

CURSO DE ELECTROCARDIOGRAFÍA BÁSICA

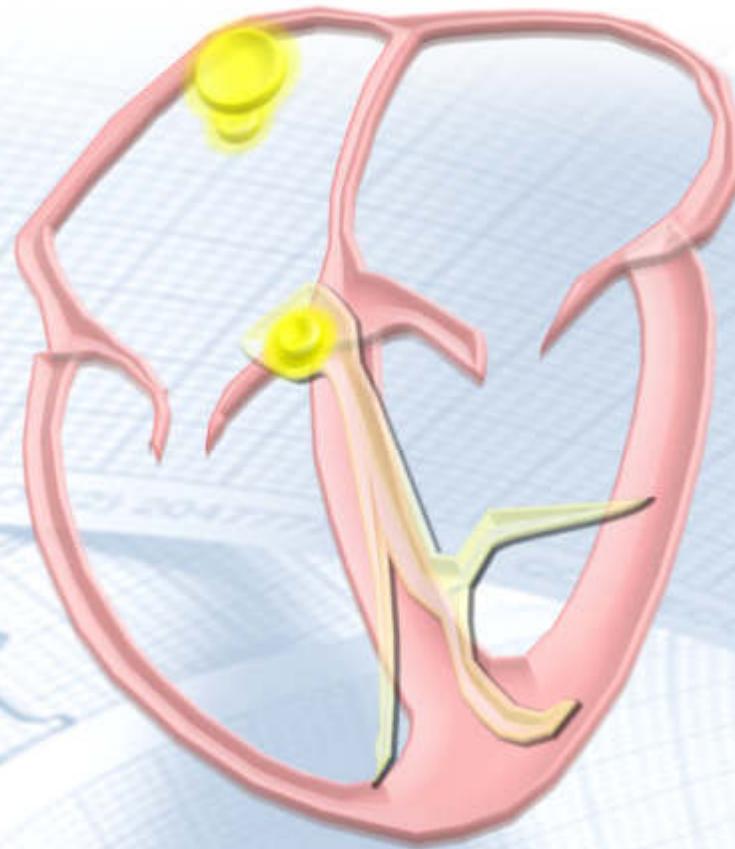
Crecimiento de cavidades

NOVIEMBRE 2022



Víctor M. Puebla Rojo
Servicio de Cardiología

Correlación fenómenos eléctricos-ECG



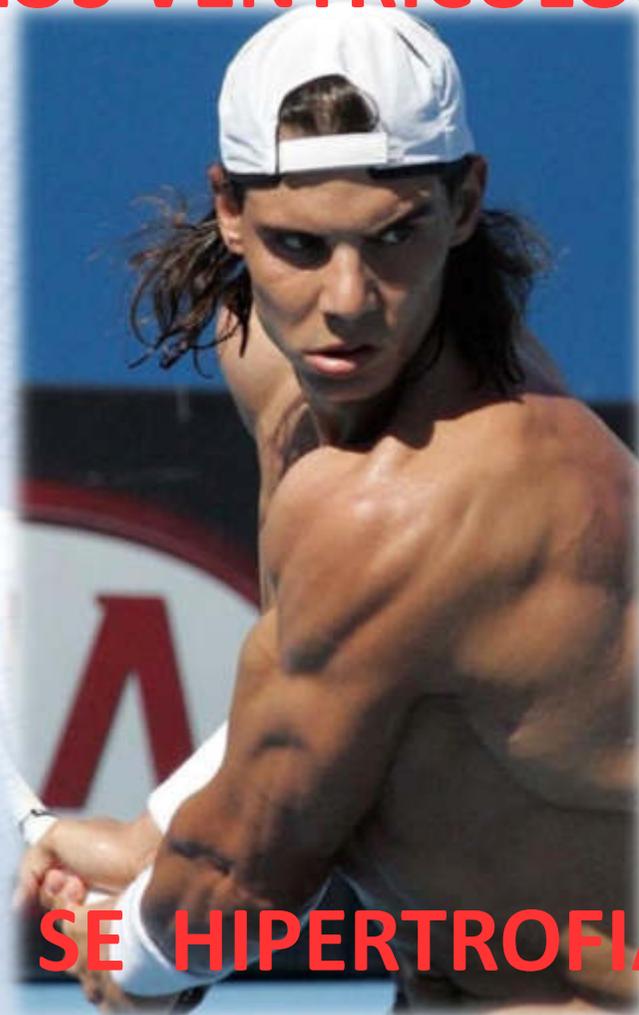
Crecimiento de cámaras cardíacas

LAS AURÍCULAS



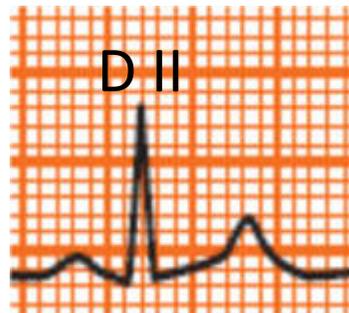
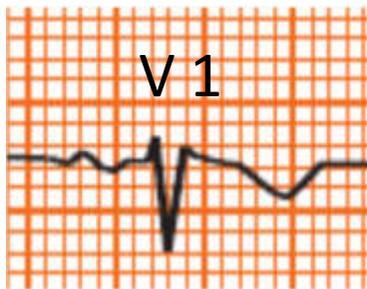
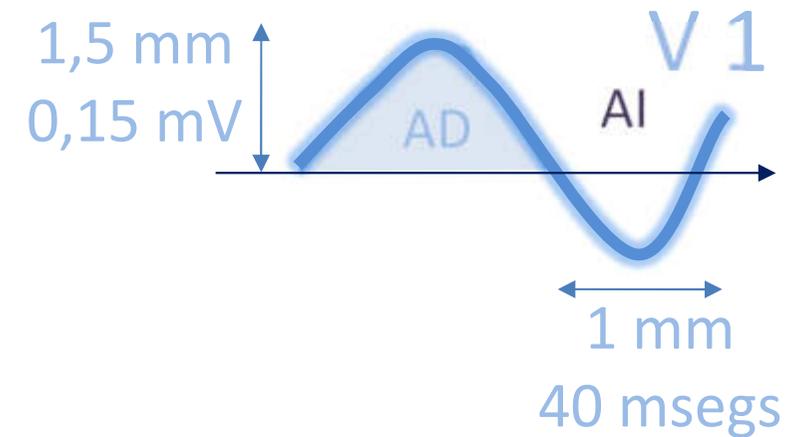
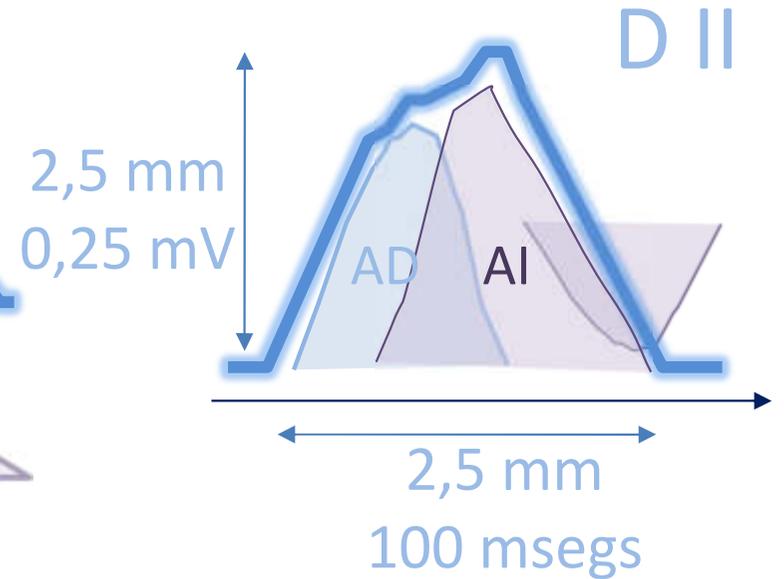
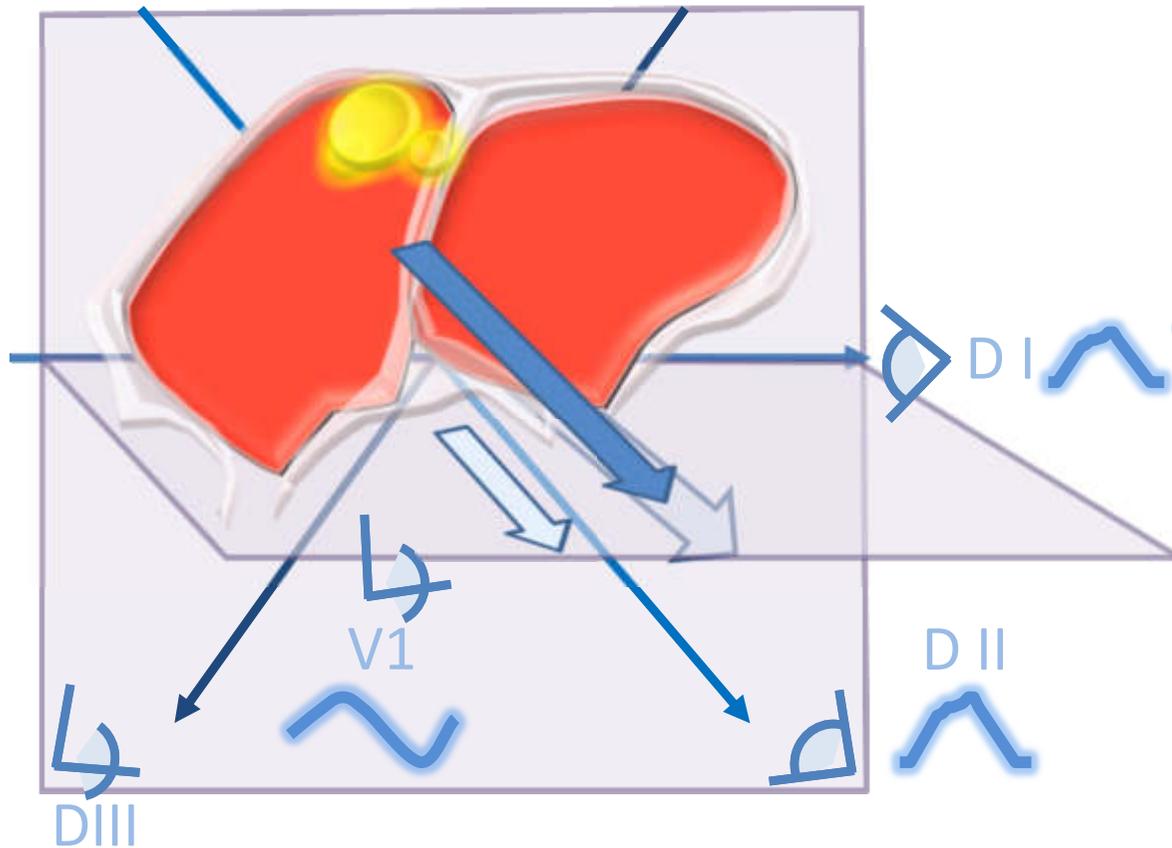
SE DILATAN

LOS VENTRÍCULOS



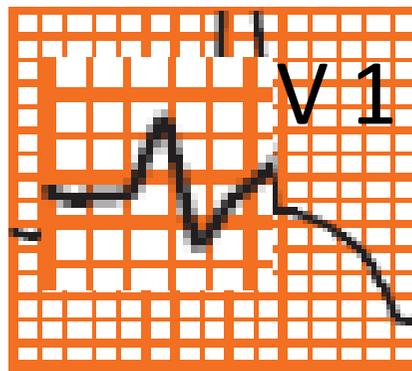
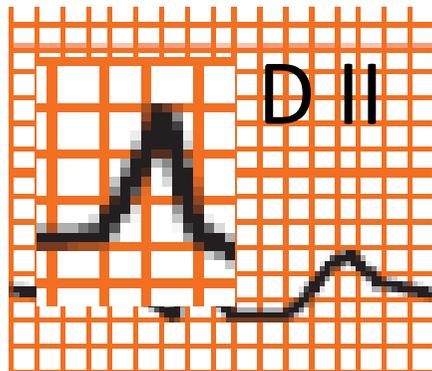
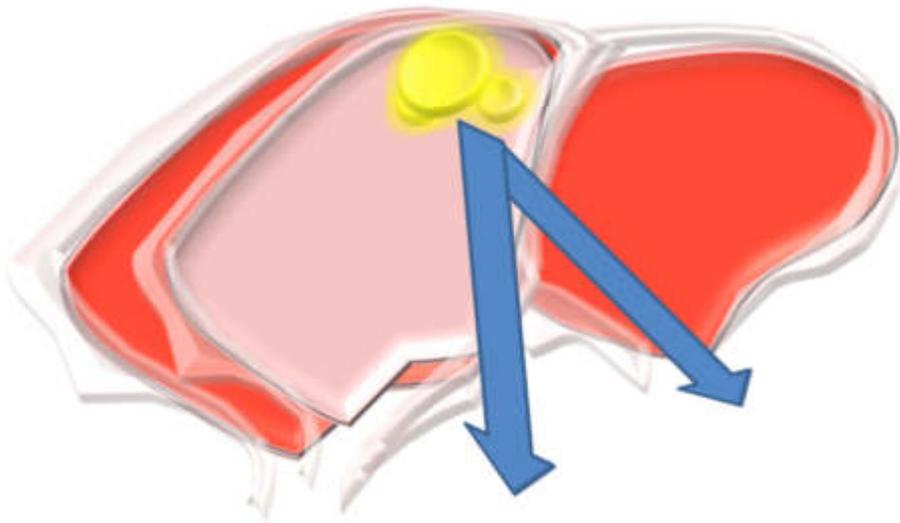
**SE HIPERTROFIAN
y/o DILATAN**

La onda P normal



Crecimiento de aurícula DERECHA

Cuestión de ALTURA



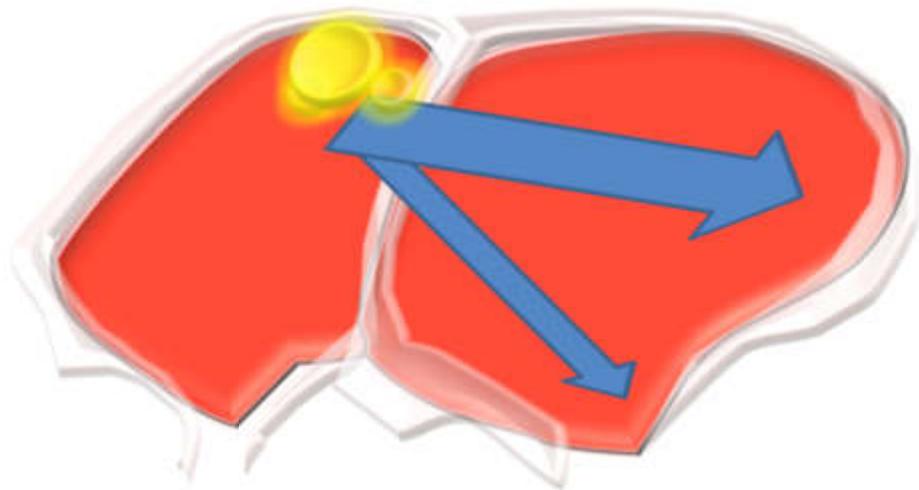
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Crecimiento de aurícula IZQUIERDA

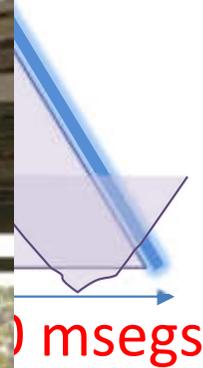
Cuestión de ANCHURA



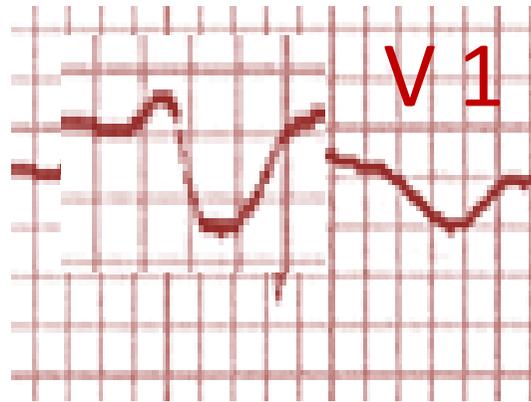
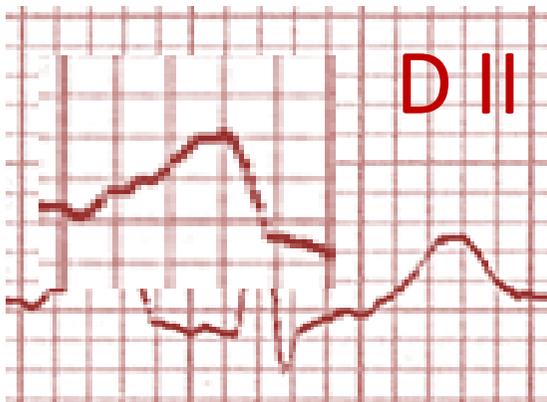
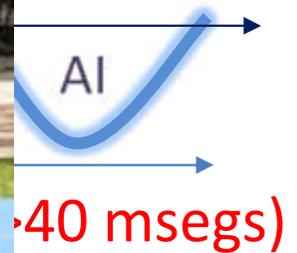
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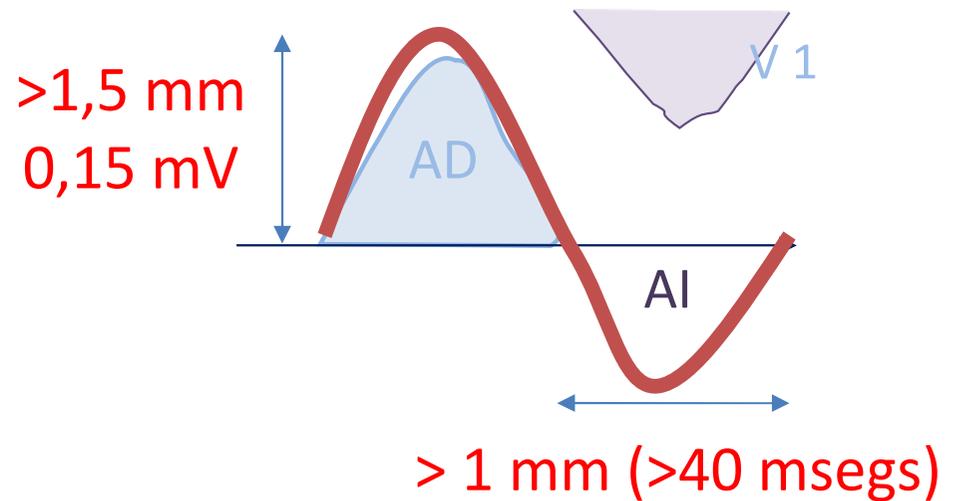
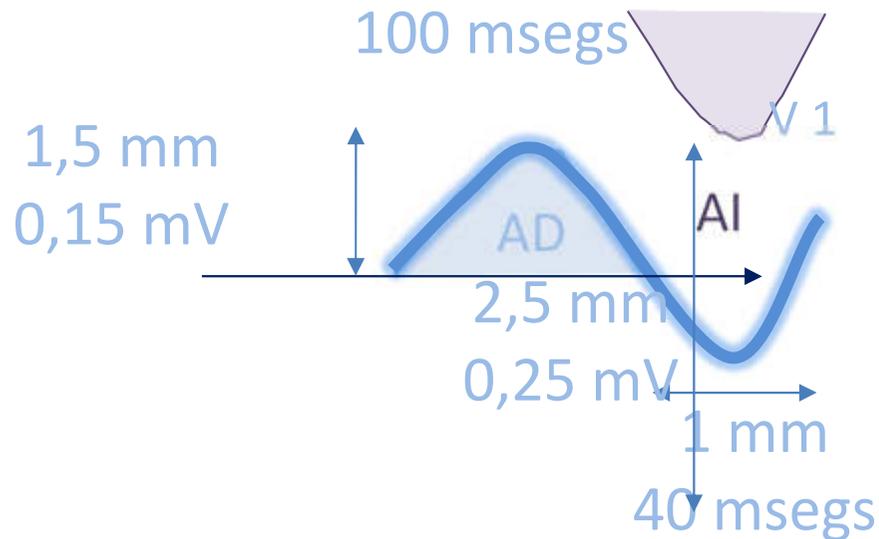
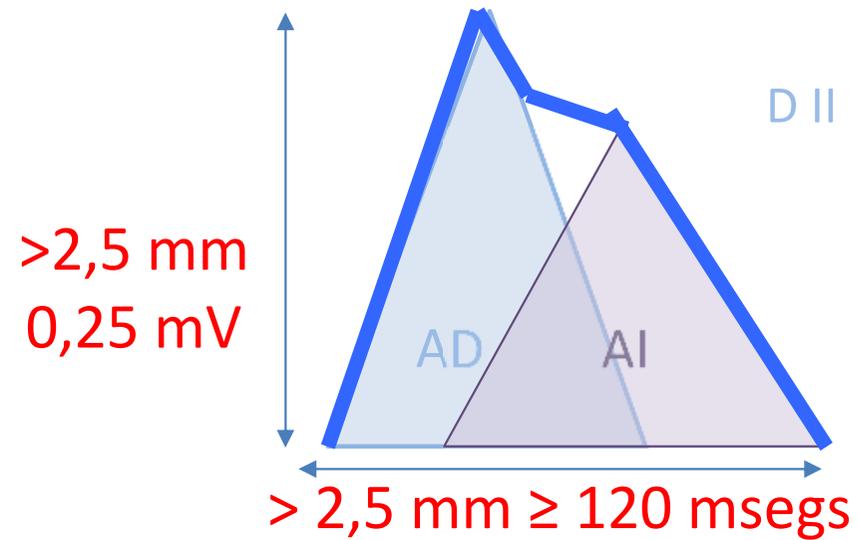
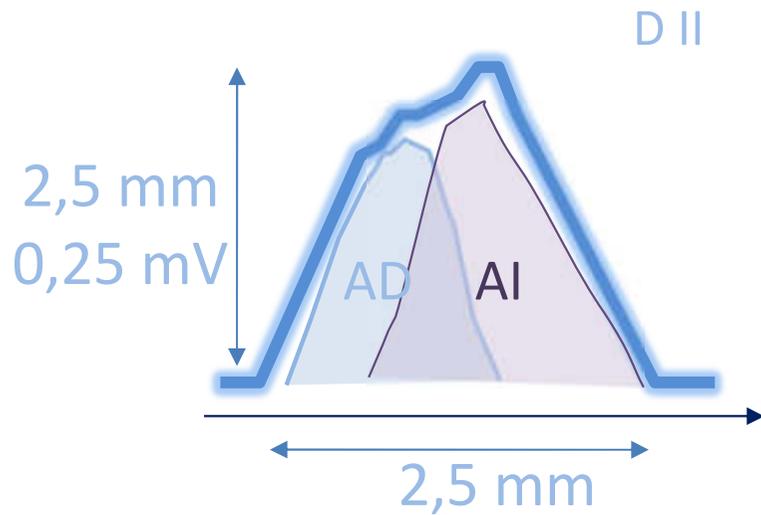
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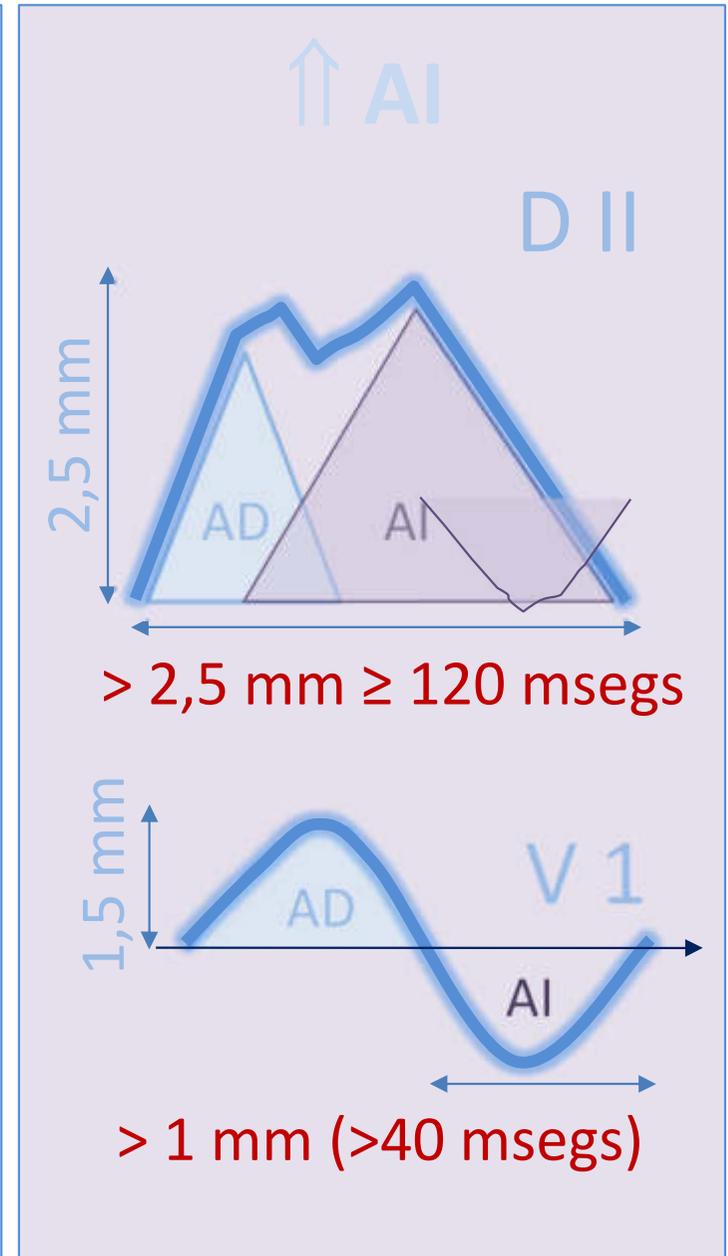
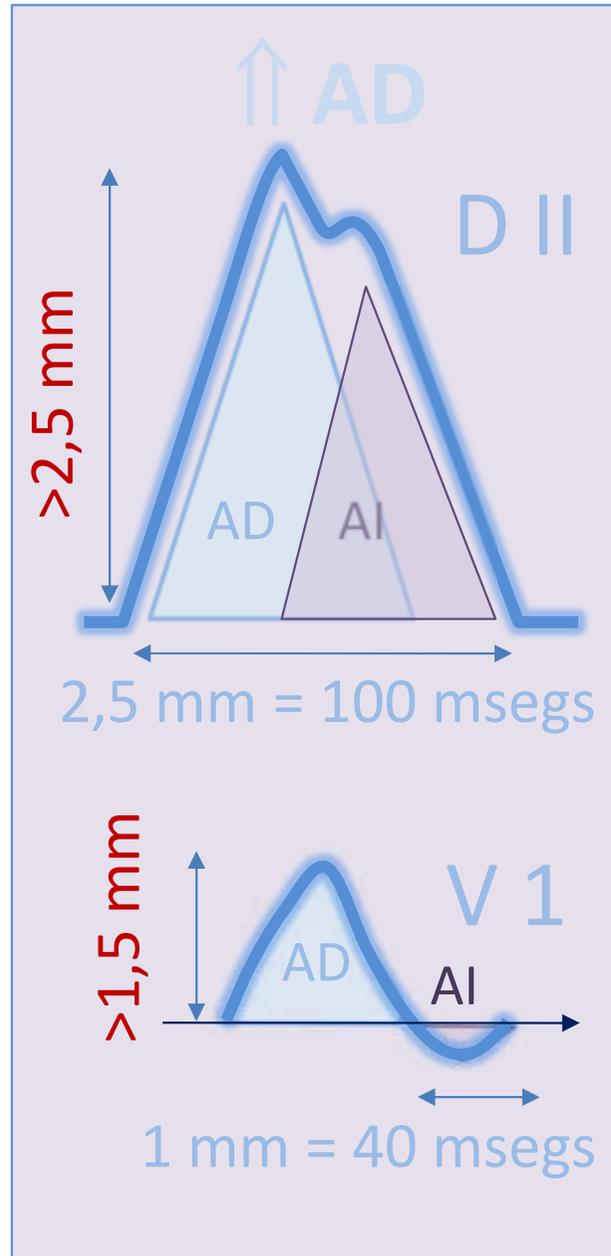
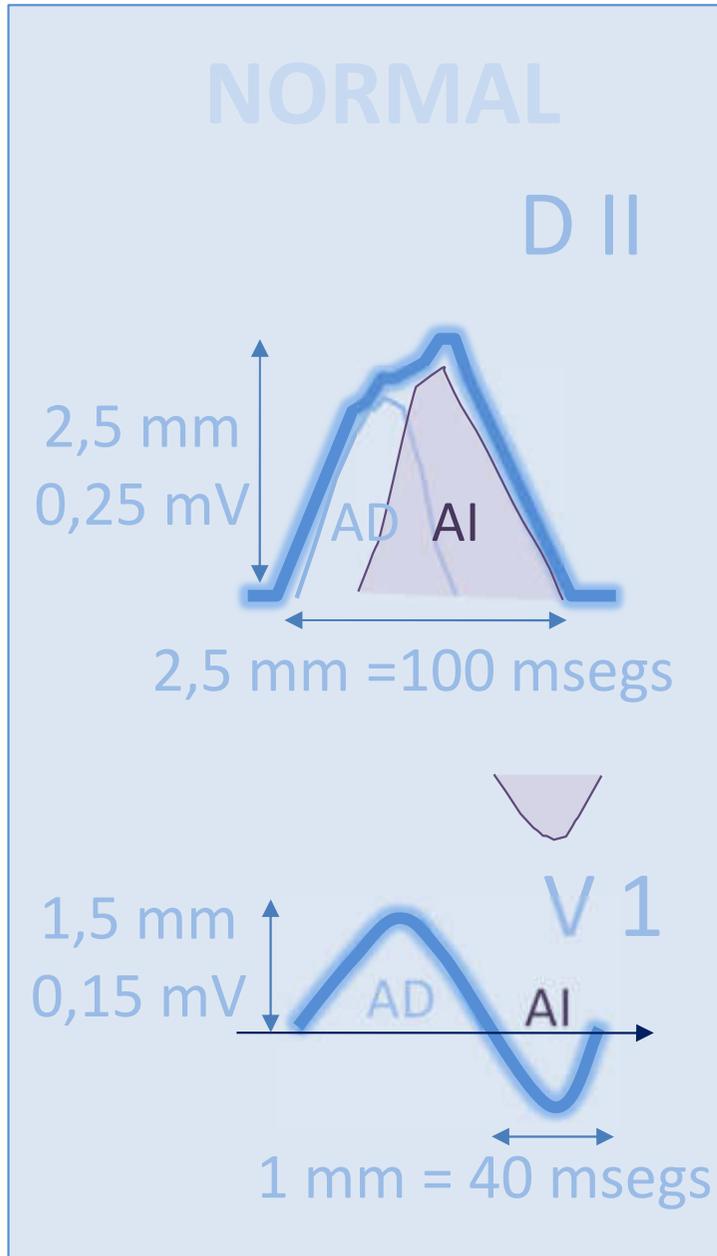
V 1



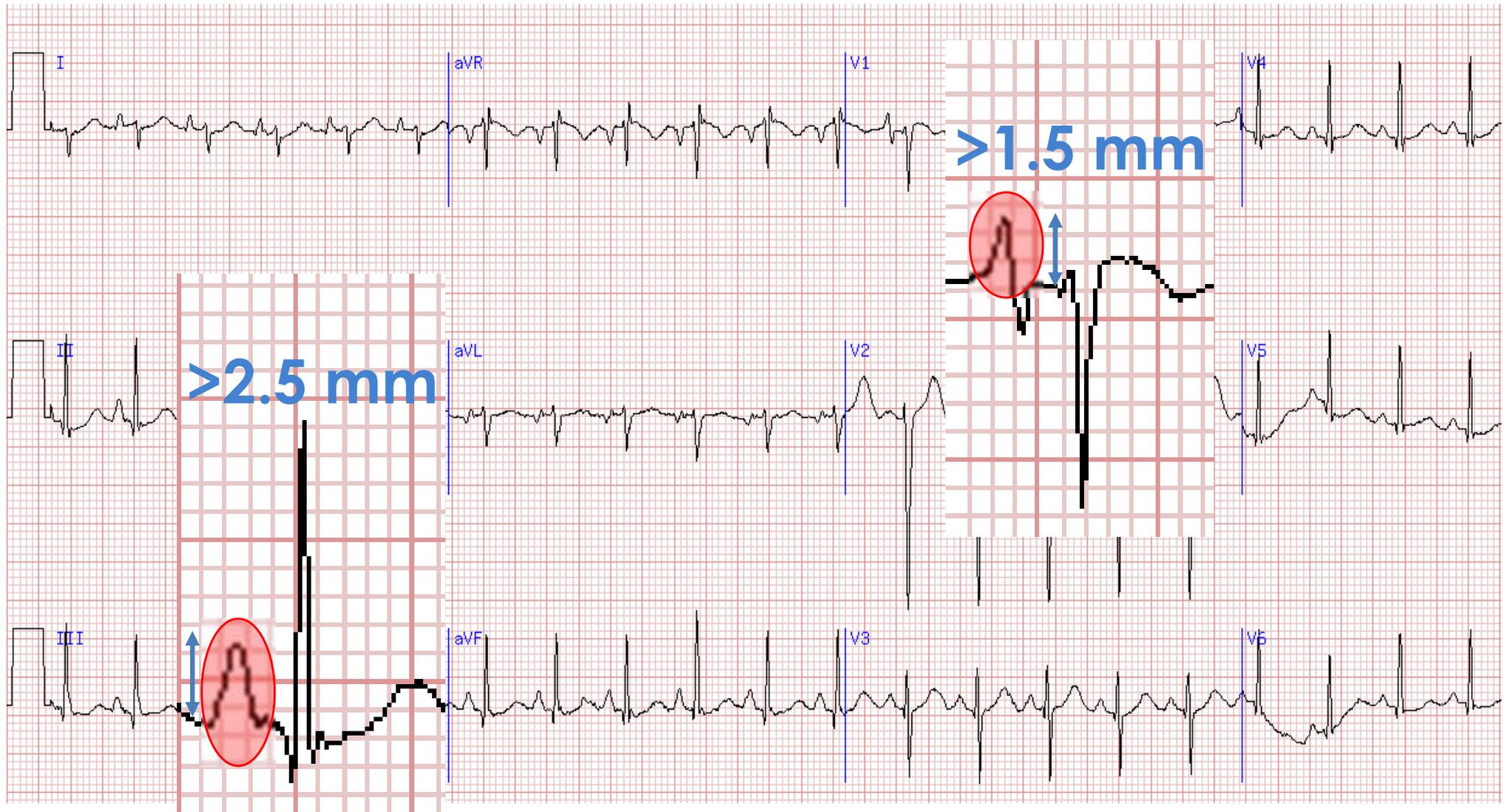
Crecimiento biauricular



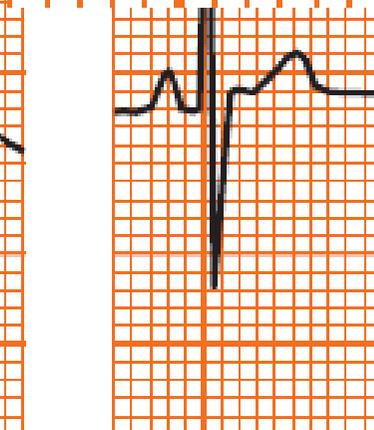
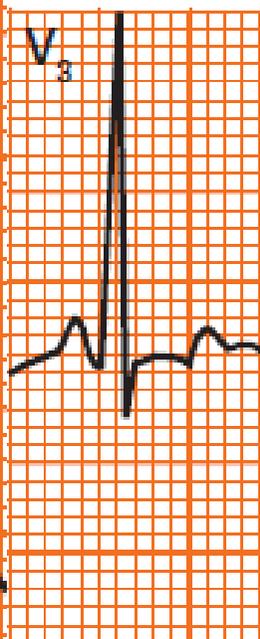
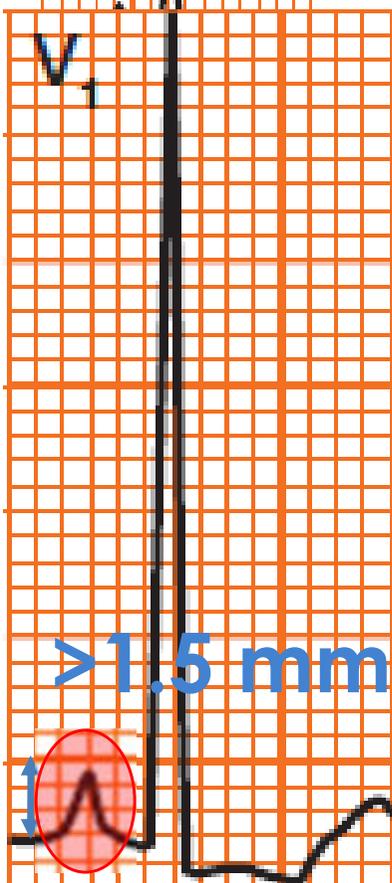
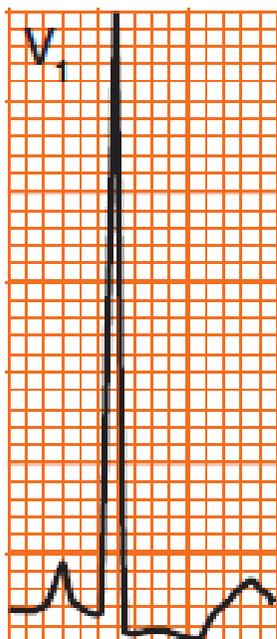
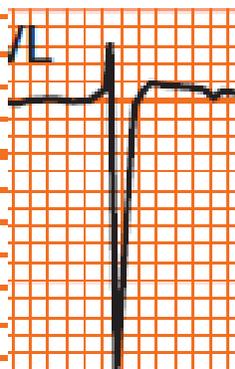
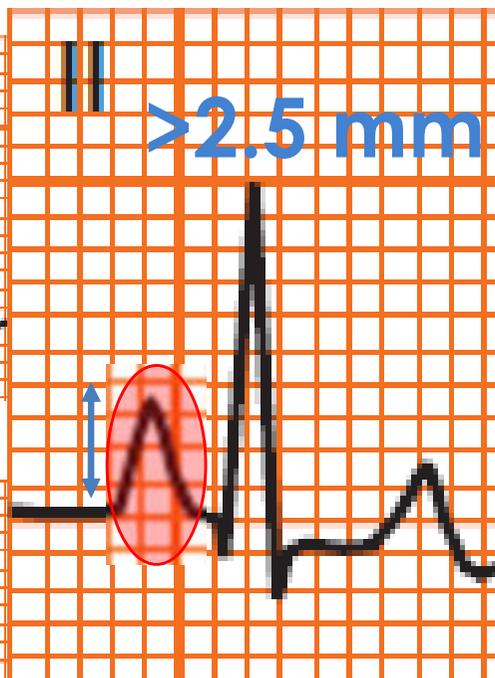
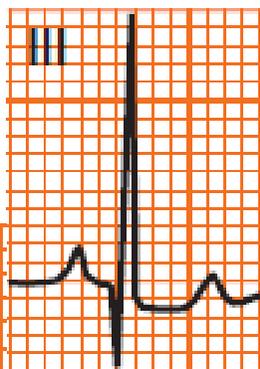
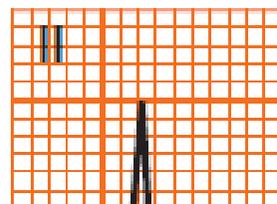
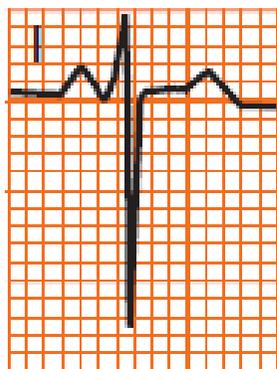
En resumen...



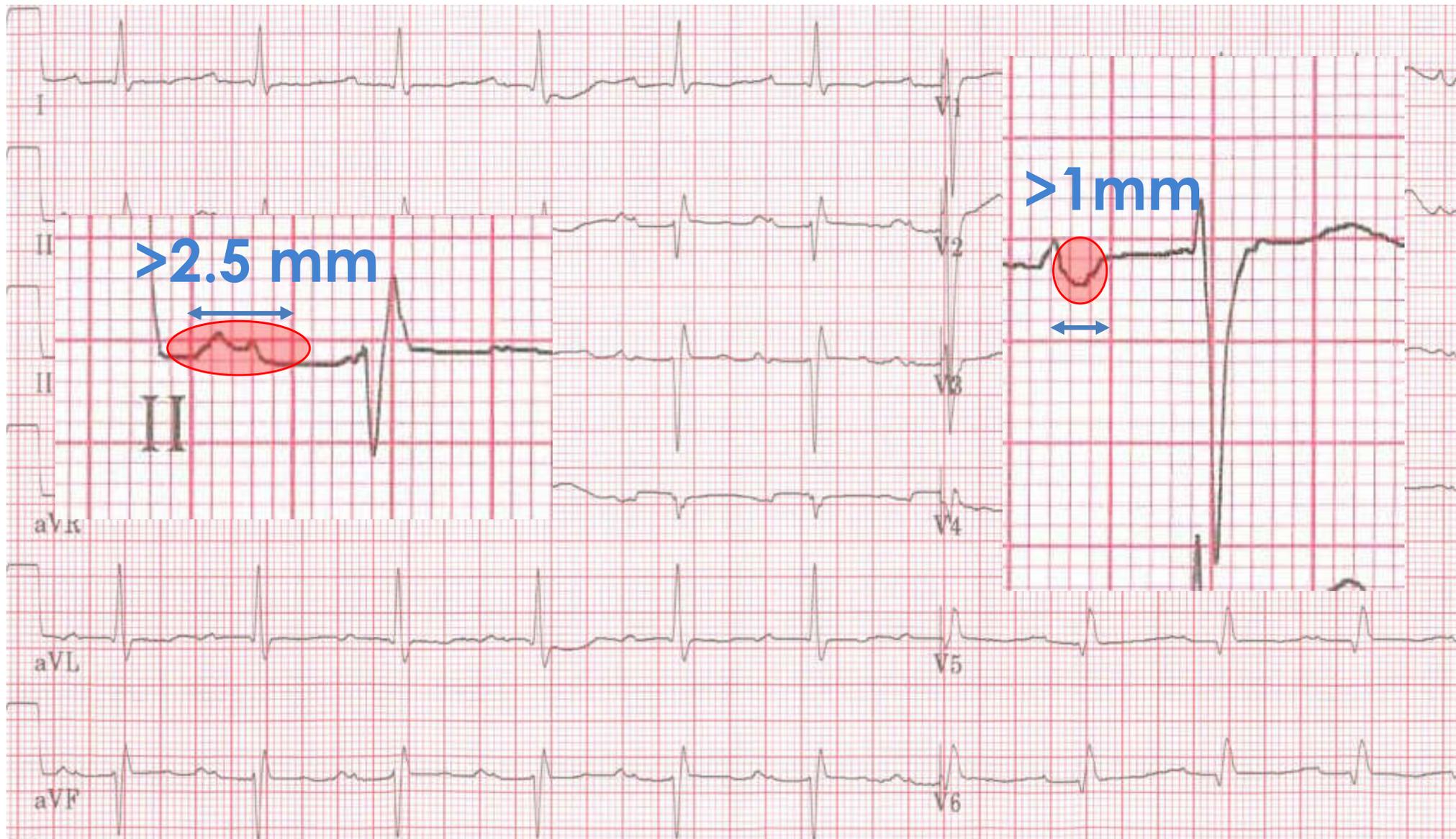
Un poco de práctica...



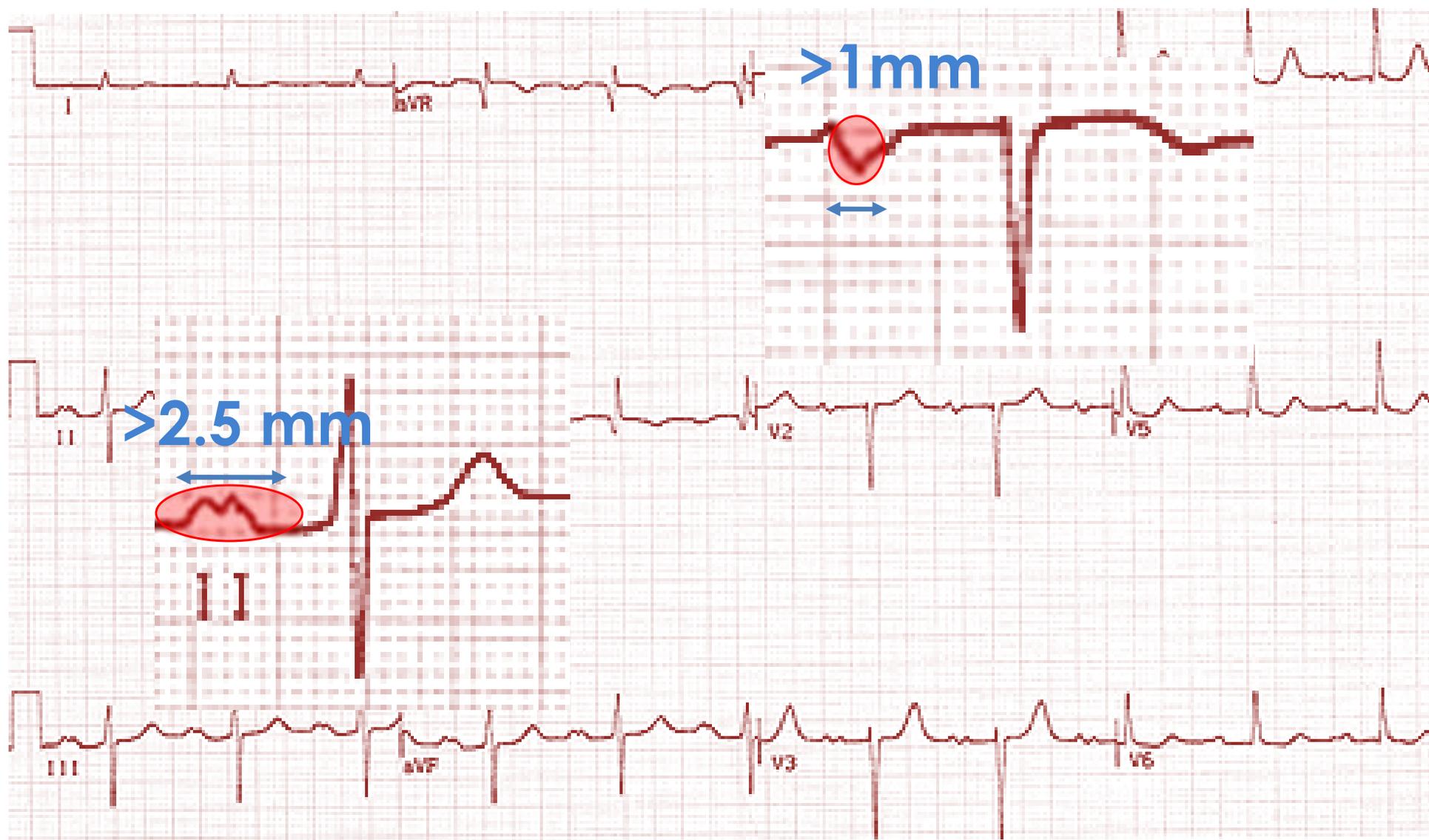
Más práctica...



Más práctica...



Más práctica...



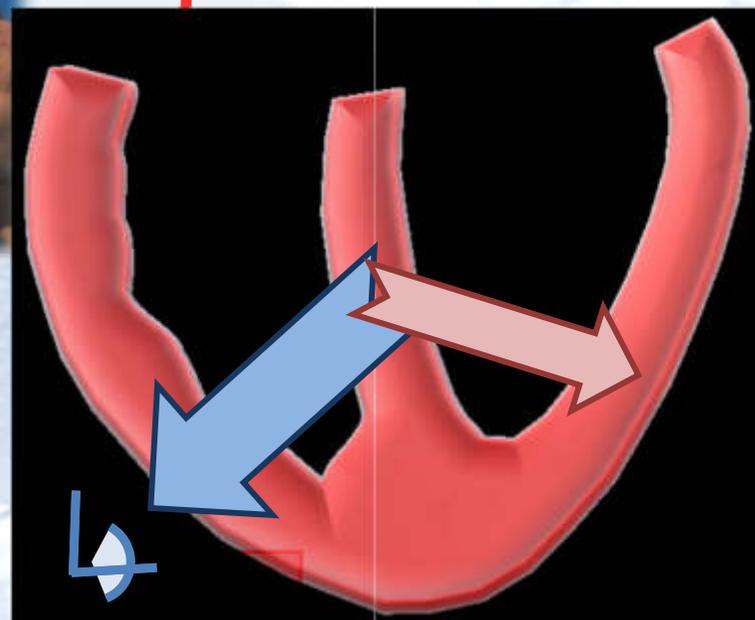
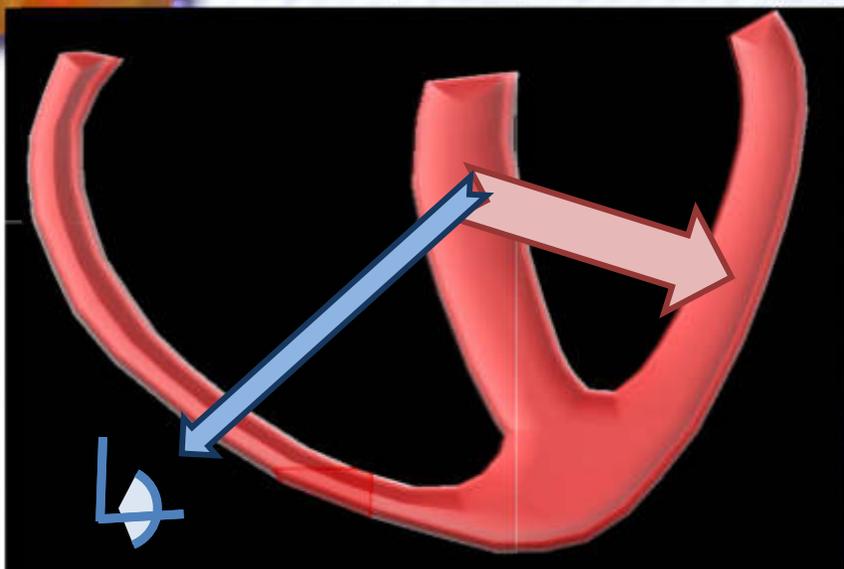
Activación de los ventrículos



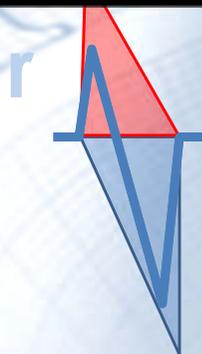
Crecimiento de VD

Dilatación VD

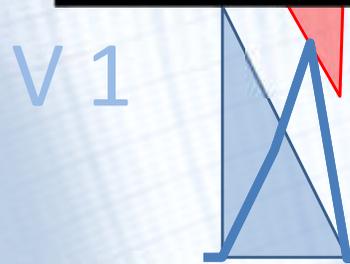
Hipertrofia VD



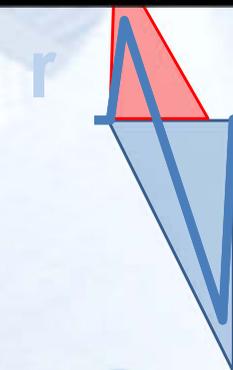
$$R > s$$



$$S > r$$



$$R > 7 \text{ mm}$$



$$S > 7 \text{ mm}$$

Crecimiento de VD

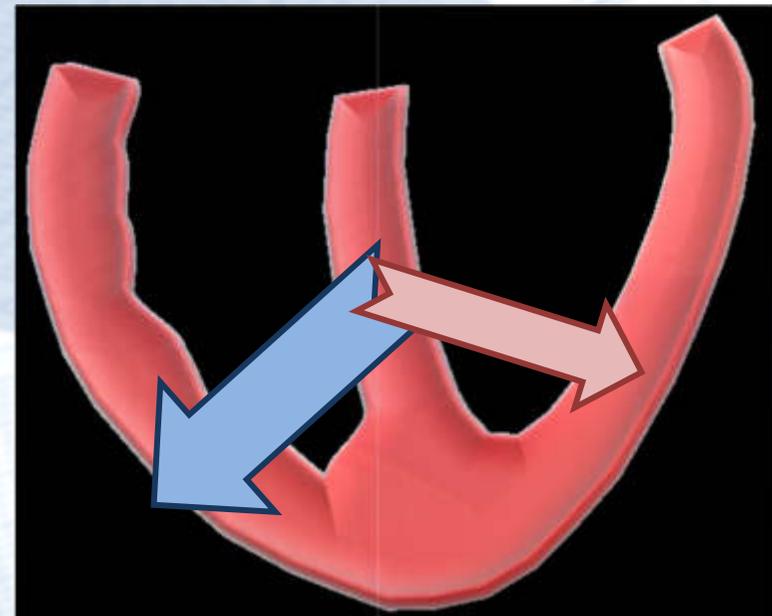
R/S en V1 ≥ 1 o ≤ 1 en V6

R V1 ≥ 7 mm

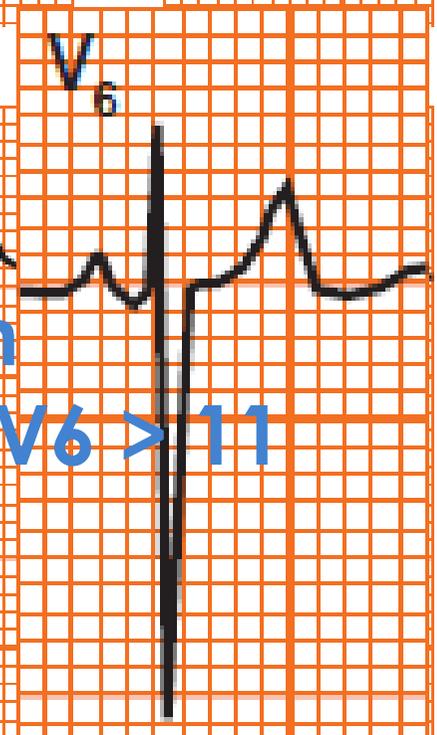
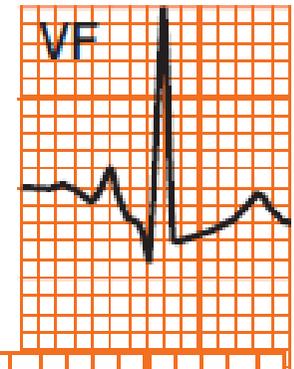
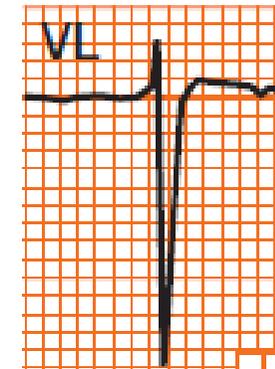
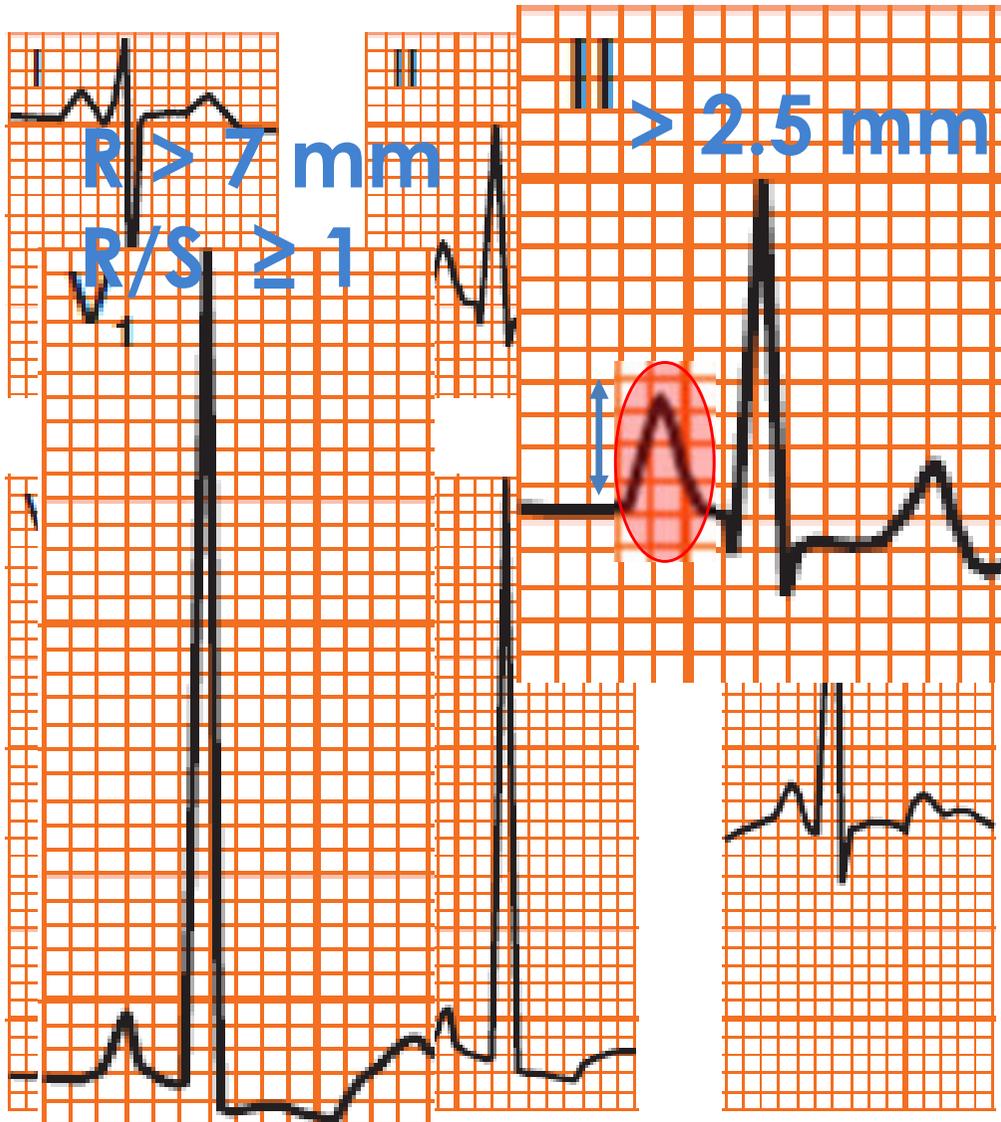
R de V1 + S de V6 > 11 mm

Inversión T en V1-V3

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

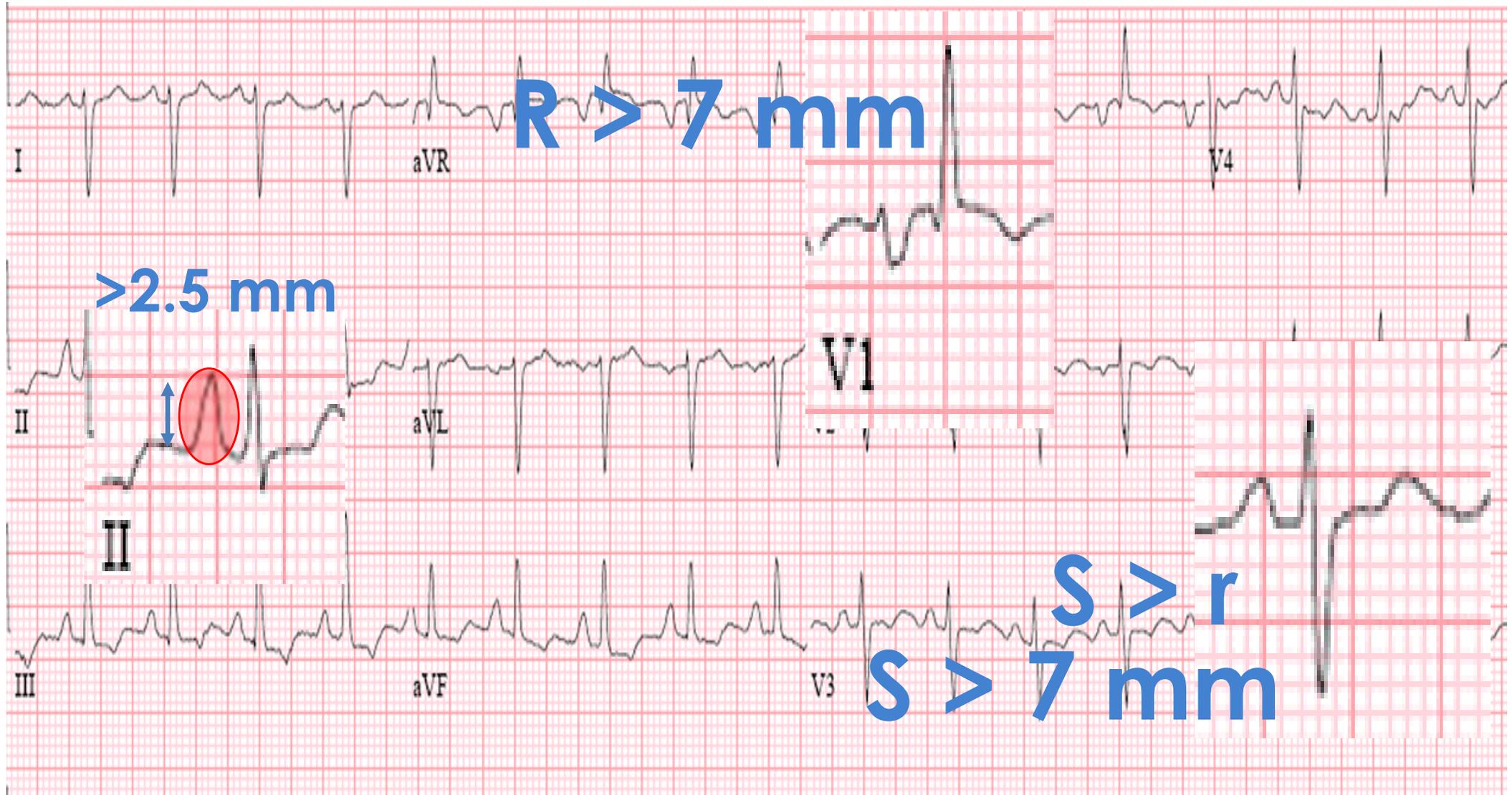


Pasamos a la práctica...

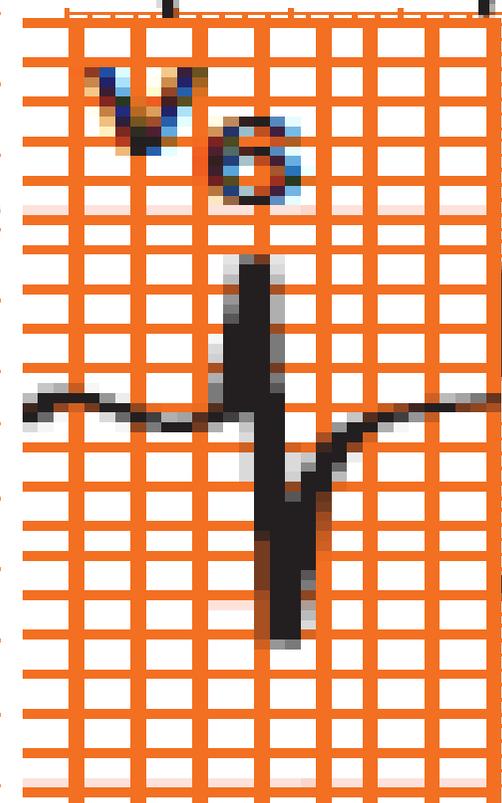
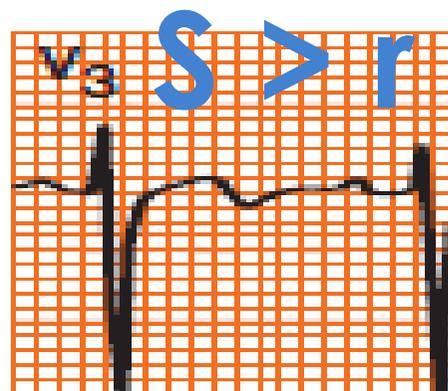
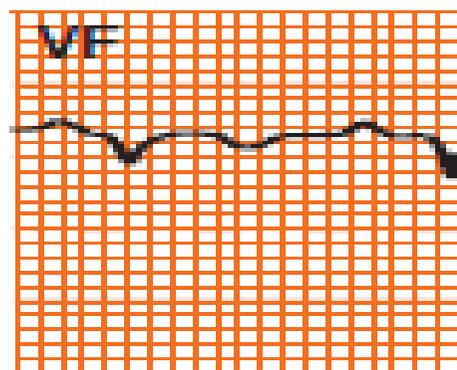
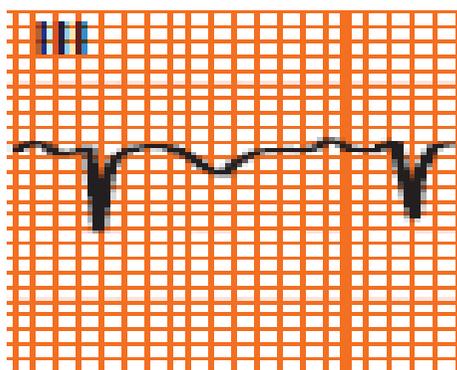
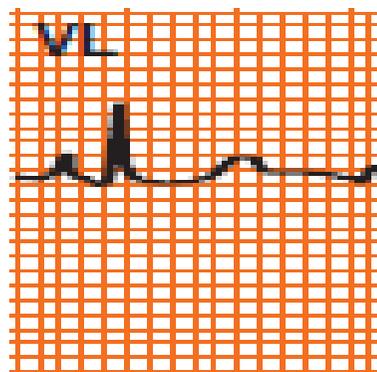
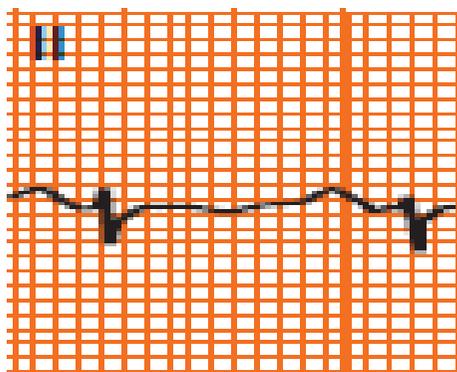
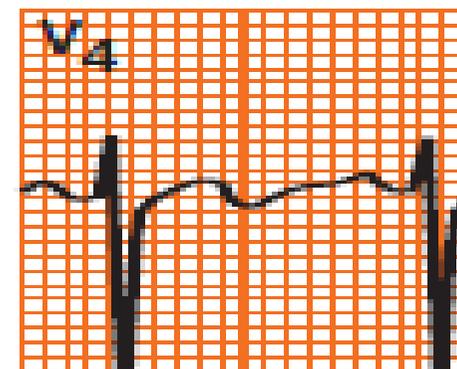
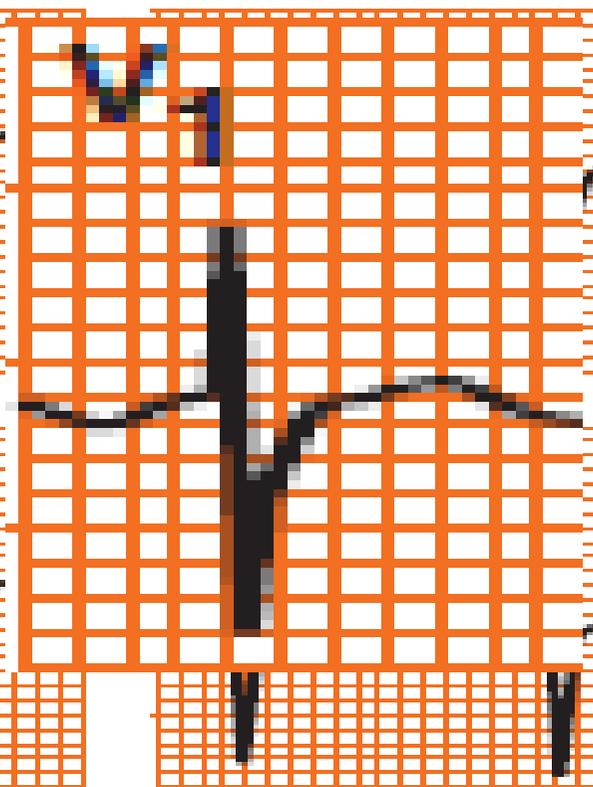
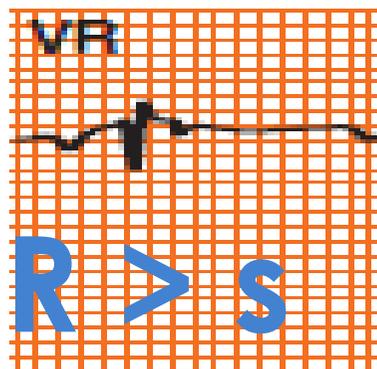
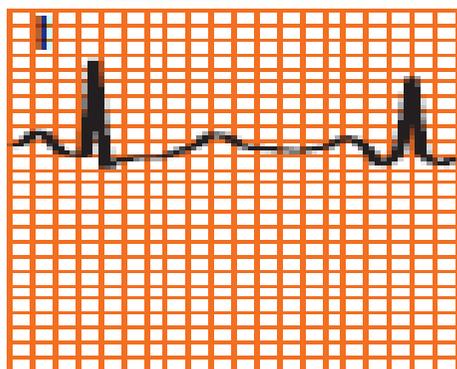


$S > r$
 $S > 7 \text{ mm}$
 $R_{V1} + S_{V6} > 11$

Más práctica...

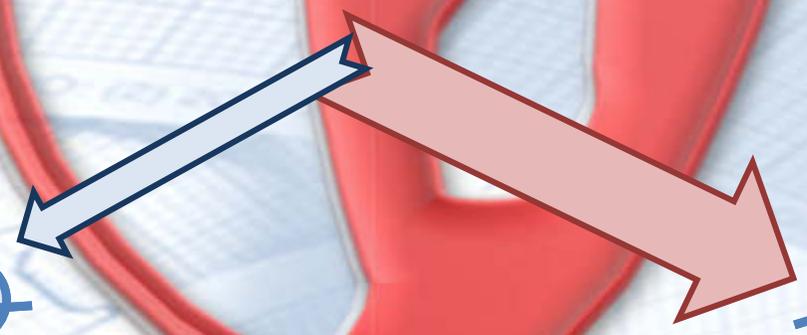
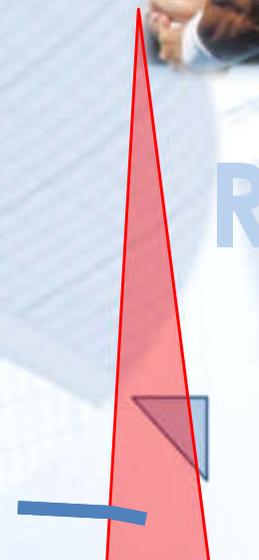
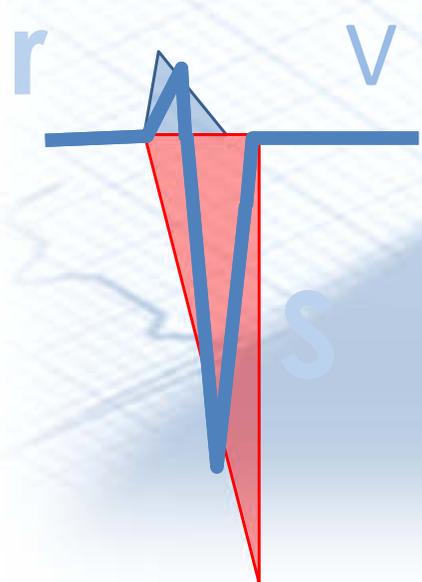


Más práctica...



Crecimiento de VI

Hipertrofia y Dilatación



Crecimiento de VI

Criterios diagnósticos

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

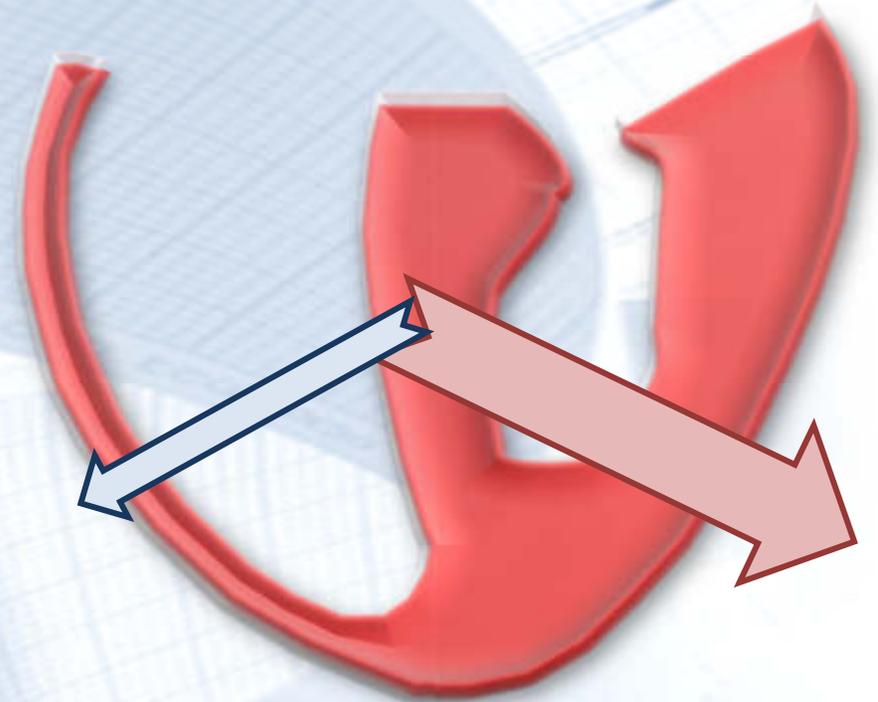
$R \text{ máxima} + S \text{ máxima} \geq 45 \text{ mm}$ (precordiales)

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

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

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

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





Crecimiento de VI

Criterios de Romhilt-Estes

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

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).

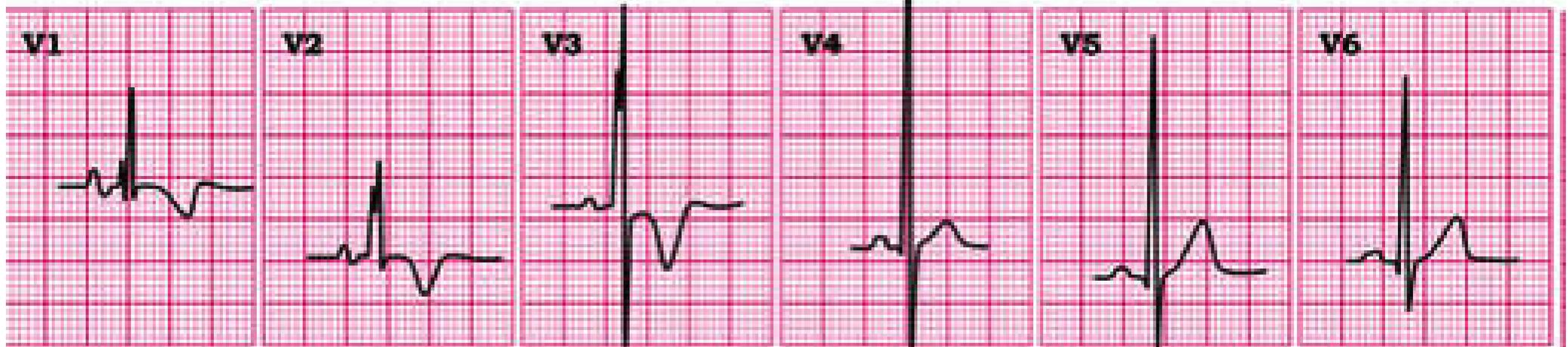
Unos ejemplos...

Crecimiento biventricular

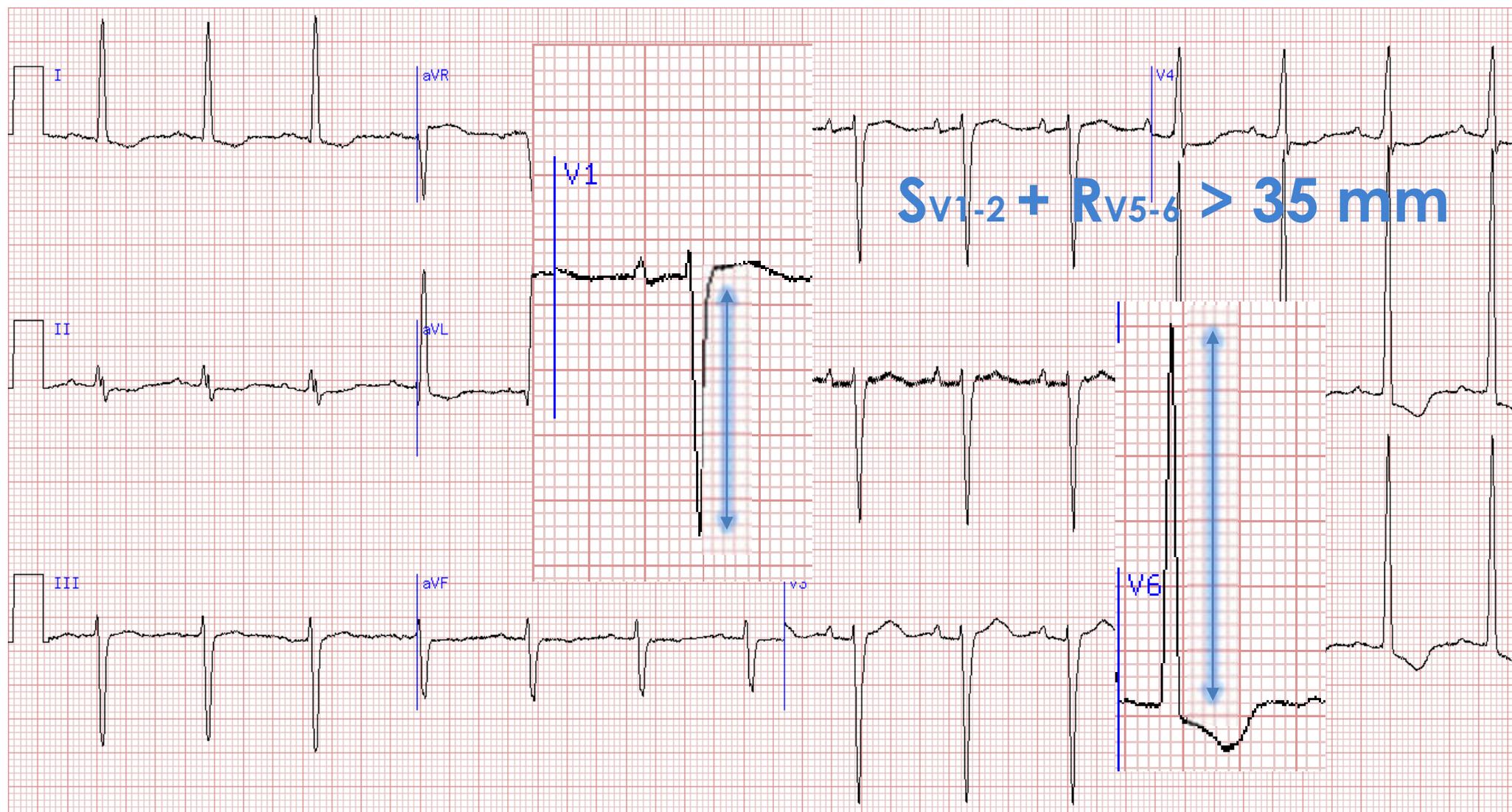


Eje + 90°

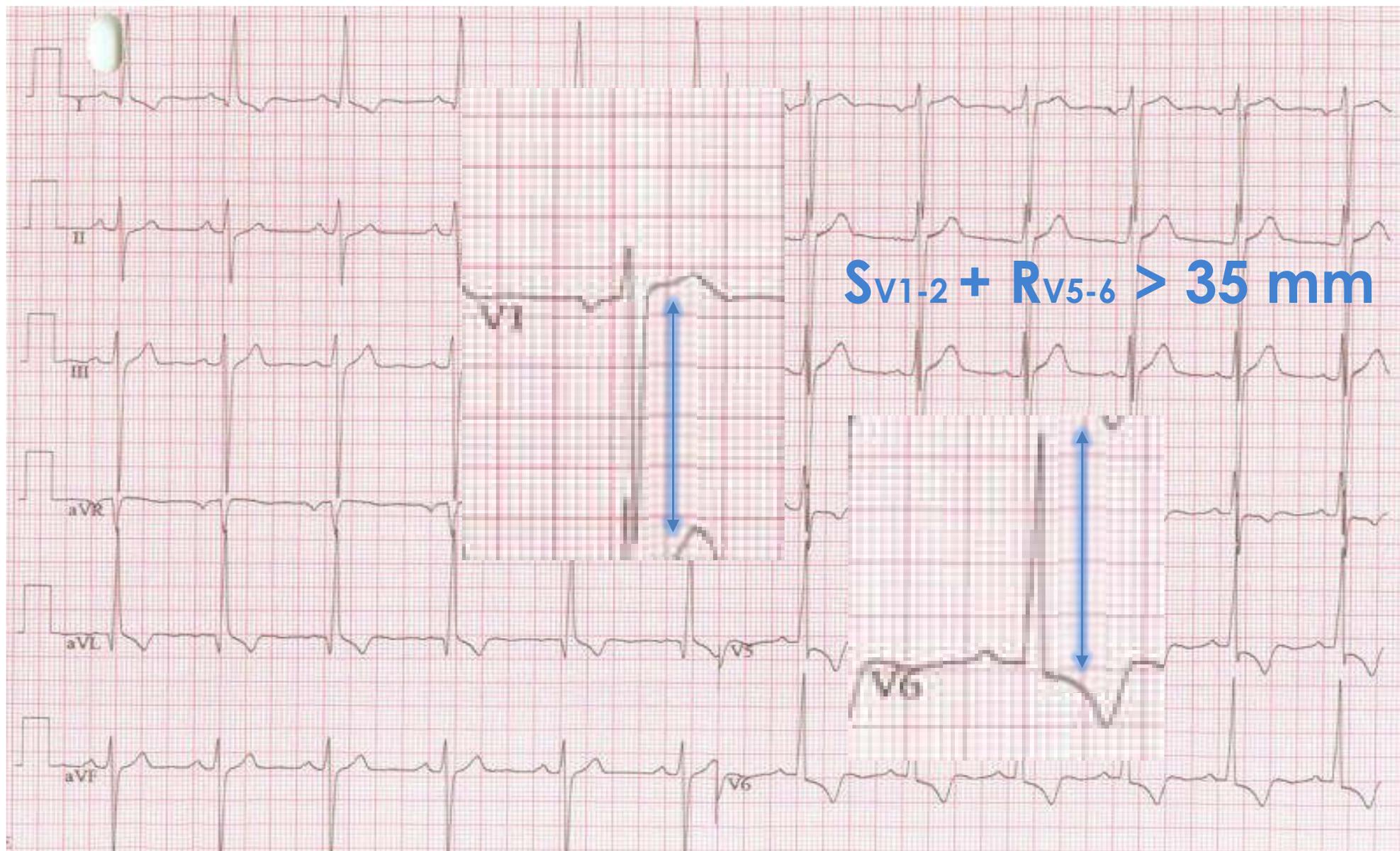
$R_{V5} > 26 \text{ mm}$



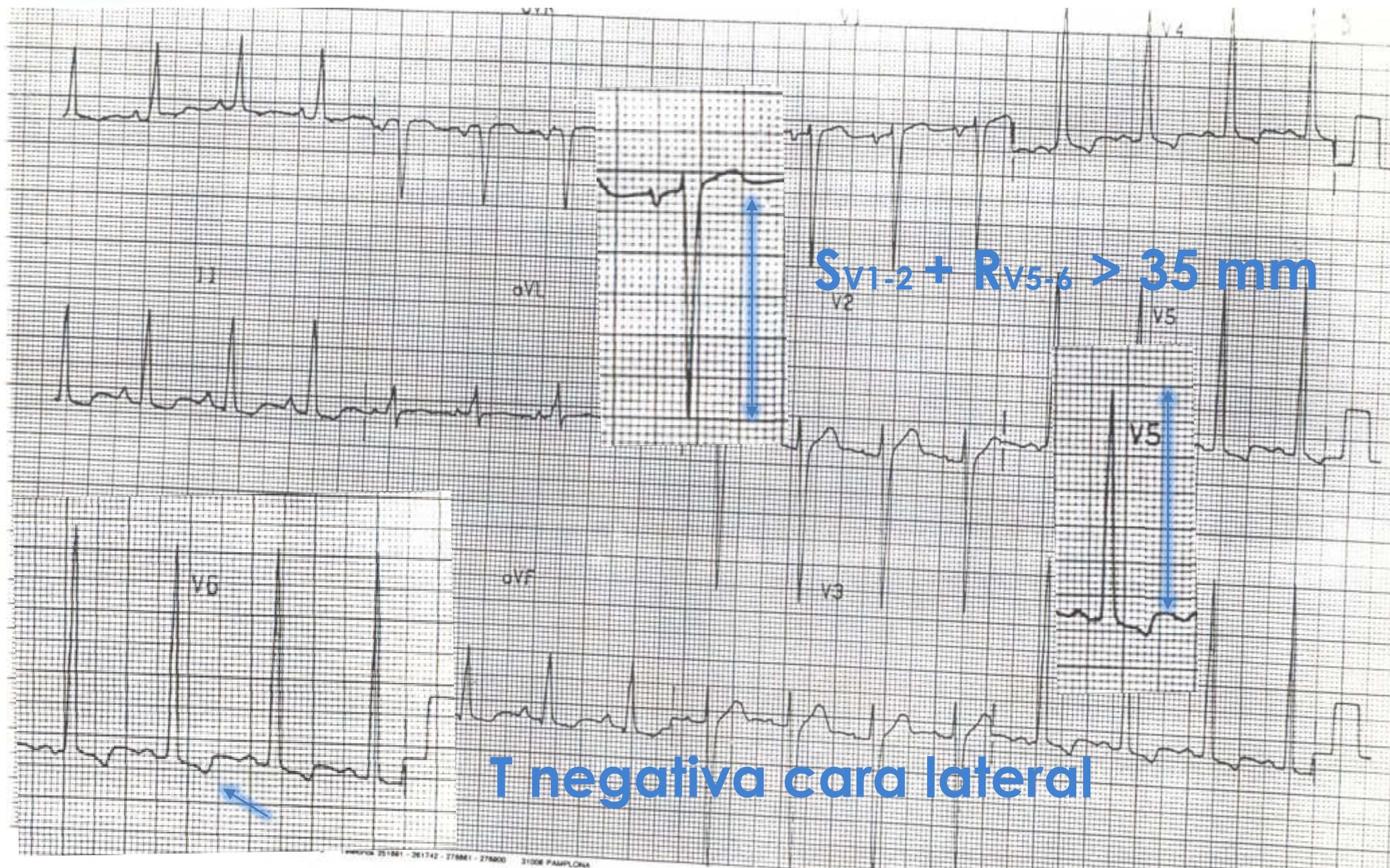
Unos ejemplos...



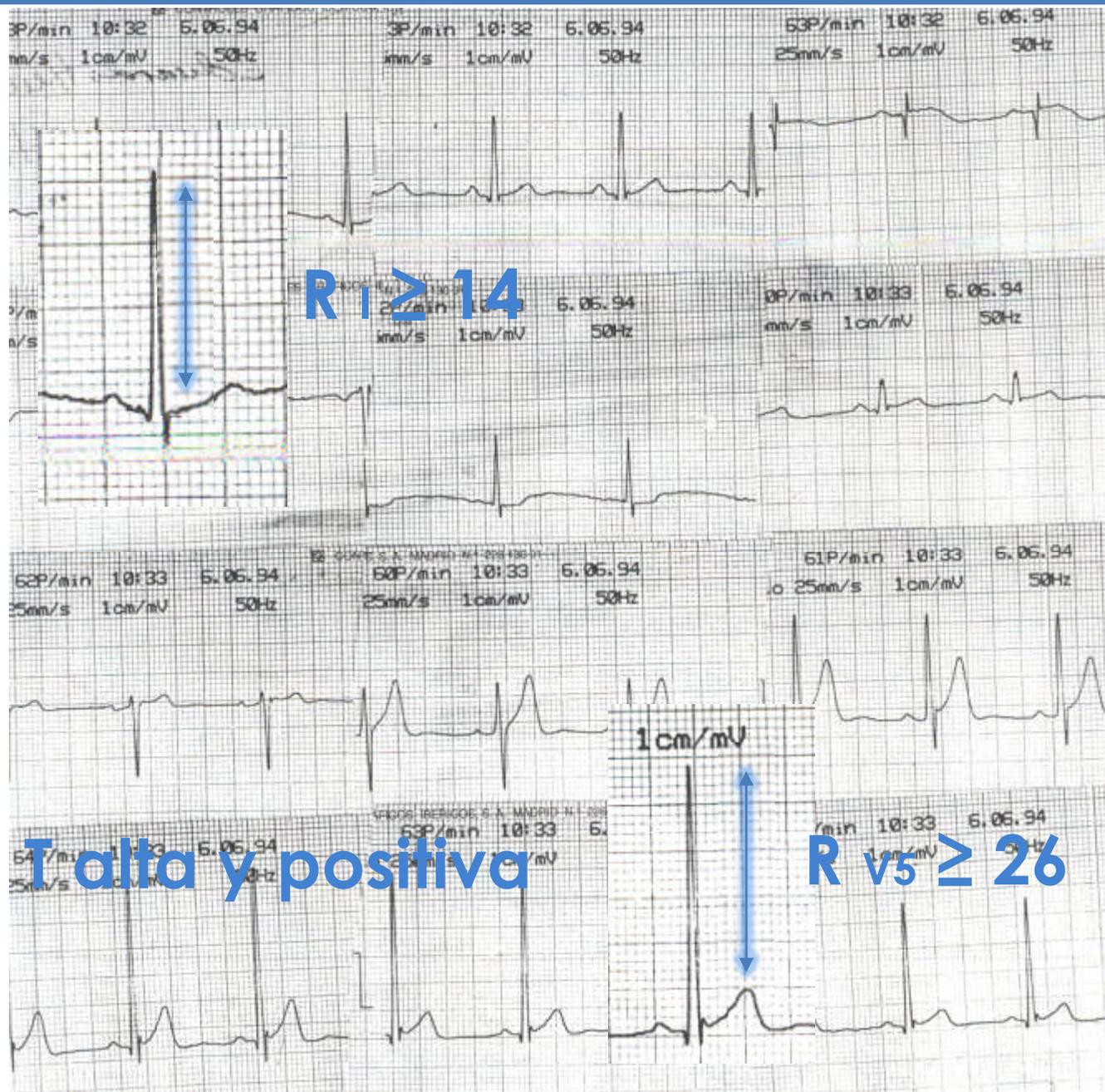
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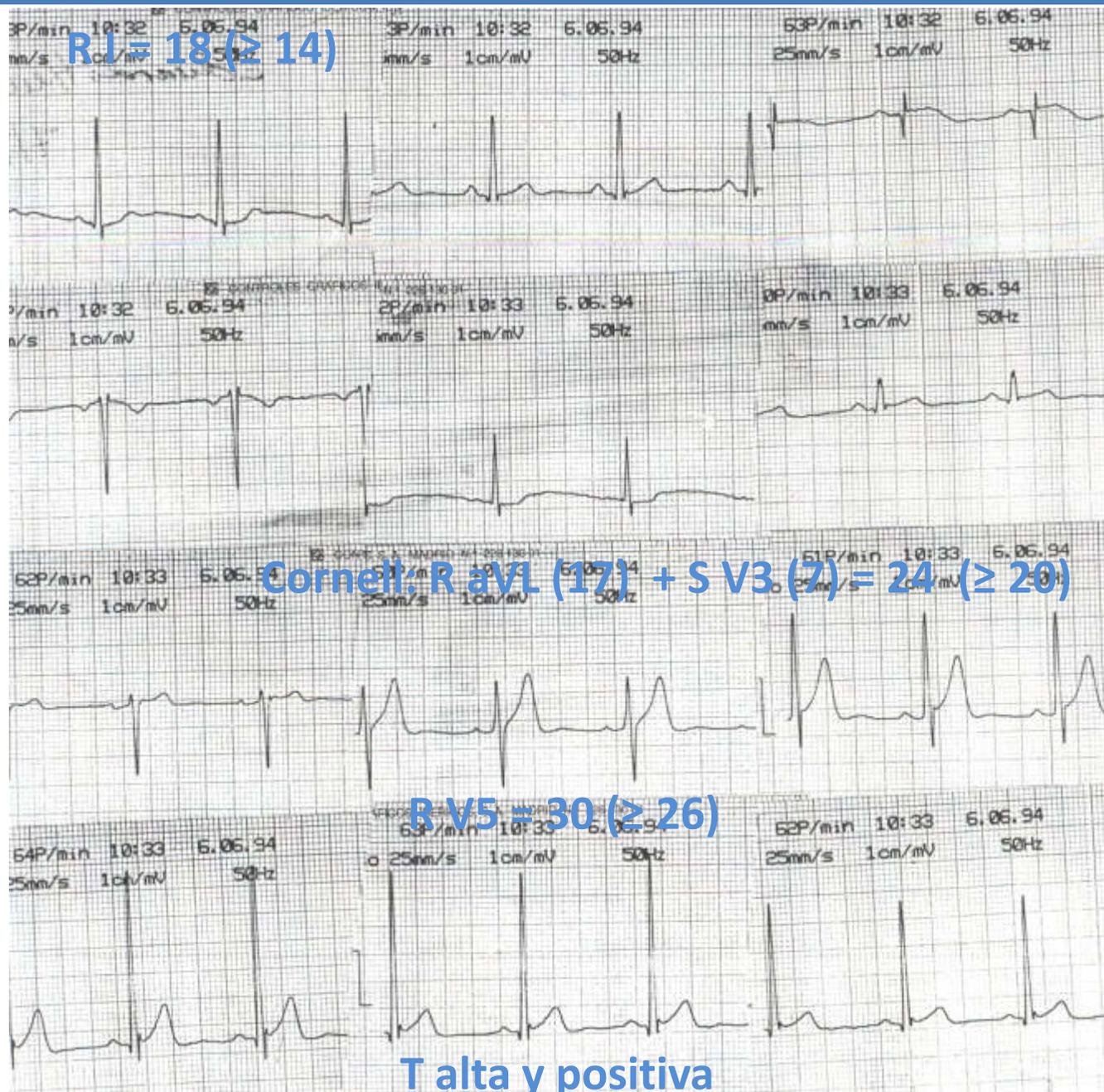
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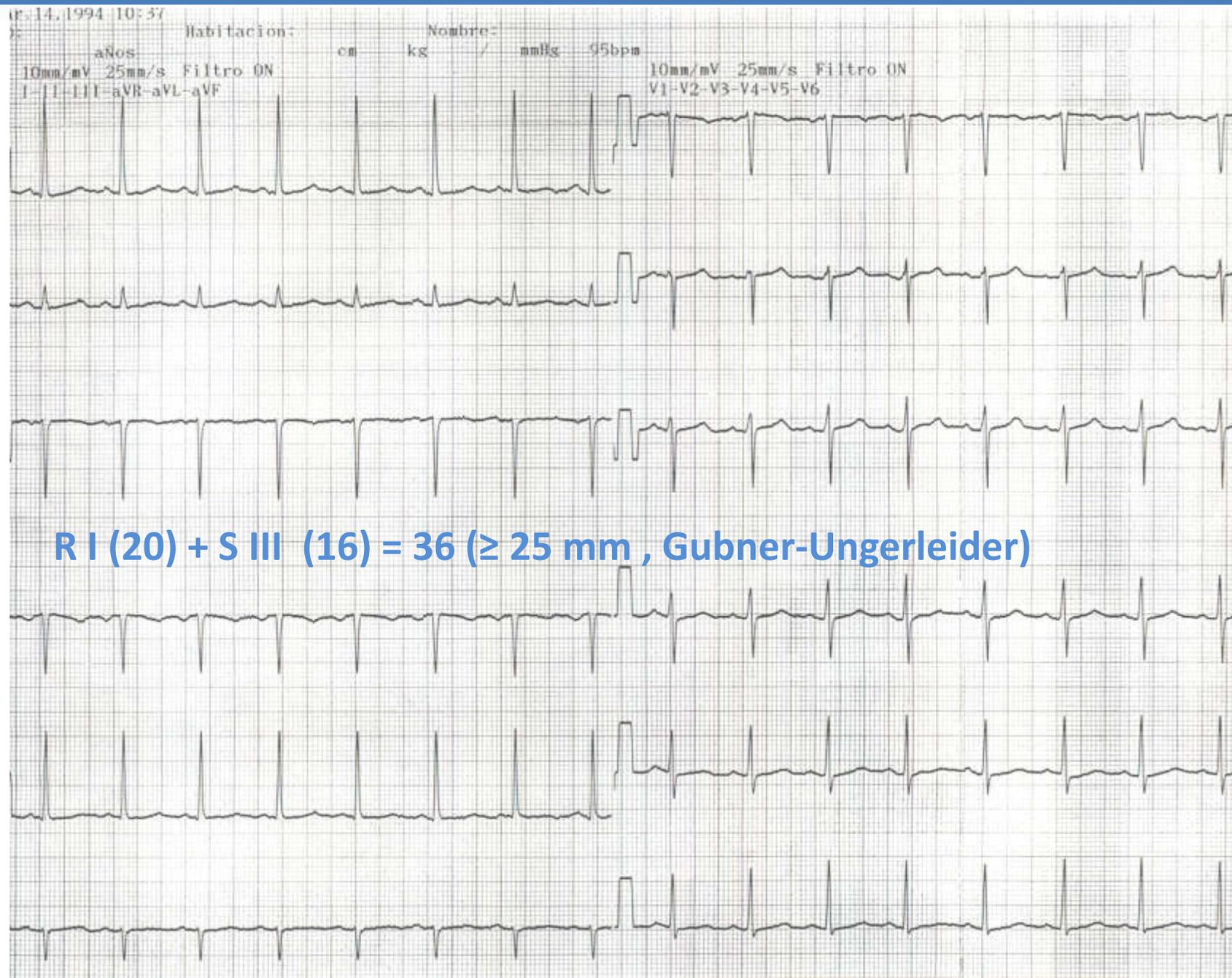
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Uno más...

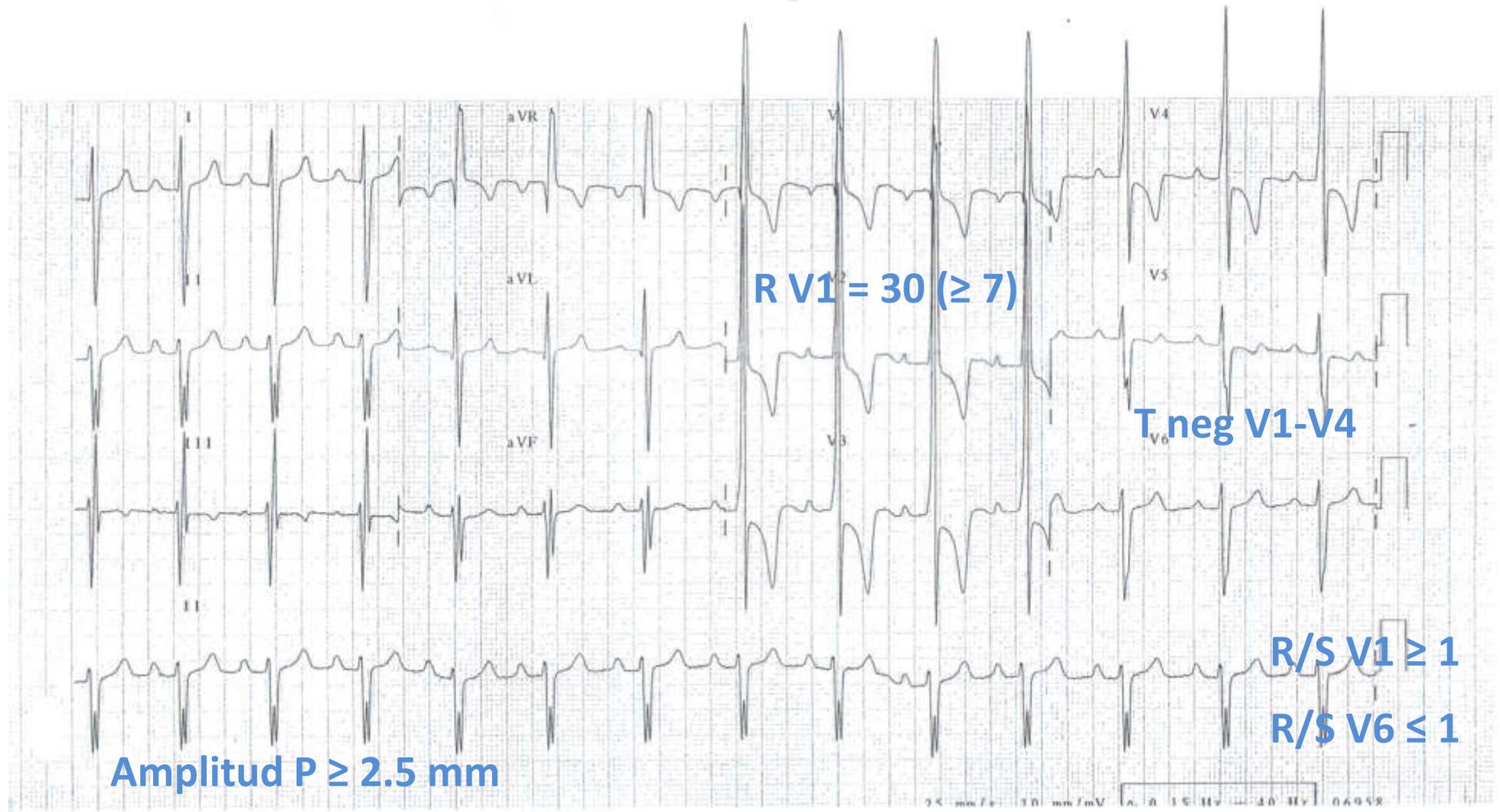


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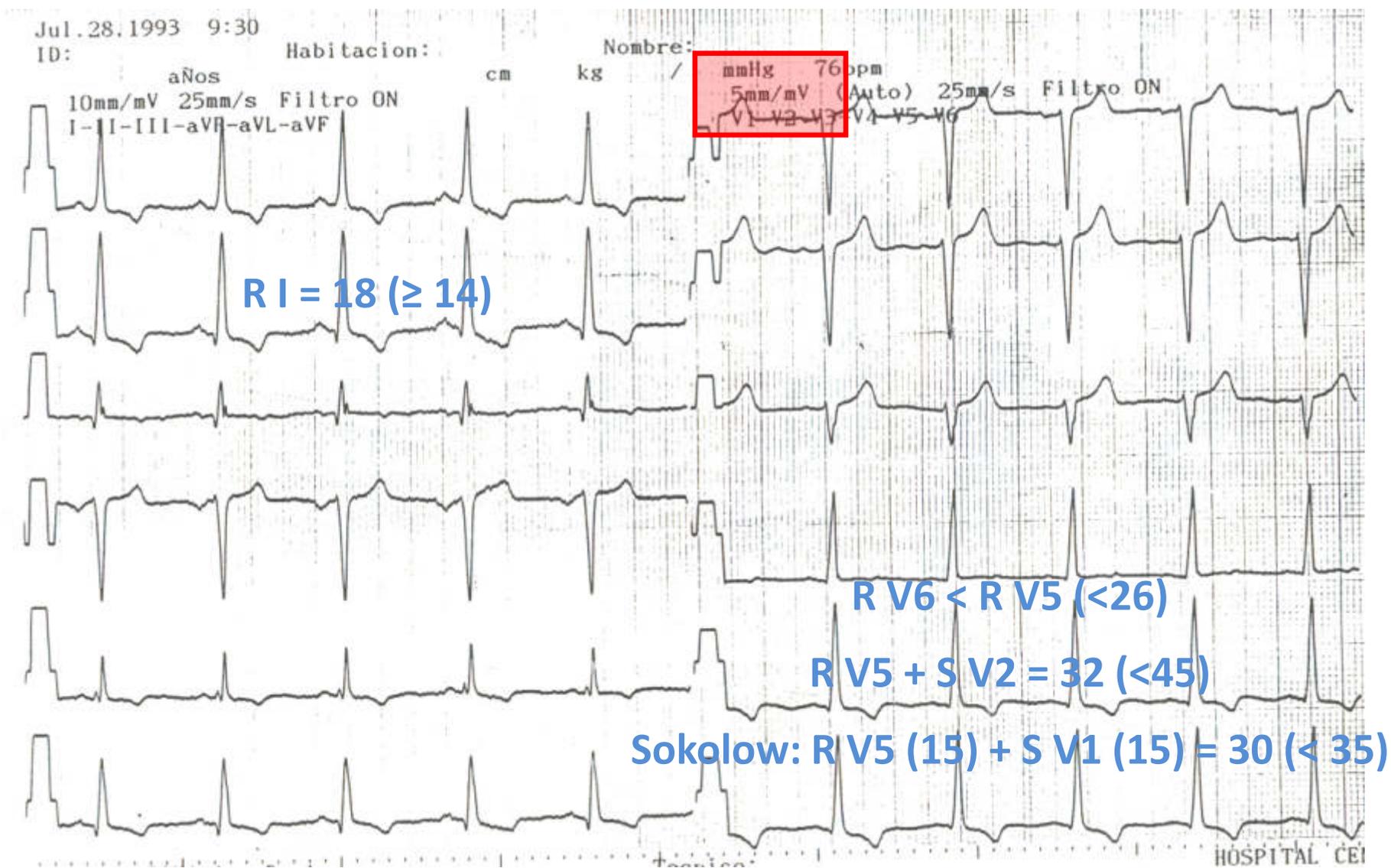


Uno más...

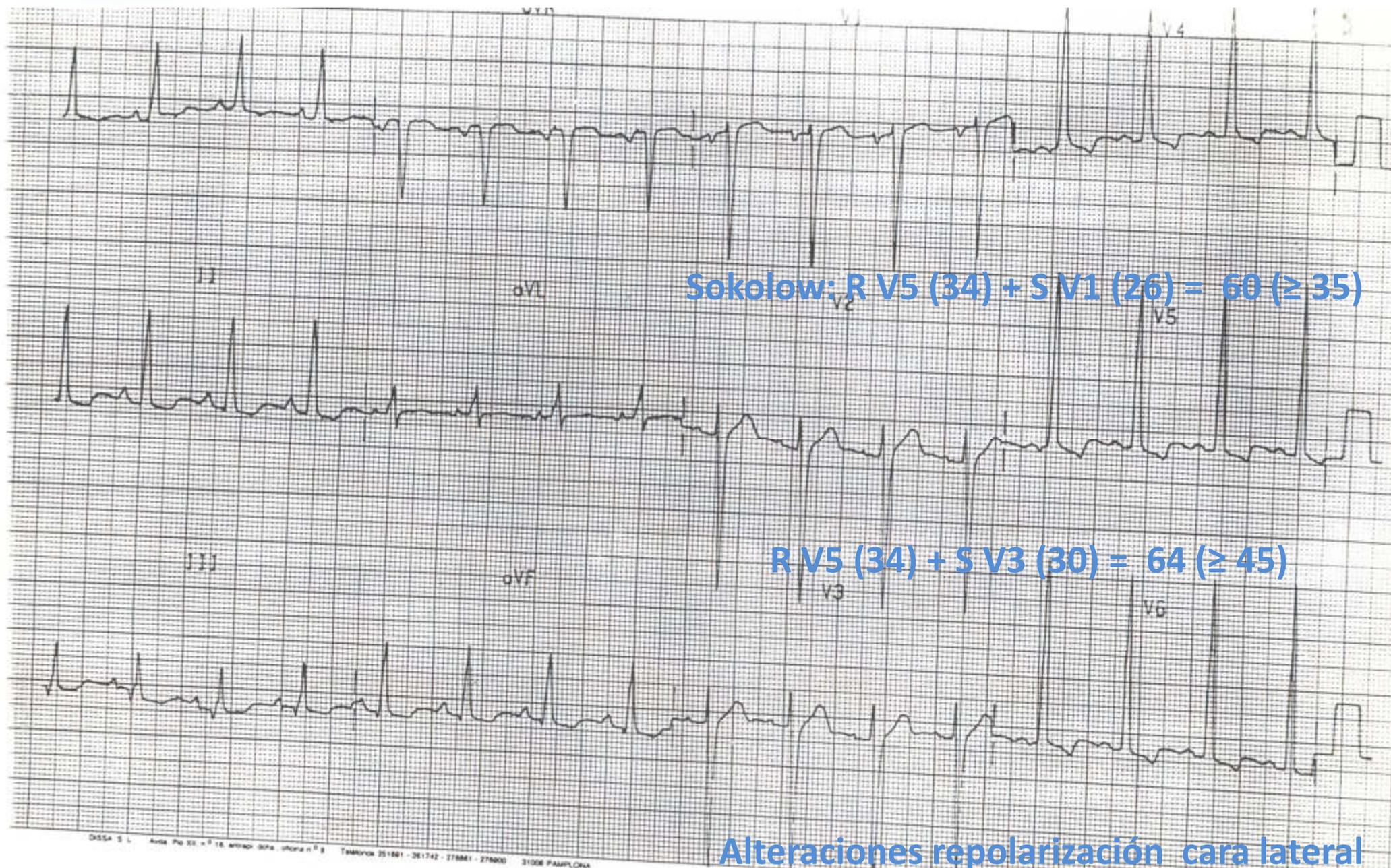
Crecimiento auricular y ventricular derecho



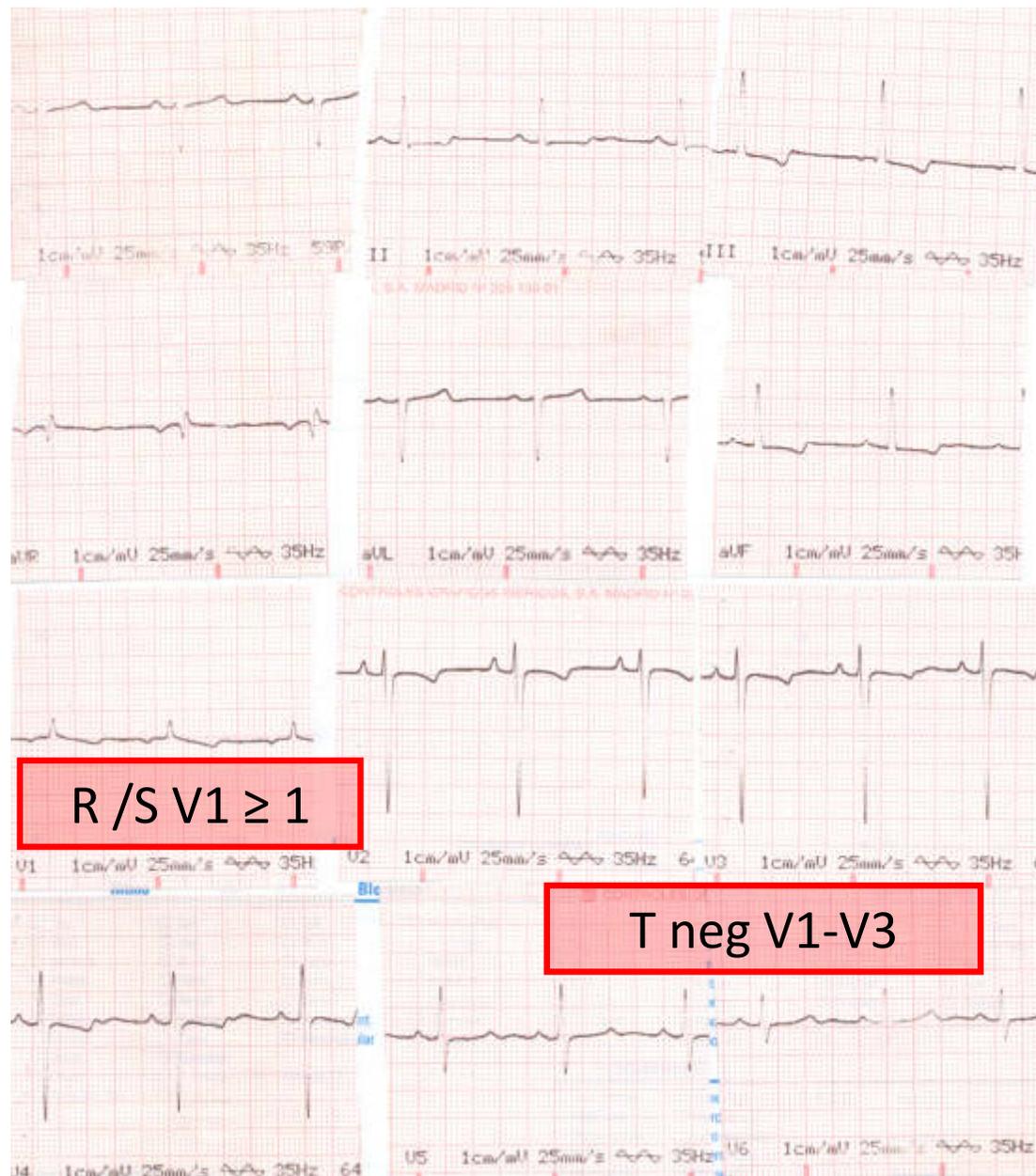
Uno más...



Uno más...



Uno más...



R /S V1 \geq 1

T neg V1-V3

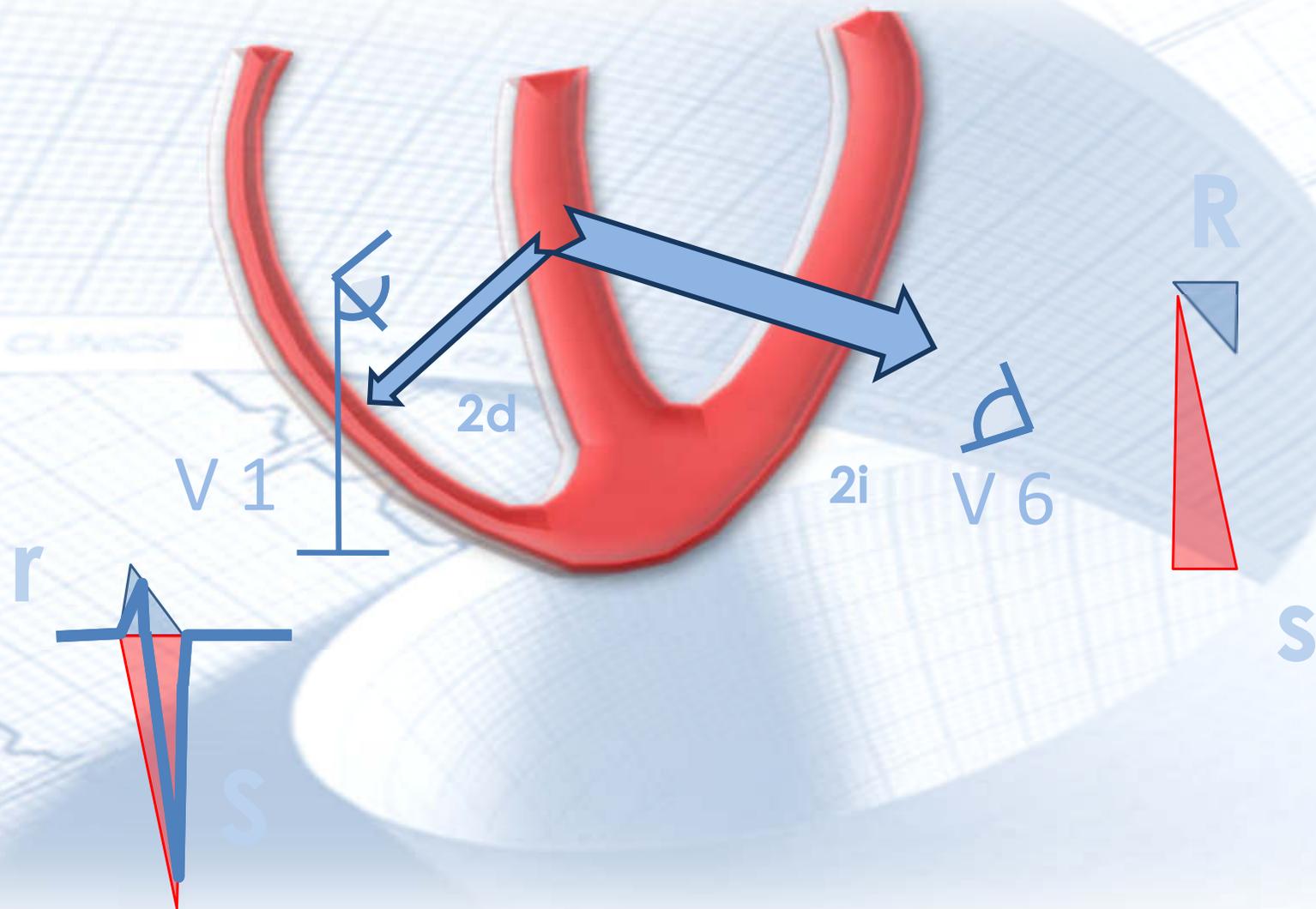
Por fin, la última...

Muchas Gracias

¿Alguna duda?



Activación de los ventrículos



Pasamos a la práctica...

