

MEET THE EXPERT UNPLUGGED

La diagnosi differenziale delle
tachicardie a QRS larghi, tra vecchi
e nuovi criteri.

Vincenzo Carbone

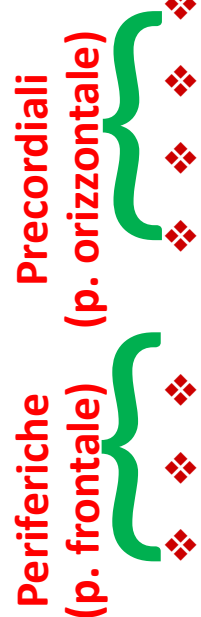


QRS largo: principali meccanismi elettrogenetici

✓ *Origine ectopica ventricolare dell'impulso.*

TACHICARDIA VENTRICOLARE

vecchi e nuovi criteri ECG

- ❖ dissociazione atrio-ventricolare
- ❖ battiti di fusione e di cattura
- 

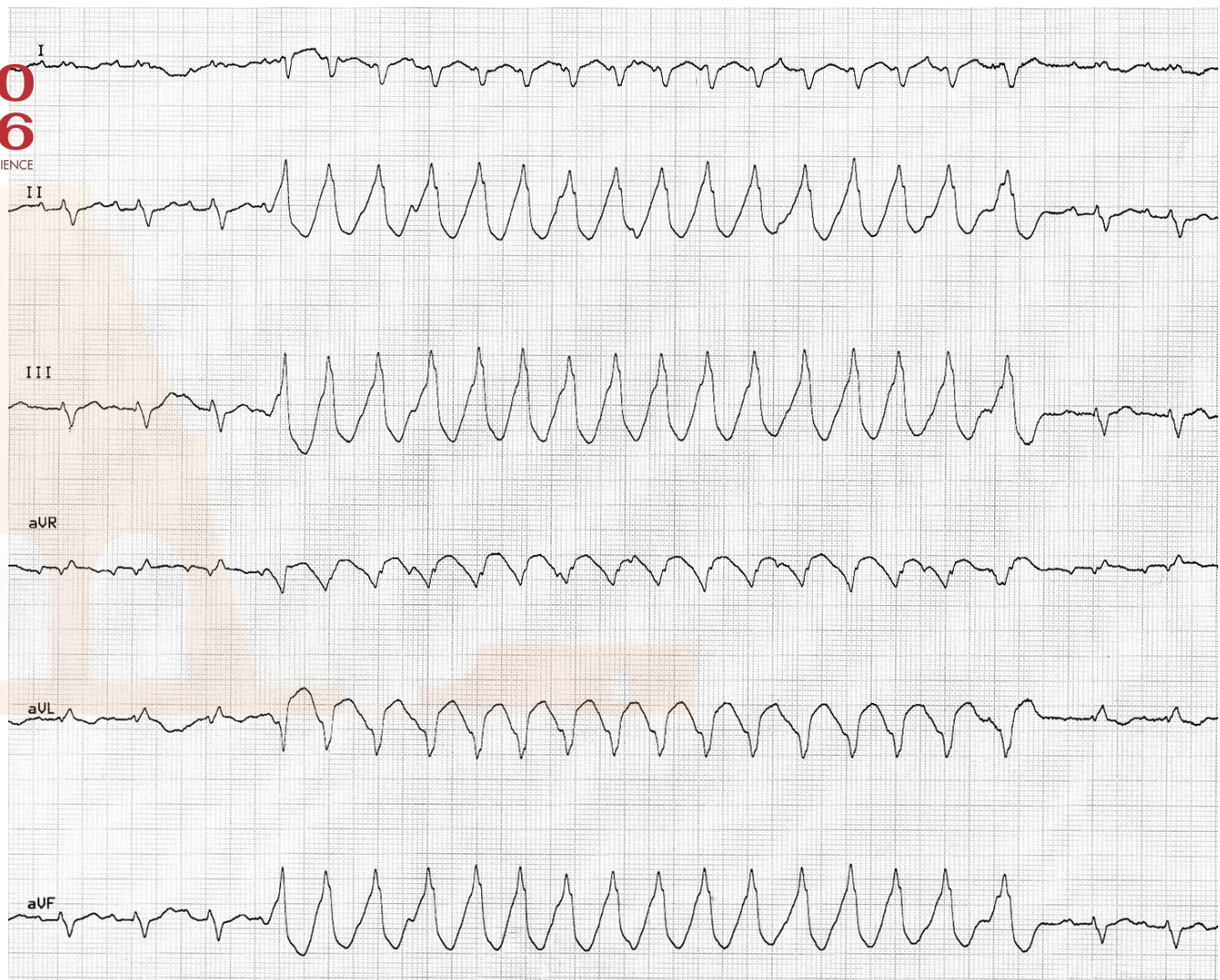
Precordiali (p. orizzontale)

 - ❖ blocco ventricolo-atriale di II grado
 - ❖ morfologia del QRS in V1 e V6 non coerente con un vero blocco di branca
 - ❖ concordanza dei QRS nelle precordiali
 - ❖ intervallo inizio QRS-nadir onda S >100 ms in almeno una precordiale (segno di Brugada)

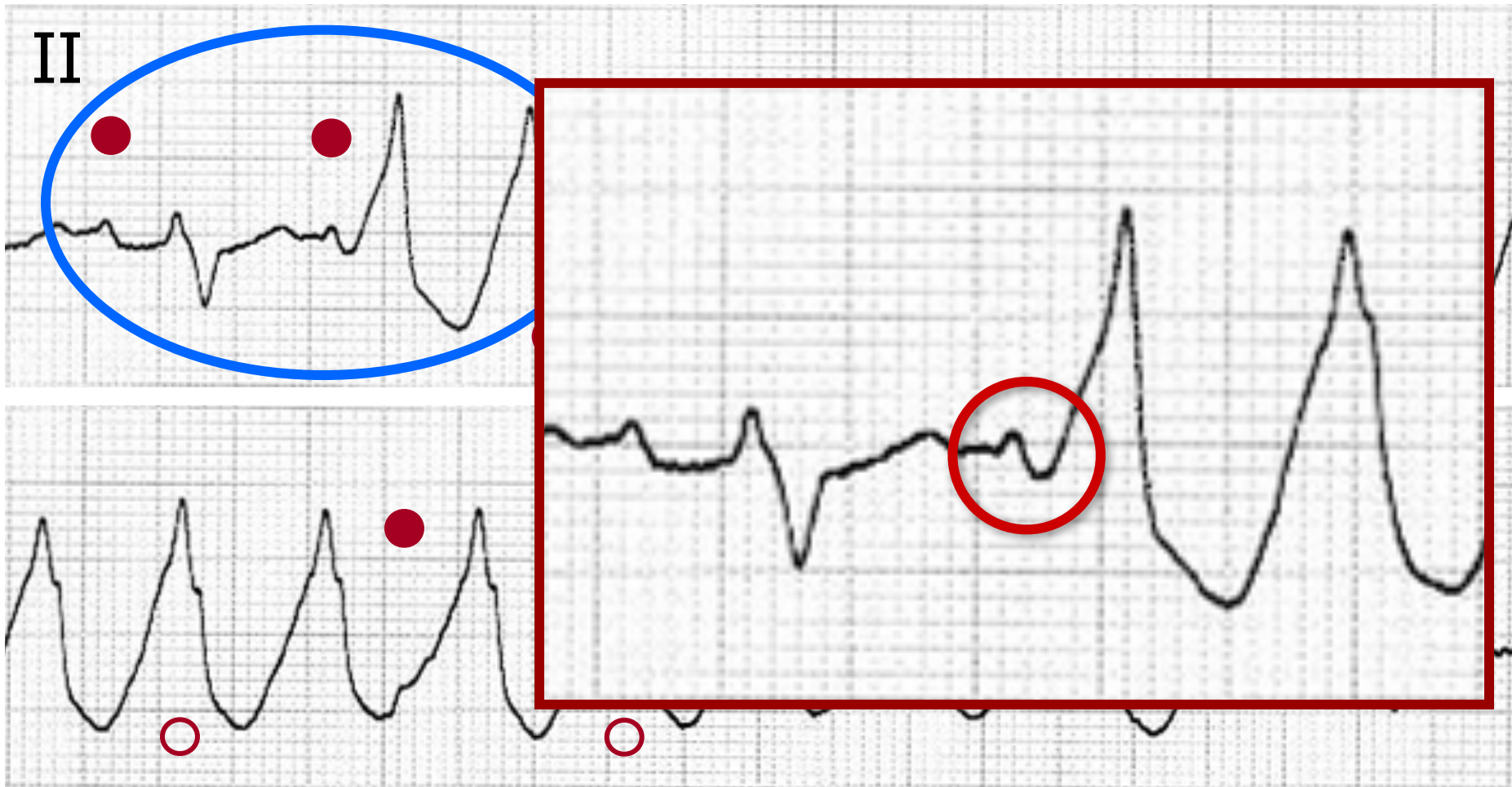
Periferiche (p. frontale)

 - ❖ morfologia del QRS in aVR (Vereckei)
 - ❖ tempo al picco dell'onda R in II derivazione (Pava)
 - ❖ polarità del QRS nelle derivazioni periferiche (Chen-Natale)

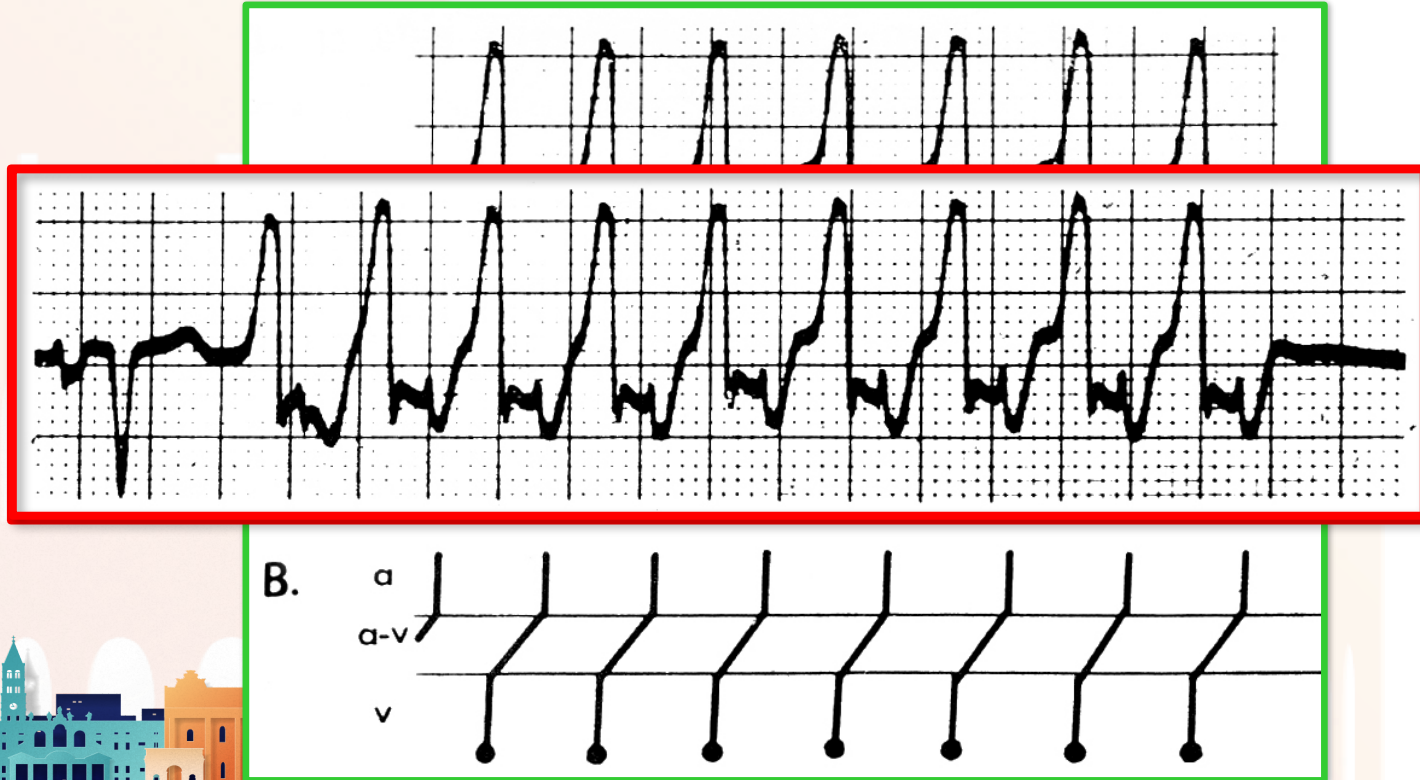
Dissociazione A-V



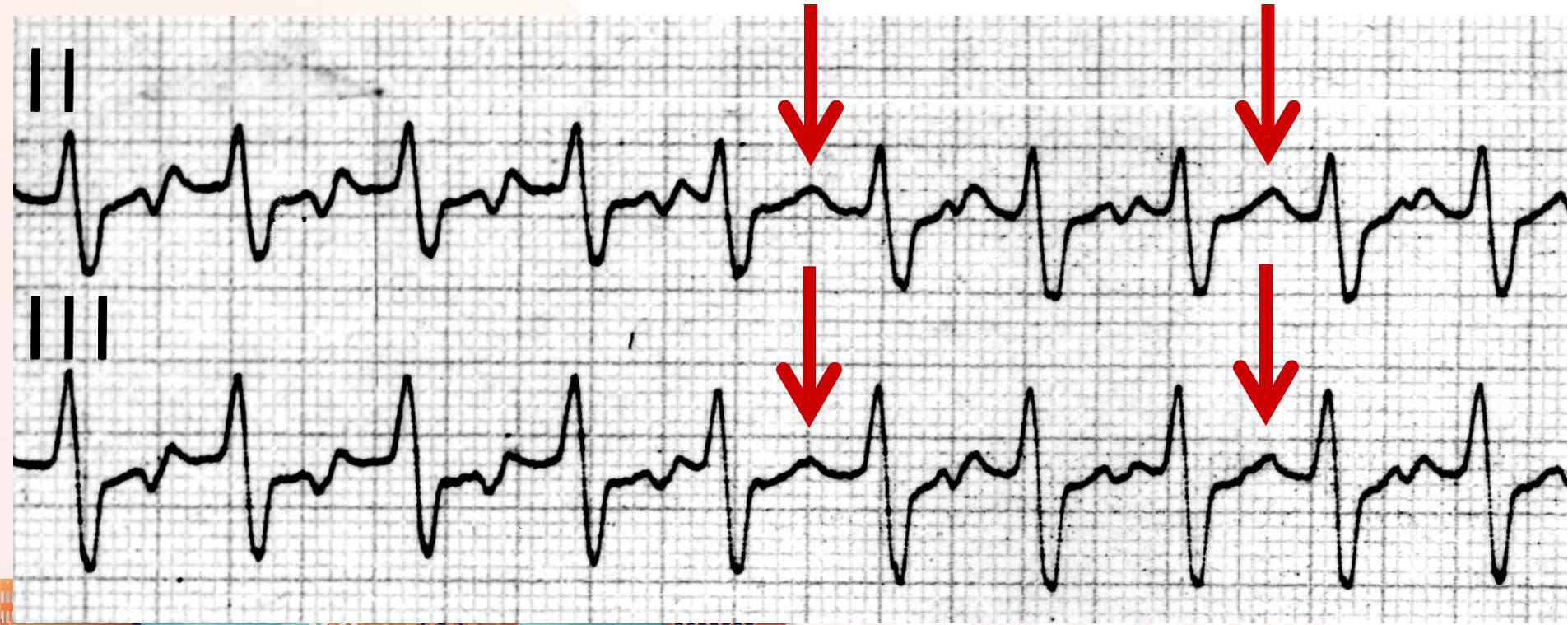
II



Rapporto QRS/P



Rapporto QRS/P > 1 (blocco Ventricolo-Atriale di II grado)



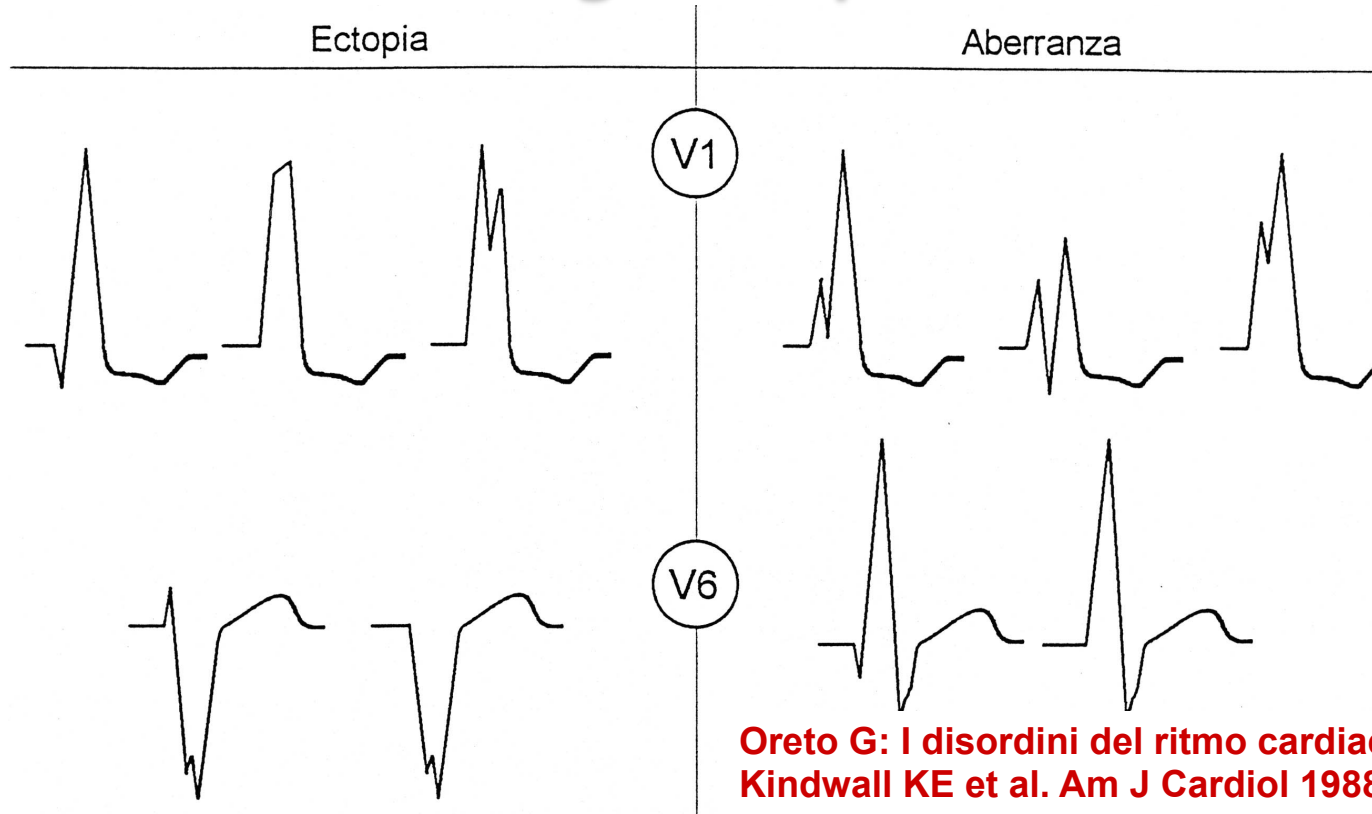
Analisi morfologica del QRS in V1 e V6

Quanto più un quadro di blocco di branca è ***tipico***, tanto più è probabile l'aberranza, mentre un blocco di branca ***atipico*** suggerisce ectopia.

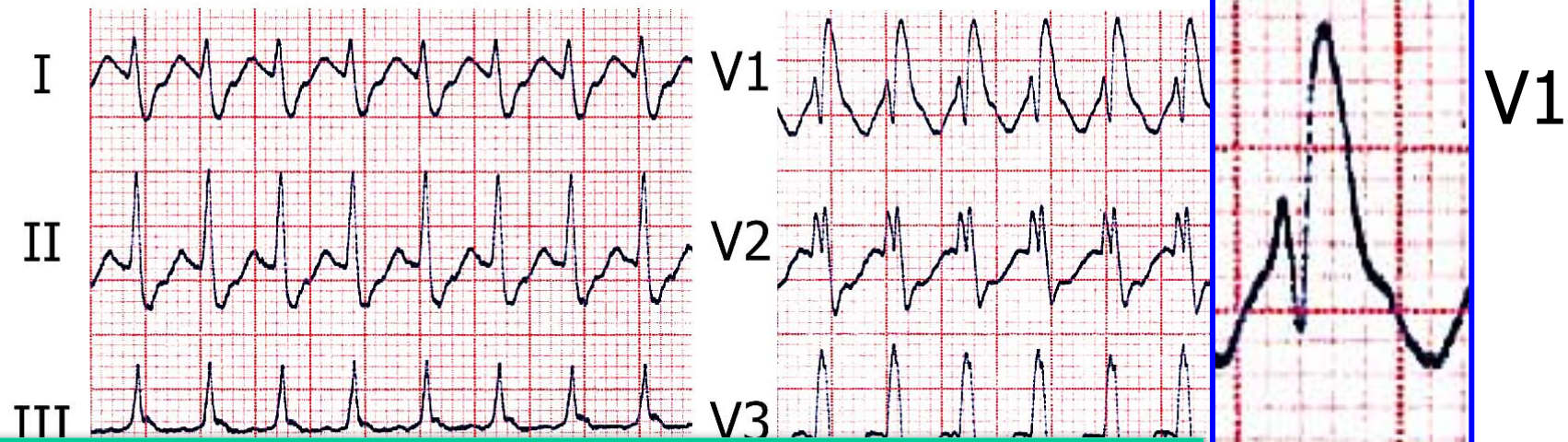


DISTINZIONE DELL'ECTOPIA DALL'ABERRANZA

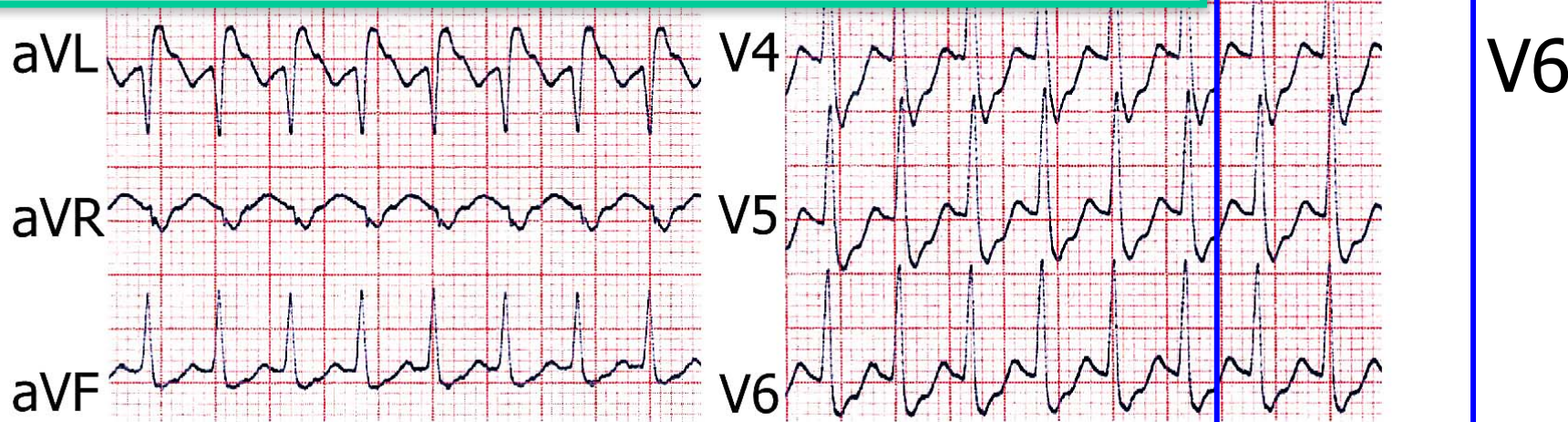
morfologia a tipo BBD



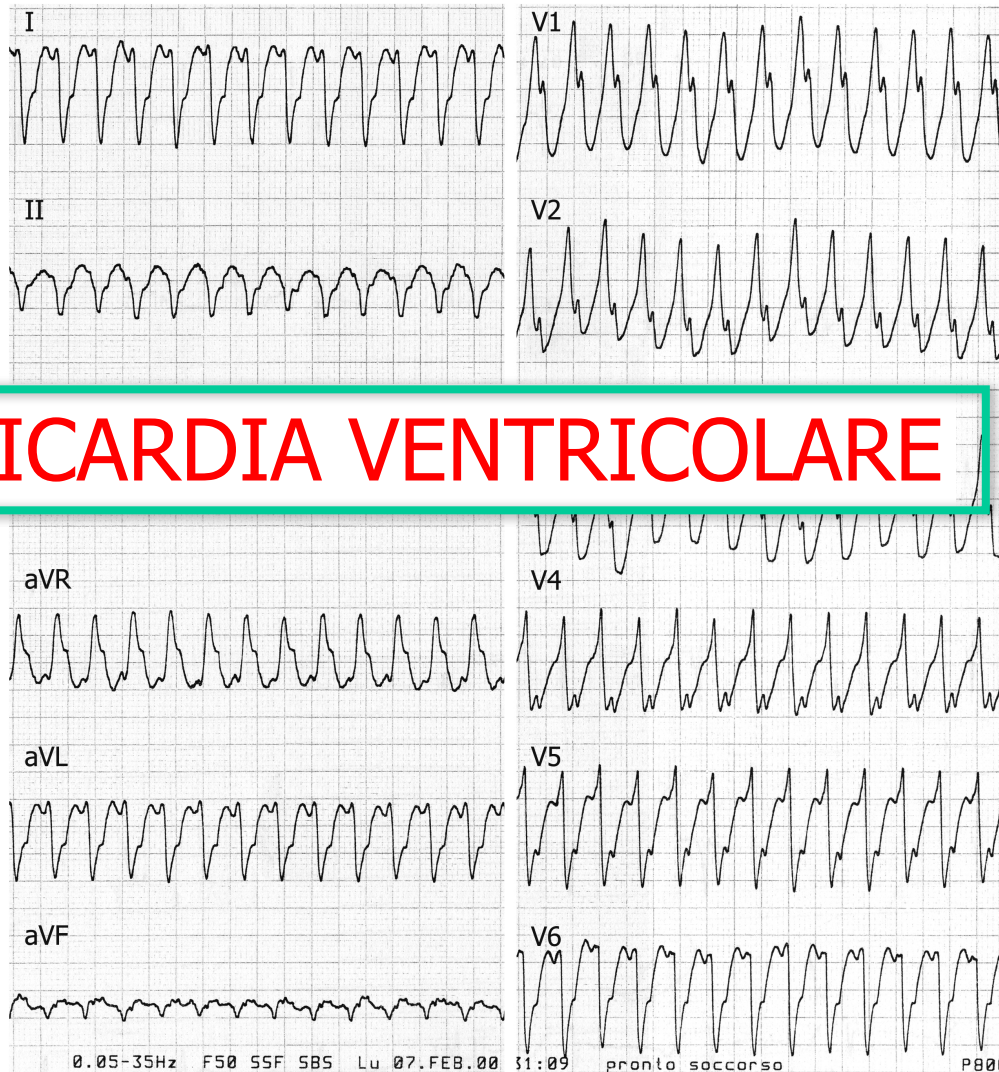
**Oreto G: I disordini del ritmo cardiaco, CSE 1997
Kindwall KE et al. Am J Cardiol 1988;61:1279-1283**



TACHICARDIA SOPRAVENTRICOLARE



TACHICARDIA VENTRICOLARE



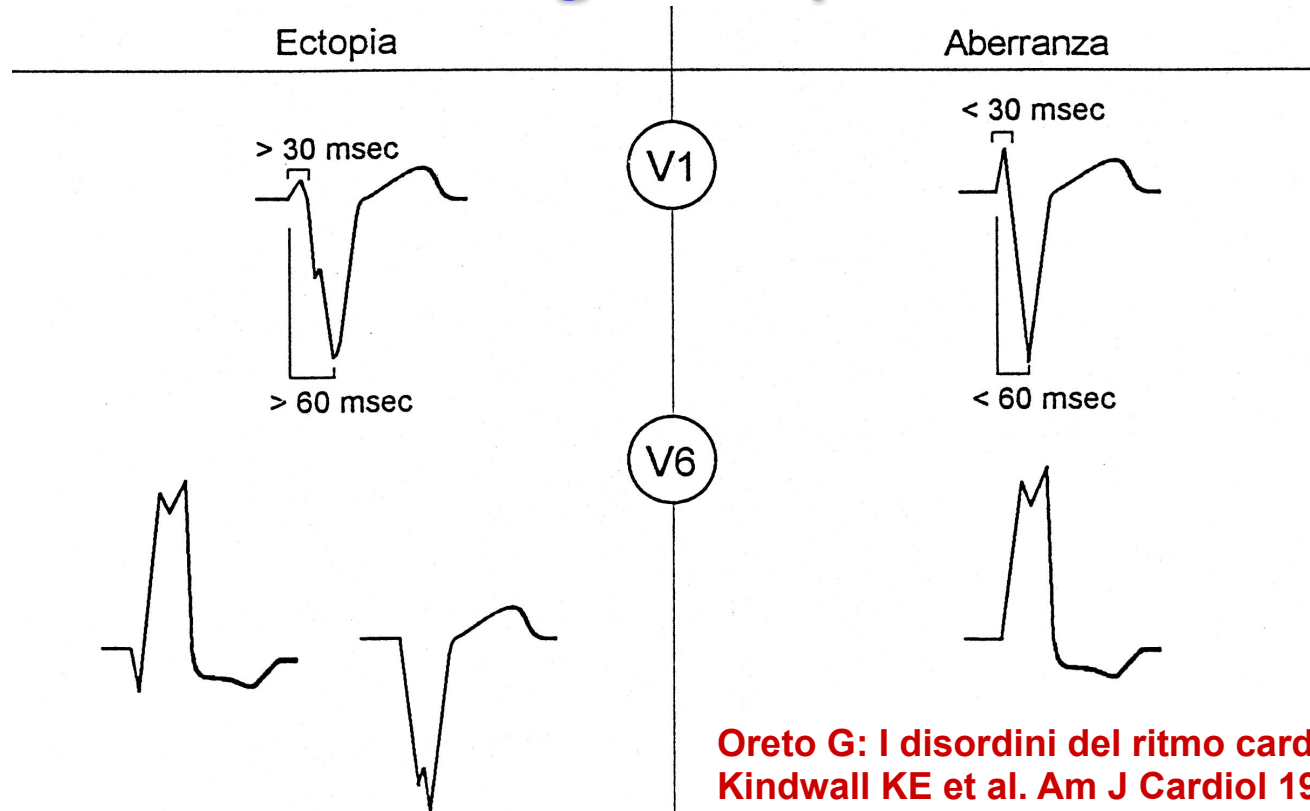
V1



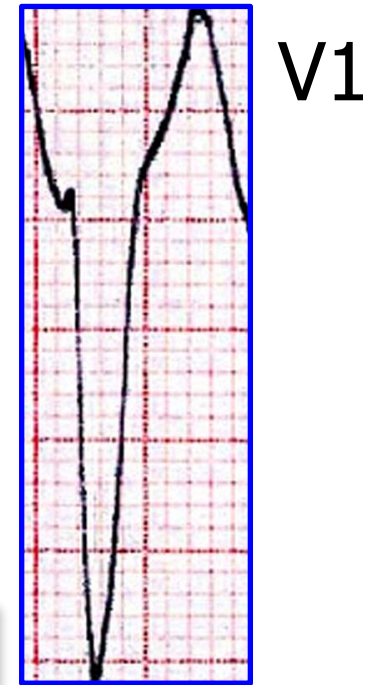
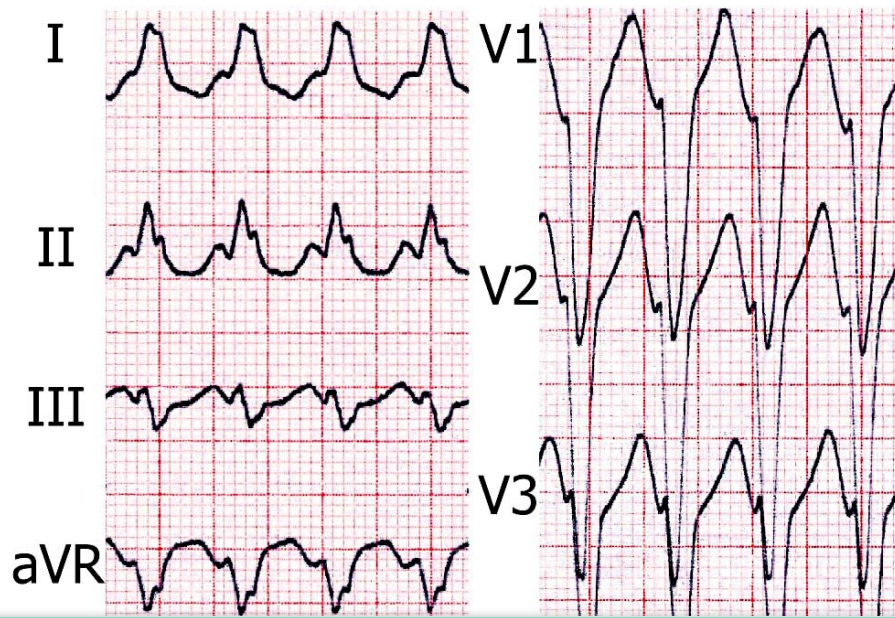
V6

DISTINZIONE DELL'ECTOPIA DALL'ABERRANZA

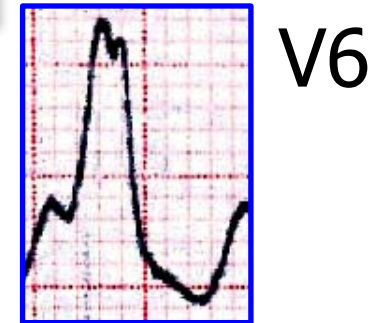
morfologia a tipo BBS



**Oreto G: I disordini del ritmo cardiaco, CSE 1997
Kindwall KE et al. Am J Cardiol 1988;61:1279-1283**



TACHICARDIA SOPRAVENTRICOLARE



I

II

TACHICARDIA VENTRICOLARE

III

aVR

aVL

aVF

V1

V2

V3

V4

V5

V6

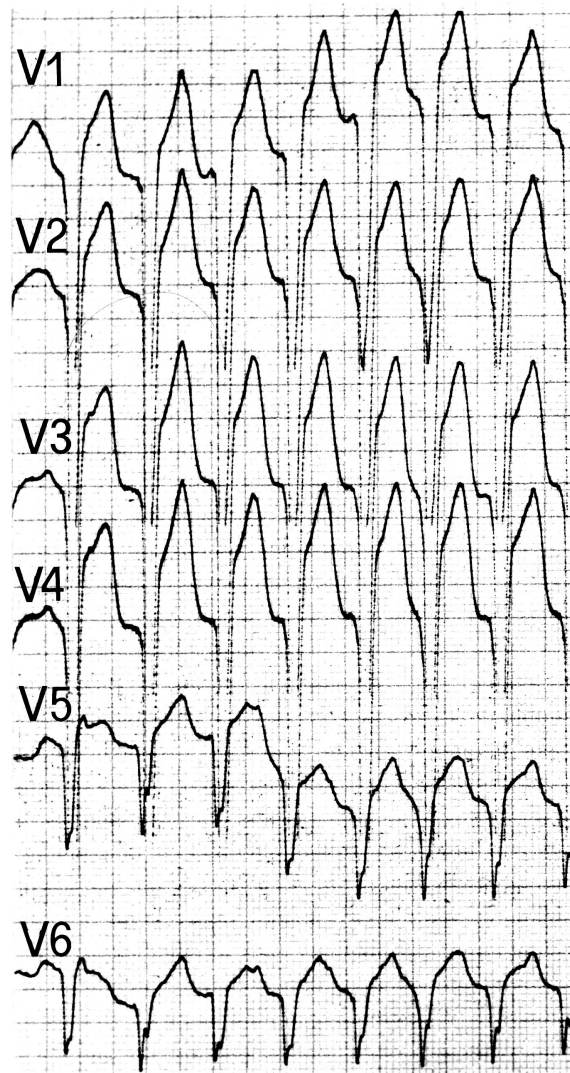
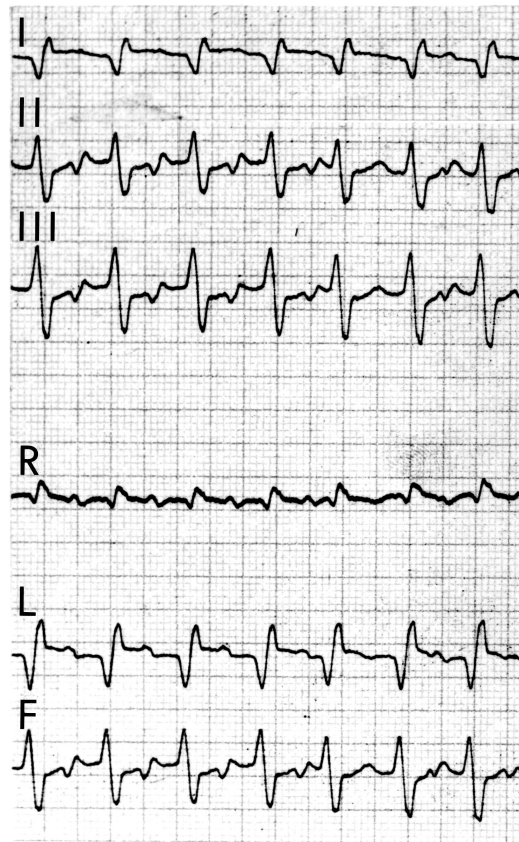
100 ms

V1

V6



Concordanza precordiale



Concordanza precordiale

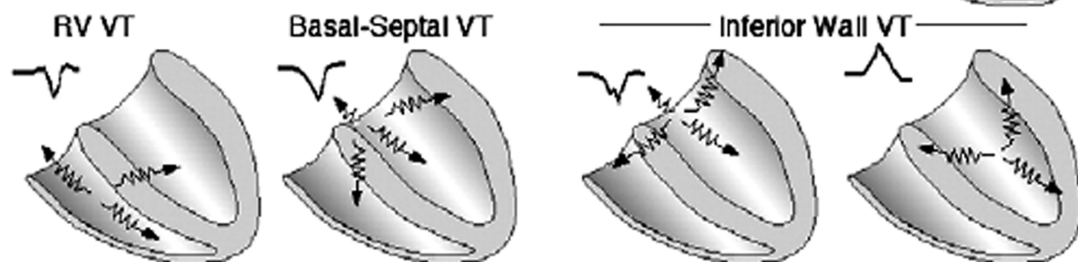
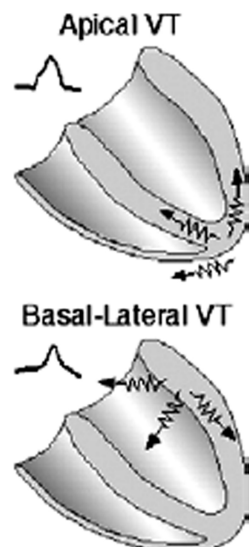
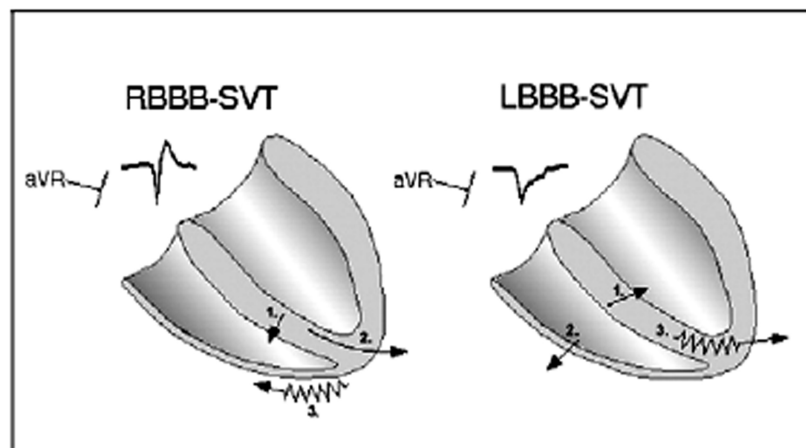
Si definisce “*concordanza*” la presenza di complessi interamente positivi (a R monofasica) o interamente negativi (morfologia QS) da V1 a V6.

Il riscontro di complessi rS o RS anche in una sola derivazione precordiale indica assenza di *concordanza*.

- ✓ Concordanza negativa: specifica per TV.
- ✓ Concordanza positiva: non specifica, in quanto compatibile anche con tachicardia preeccitata da fascio di Kent sinistro.

New algorithm using only lead aVR for differential diagnosis of wide QRS complex tachycardia

András Vereckei, MD,* Gábor Duray, MD,[†] Gábor Szénási, PhD,[‡] Gregory T. Altemose, MD, FHRS,[¶] John M. Miller, MD, FHRS[§]

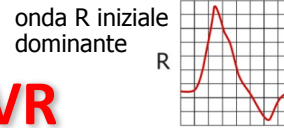


Heart Rhythm 2008;5:89-98

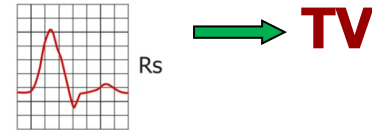
Morfologia del QRS in aVR

l'algoritmo di Vereckei

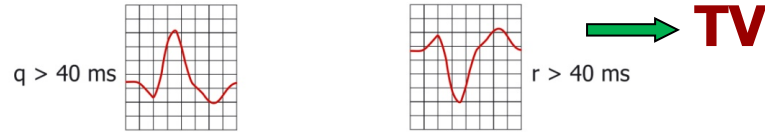
Heart Rhythm 2008;5:89-98



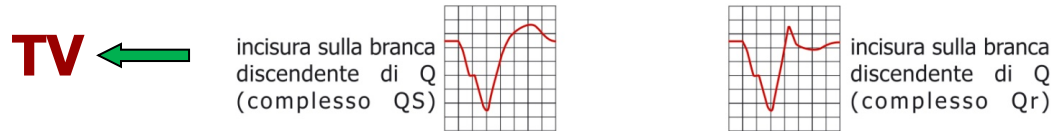
STEP 1



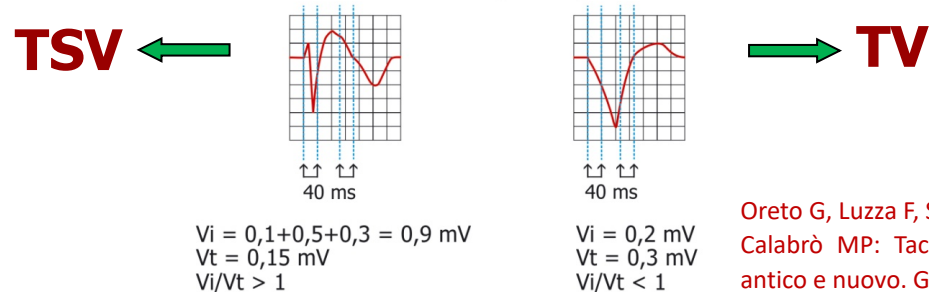
STEP 2



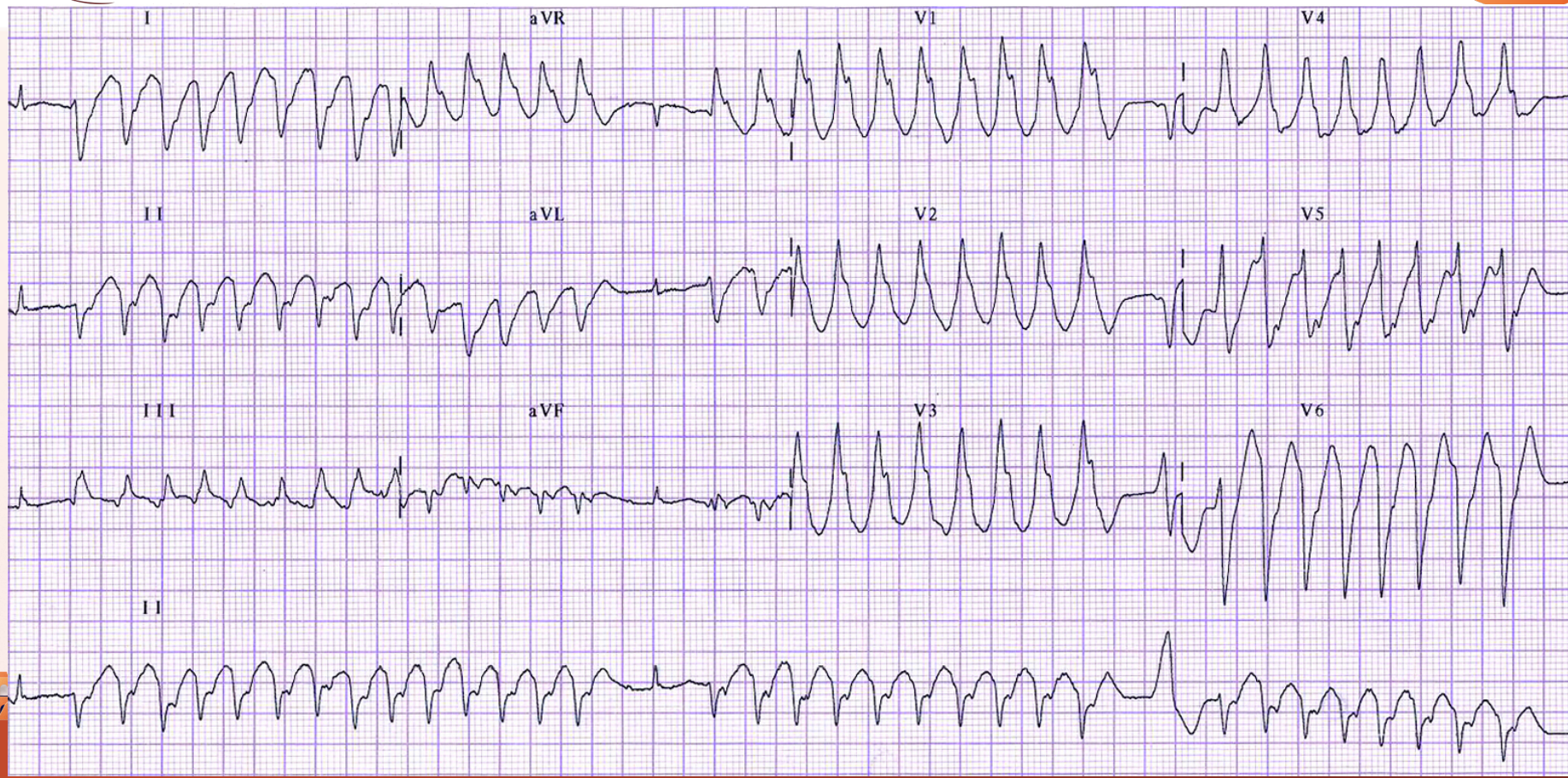
STEP 3



STEP 4 (V_i/V_t)

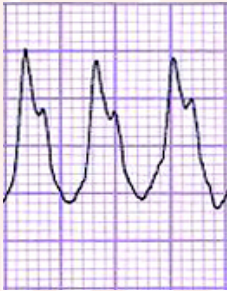


Oreto G, Luzzo F, Satullo G, Donato A, Carbone V,
 Calabrò MP: Tachicardia a QRS larghi: un problema
 antico e nuovo. G Ital Cardiol 2009; 10 (9): 580-595

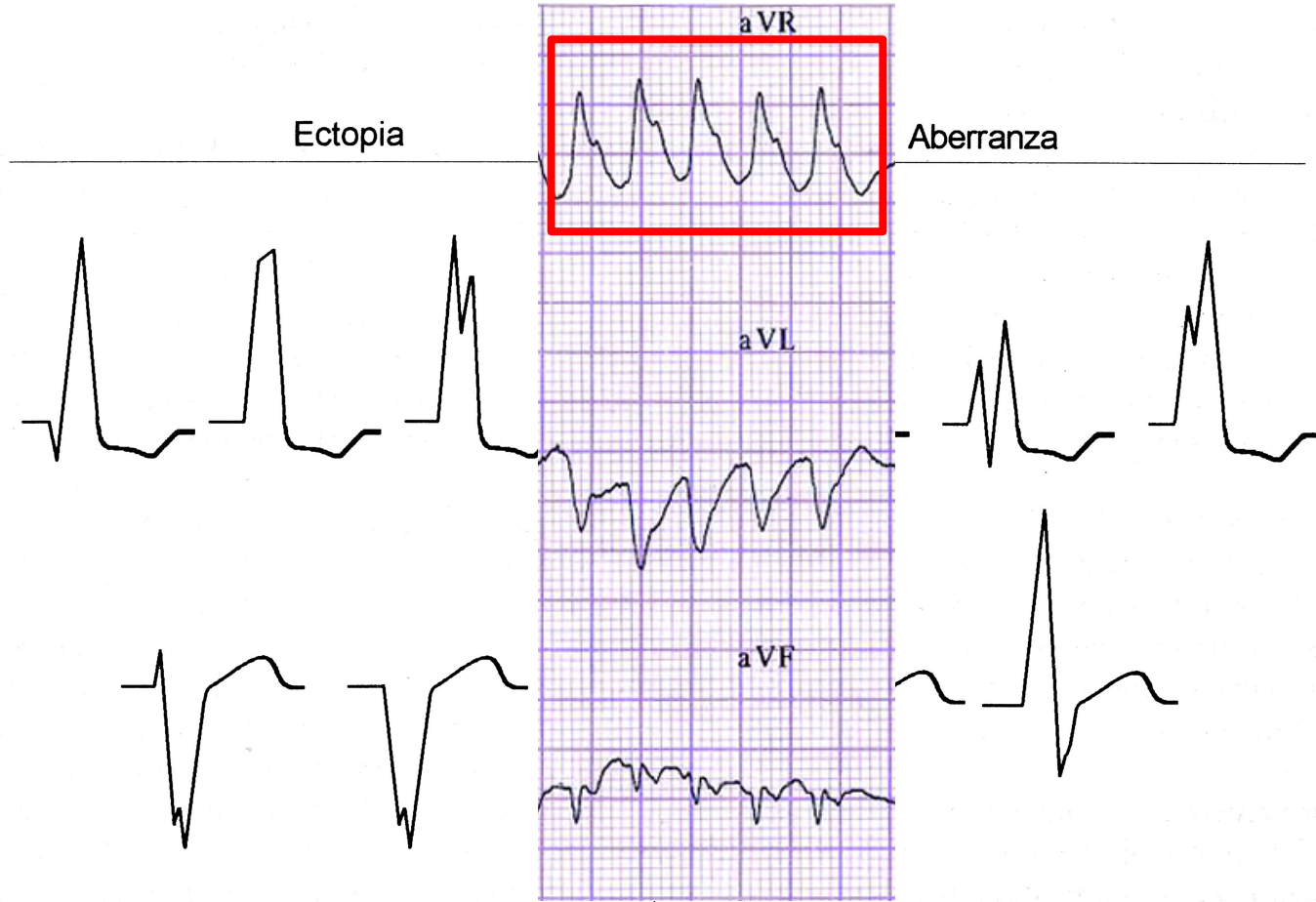


Onda R iniziale dominante (step 1 positivo)

V1



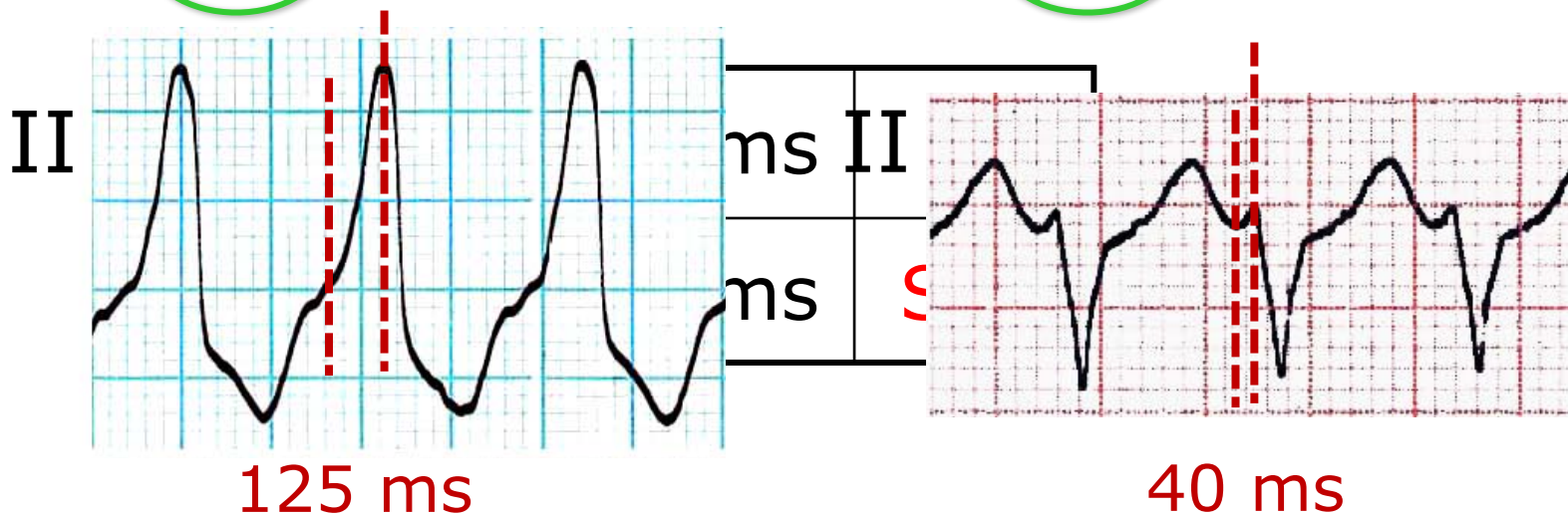
V6



R-wave peak time at DII: A new criterion for differentiating between wide complex QRS tachycardias

Luis Fernando Pava, MD, PhD,* Pablo Perafán, MD,* Marisol Badiel, MD, MSc,[†] Juan José Arango, MD,[†] Lluís Mont, MD, PhD,[§] Carlos A. Morillo, MD, FRCPC, FHRS,[‡] Josep Brugada, MD, PhD[§]

Differentiating between wide QRS complex tachycardias



Simple electrocardiographic criteria for rapid identification of **Limb Leads Algorithm**: The new limb lead algorithm

Accuracy, % (95% CI)	88.1 (85.0 - 90.7)
Sensitivity, % (95% CI)	87.2 (83.5 - 90.3)
Specificity, % (95% CI)	90.8 (84.6 - 95.2)

Step 1- presence of monophasic R wave in lead aVR

No 368

Yes 160 (VT 159, SVT 1)

Step 2- predominantly negative QRS in leads I, II and III

No 334

Yes 34 (VT 28, SVT 6)

Step 3- opposing QRS complex in the limb leads

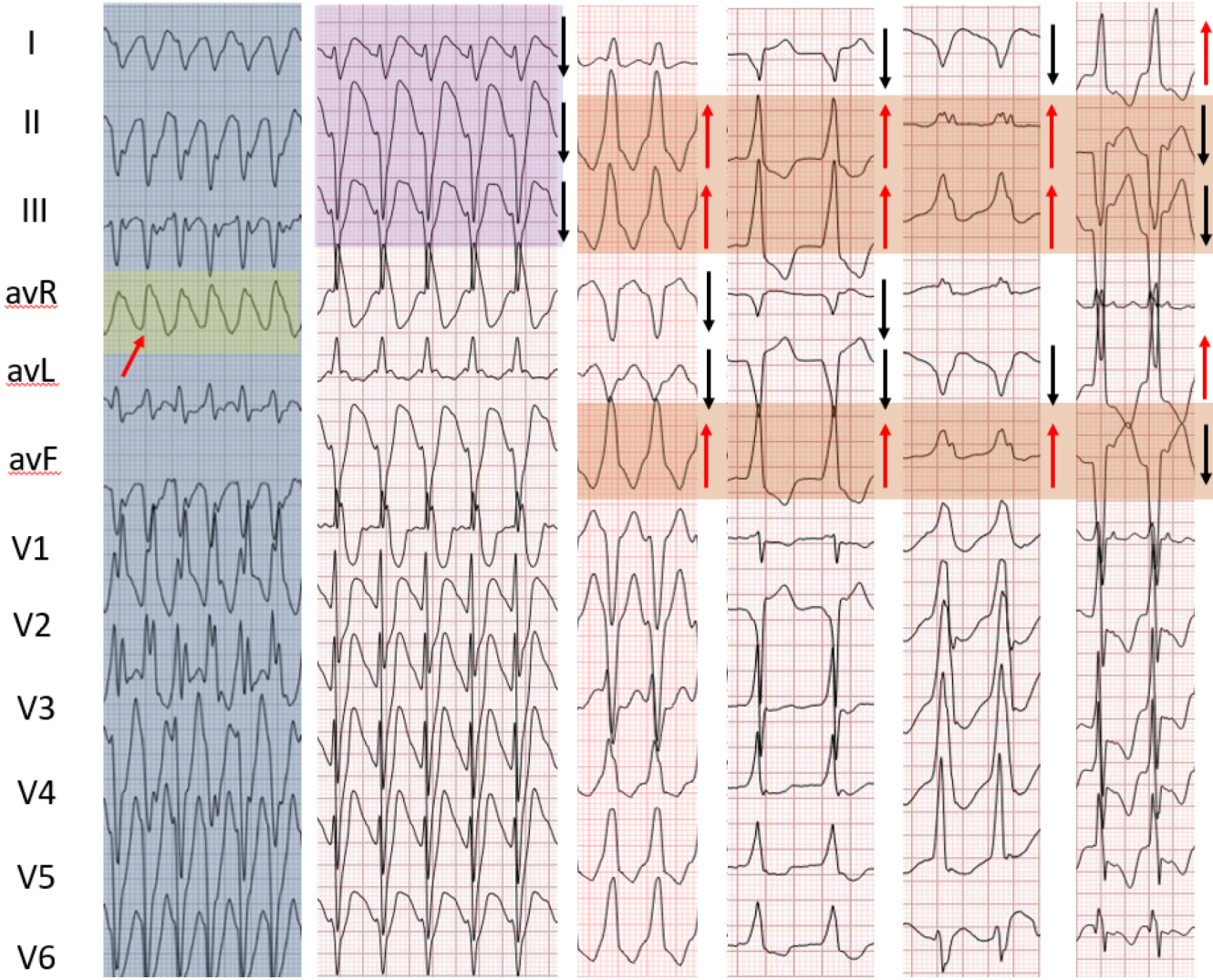
No 170 (VT 51, SVT 119)

Yes 164 (VT 159, SVT 5)

Monophasic QRS complexes in all 3 inferior leads sharing the same polarity (R or QS), and monophasic QRS complexes in 2 or 3 of non-inferior limb leads, with an opposite polarity to that in the inferior leads.

**Diagnosi corretta di
Tachicardia Ventricolare
utilizzando l'algoritmo a 3
step di Chen-Natale.**

**Chen Q et al.
Heart Rhythm
2020;17:431-438**



Non esiste un criterio semplice, rapido ed efficace in tutti i casi. Solo un approccio multiparametrico con analisi delle 12 derivazioni, che tenga conto di tutti i criteri disponibili e scientificamente validati, può consentire un'accurata diagnosi differenziale!



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GRAZIE

Vincenzo Carbone

