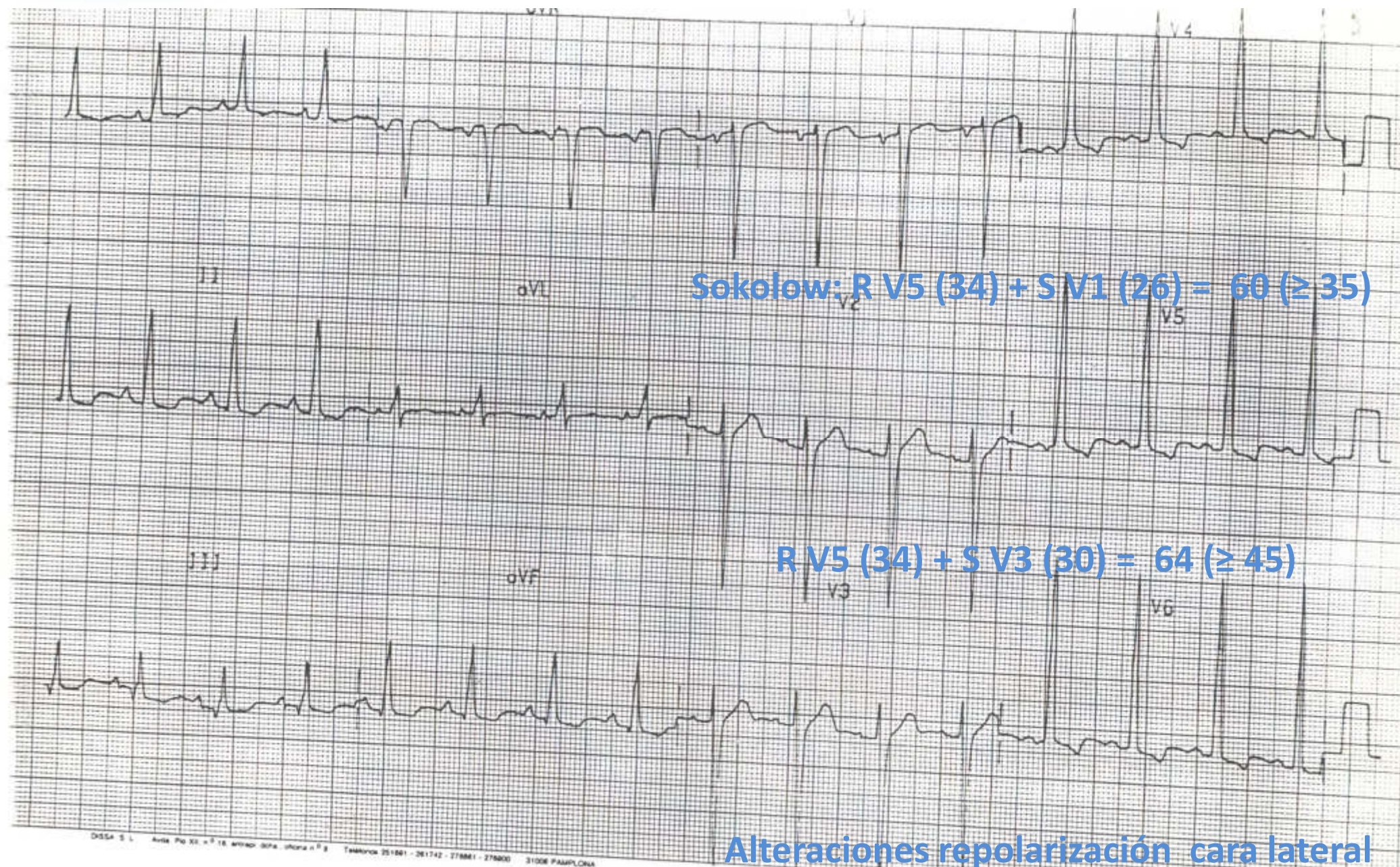
Crecimiento auricular y ventricular derecho



Uno más...

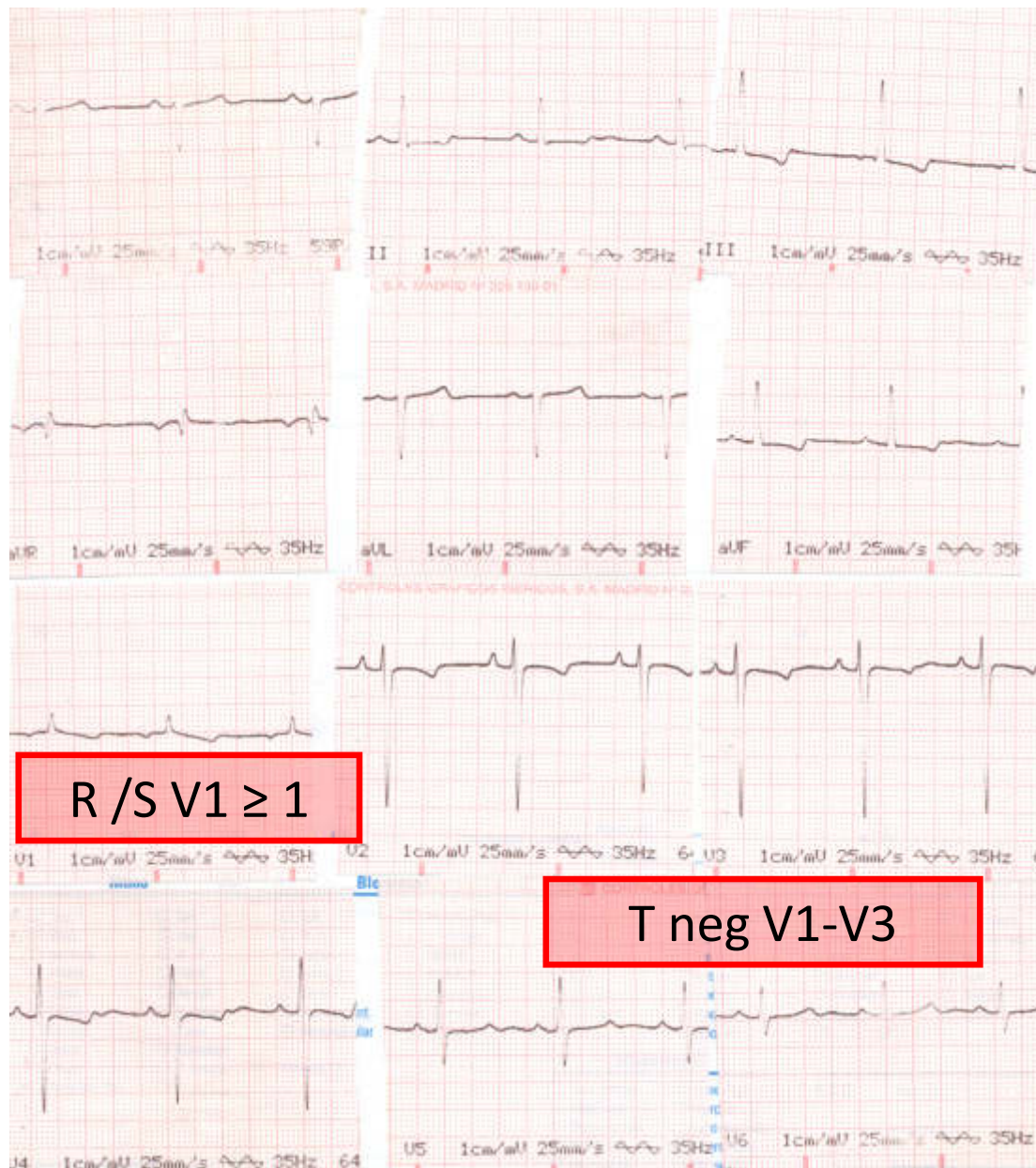


Uno más...



Alteraciones repolarización cara lateral

Uno más...



R /S V1 \geq 1

T neg V1-V3

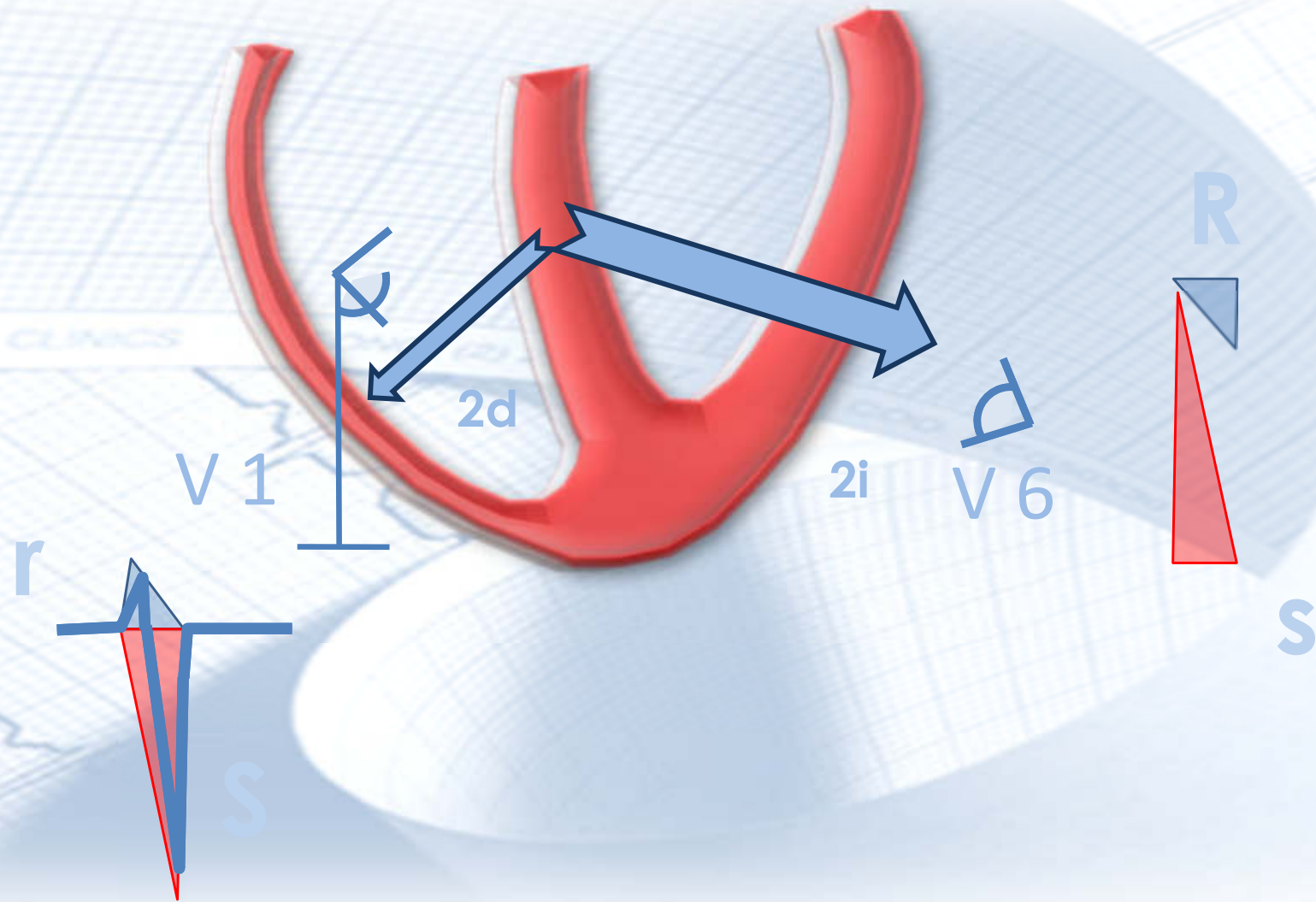
Por fin, la última...

Muchas Gracias

¿Alguna duda?



Activación de los ventrículos



Pasamos a la práctica...

