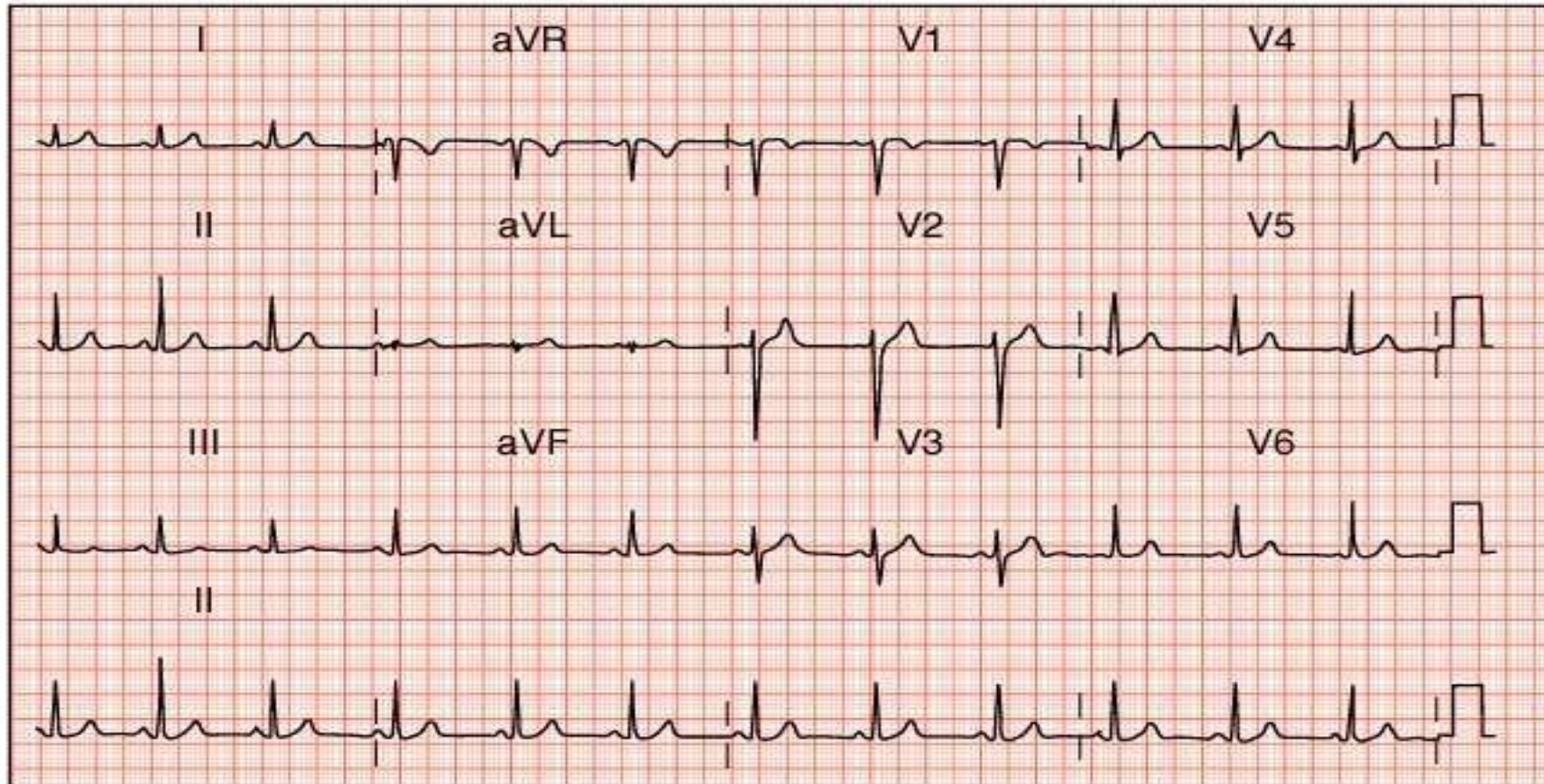


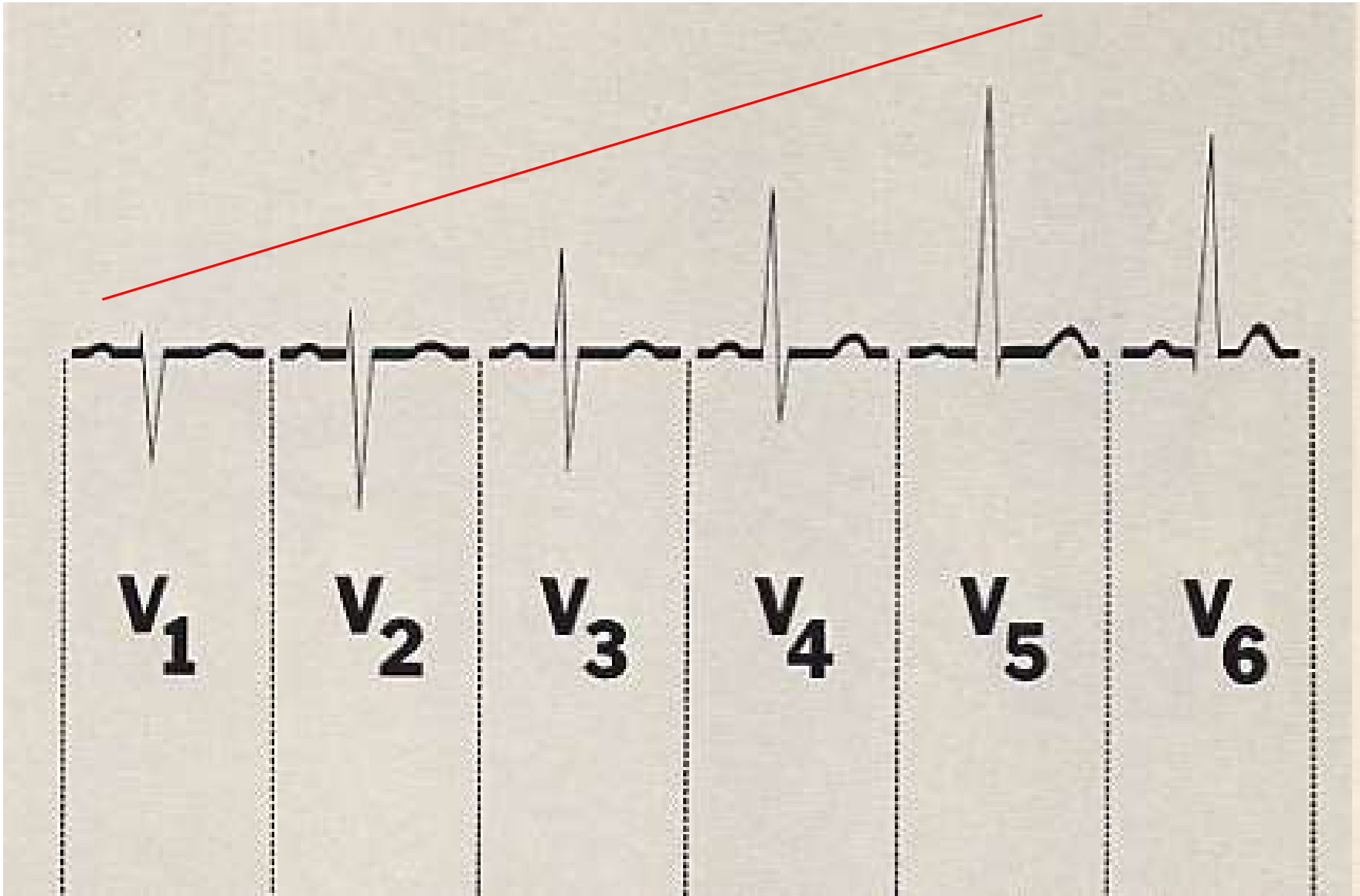
I disturbi di conduzione:

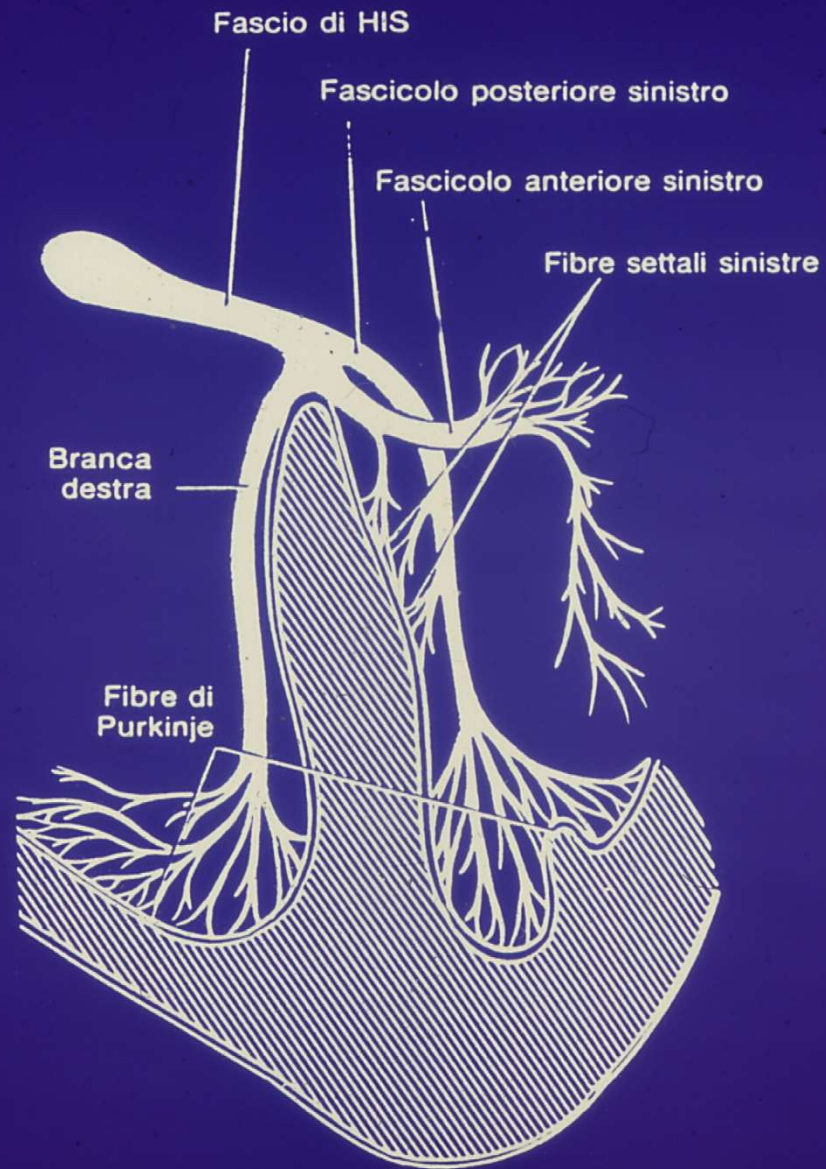
I blocchi di branca

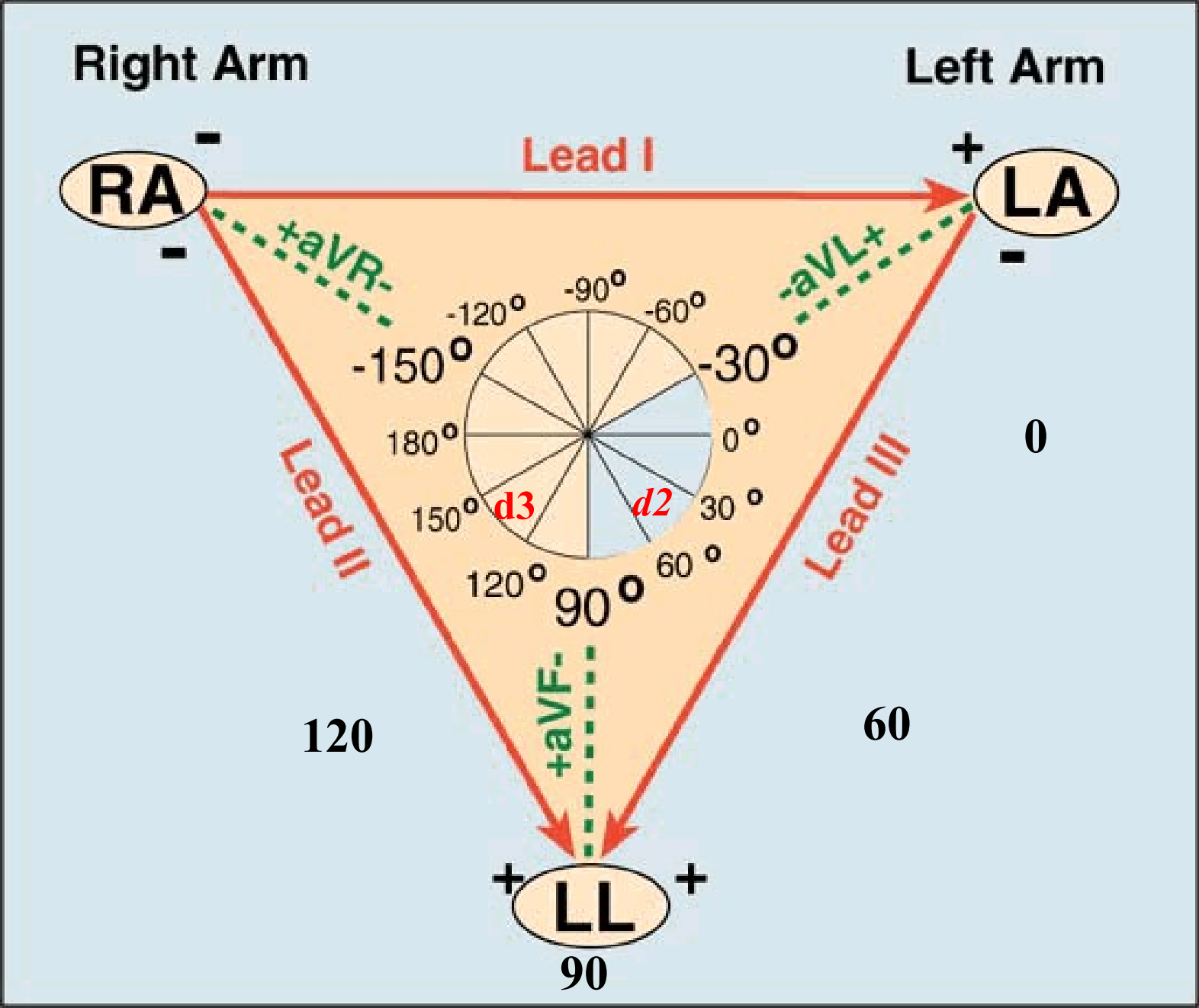
L'ecg normale!!!!

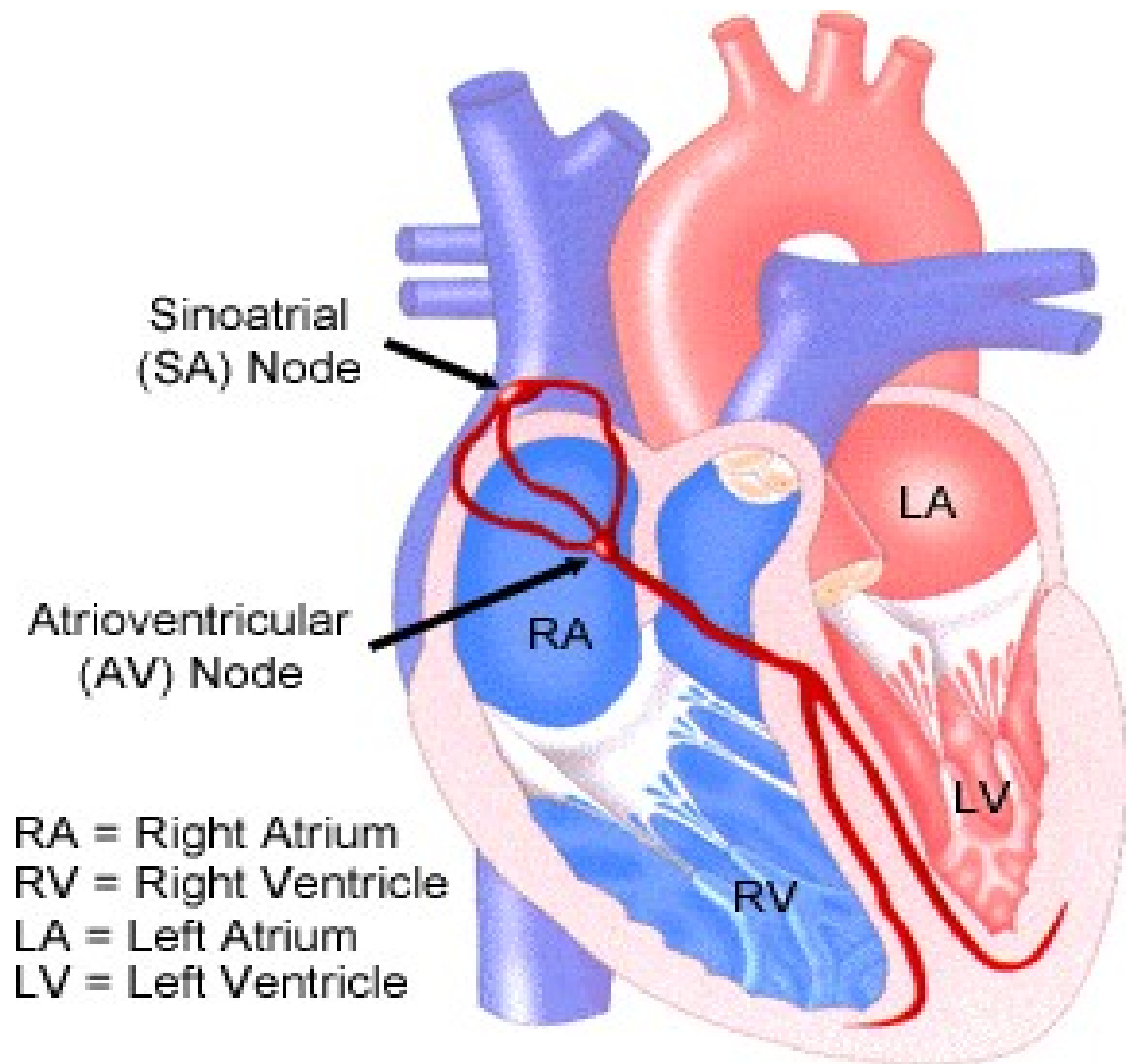


Tienilo a mente e individua negli ecg che vedi ciò che è diverso dal normale

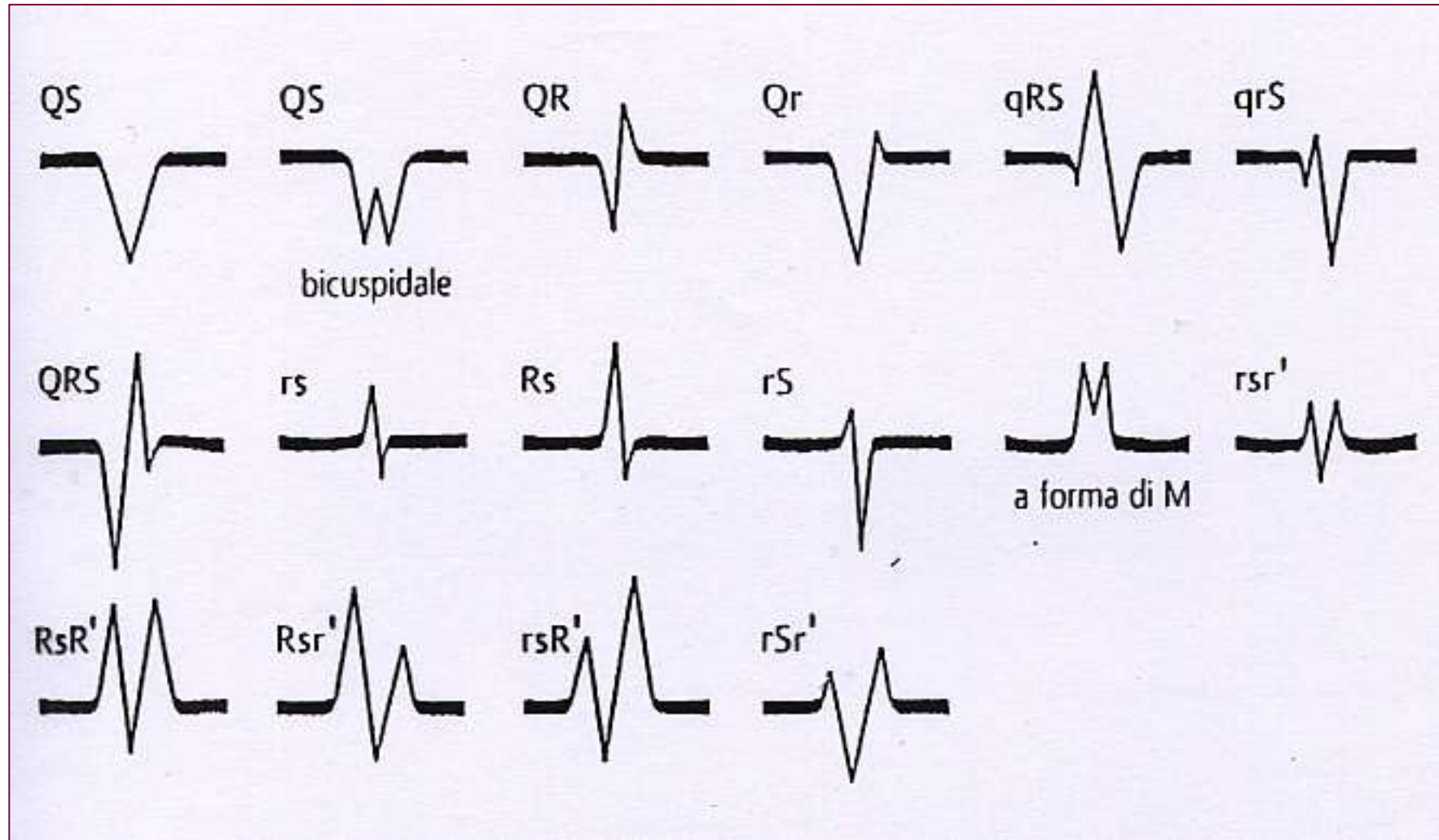








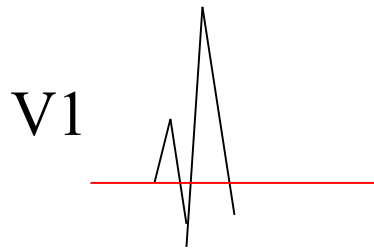
II QRS



Blocchi di branca

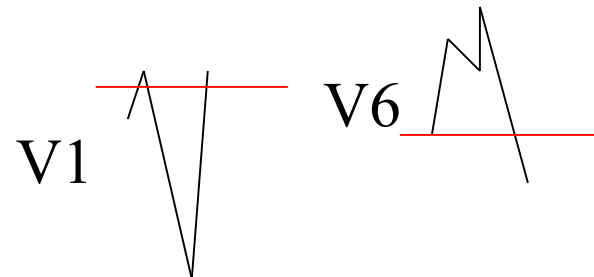
Dx

- **V1 positivo:**
- **rsR' o rR'**



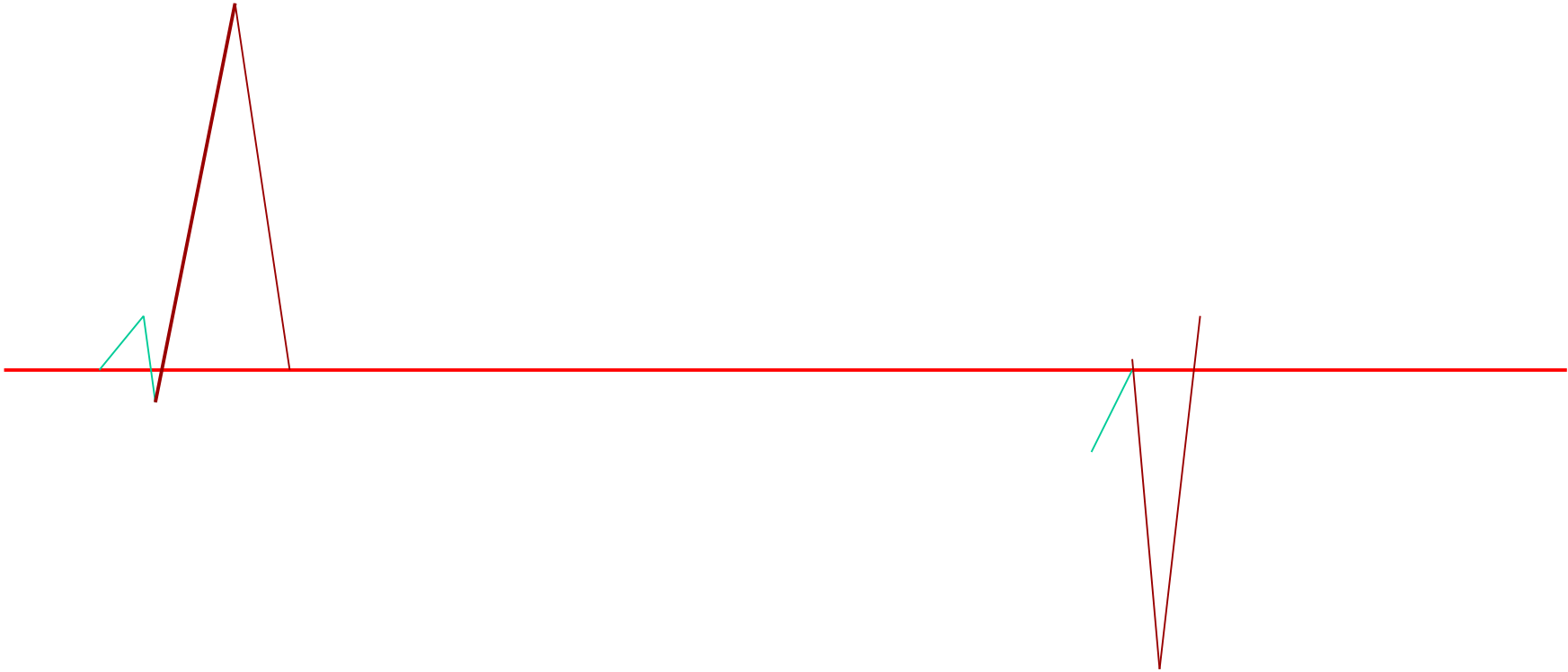
Sx

- **V1 negativo:**
- **rS o QS**
- **e V6 senza q e ad M**



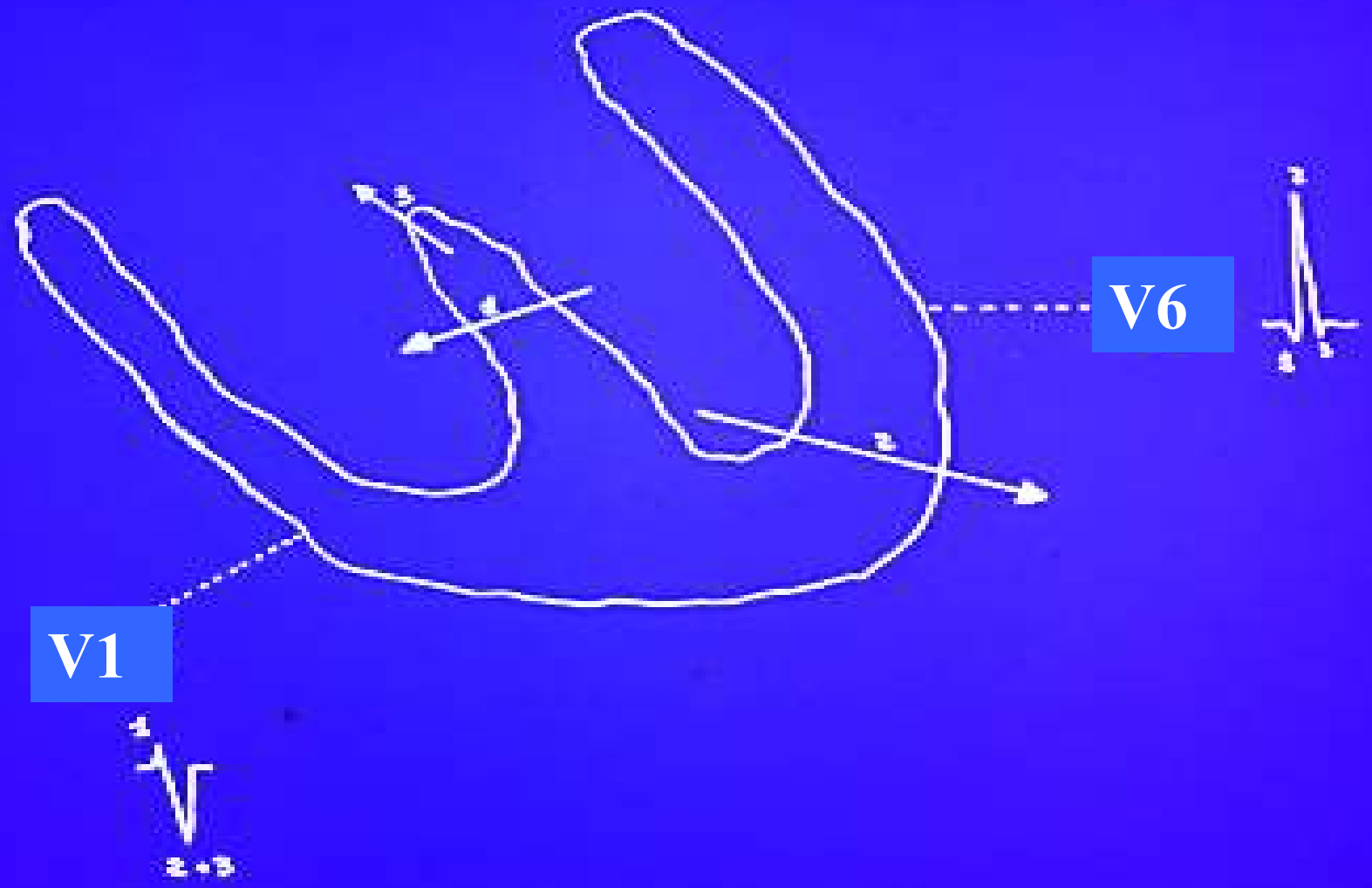
V1

Tutto sopra: Bbdx

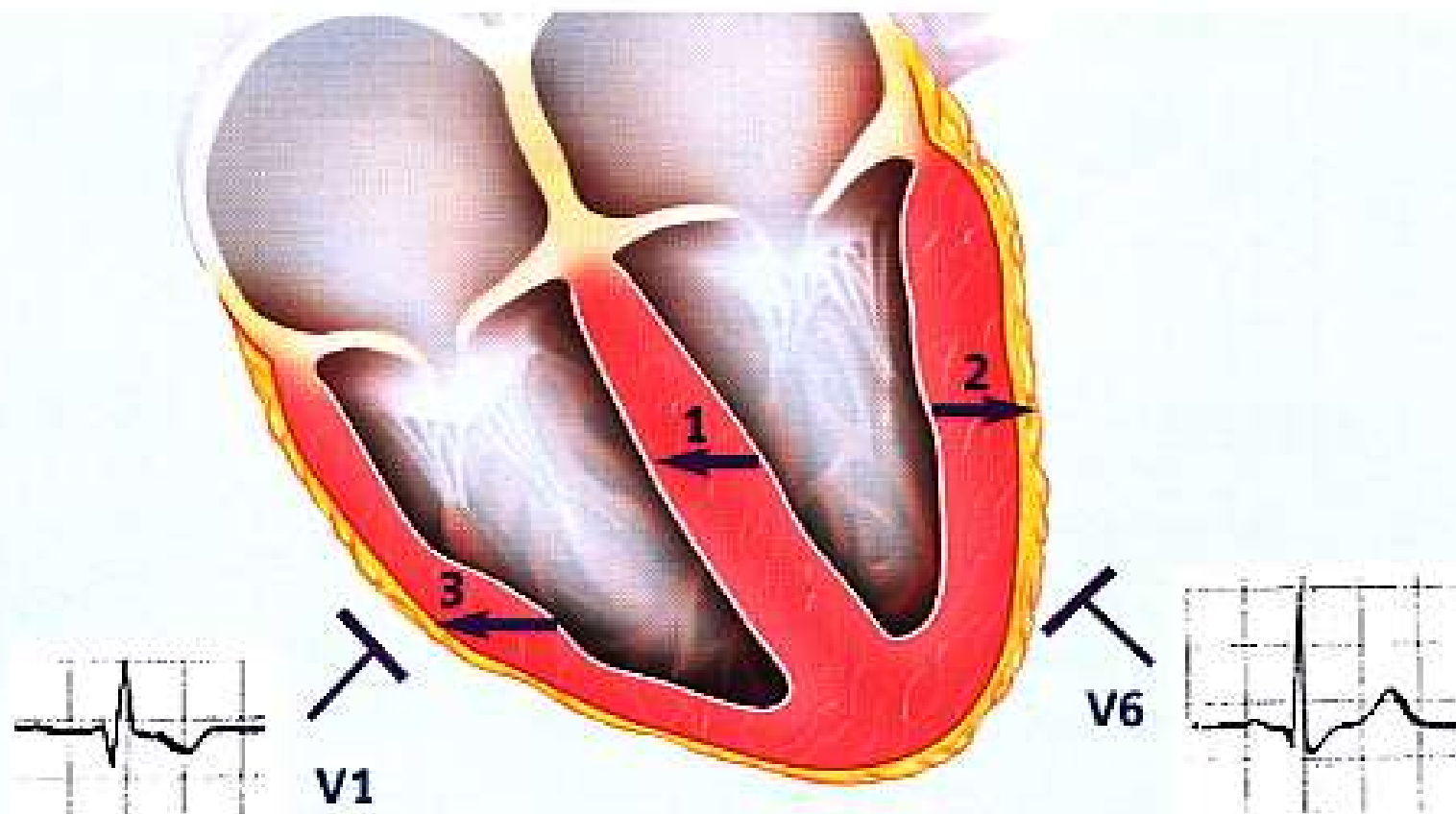


Tutto sotto: Bbsx

L'ATTIVAZIONE VENTRICOLARE (piano frontale)

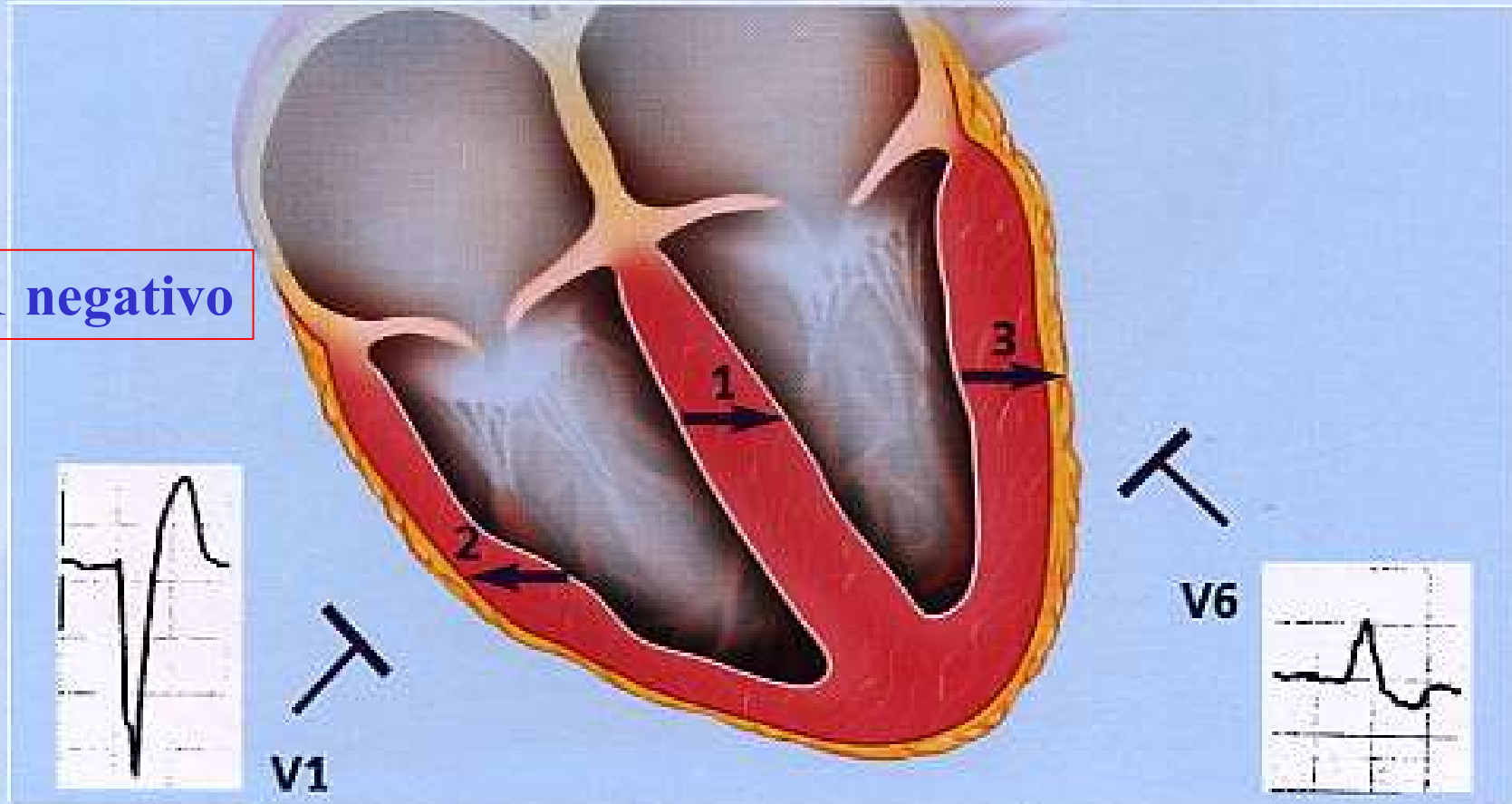


Blocco di branca destra



Blocco di branca sinistra

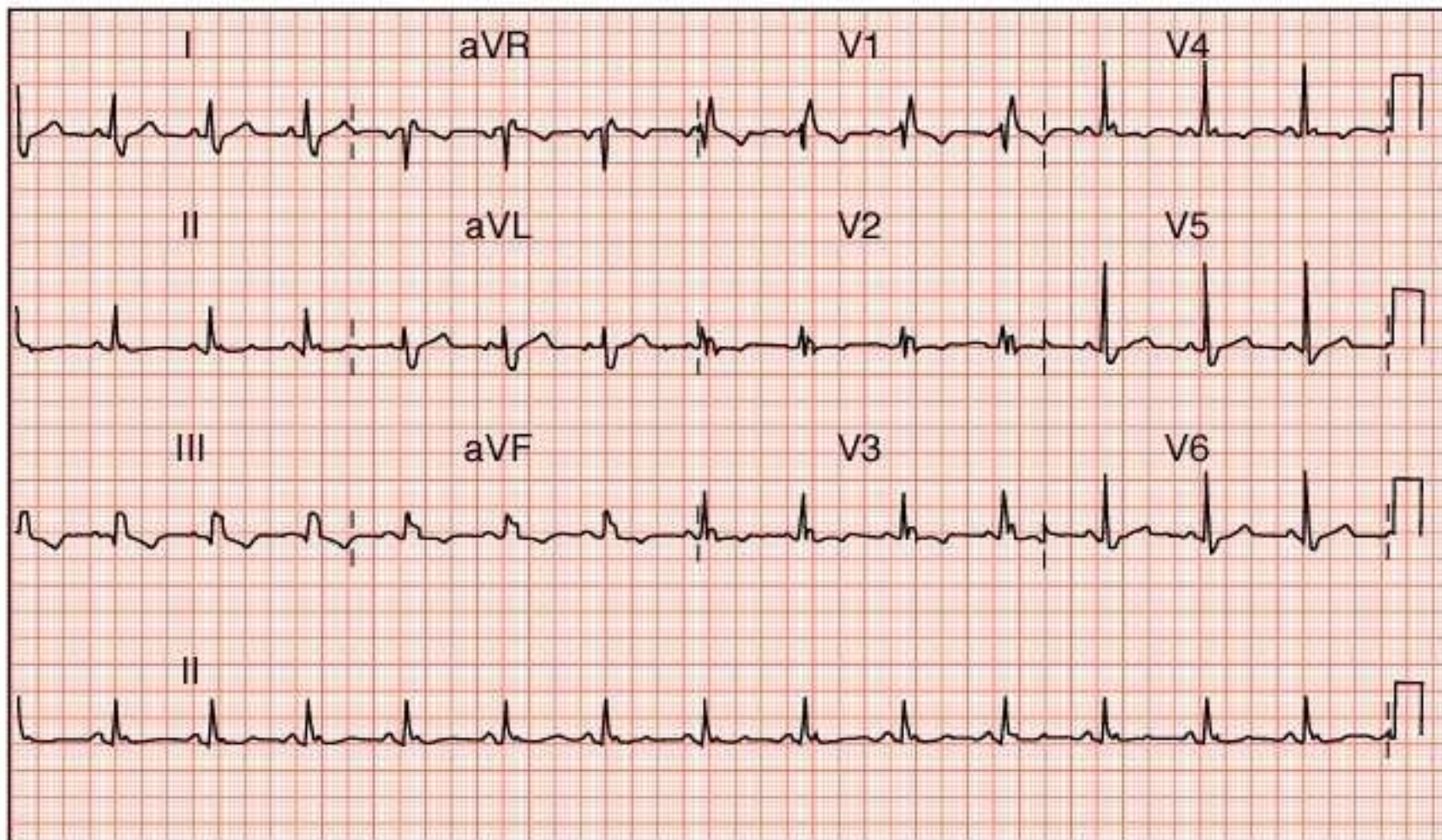
V1 negativo

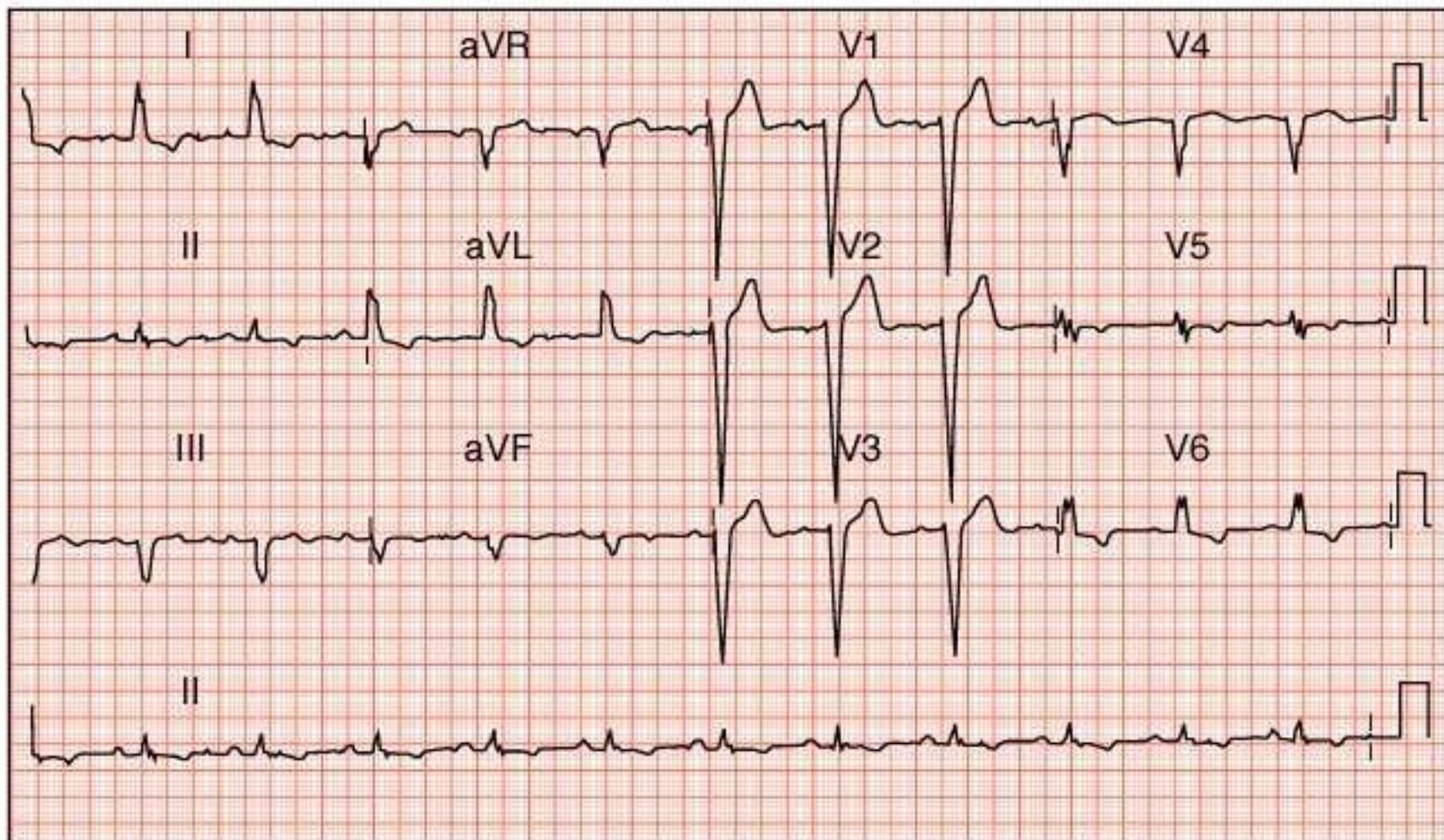


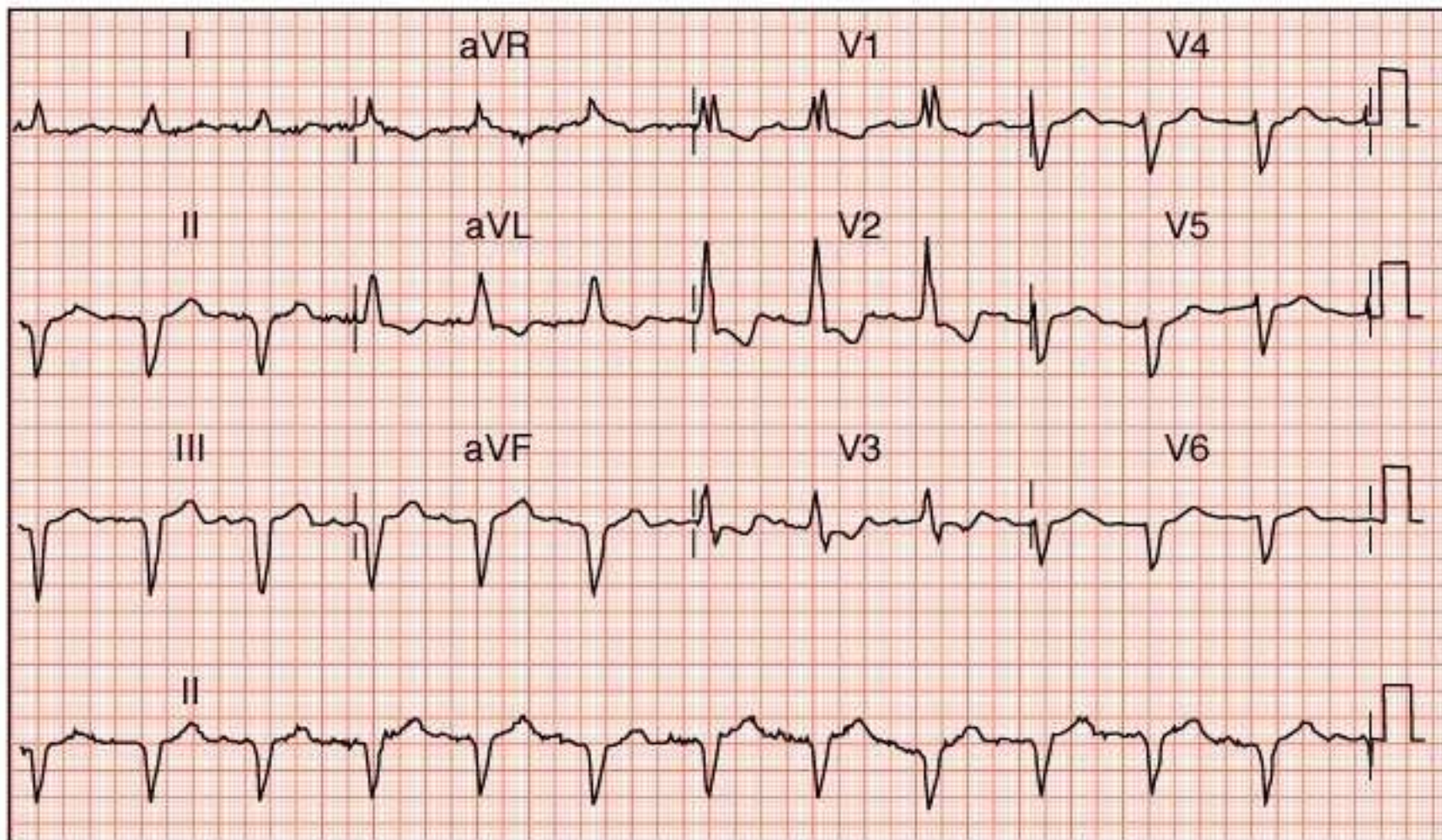
Assenza (o < di 0,03sec) della r in V1

Assenza della q in V6

V1-V6: Ampiezza dell'ST-T elevata ma sempre < di quella del QRS

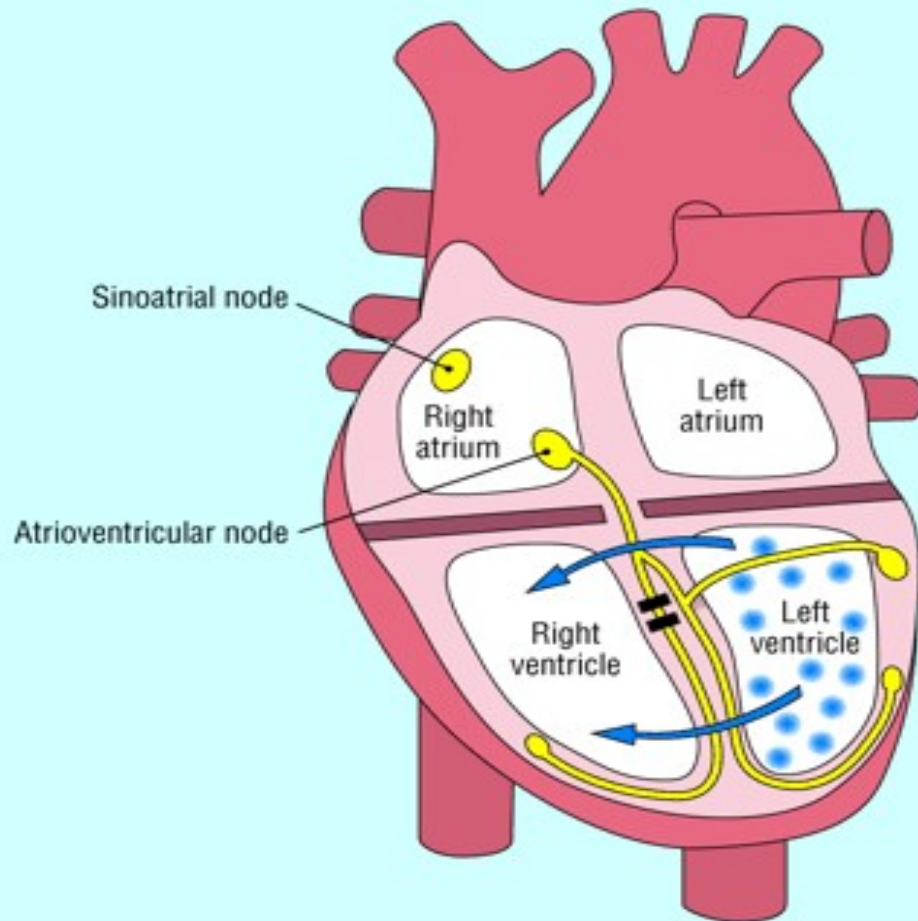






Blocco di branca

- Completo: **QRS \geq 0,12 sec**
- Incompleto: **QRS $<$ 0,12 sec**

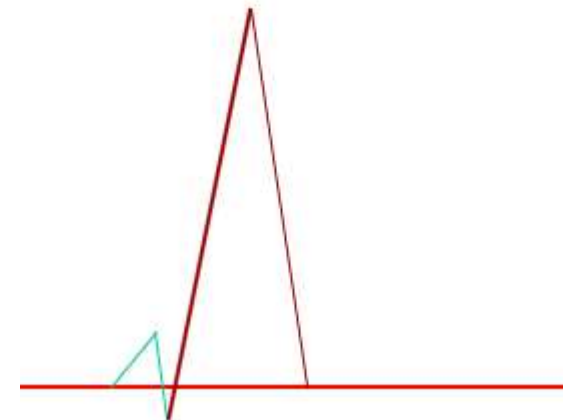


V1

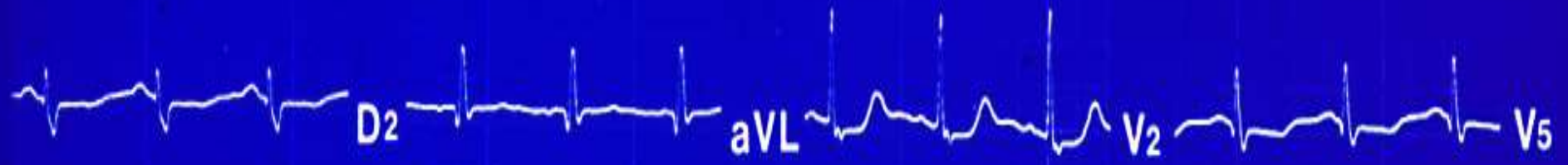
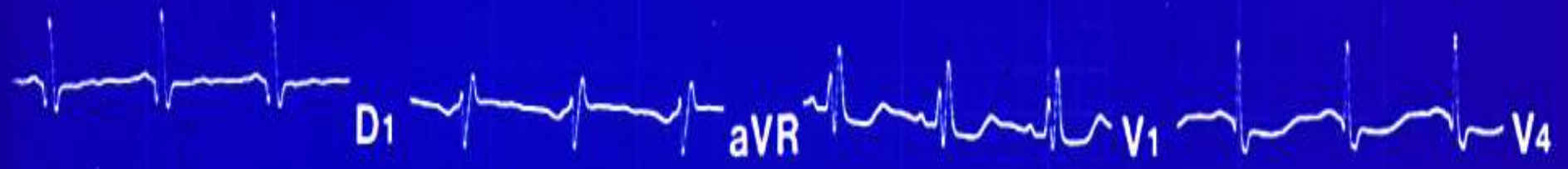
Tutto sopra: Bbdx

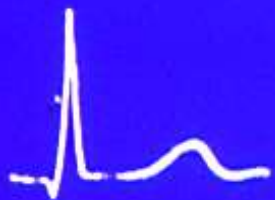
BBDx

- V1 positivo:
- rsR' o rR'





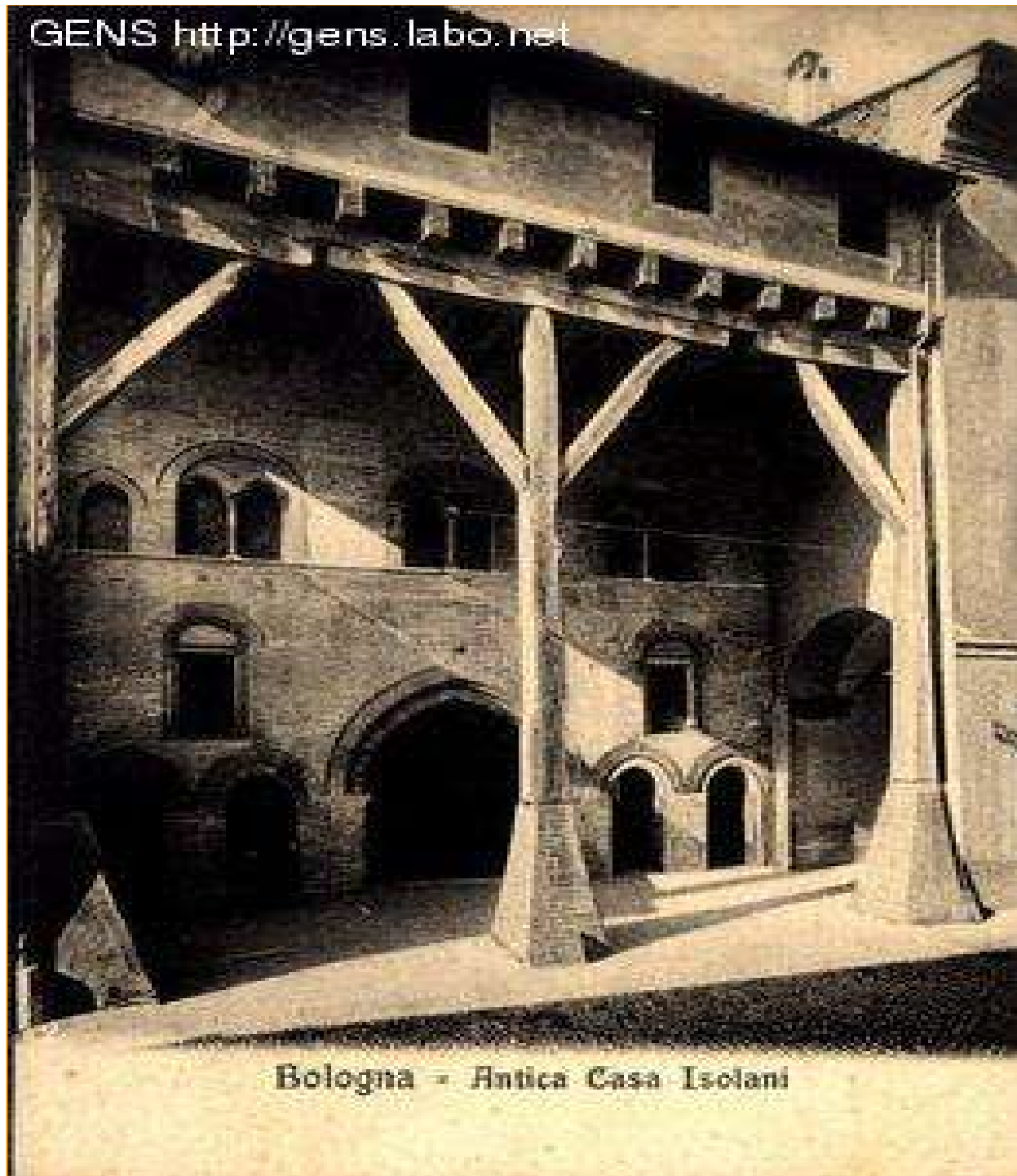




Il primo vettore del QRS
La ripolarizzazione: alterazioni secondarie



Alterazioni della ripolarizzazione?!



Bologna - Antica Casa Isolani

Cod.
Cognome
Nome
Motivo II
Età
Sesso
Razza
Altezza
Peso

Baldo
Vincio
PR :
170/100

Richiesta di:
Indicazioni:

Terapia :

PRONTO SOCCORSO-BO-

07:37 08/ Lug/1999

FC 88



Codi
Cognome
Nome
Nato/a
Età
Sesso
Razza
Altezza
Peso

Richiesto da:
Indicazioni:

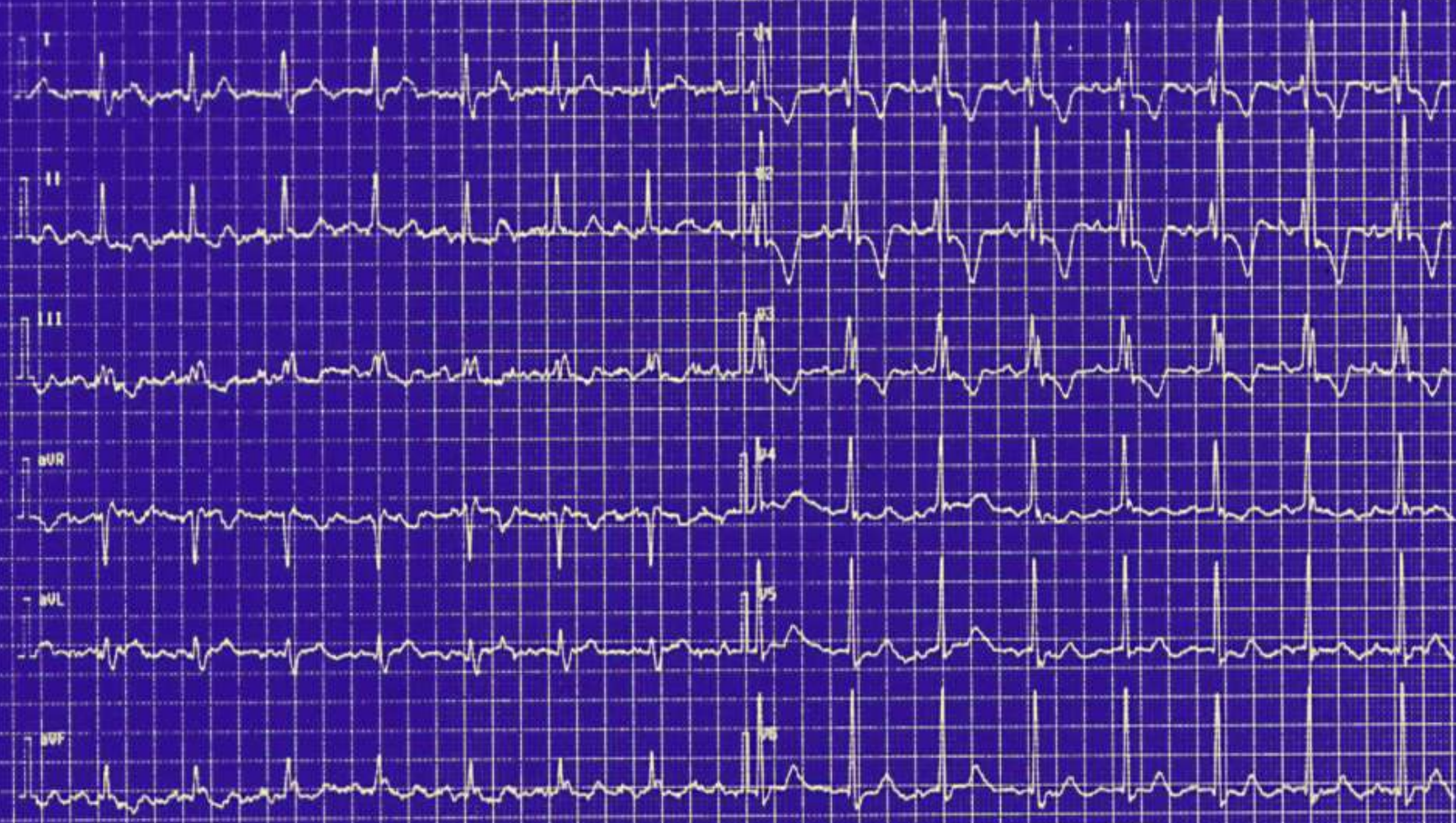
Terapia

PR :

P. S. - S. ORSOLA - MALP.

13-18 17/ Ago/1999

FC 93



Codi :
Cognome :
Nome :
Vato/a il :
Età :
Sesso :
Razza :
Altezza :
Peso :

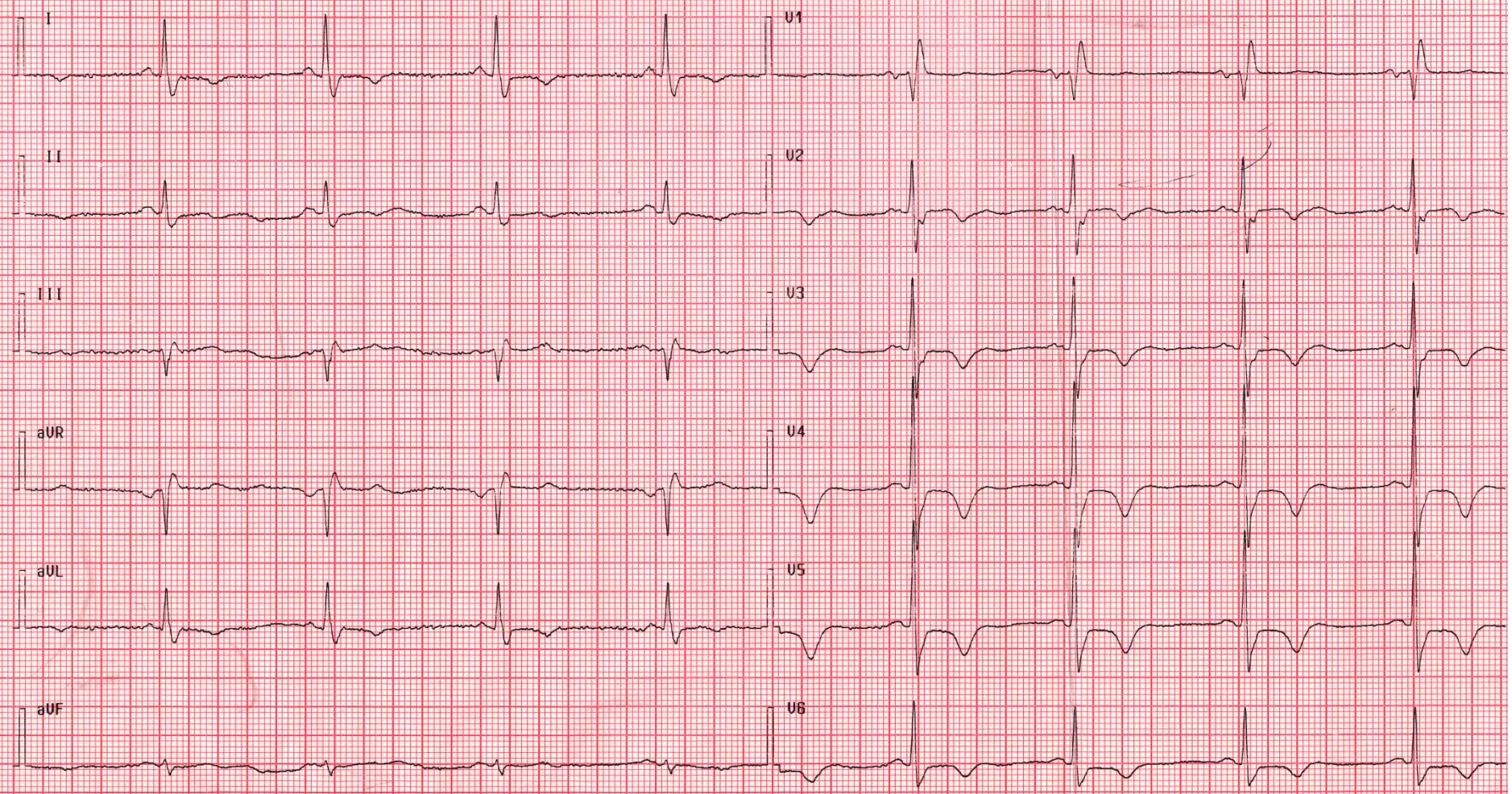
Richiesto da:
Indicazioni:

Terapia :

PA :

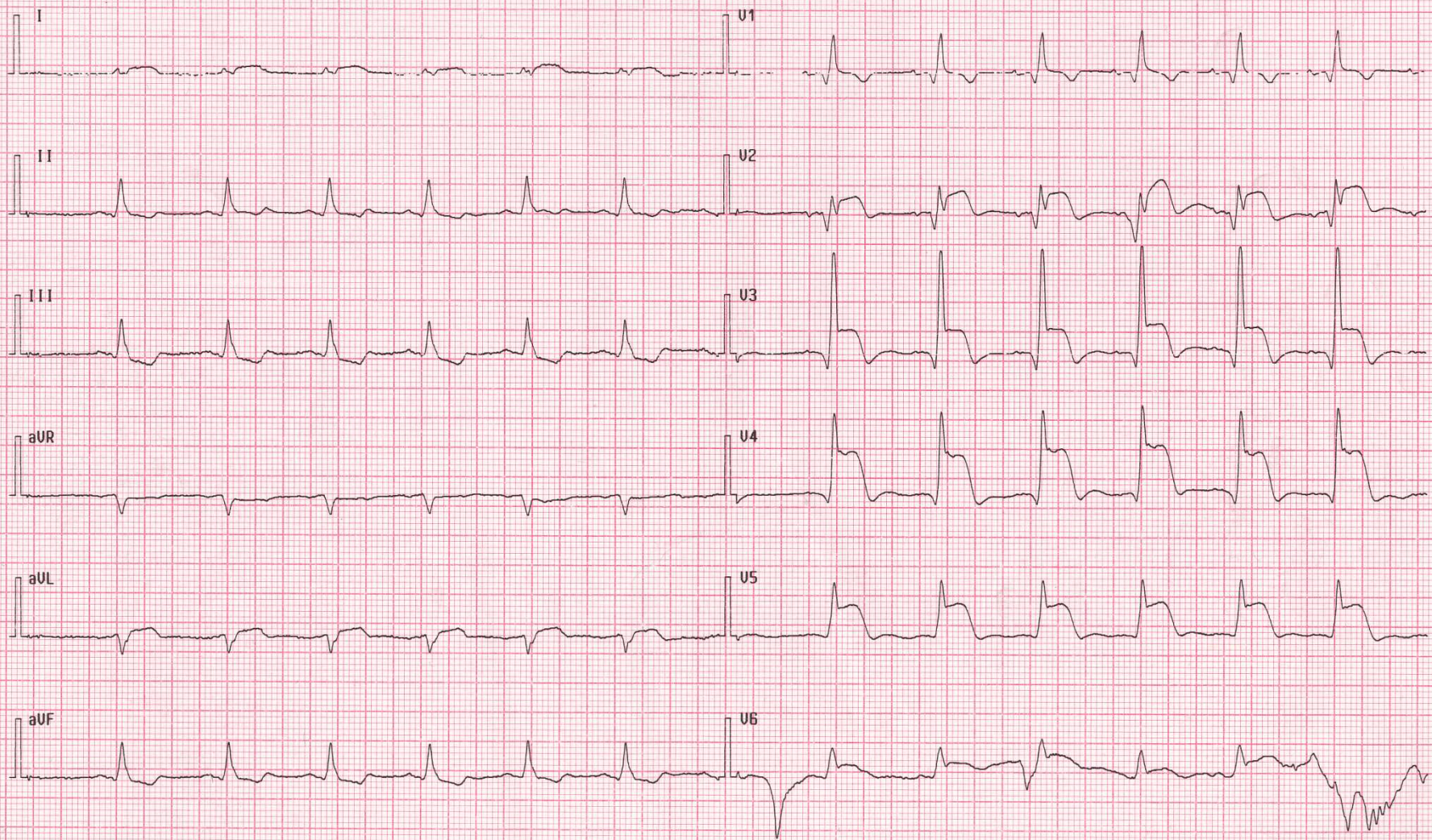
16:49 30/ Apr/2002
FC 058

75



Codice :
Cognome :
Nome :
Nato/a il :
Età :
Sesso :
Razza :
Altezza :
Peso :
Richiesto da:
Indicazioni:
Terapia :
PA :

FC 77



Aspetti del QRS

“a tipo” blocco di branca dx

Un esempio:



QRS: «..... come..Brugada»

La sindrome di Brugada:

«episodio sincopale o morte improvvisa in pazienti con cuore «strutturalmente» normale ed ECG con pattern «a tipo» BBdx von ST elevato in V1 e V3

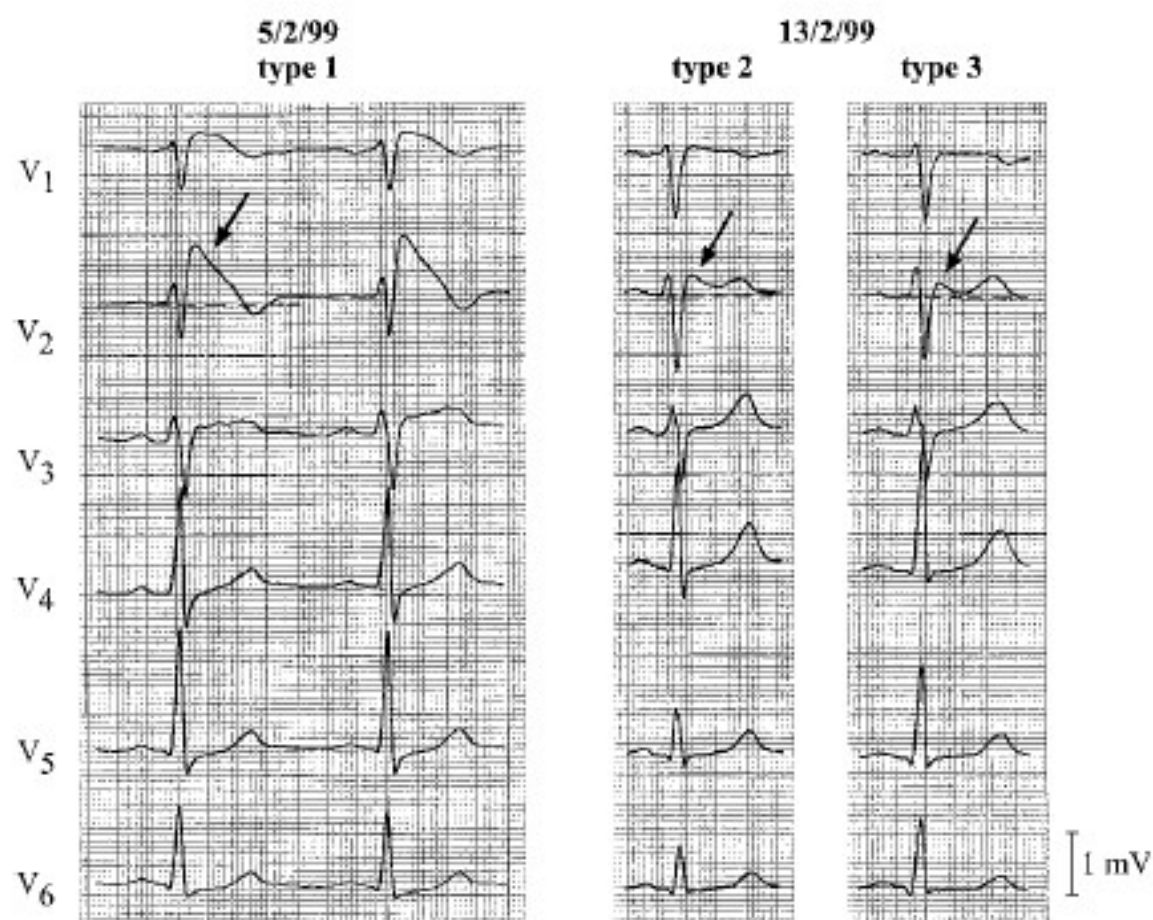
...é una malattia cardiaca ereditaria, geneticamente trasmessa, caratterizzata da un malfunzionamento di una parte della membrana che riveste le cellule del cuore (**canali ionici del sodio**) che, a sua volta, provoca delle modificazioni caratteristiche dell'elettrocardiogramma ed una predisposizione ad aritmie ventricolari maligne.

Alterazioni ECGrafiche

Le alterazioni elettrocardiografiche possono essere assenti o minime e possono essere slatentizzate o accentuate da farmaci bloccanti dei canali del Na, specie gli antiaritmici della Classe IC (*flecainide*) o da una prova da sforzo.

	Type 1	Type 2	Type 3
J-wave amplitude	≥ 2 mm	≥ 2 mm	≥ 2 mm
T-wave	Negative	Positive or biphasic	Positive
ST-T configuration	Coved type	Saddle back	Saddle back
ST segment (terminal portion)	Gradually descending	Elevated ≥ 1 mm	Elevated <1 mm

1 mm=0.1 mV, the terminal portion of the ST-segment refers to the latter half of the ST-segment.



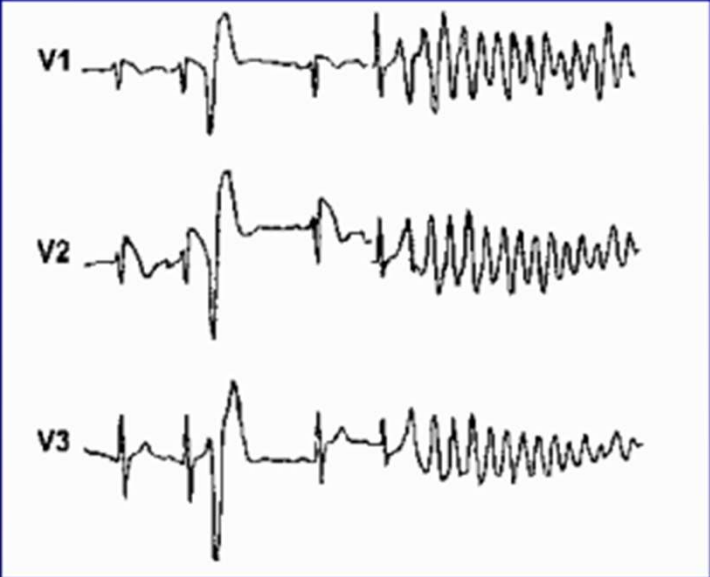
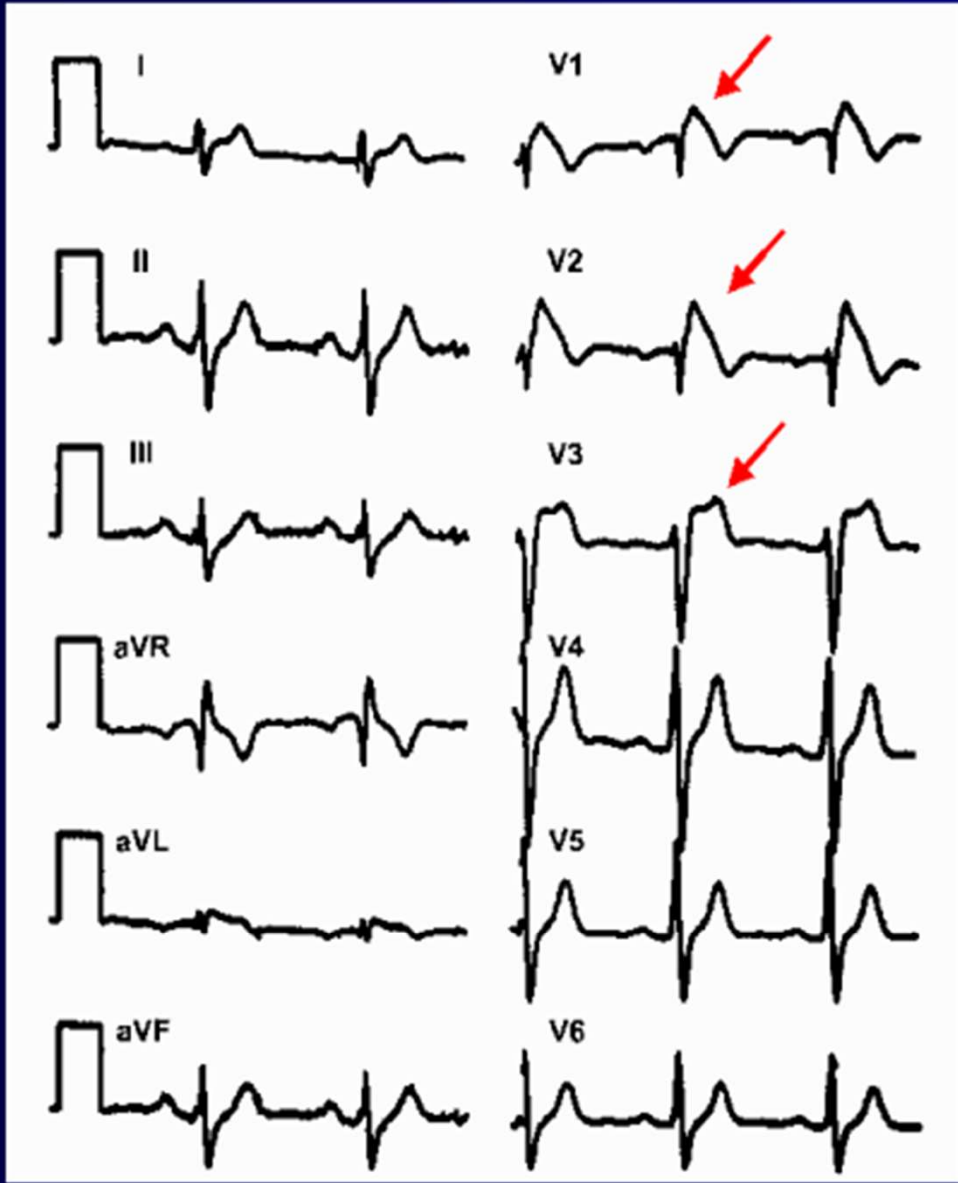


Table 2 (a) Abnormalities that can lead to ST-segment elevation in the right precordial leads

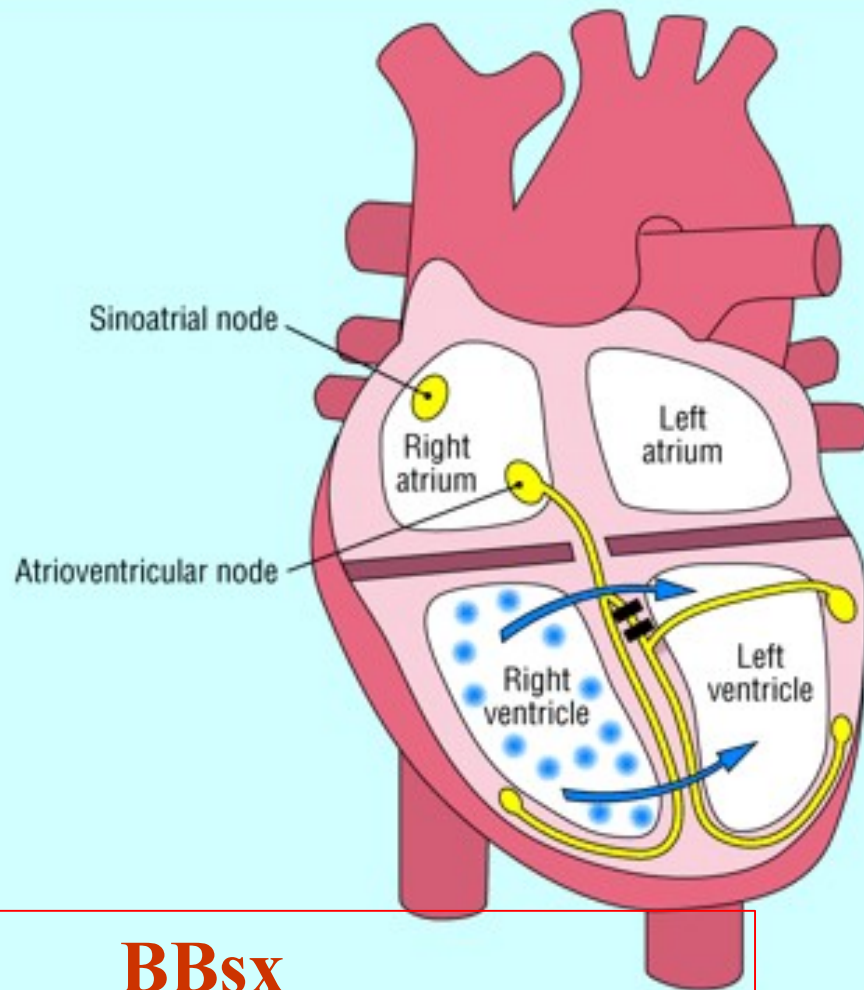
Right or left bundle branch block, left ventricular hypertrophy^[28]
Acute myocardial ischemia or infarction^[29]
Acute myocarditis^[30]
Right ventricular ischemia or infarction^[31]
Dissecting aortic aneurysm^[32]
Acute pulmonary thromboemboli^[33]
Various central and autonomic nervous system abnormalities^[34,35]
Heterocyclic antidepressant overdose^[36]
Duchenne muscular dystrophy^[37]
Friedreich's ataxia^[38]
Thiamine deficiency^[39,40]
Hypercalcemia^[41]
Hyperkalemia^[42]
Cocaine intoxication^[43,44]
Mediastinal tumor compressing RVOT^[45]
Arrhythmogenic right ventricular dysplasia/cardiomyopathy^[24,25]
LQTS, type 3^[11,12]

Table 2(b) Other conditions that can lead to ST-segment elevation in the right precordial leads

Early repolarization syndrome
Other normal variants (particularly in men)

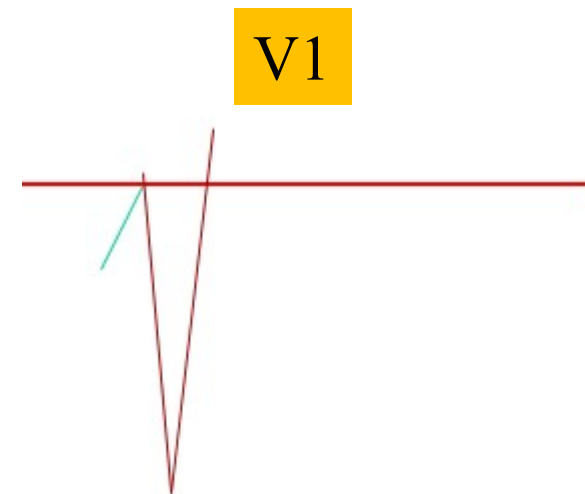
Blocco di branca sx





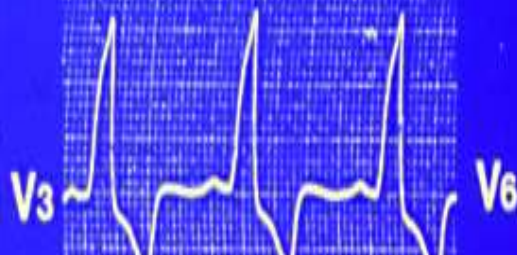
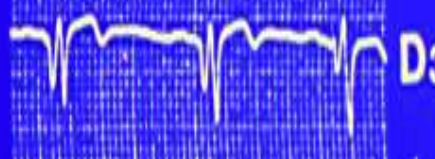
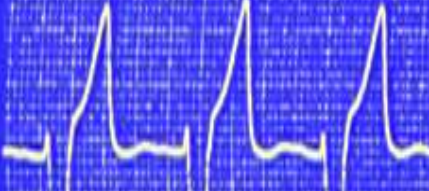
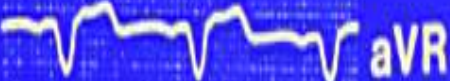
BBsx

- **V1 negativo:**
- **rS o QS**
- **e V6 senza q e ad M**



Tutto sotto: Bbsx





Cella
Cognome
Nome
Nato/a ()
Sex
Dato
Data
Misure
Peso

MICCOLINELLI
FEDERICO

RICIARDI DA
IMPIERZANI

P. 1 - 1.000.000 - 00.0

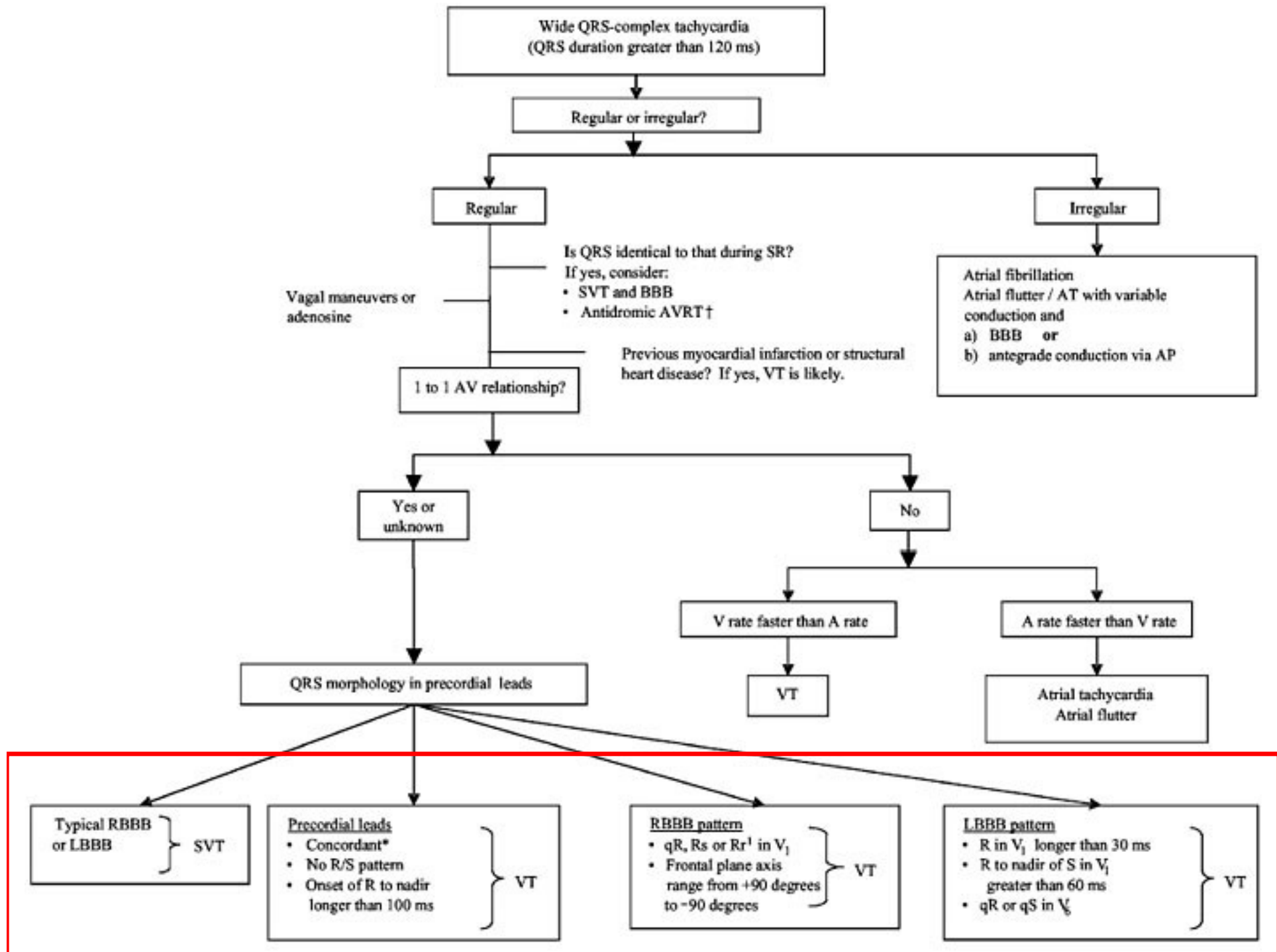
14.06.05 / Legn/1000
15. 07

Terapia :

pe



Perché conoscere i blocchi di branca



Tachicardia a complessi larghi

morfologia del **QRS** in V1 e V6

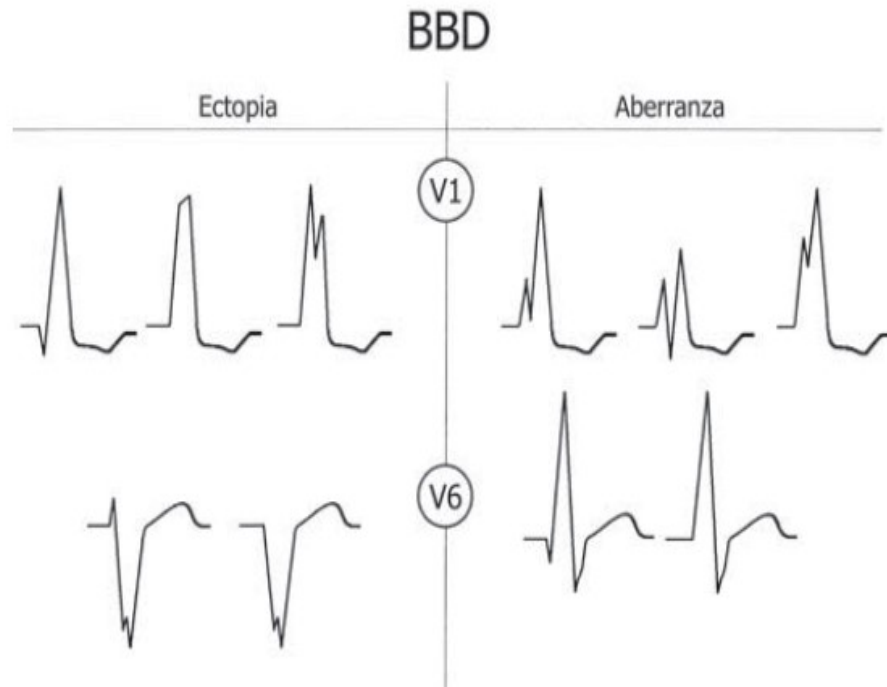
Tipico BBdx o BBsx } SVT

pattern BBdx:

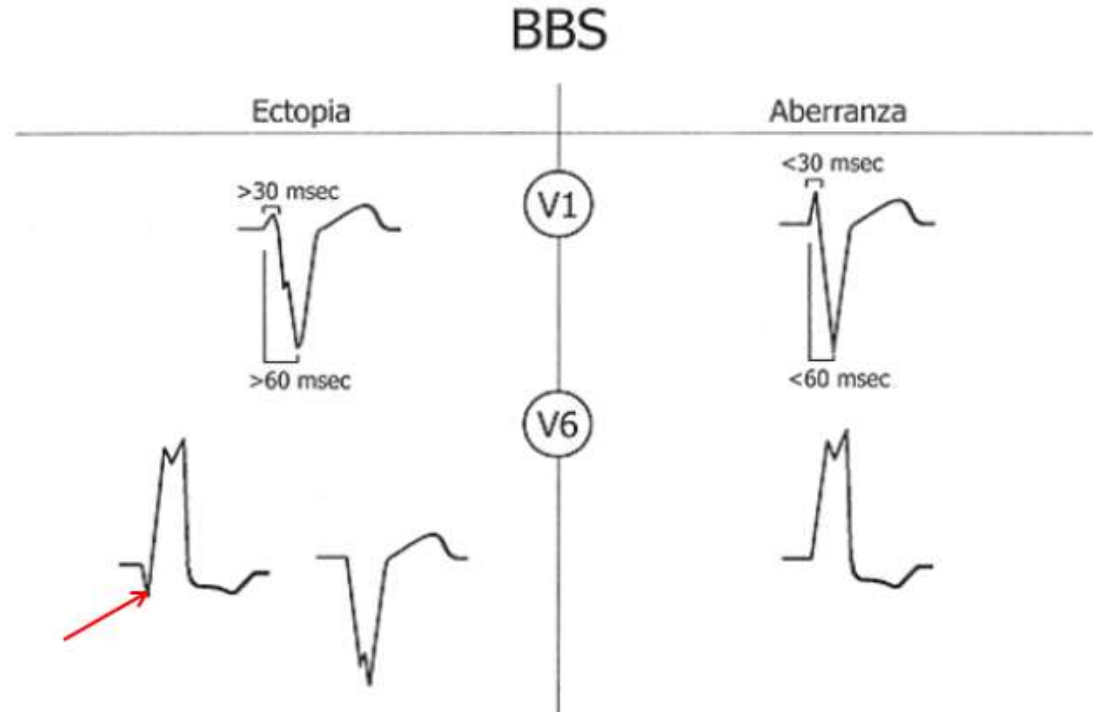
qR, Rs o Rr' in **V1** } **TV**

pattern BBsx: **TV**

R in V1 + lungo di 30 ms (0,03sec) }
qR o qS in **V6** }

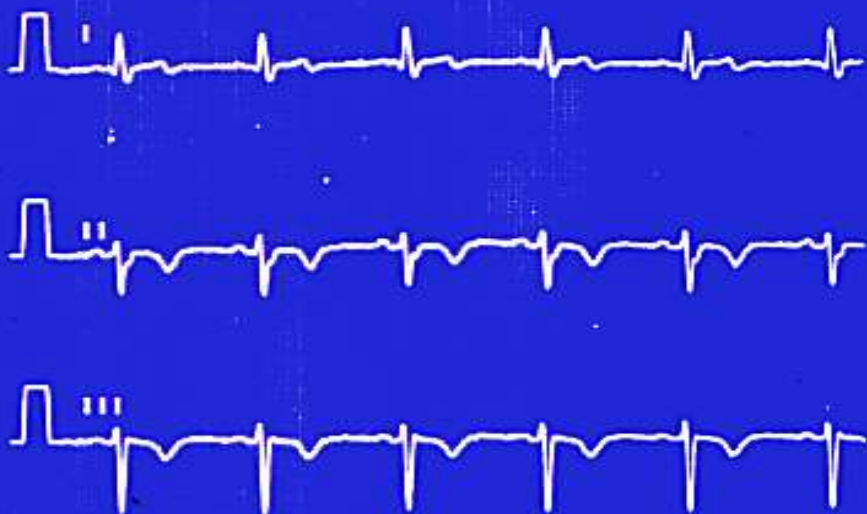


*G Oreto et al - Tachicardia a QRS larghi
(G Ital Cardiol 2009; 10 (9): 580-595)*





10-011-91 10:05 AUTO 10mm/mV 25mm/s F3 RC 66



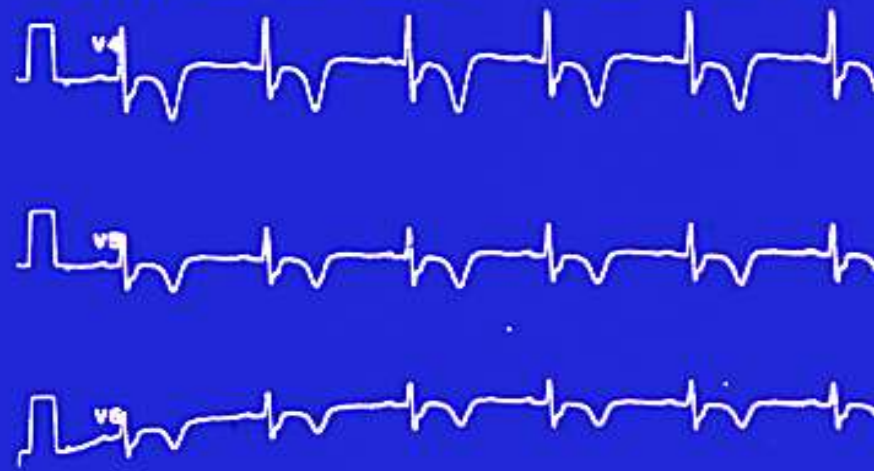
10-011-91 10:05 AUTO 10mm/mV 25mm/s F3 RC 65



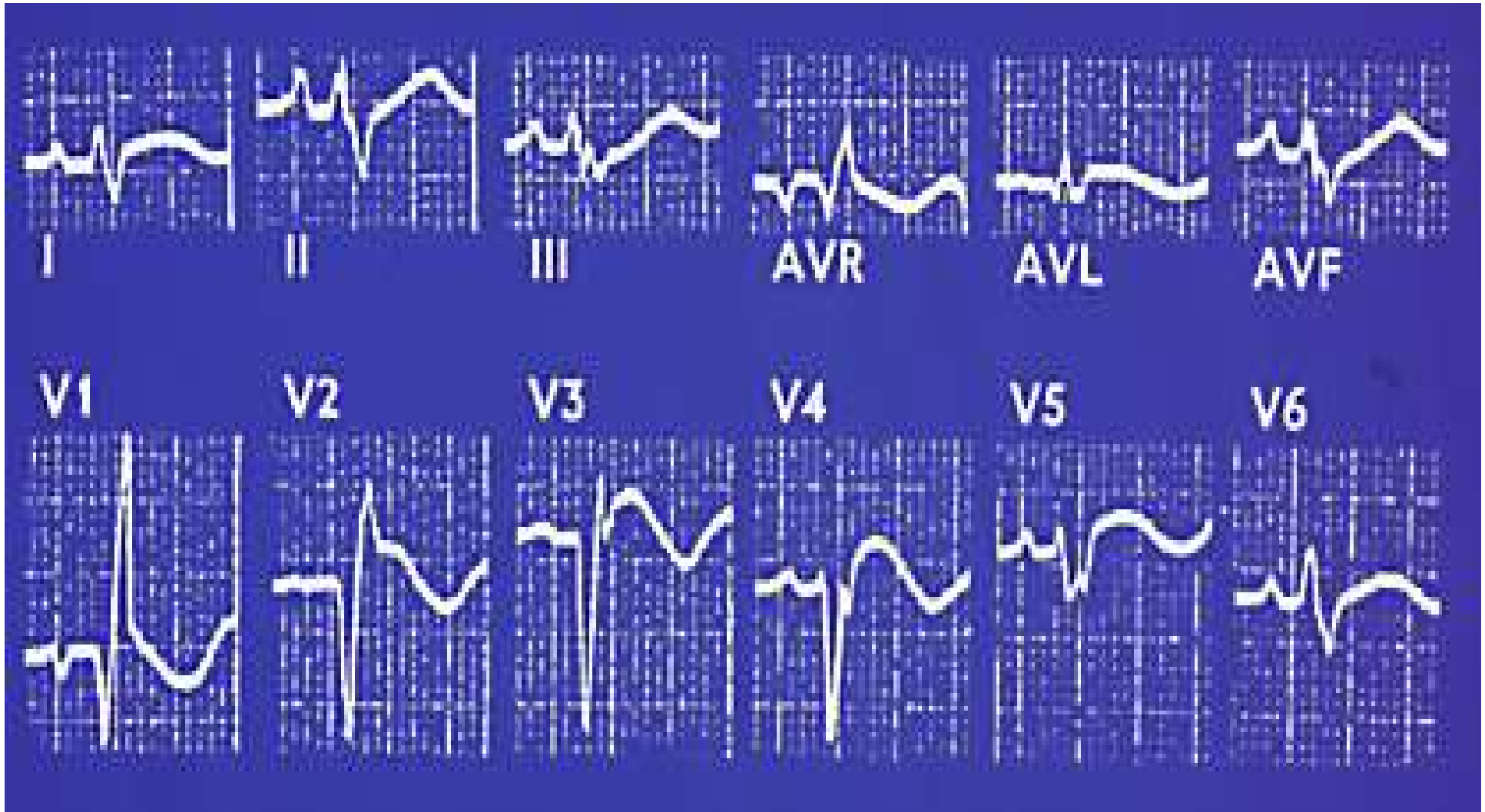
10-011-91 10:05 AUTO 10mm/mV 25mm/s F3 RC 64

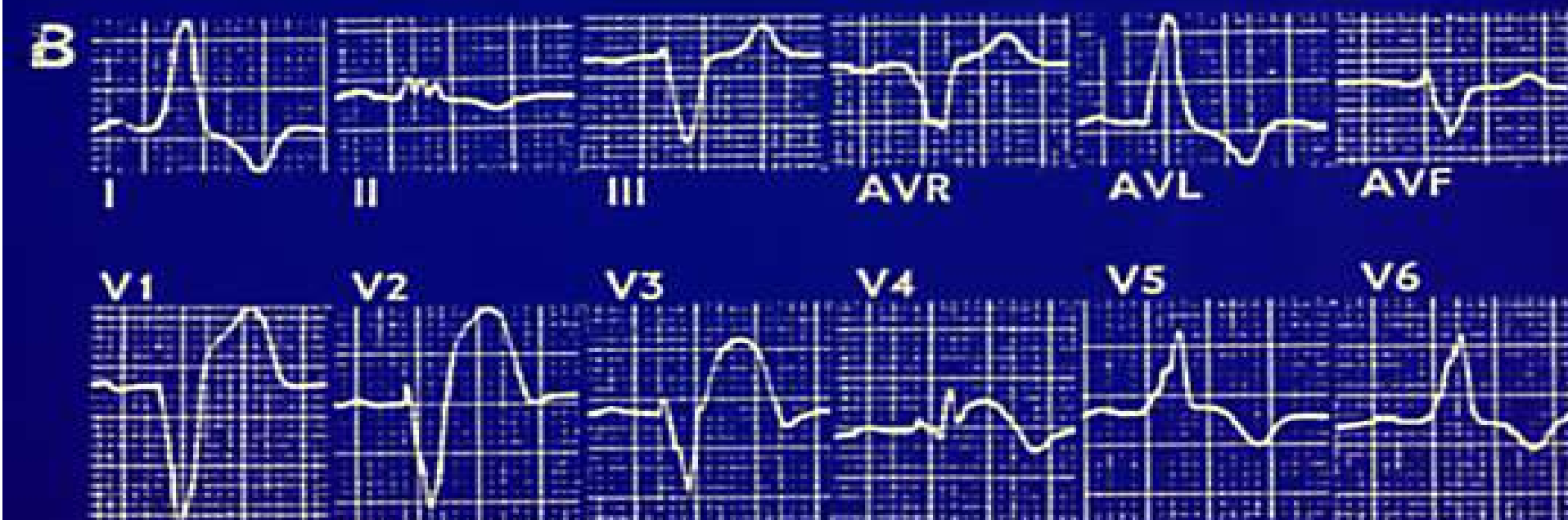
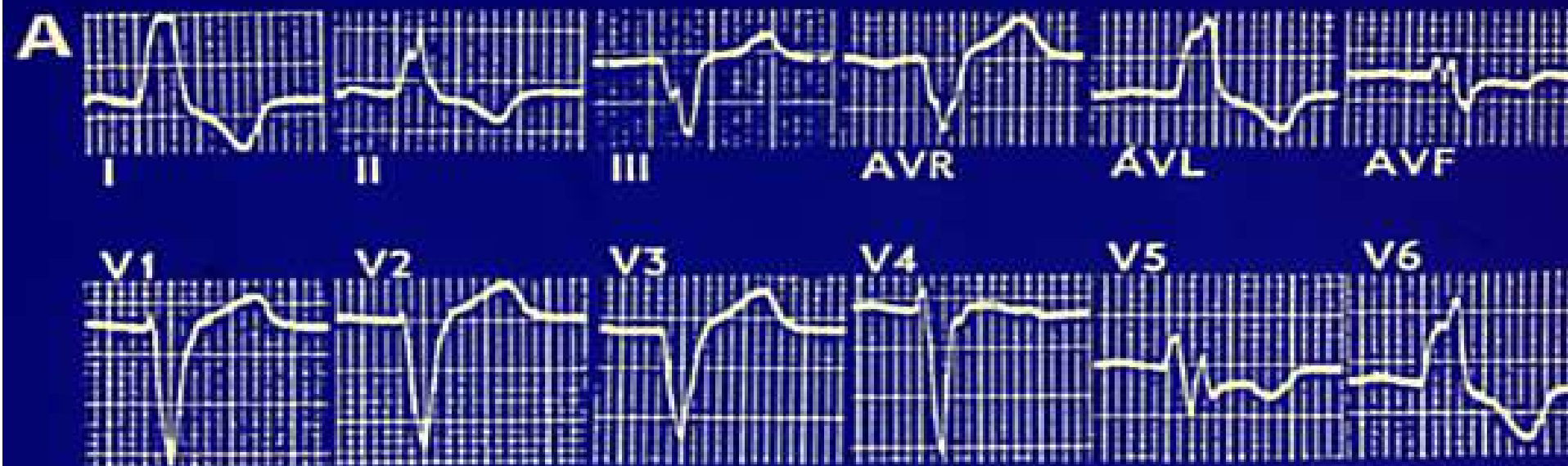


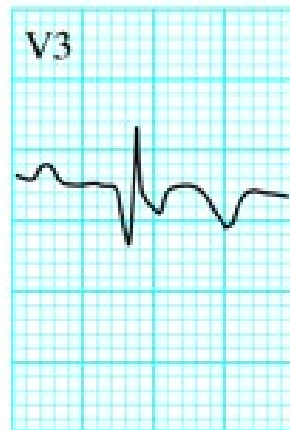
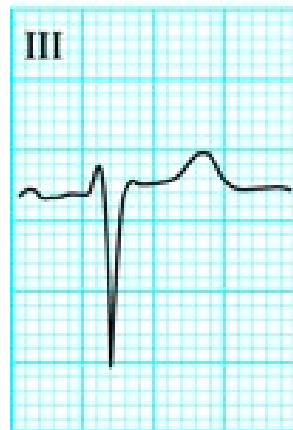
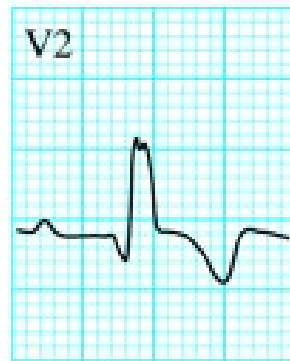
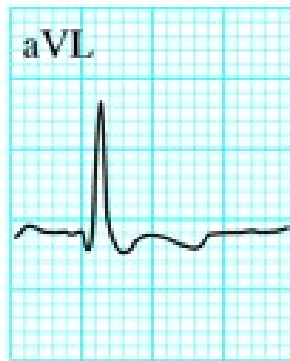
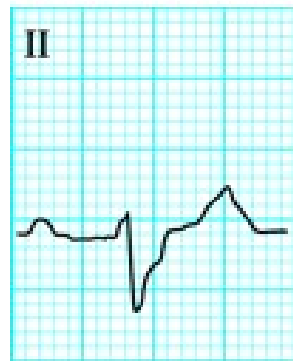
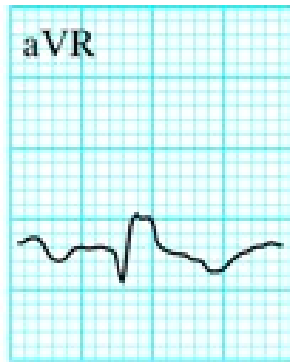
10-011-91 10:05 AUTO 10mm/mV 25mm/s F3 RC 65



20mm 0.5 50ms







La causa del blocco di branca

Bbdx/deviazione assiale dx

- **Giovane età**
- **Costituzione longilinea**

- **BPCO, cuore polmonare cronico**
- **Embolia polmonare**
- **Infarto posteriore (pattern simile)**
- **Difetto setto inter_atriale**

I blocchi di branca sinistra :

- **Cardiopatía ipertensiva**
- **Cardiopatía ischemica**
- **Valvulopatía**
- **miocardiopatie**

“stretching “ del miocardio

Bundle-Branch Block in a General Male Population

The Study of Men Born 1913

Peter Eriksson, MD; Per-Olof Hansson, MD; Henry Eriksson, PhD, MD; Mikael Dellborg, PhD, MD

855 uomini di 50 aa nel 1963 e seguiti per 30aa

CONCLUSIONI: il **BLOCCO DI BRANCA**

Si correla in modo importante all'età, ed è comune negli uomini anziani.
I risultati supportano la teoria che il **BB** sia il marcatore di una malattia degenerativa, lentamente progressiva che interessa il miocardio!

Circulation. 1998; 98: 2494-2500

Bundle-branch block in middle-aged men: risk of complications and death over 28 years

The Primary Prevention Study in Göteborg, Sweden

Peter Eriksson^{1,3,*}, Lars Wilhelmsen² and Annika Rosengren³

Conclusion The presence of BBB was strongly associated with future high-degree atrioventricular block that was more pronounced for left-BBB. Men with left-BBB have a substantially increased risk of coronary death, mainly due to sudden death outside the hospital setting.



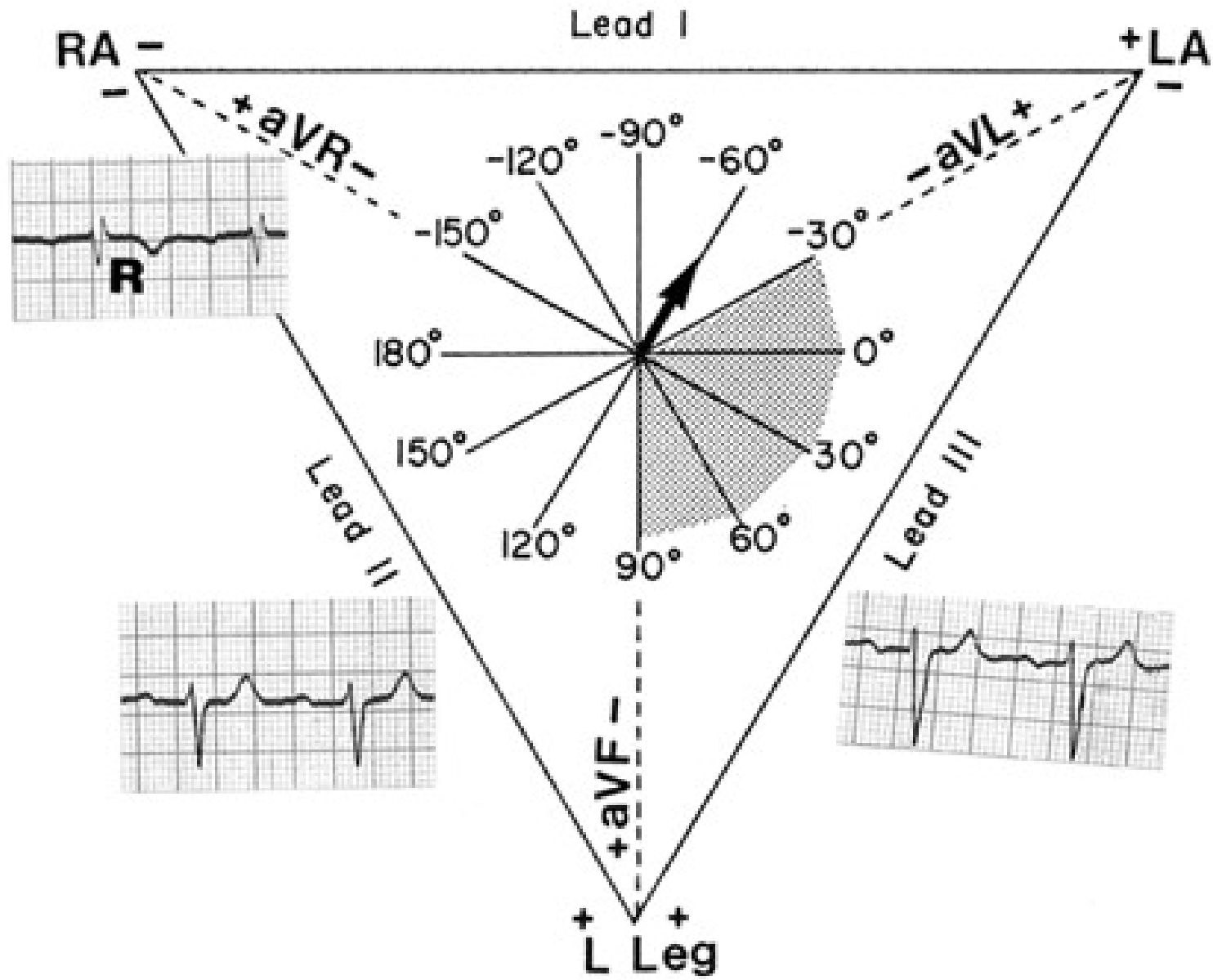




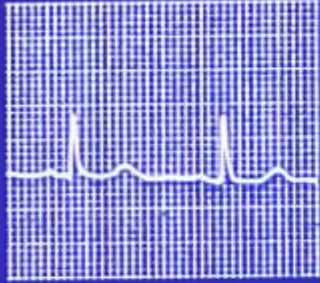
EAS



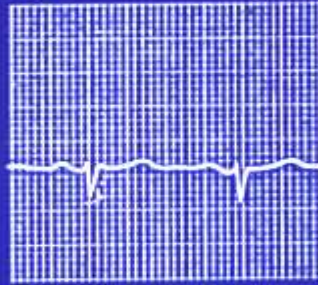
EPS



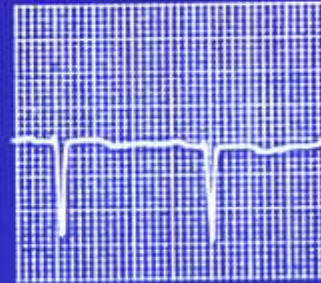
D₁



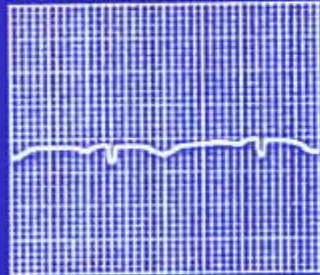
D₂



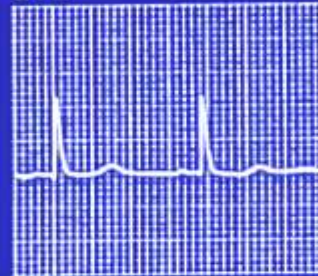
D₃



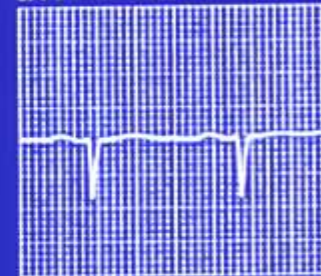
aVR



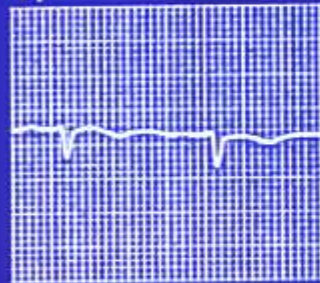
aVL



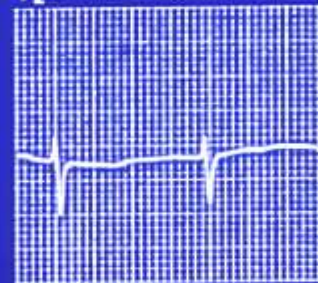
aVF



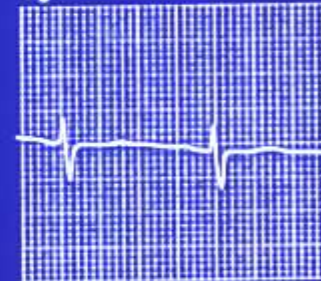
V₁



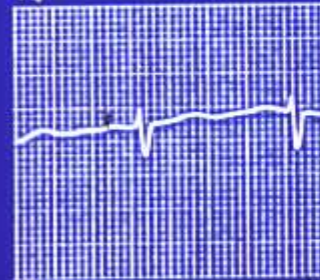
V₂



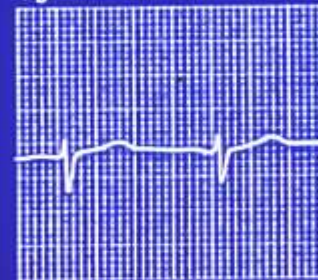
V₃



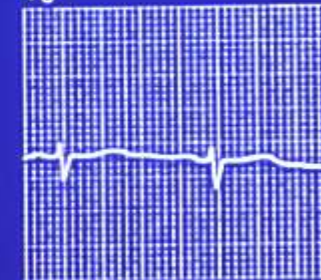
V₄



V₅

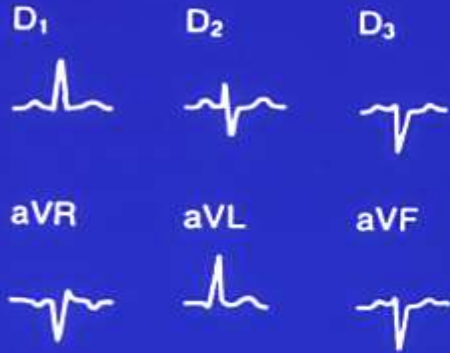


V₆



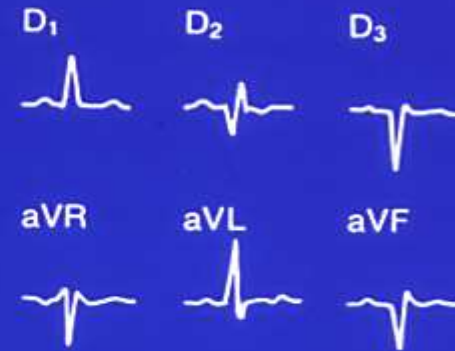


rS II, III, aVF



Left anterior hemiblock

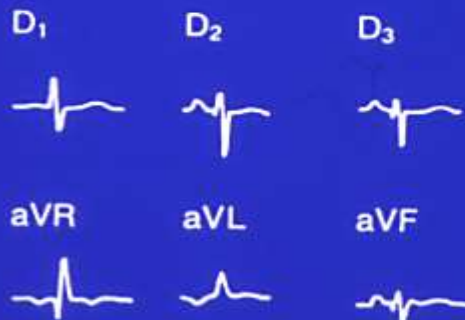
Q wave in II, III, aVF



Inferior wall myocardial infarction

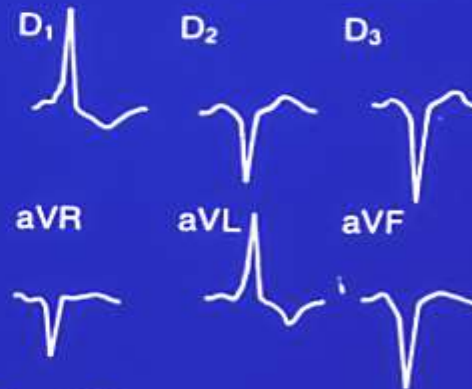
LAD

Chronic pulmonary disease

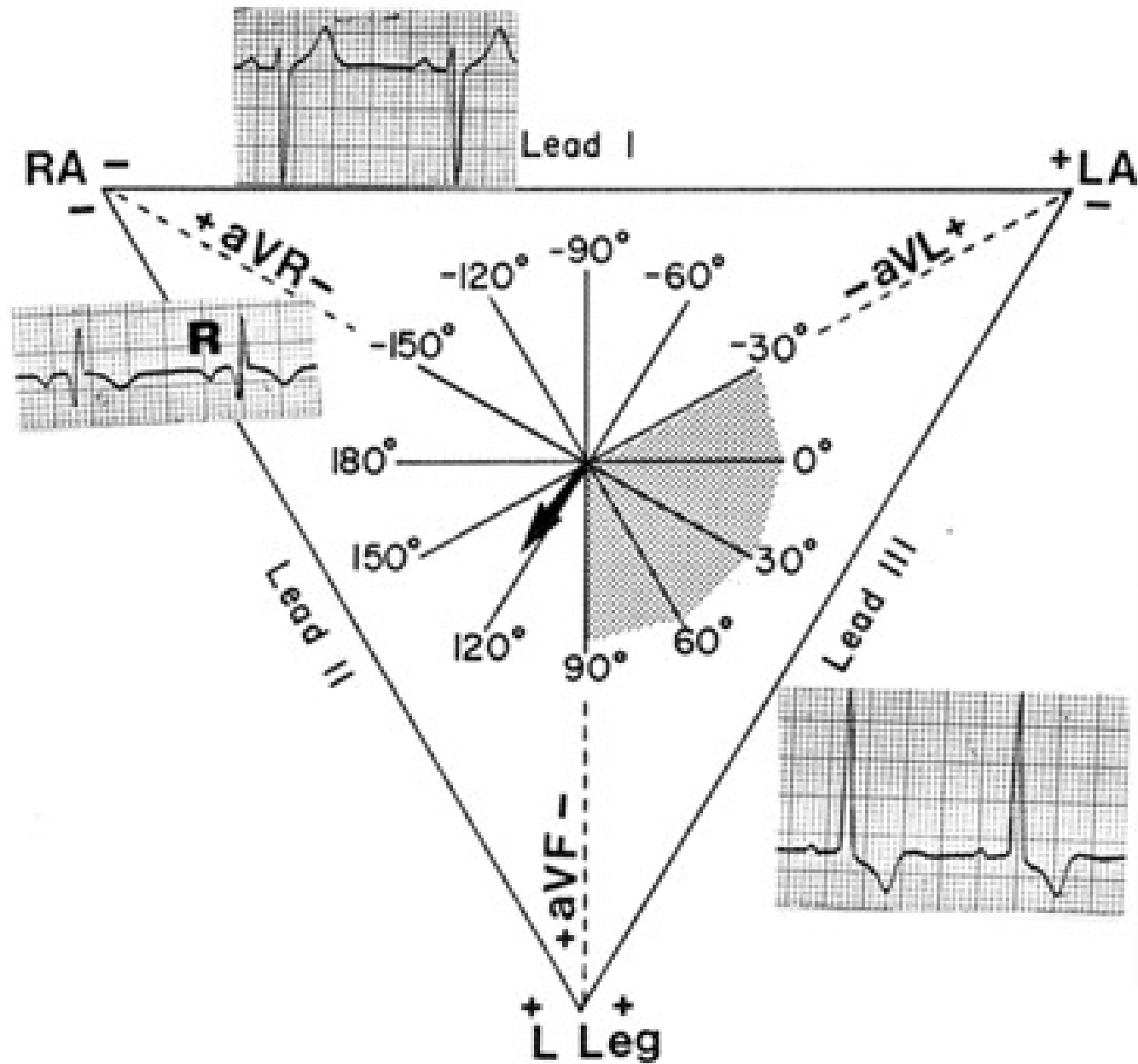


P negative in aVL
High R in aVR. S_I S_{II} S_{III} Syndrome
qrS in II, III, aVF (?)

Wolff-Parkinson-White



Short PR
delta wave
widened QRS



24.7.58

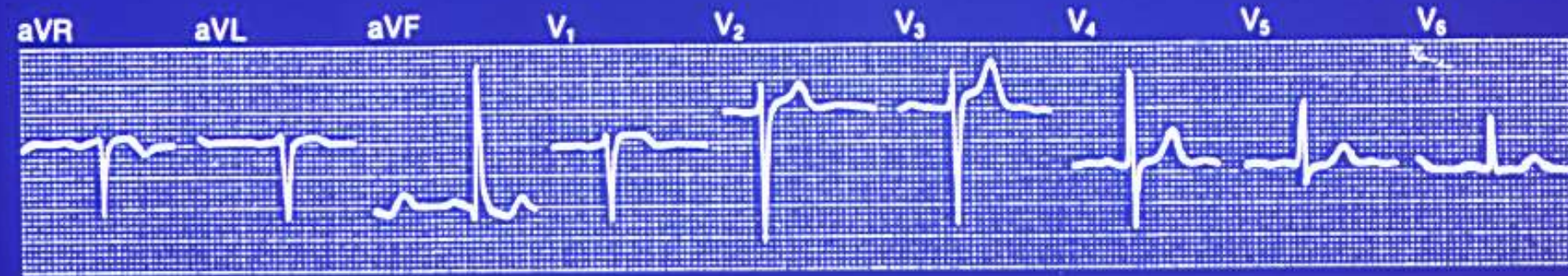
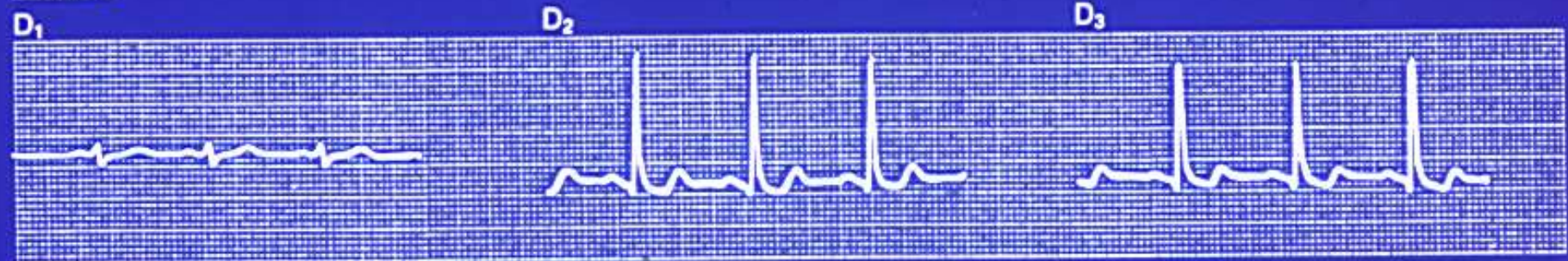


Figura 112



B.S. a 64



