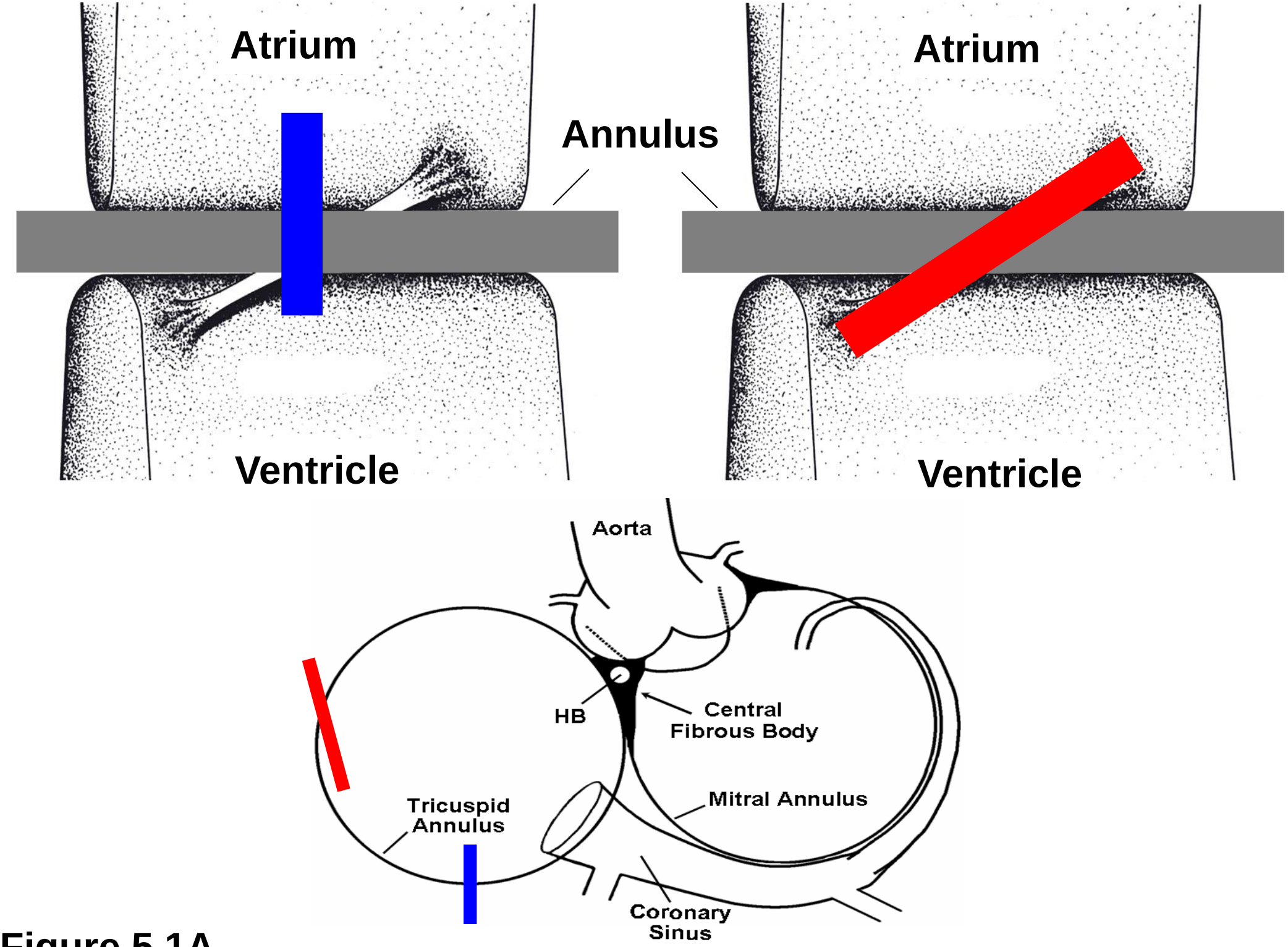

Atrium
Annulus
Ventricle
Atrium
Ventricle
Aorta
HB
Central
Fibrous Body
Tricuspid
Annulus
Mitral Annulus
Coronary
Sinus

Figure 5.1A

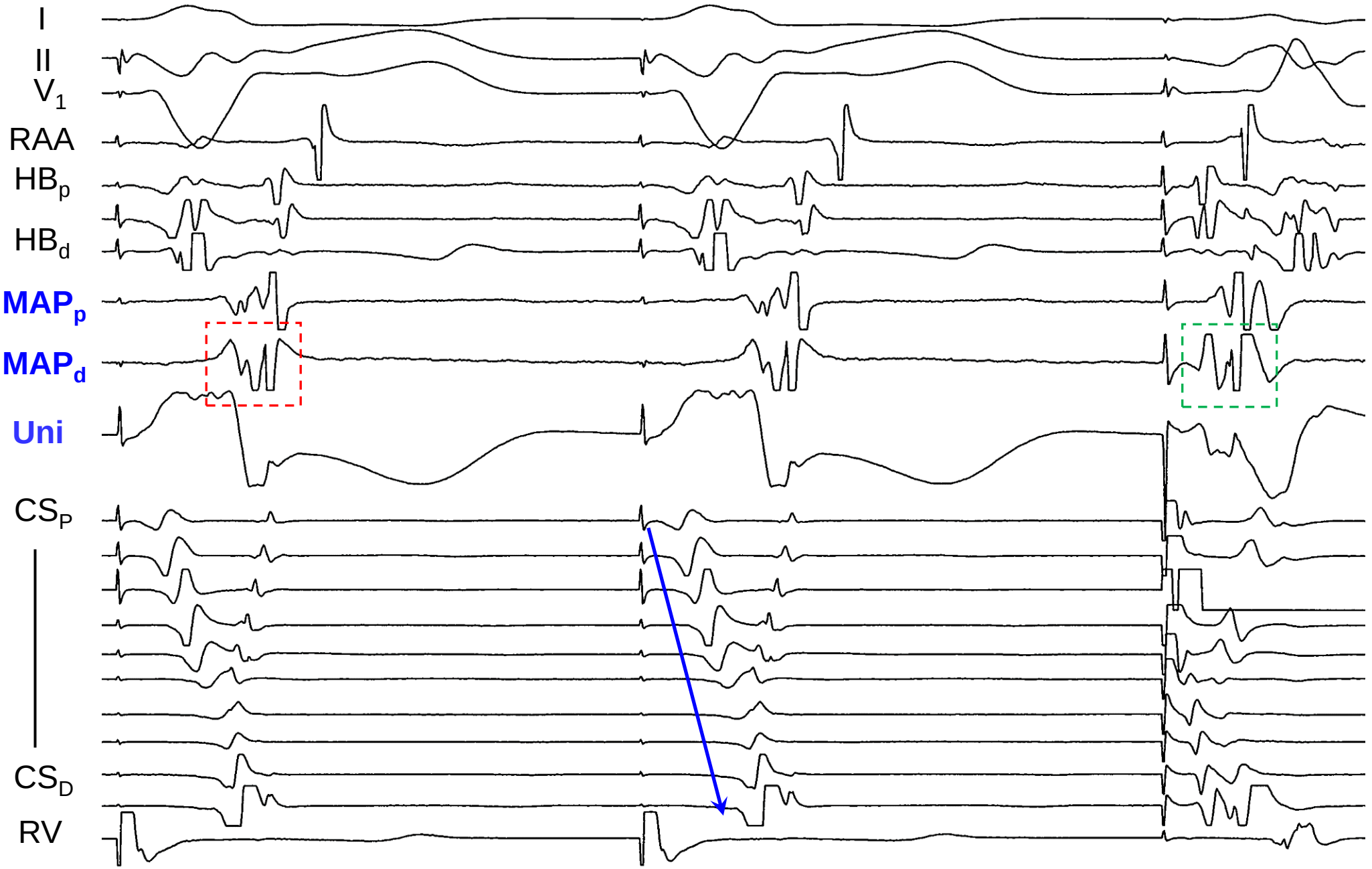


Figure 5.1B

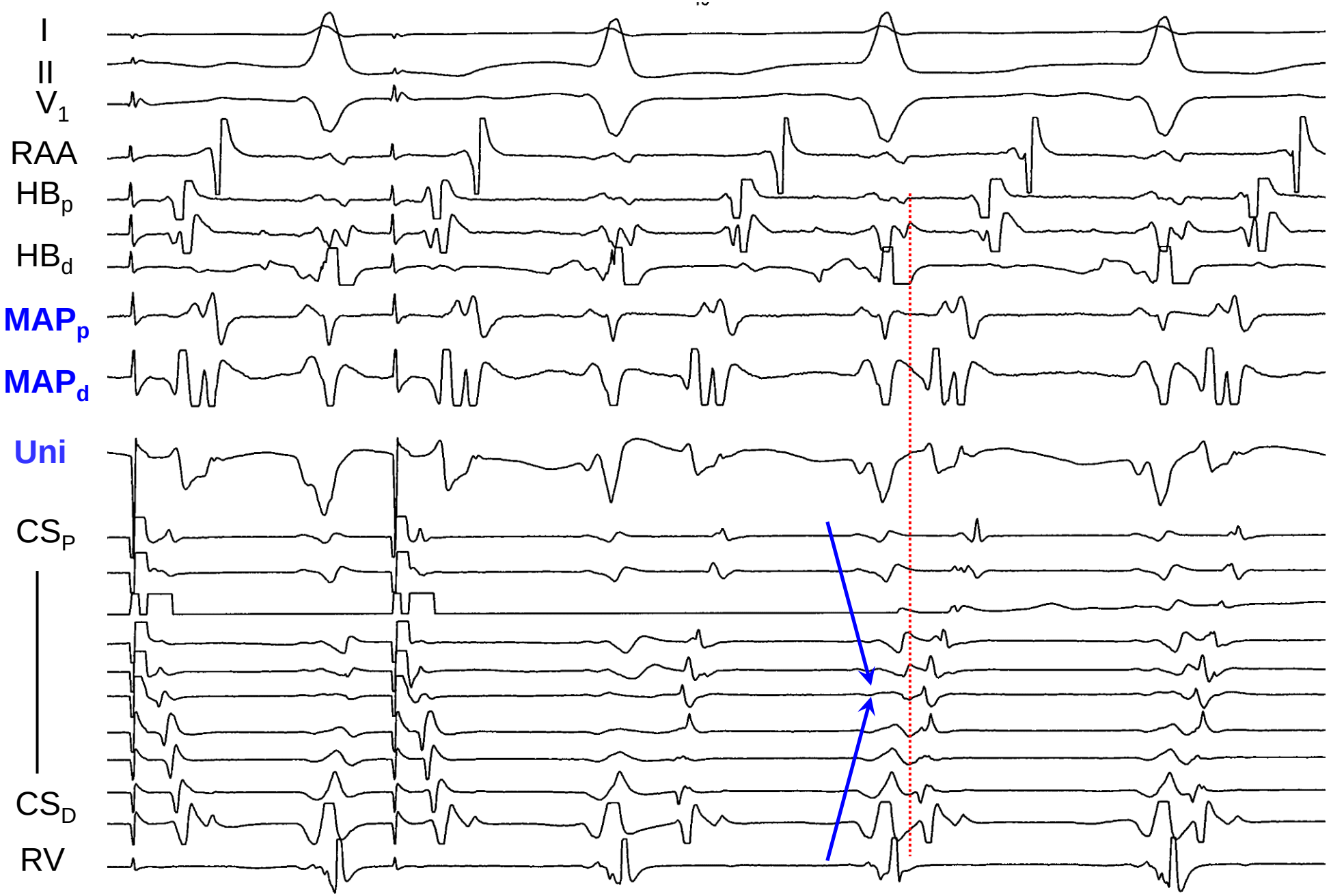


Figure 5.1C

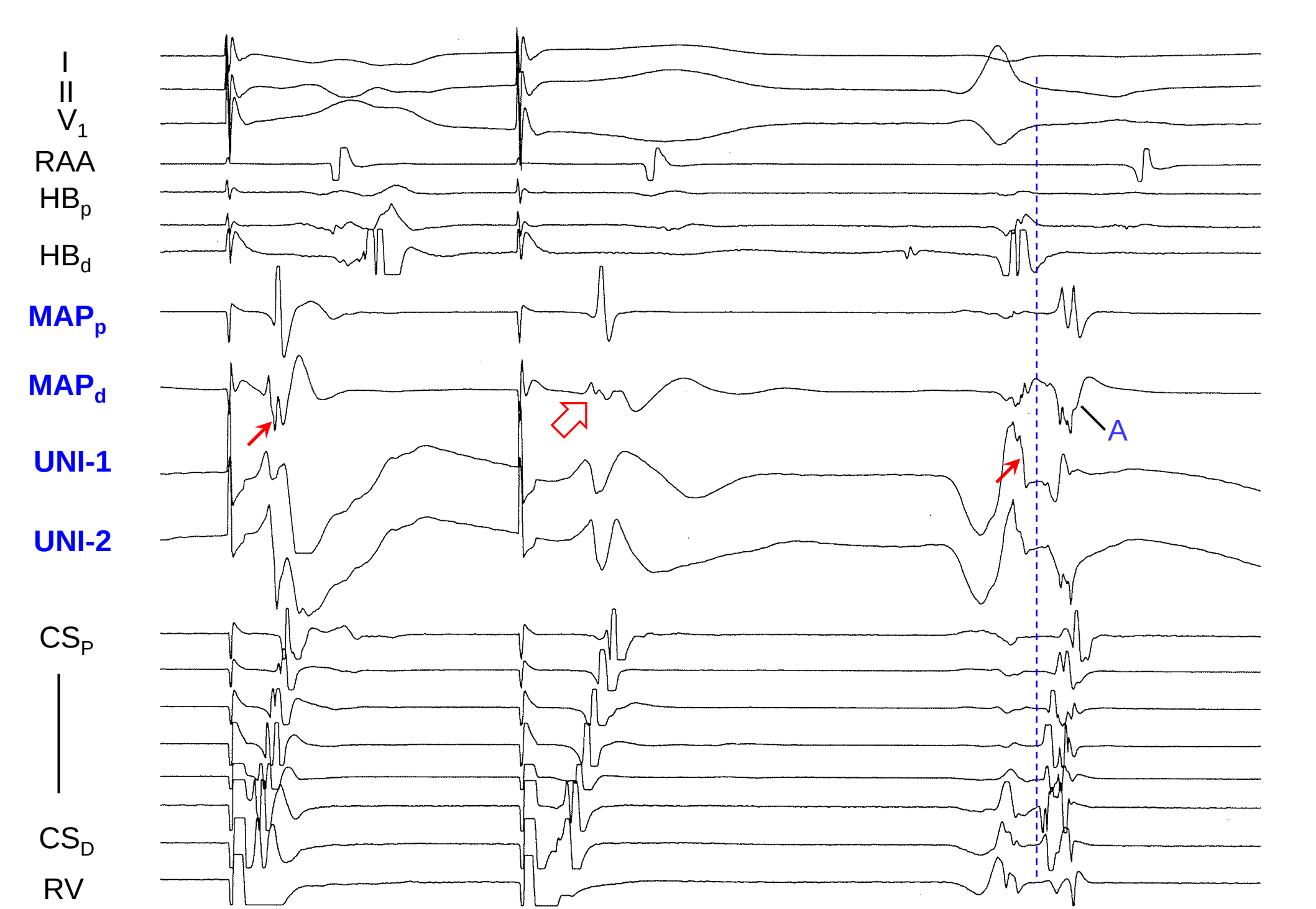


Figure 5.1D

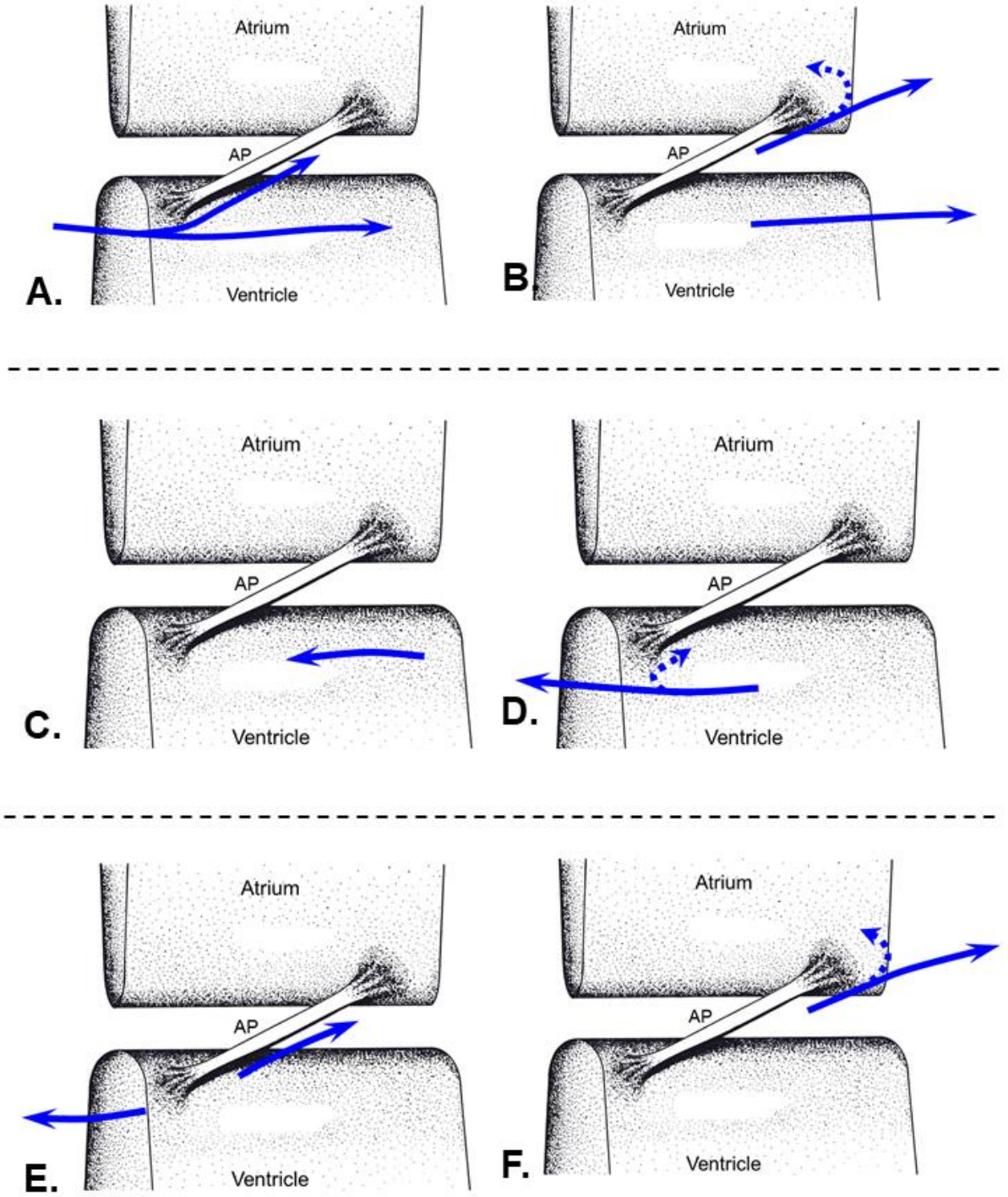


Figure 5.2

Courtesy of Dr. Jackman

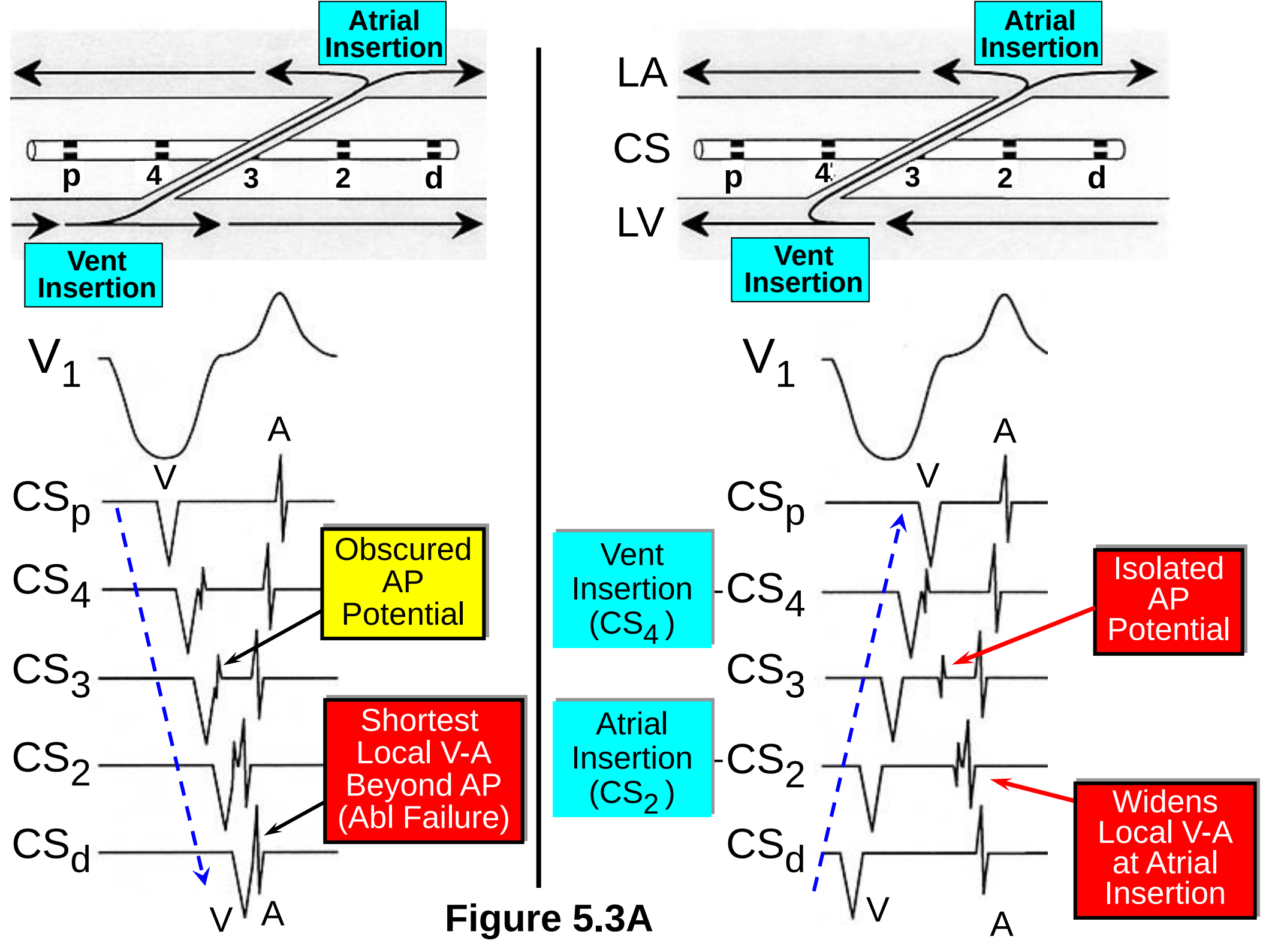

Atrial Insertion
p
4
3
2
d
Vent Insertion
V1
A
V
CSp
CS4
CS3
CS2
CSd
Obscured AP Potential
Shortest Local V-A Beyond AP (Abl Failure)
V
A
Vent Insertion (CS4)
Atrial Insertion (CS2)
LA
CS
LV
Atrial Insertion
p
4'
3
2
d
Vent Insertion
V1
A
V
CSp
CS4
CS3
CS2
CSd
Isolated AP Potential
Widens Local V-A at Atrial Insertion
V
A

Figure 5.3A

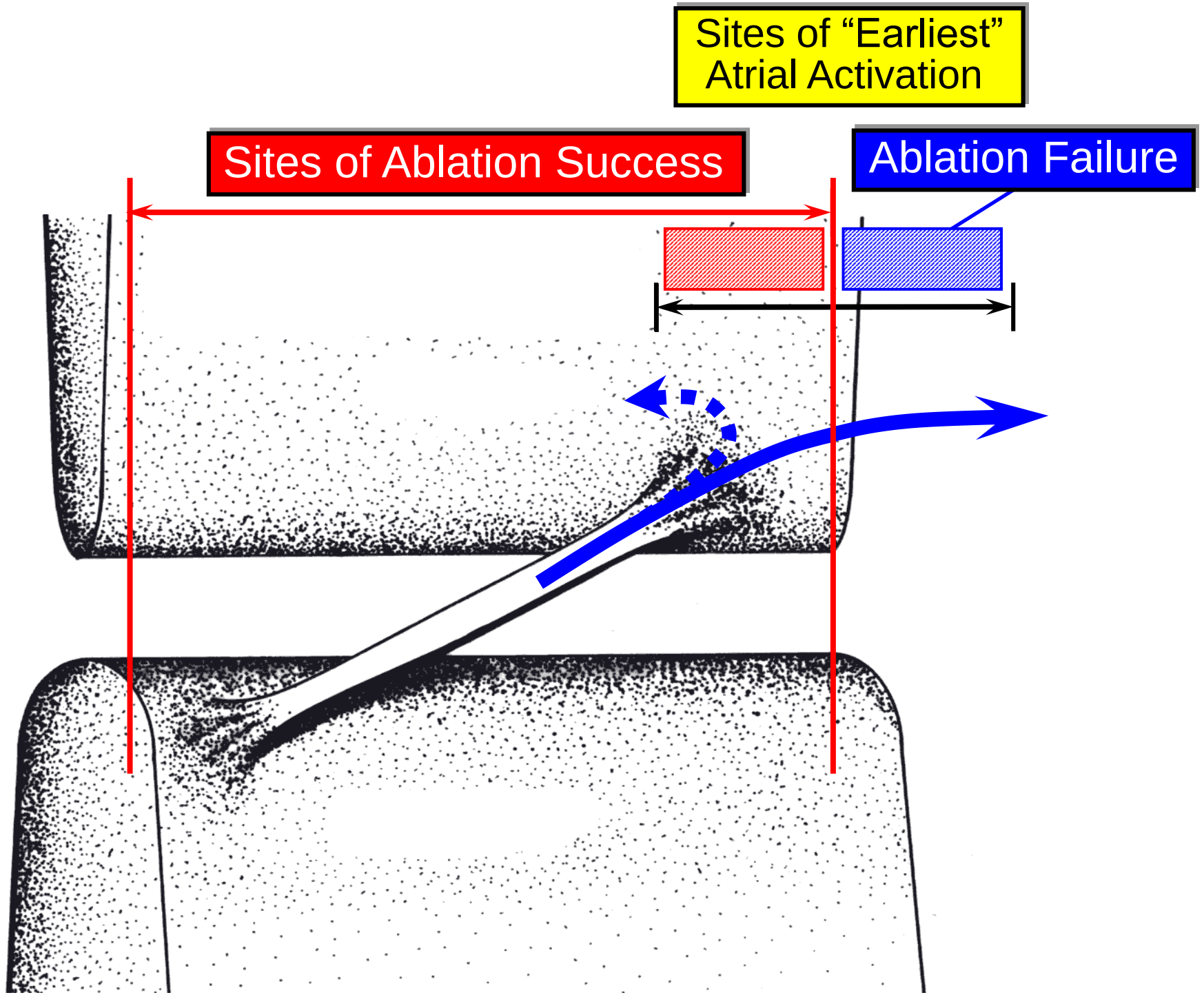

Sites of "Earliest" Atrial Activation
Sites of Ablation Success
Ablation Failure

Figure 5.3 B.

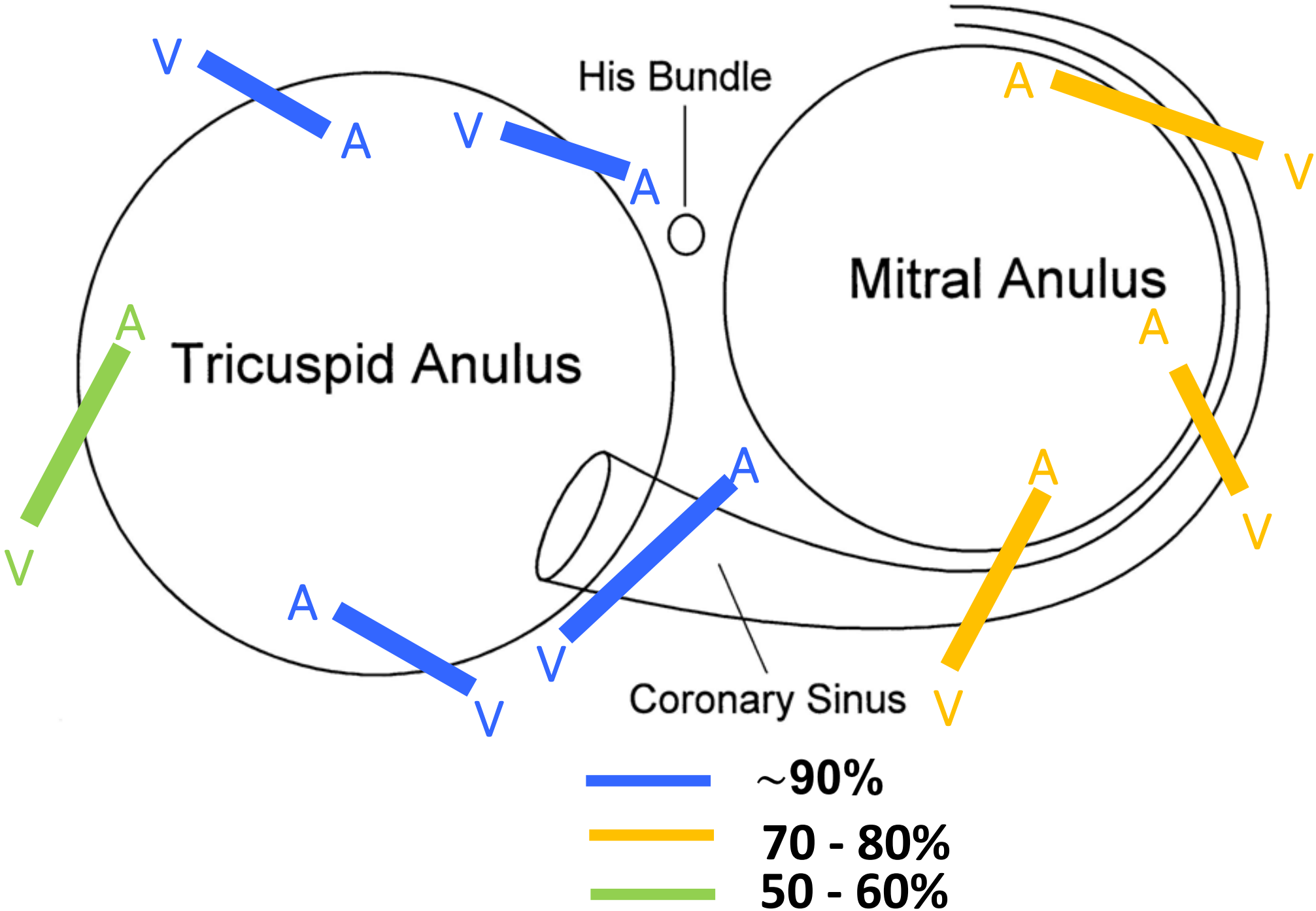

V
A
His Bundle
V
A
A
V
Mitral Anulus
A
Tricuspid Anulus
A
V
A
A
V
A
V
V
Coronary Sinus
V
~90%
70 - 80%
50 - 60%

Figure 5.3C.

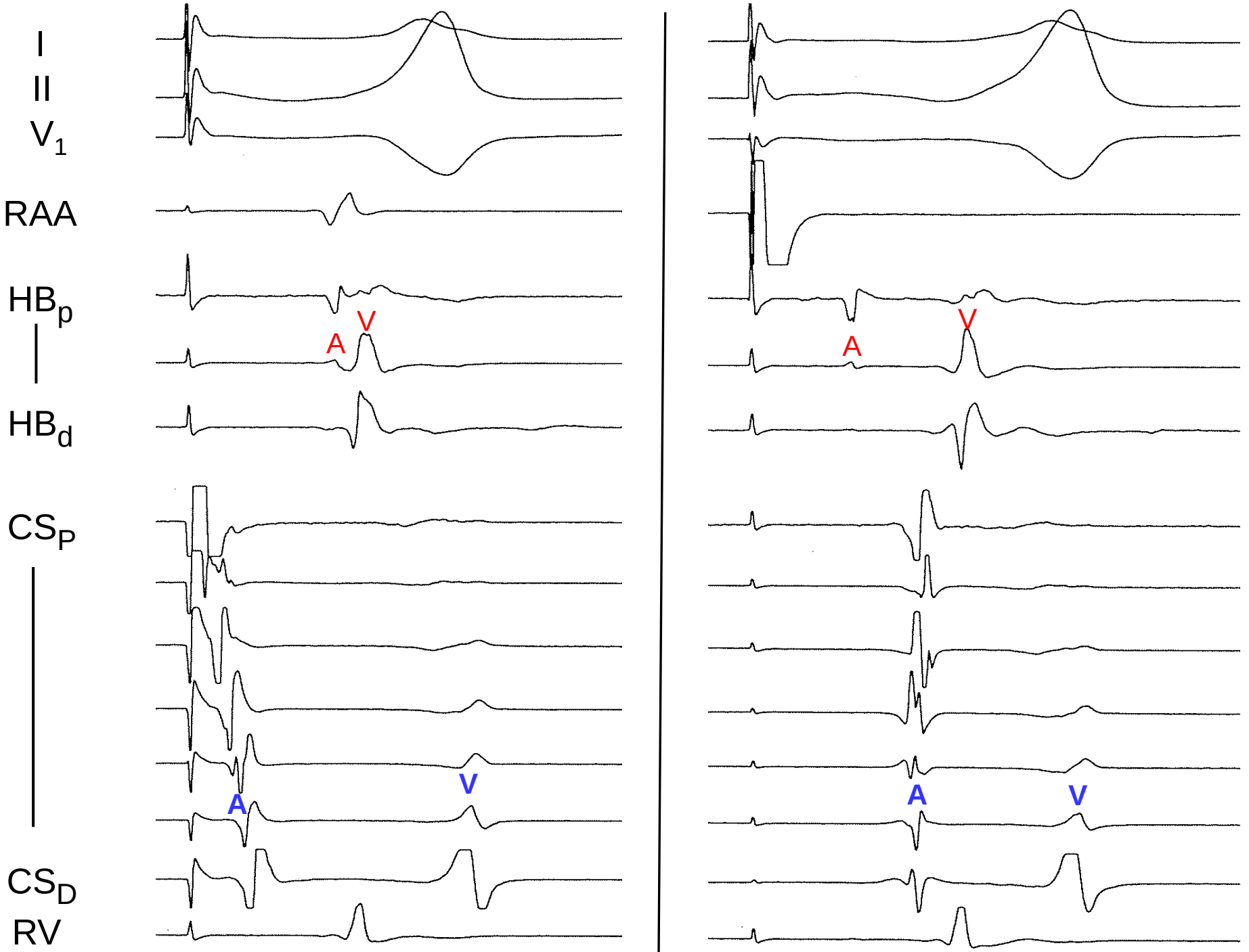


Figure 5.3D

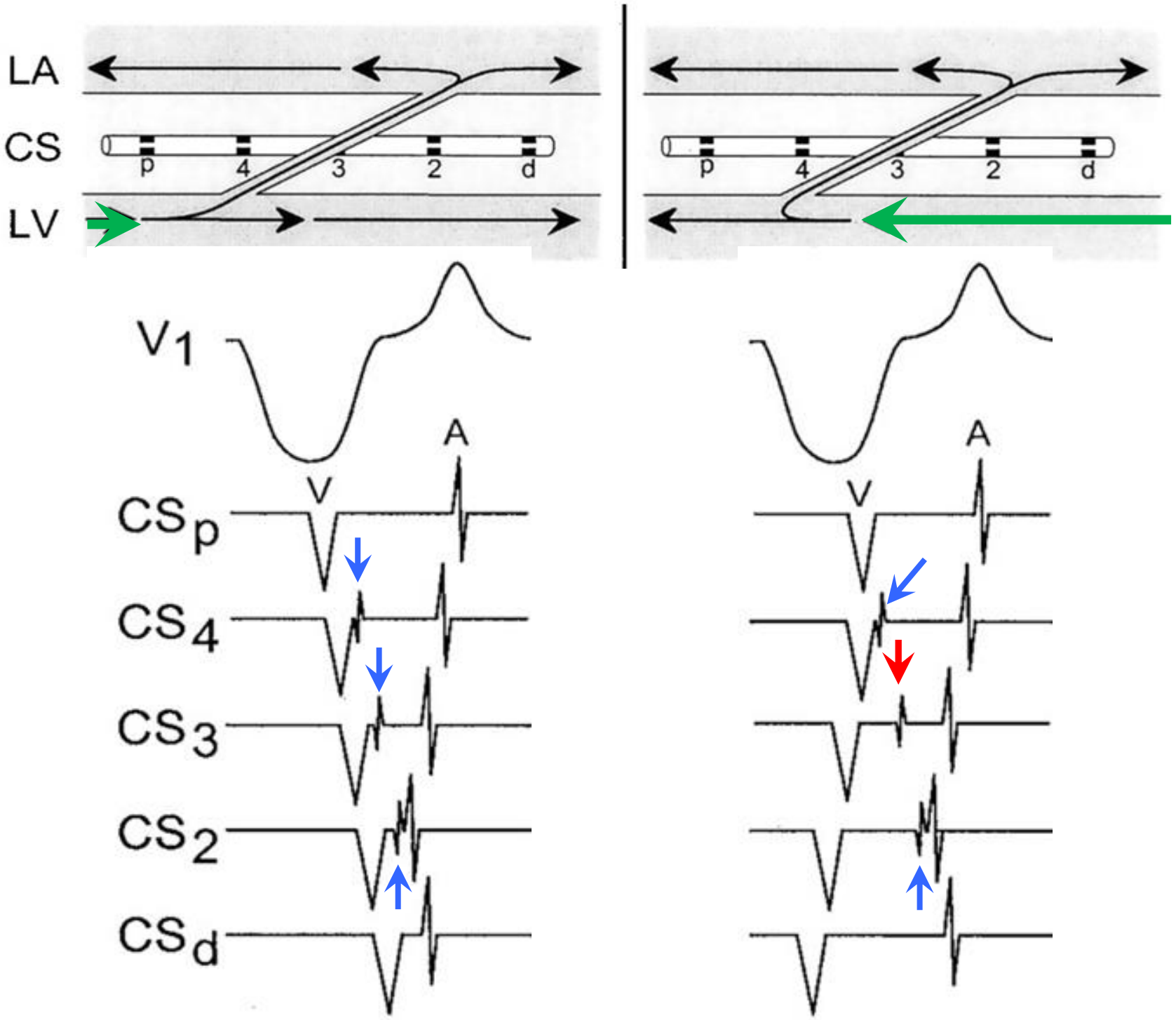


Figure 5.4A

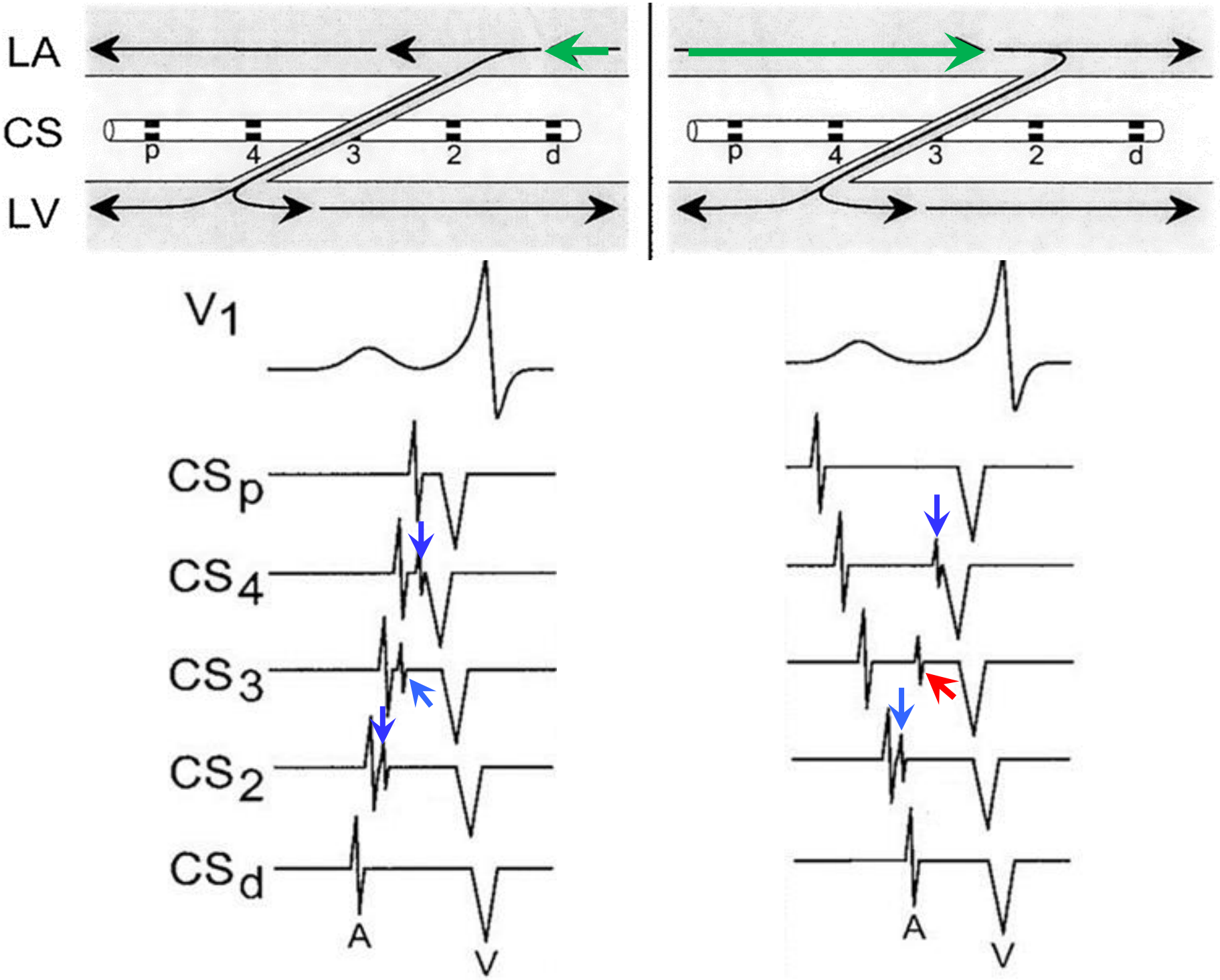


Figure 5.4B

Differential Pacing from Proximal and Distal CS

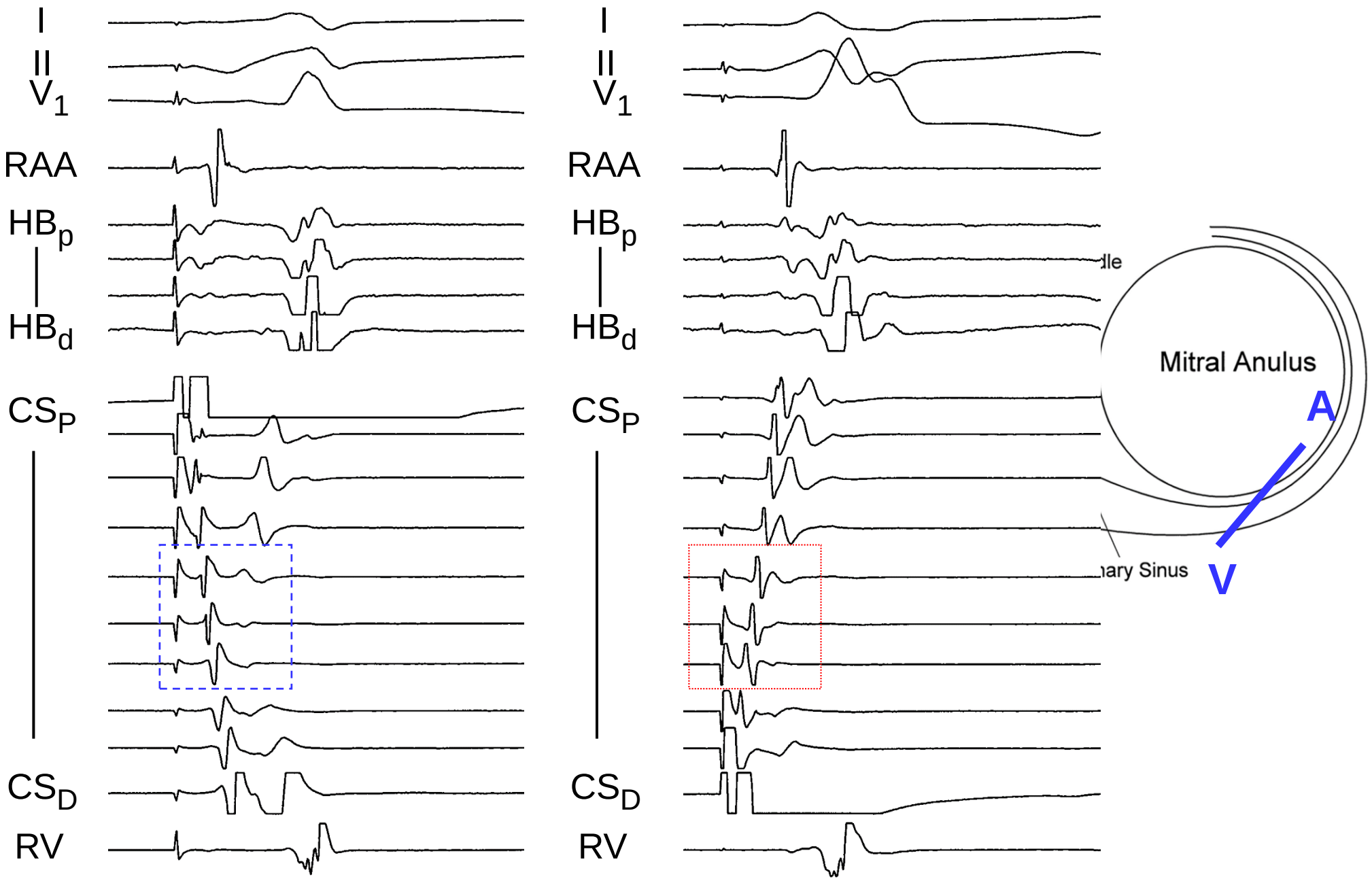
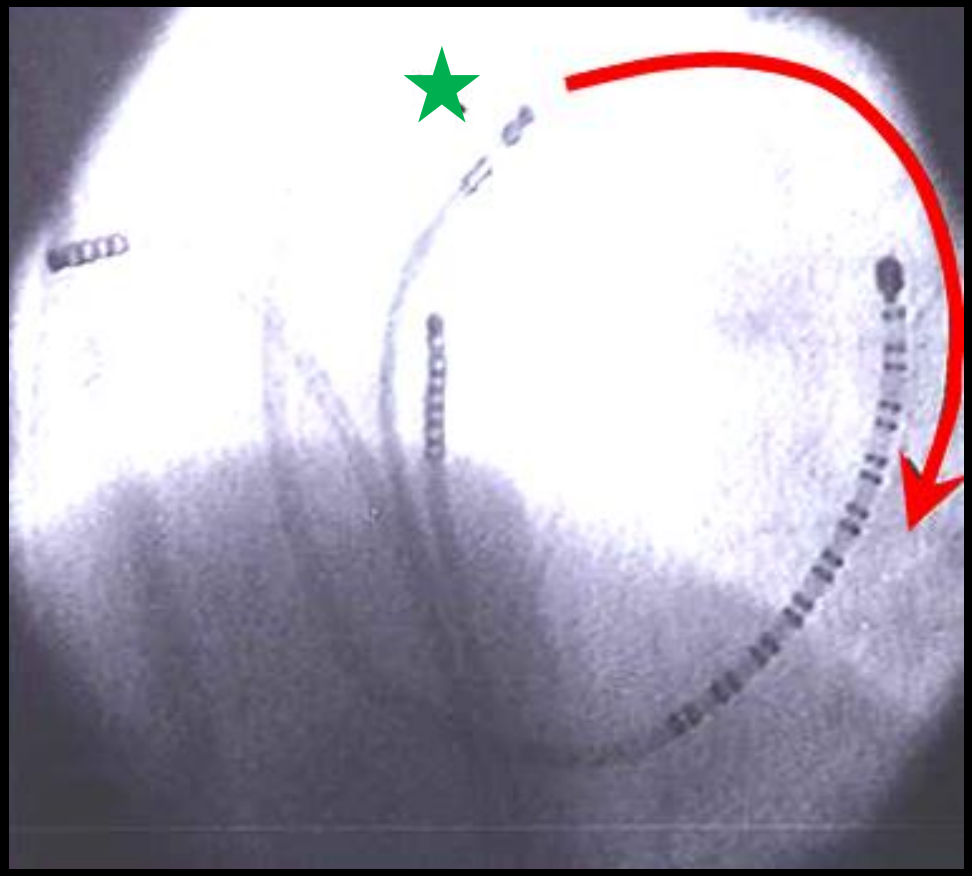


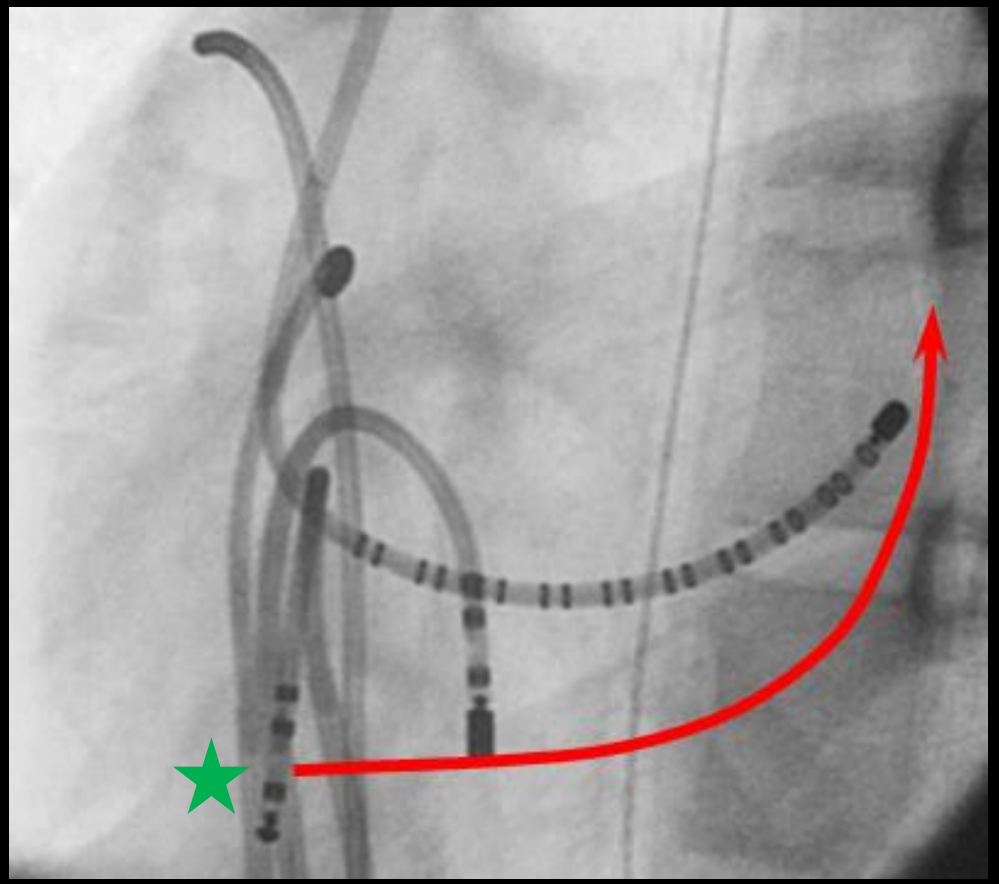
Figure 5.5A

Pacing from RVOT



LAO

Pacing from Basal Posterior Septum



LAO

Fig 5.5B.

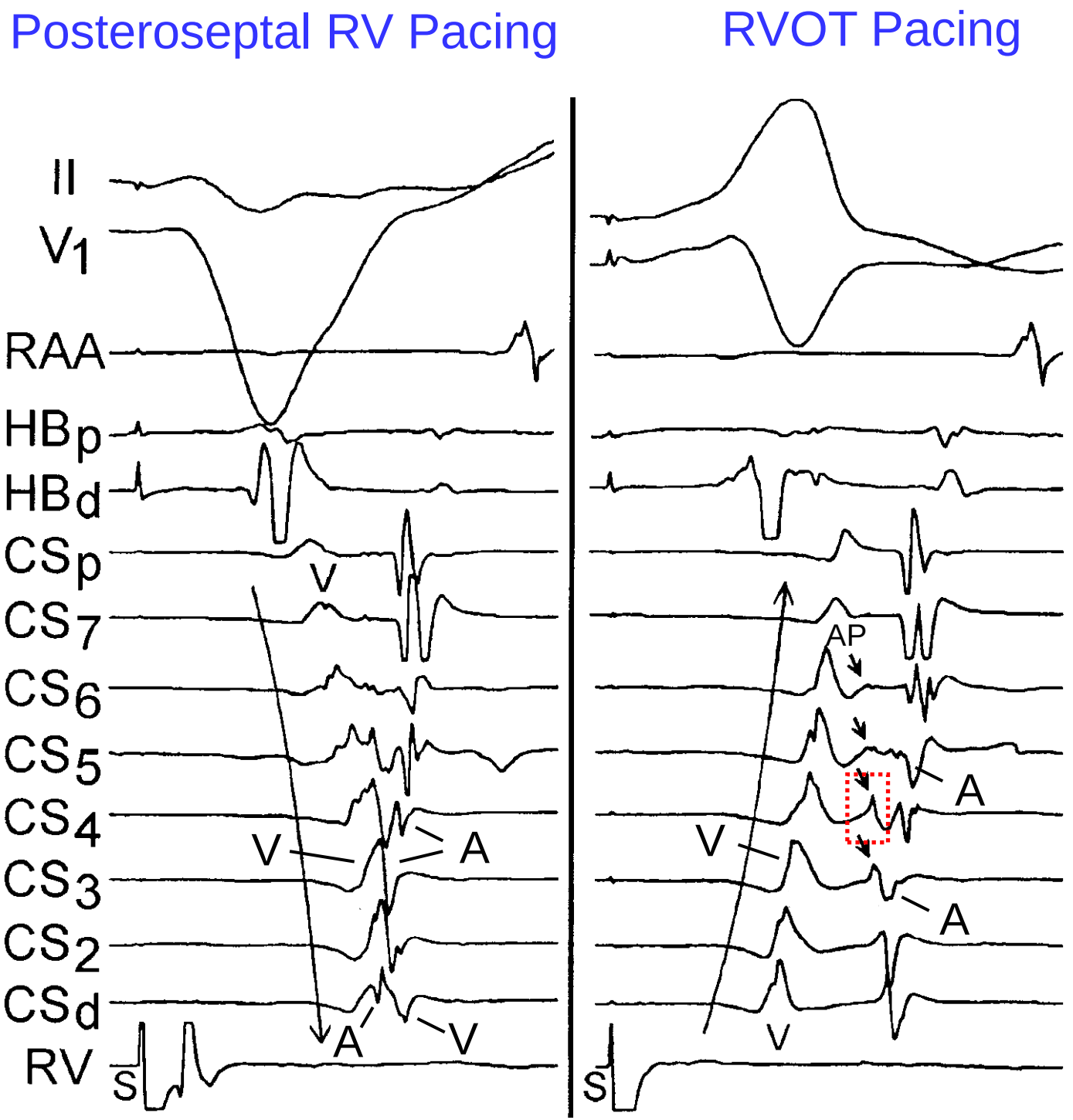

Posteroseptal RV Pacing
RVOT Pacing
II
V1
RAA
HBp
HBd
CSp
CS7
CS6
CS5
CS4
CS3
CS2
CSd
RV
S
V
A
AP

Fig 5.5C

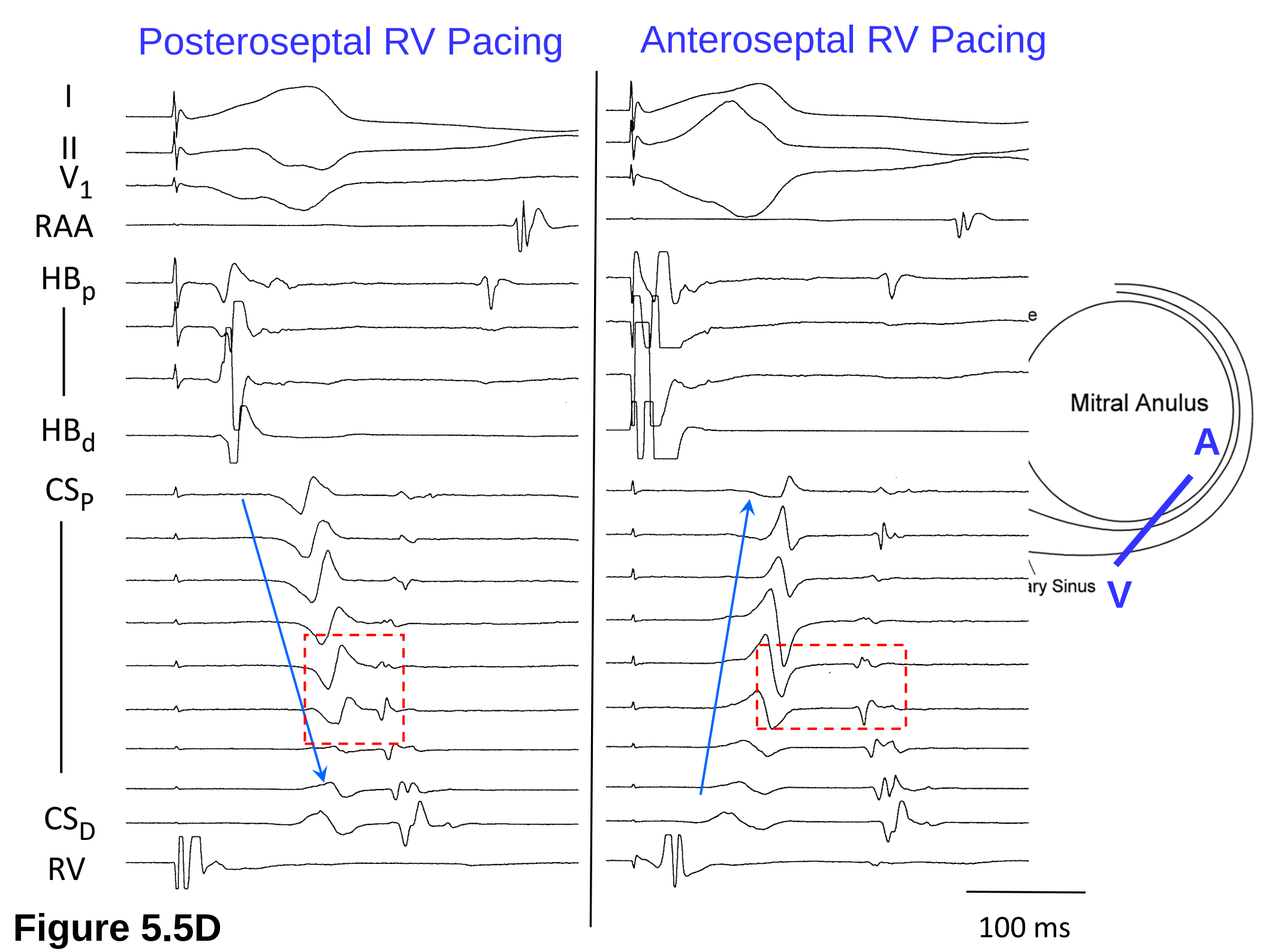
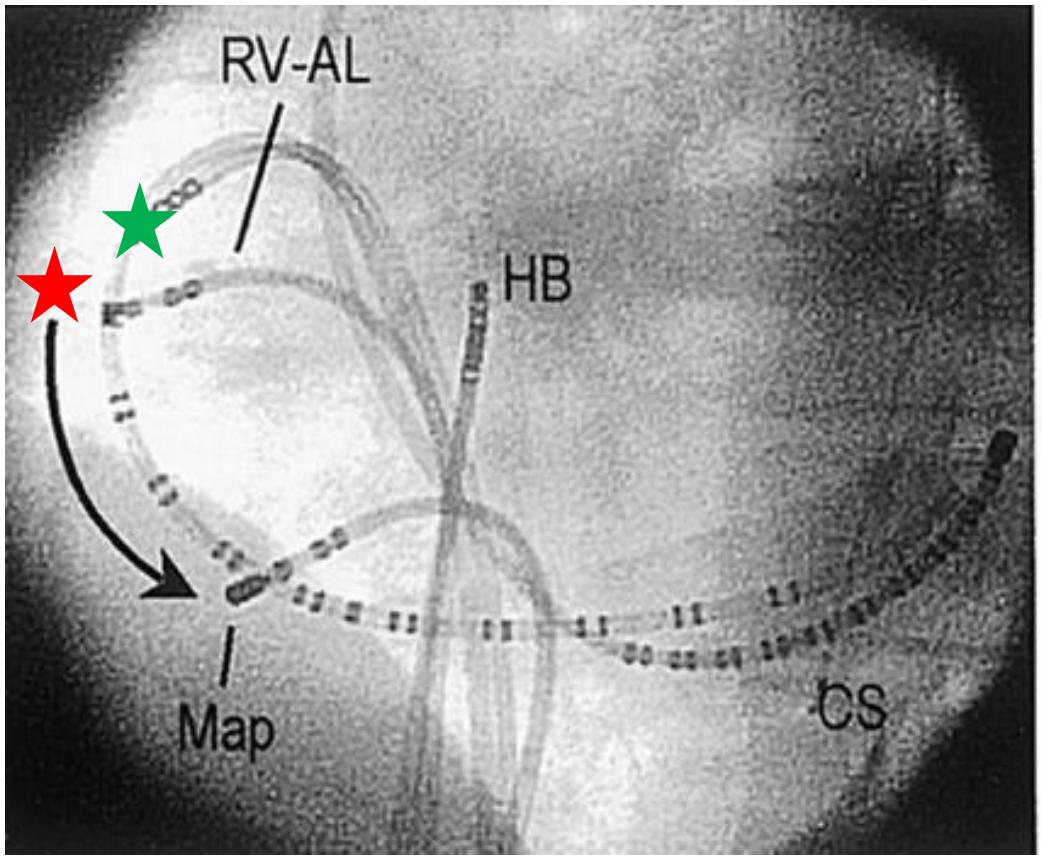
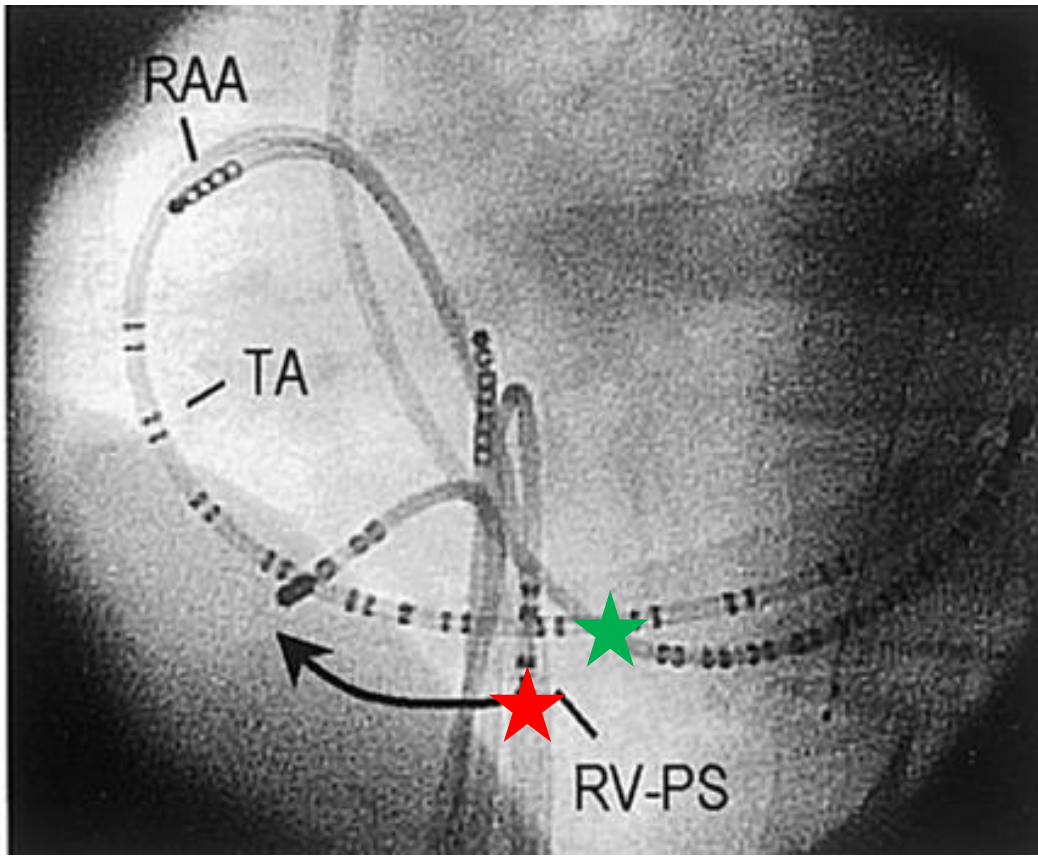

Posteroseptal RV Pacing
Anteroseptal RV Pacing
I
II
V1
RAA
HBp
HBd
CSP
CSD
RV
Mitral Anulus
A
V
100 ms

Figure 5.5D

Differential pacing for a right free wall accessory pathway:

- ★ RA appendage vs. CS ostium:
- ★ Basal anterolateral RV vs. basal posteroseptal RV



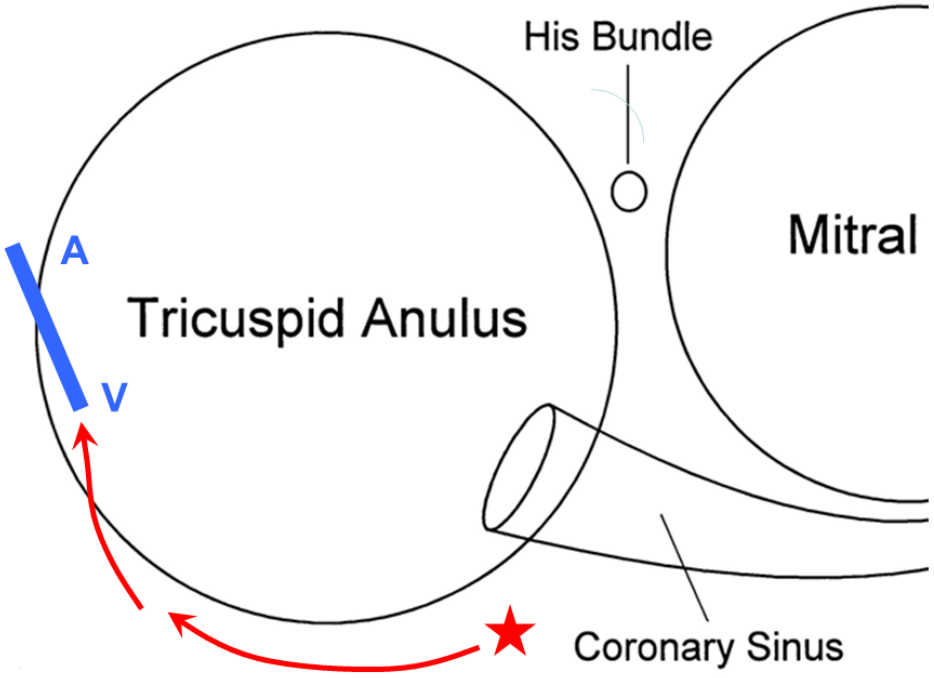


LAO Projection

Fig 5.6A

Differential RV Pacing

Short VA Interval



Long VA Interval

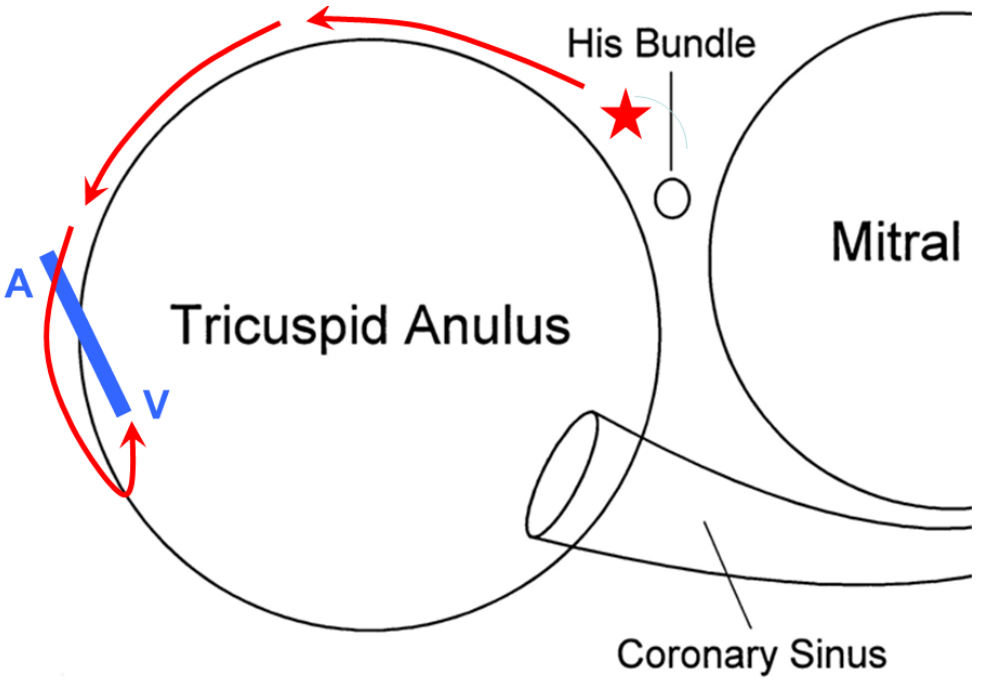
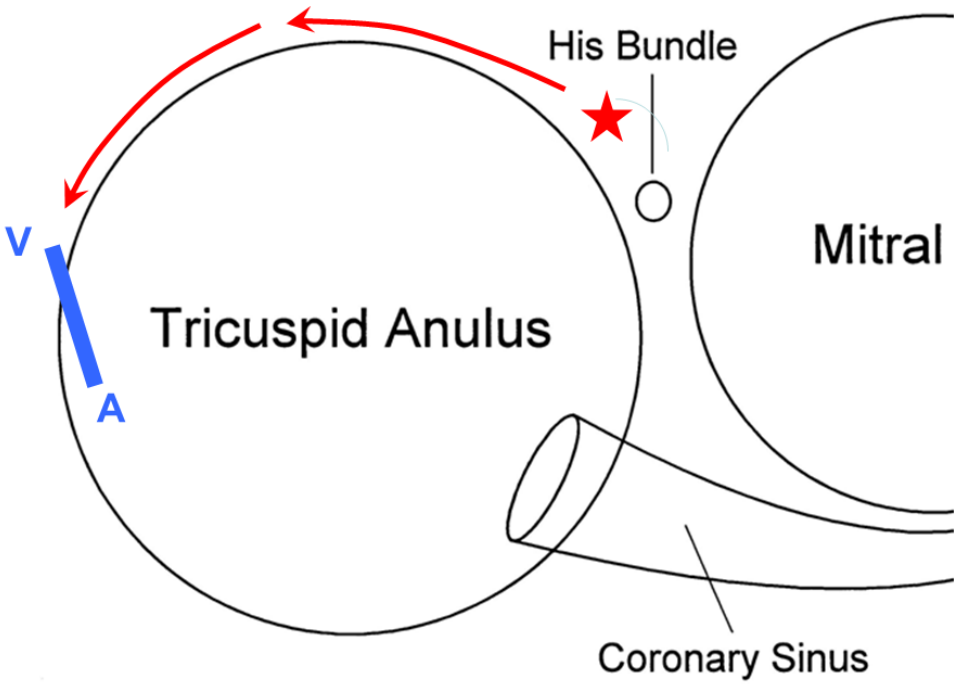


Fig 5.6B

Differential RV Pacing

Short VA Interval

Long VA Interval



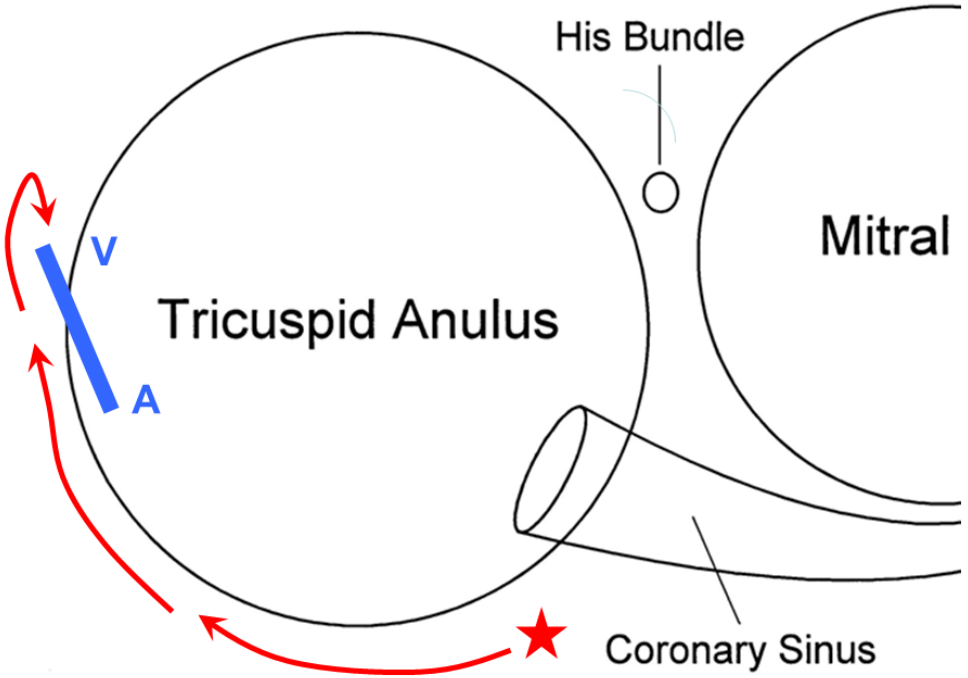


Fig 5.6C.

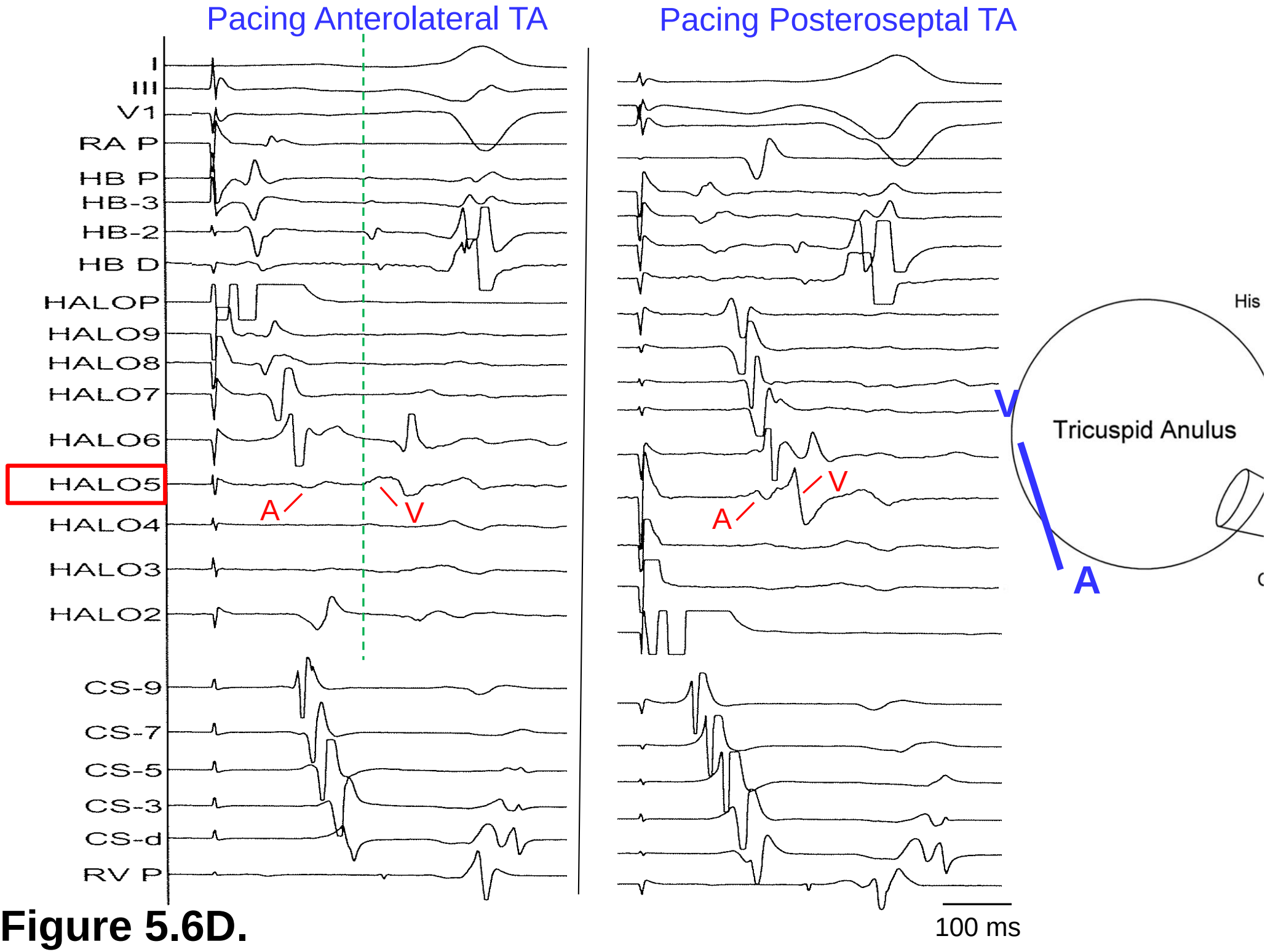
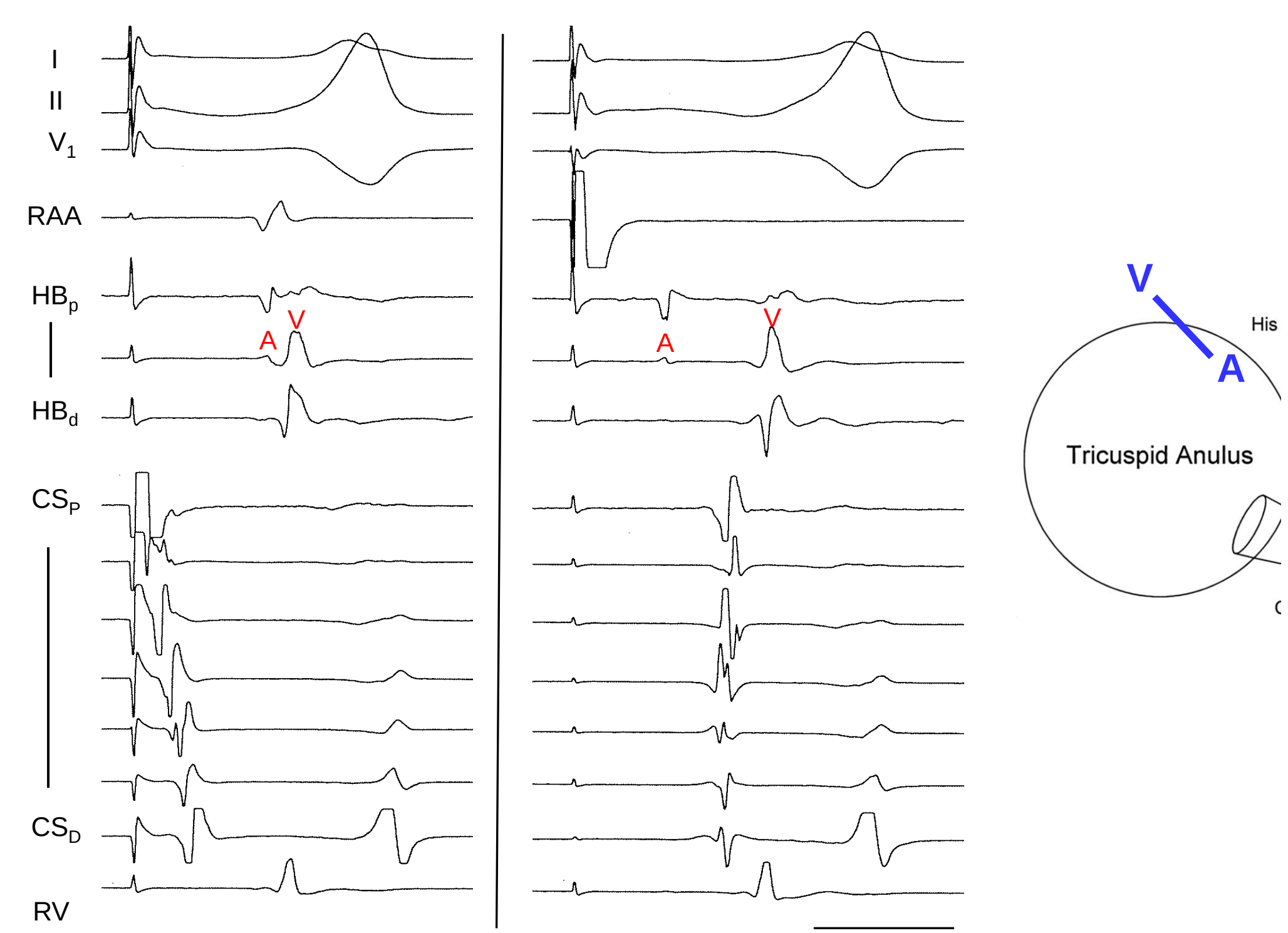

Pacing Anterolateral TA
Pacing Posteroseptal TA
I
III
V1
RA P
HB P
HB-3
HB-2
HB D
HALOP
HALO9
HALO8
HALO7
HALO6
HALO5
HALO4
HALO3
HALO2
CS-9
CS-7
CS-5
CS-3
CS-d
RV P
A
V
A
V
His
Tricuspid Anulus
V
A
100 ms

Figure 5.6D.


I
II
V1
RAA
HBp
HBd
CSP
CSD
RV
A
V
A
V
100 ms

V
A
His
Tricuspid Anulus

Figure 5.7A

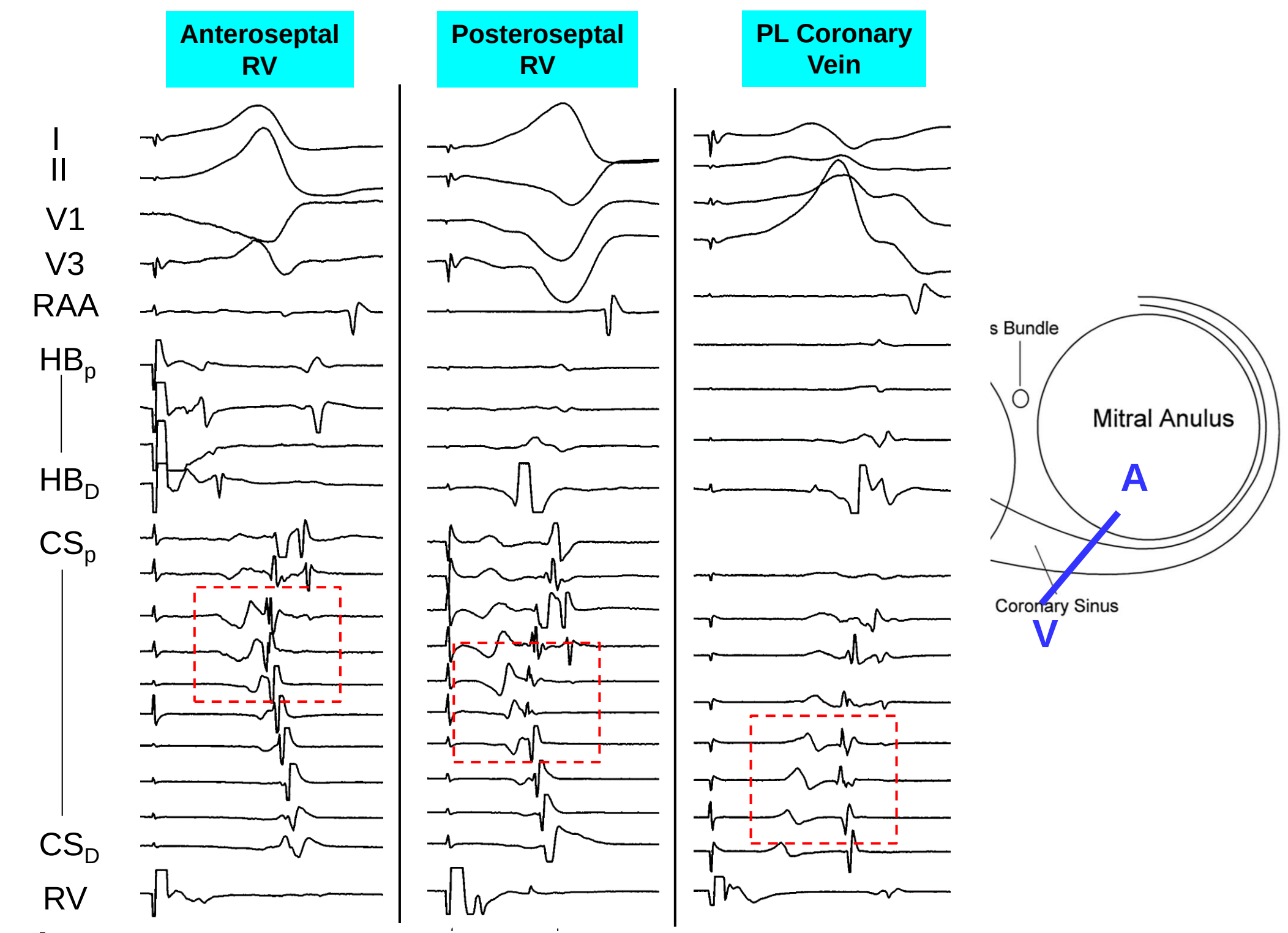

Anteroseptal RV
Posteroseptal RV
PL Coronary Vein
I
II
V1
V3
RAA
HBp
HBD
CSp
CSD
RV
s Bundle
Mitral Anulus
A
Coronary Sinus
V

Figure 5.7B.

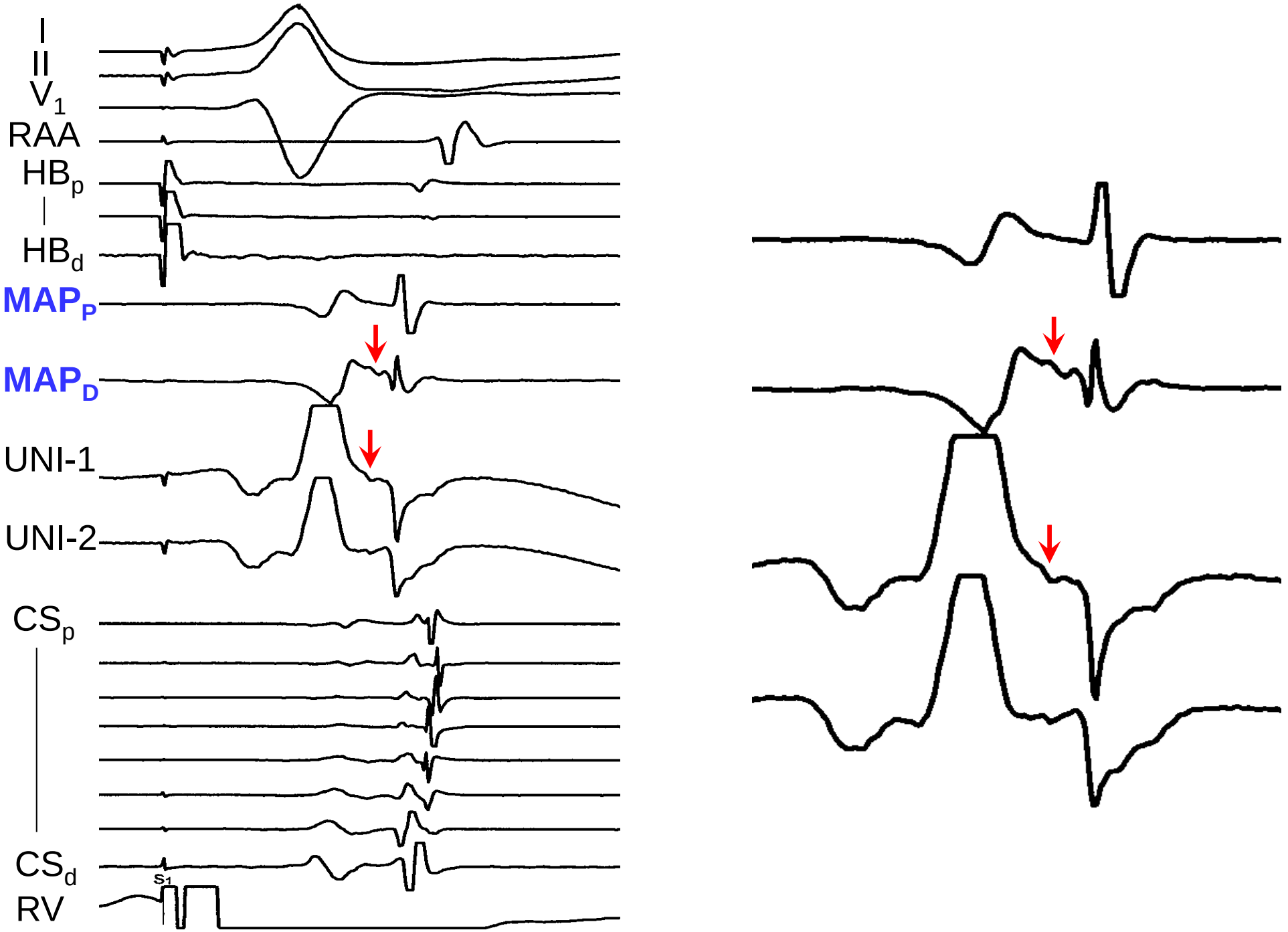


Fig 5.8A.

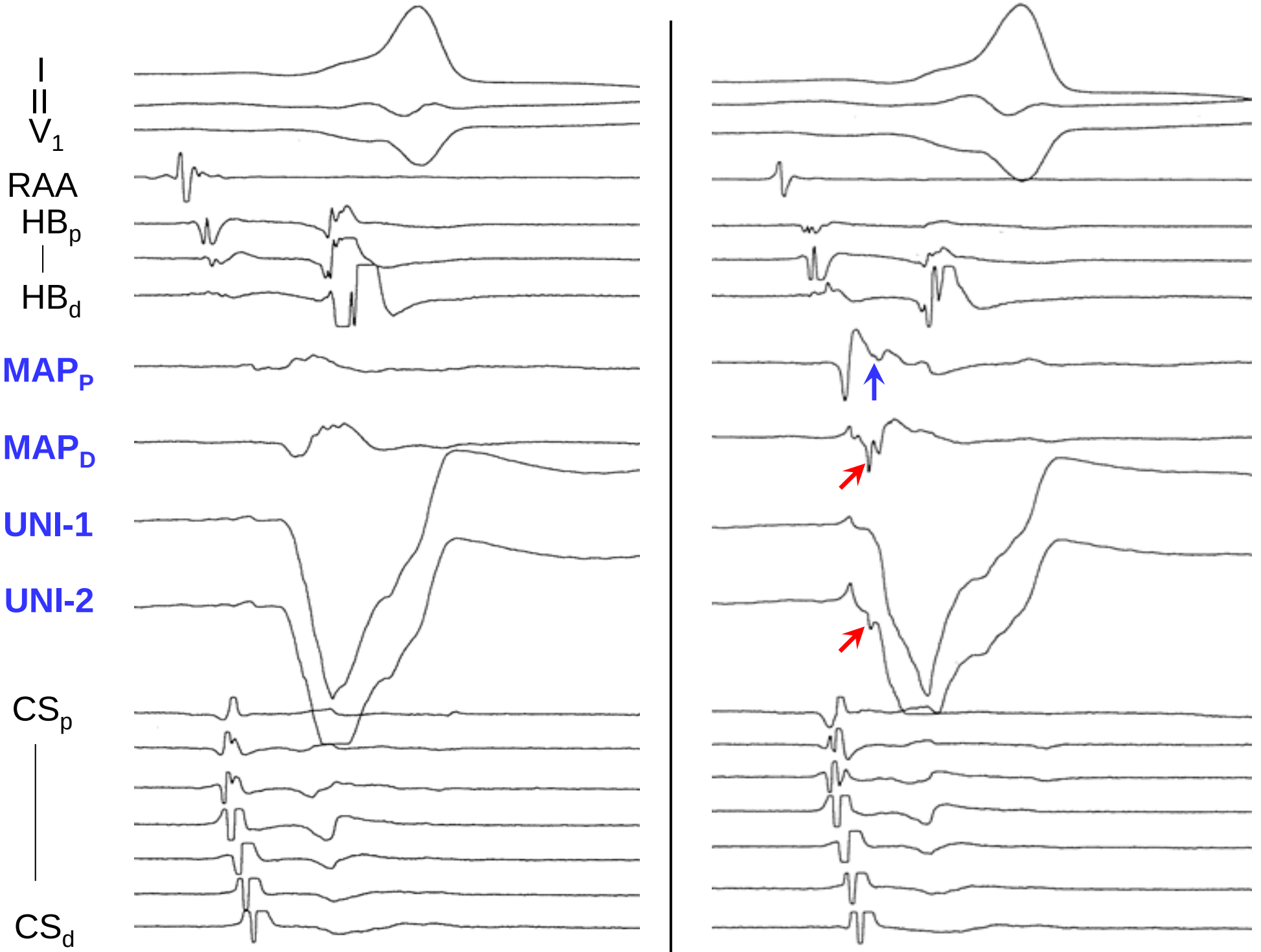


Fig 5.8B.

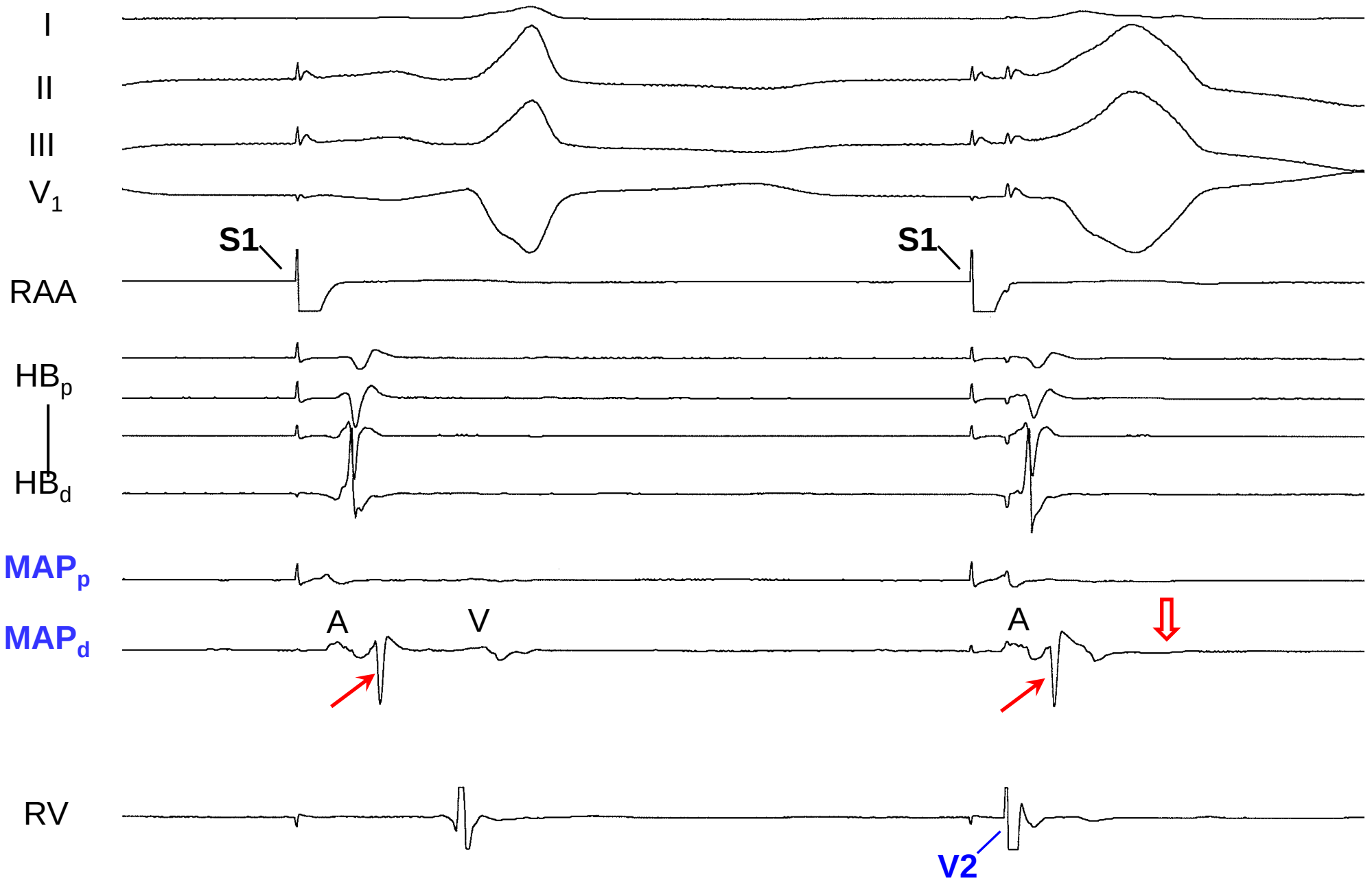


Fig 5.9A.

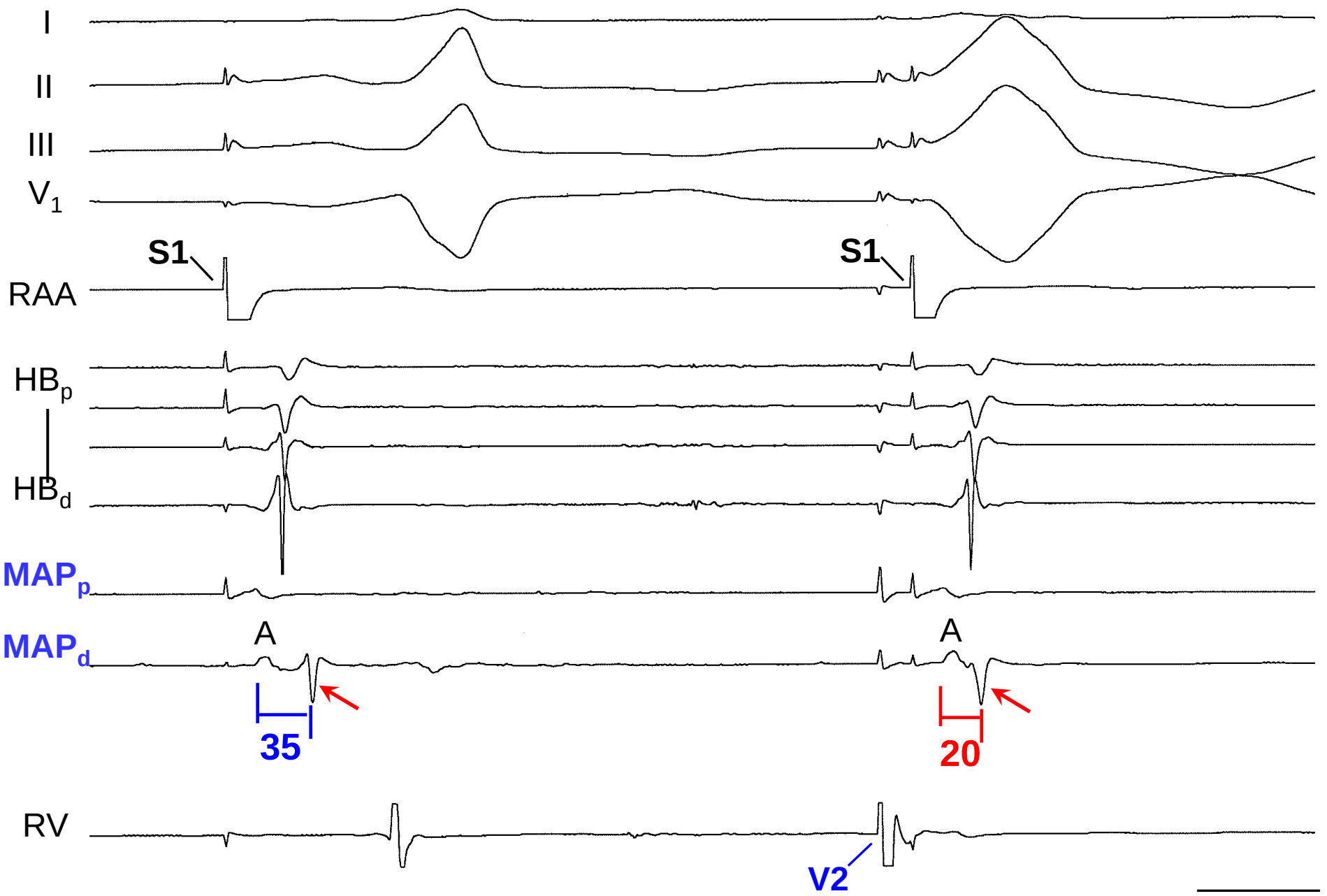


Fig 5.9B.

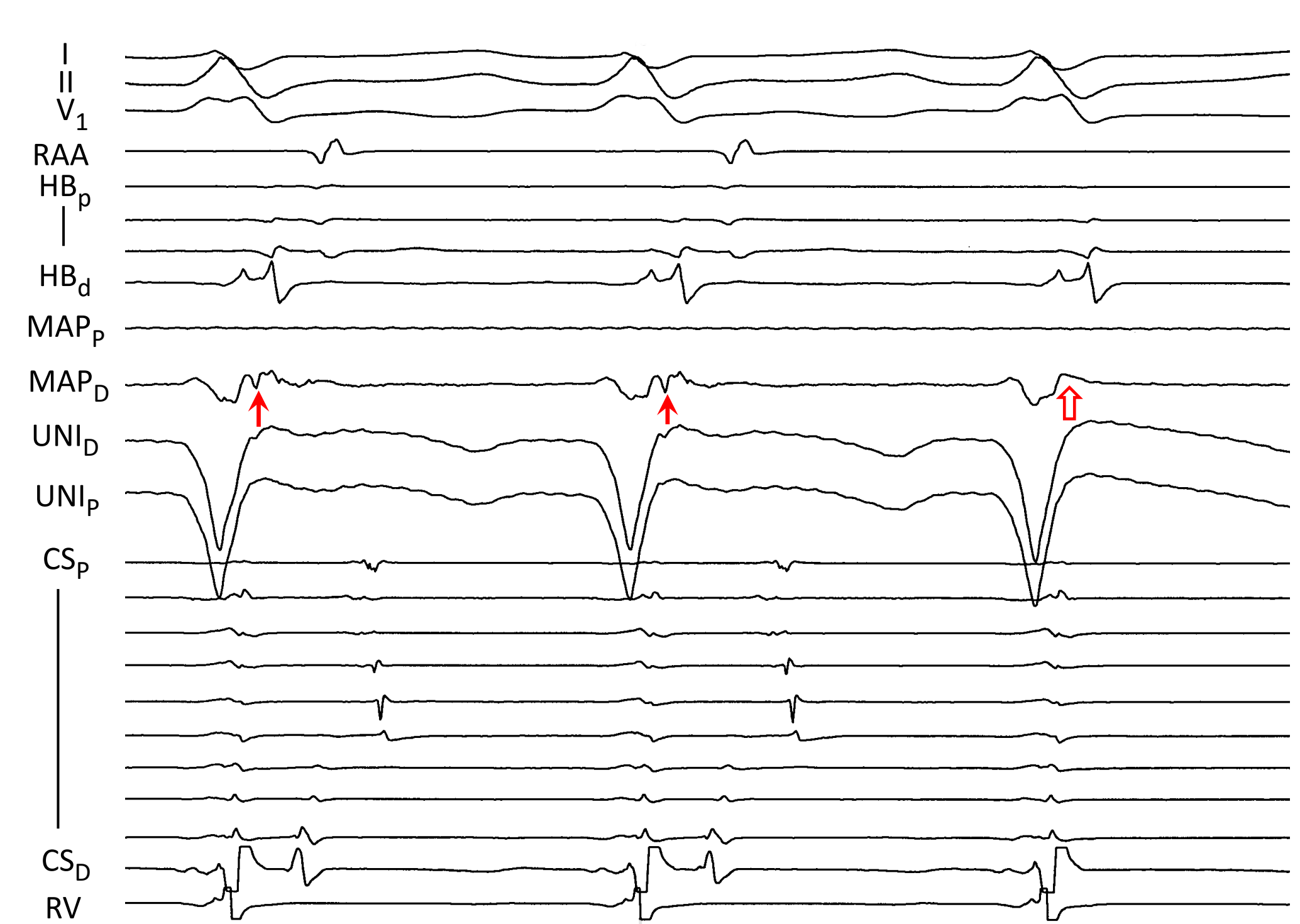


Figure 5.10A

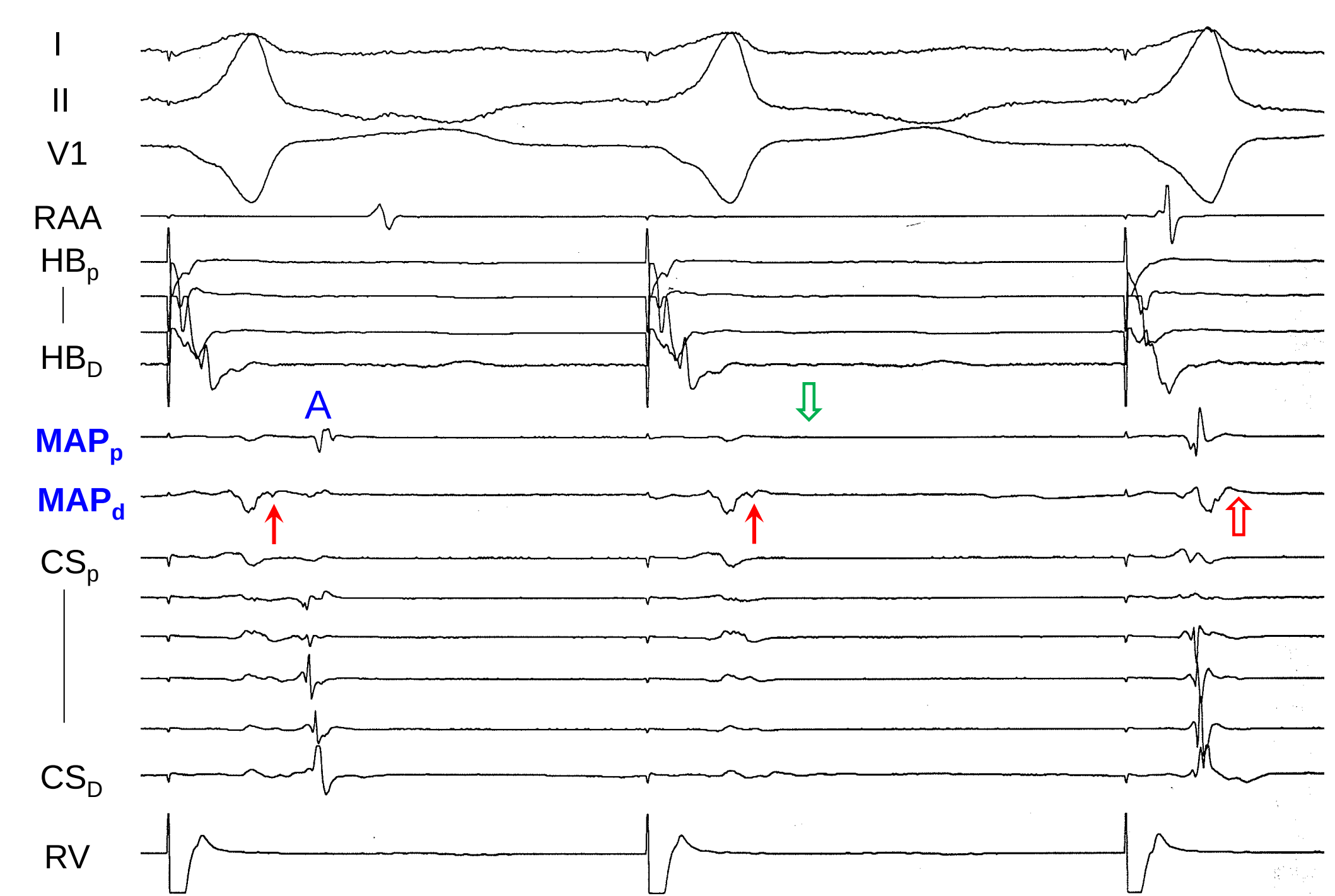


Figure 5.10B

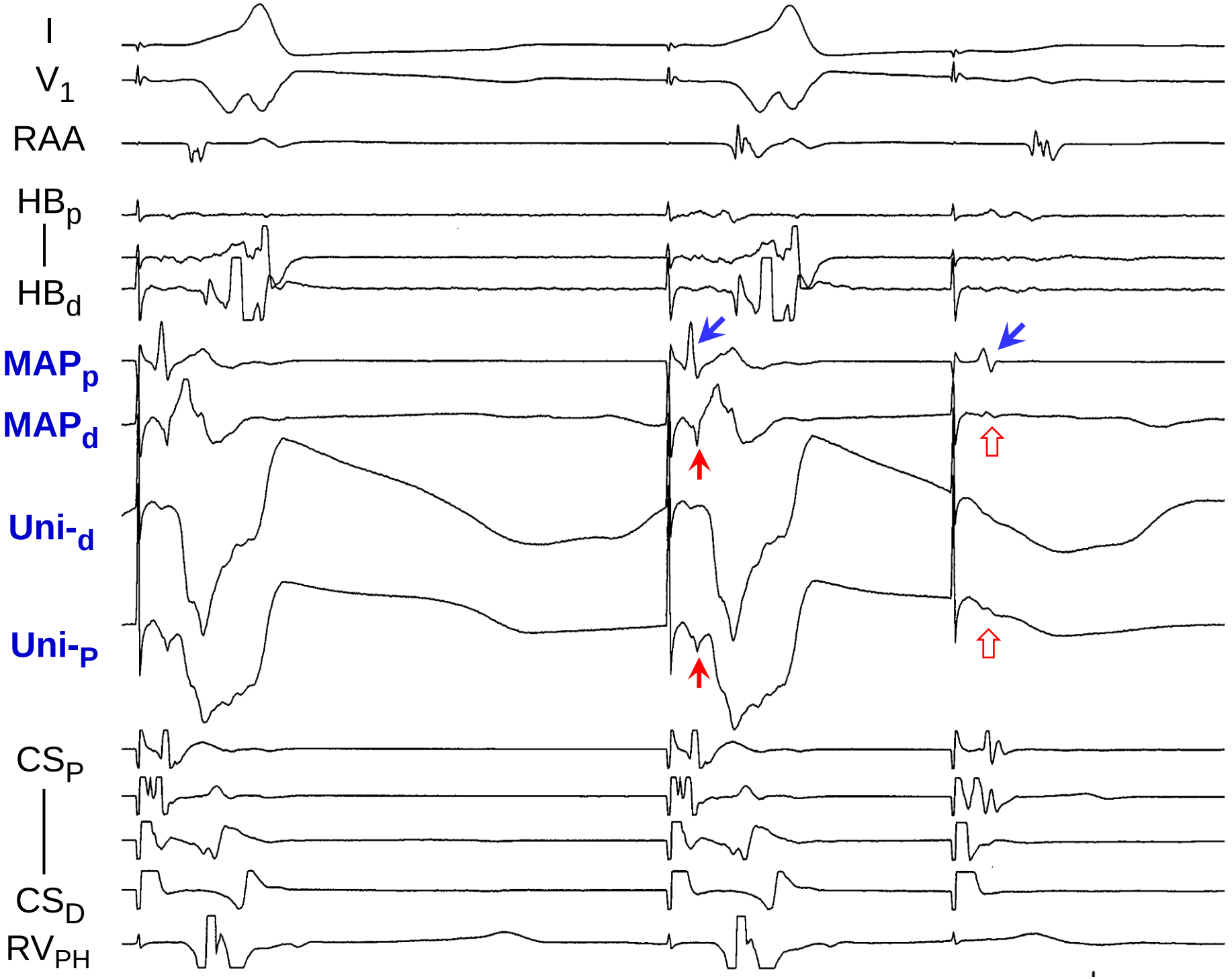
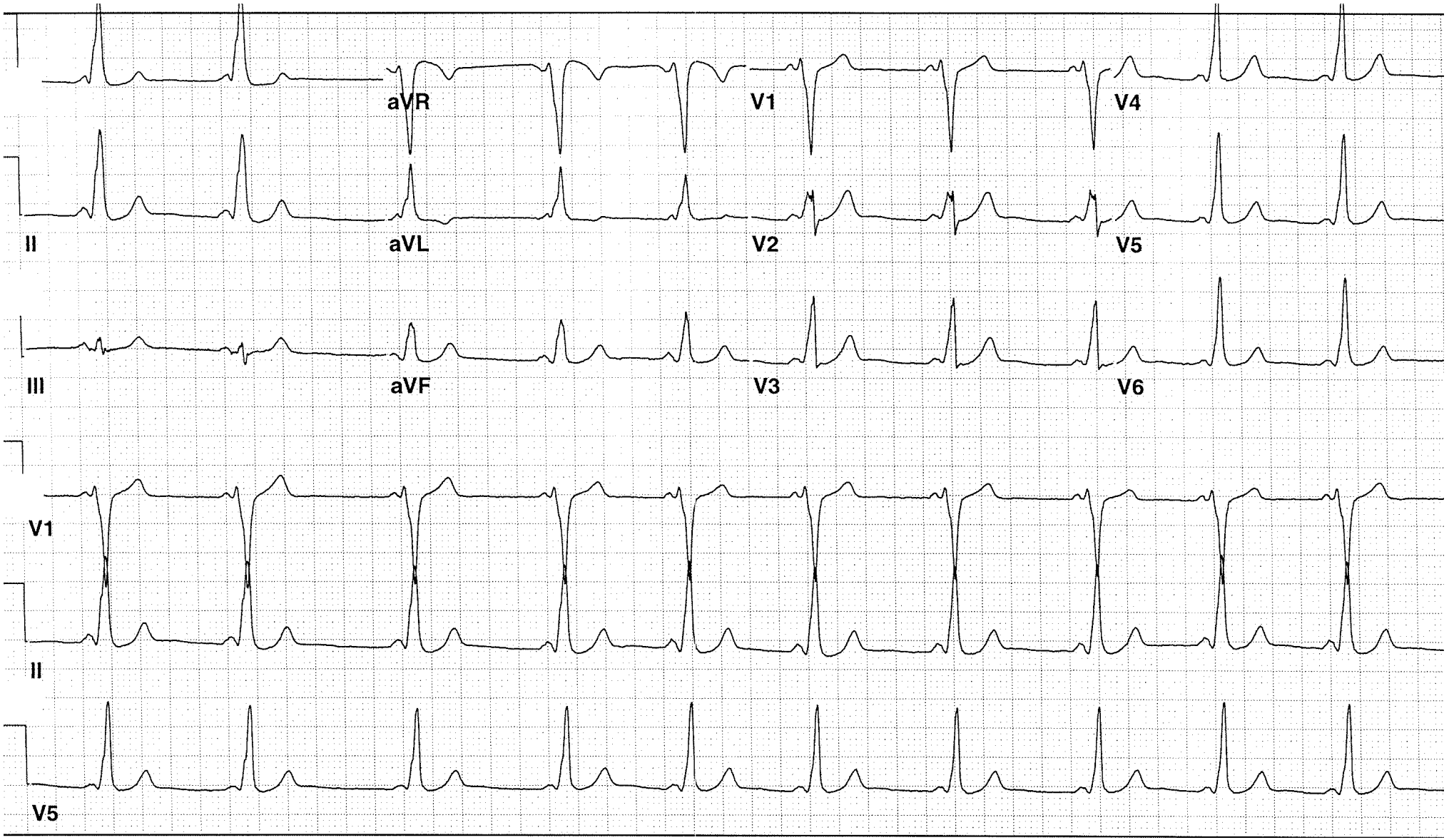
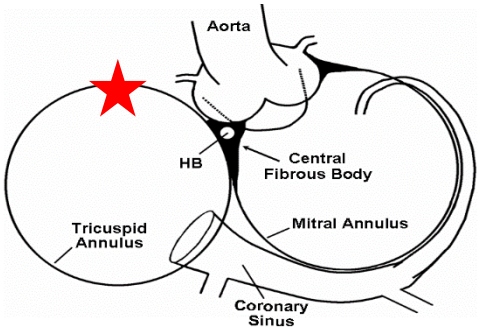


Fig. 5.10C



Score = 3



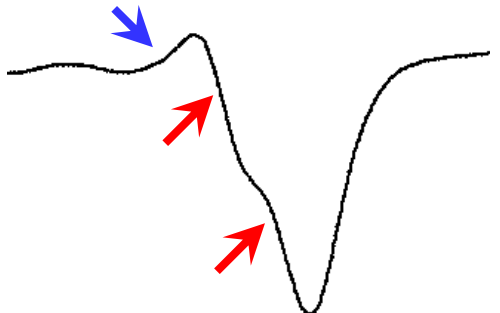
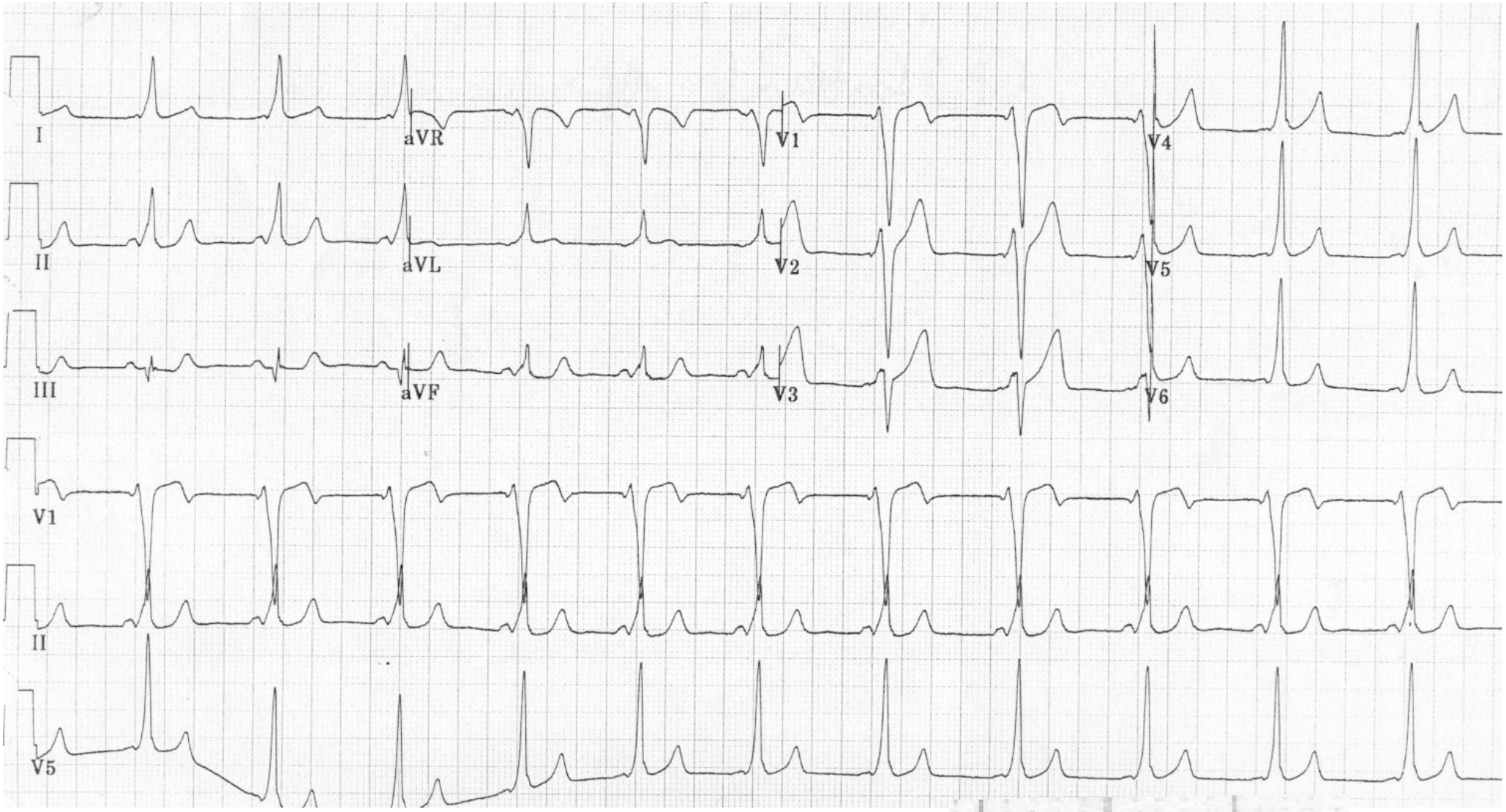


Figure 5.11A.



Score = 2

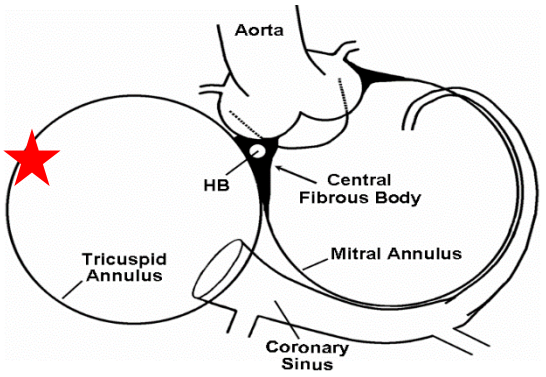
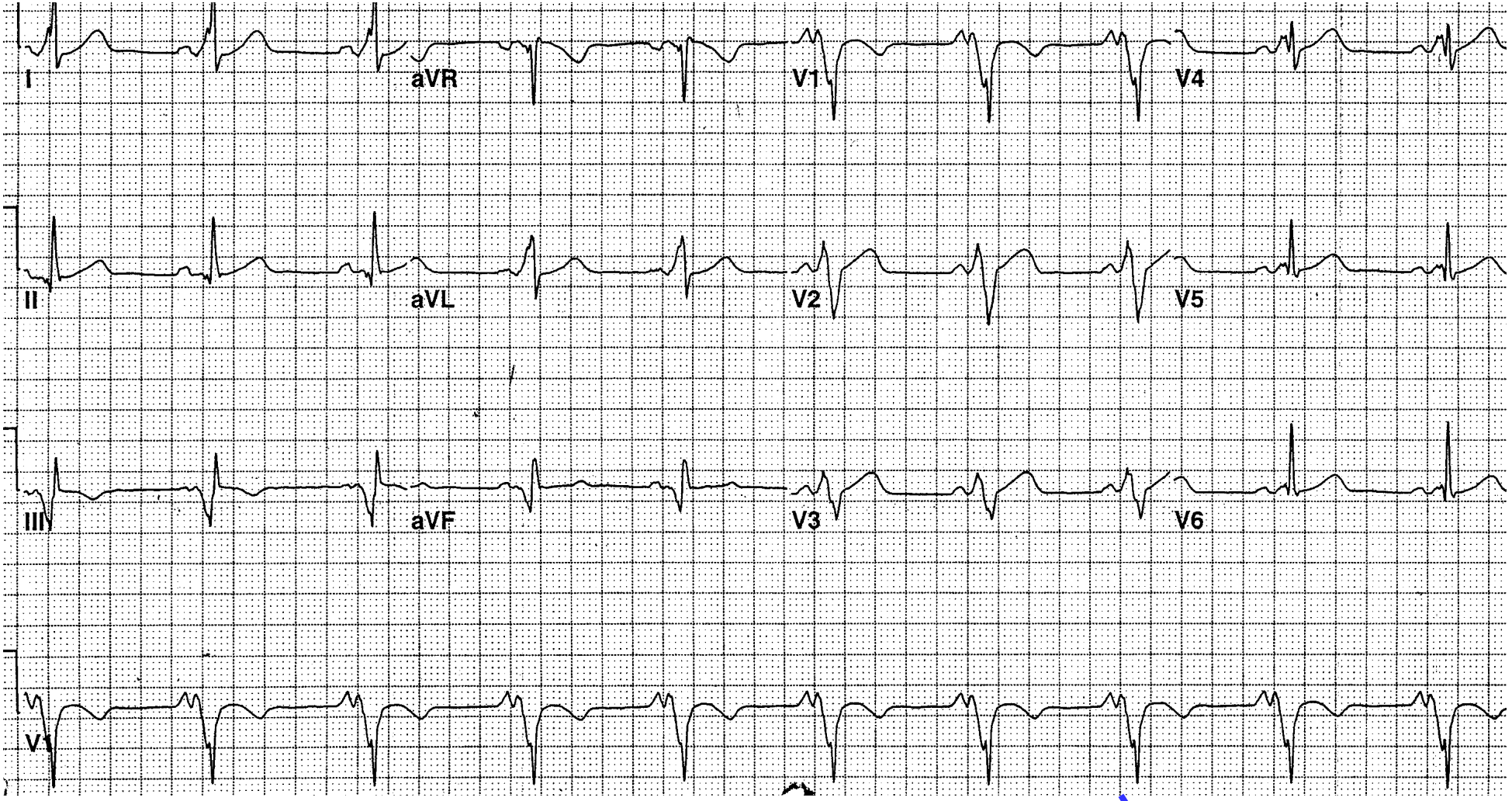
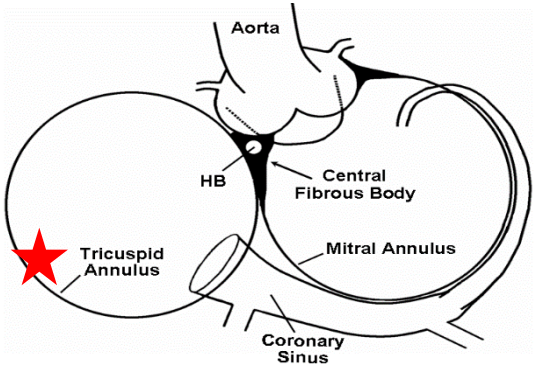


Figure 5.11B.



Score = -1



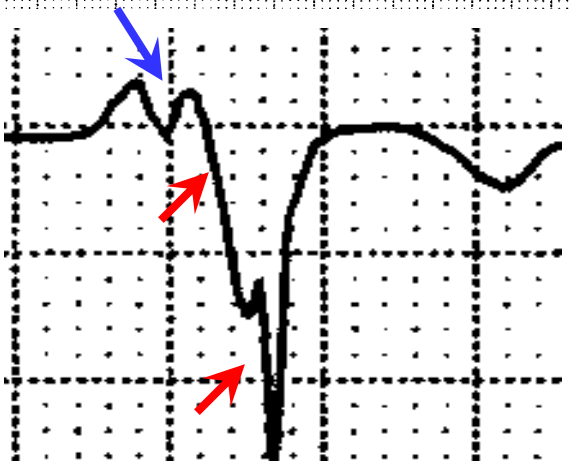
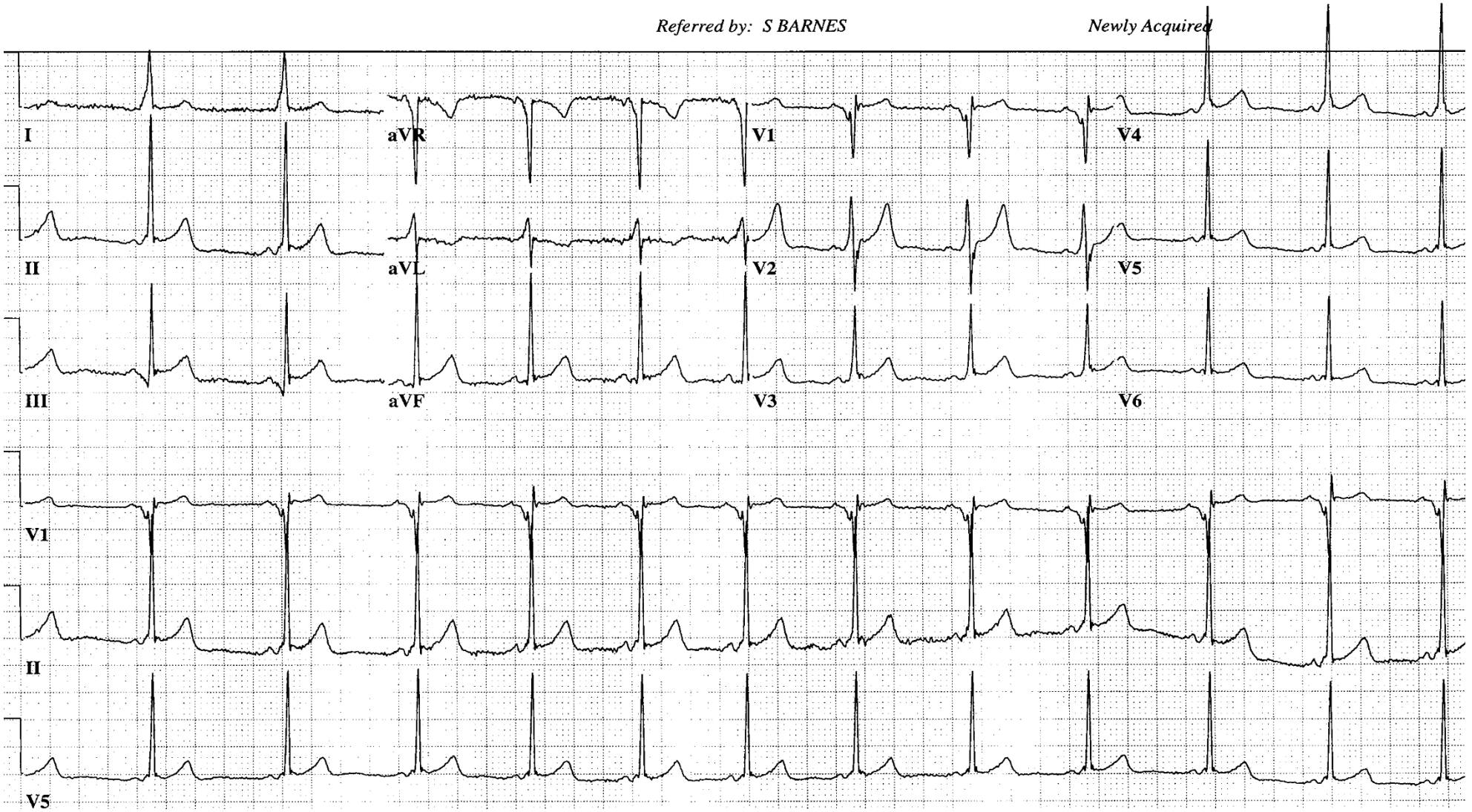
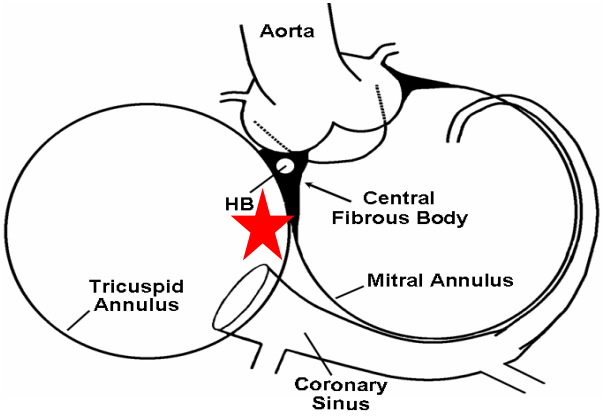


Figure 5.11C.



Score = 0



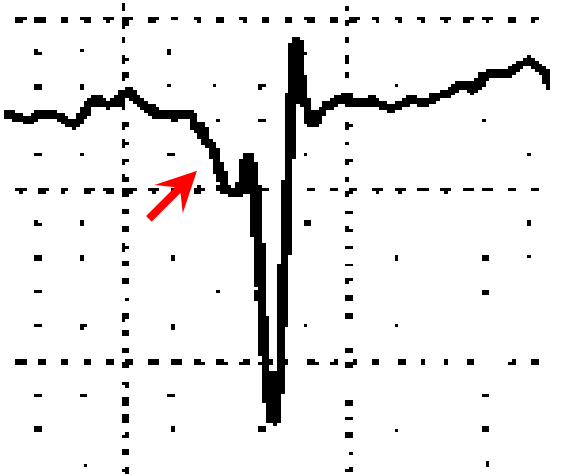


Figure 5.11D.

Referred by: Karen Beckman

Confirmed By: Thomas Walsh

I aVR V1 V4

II aVL V2 V5

III aVF V3 V6

V1

II

V5

Score = 3

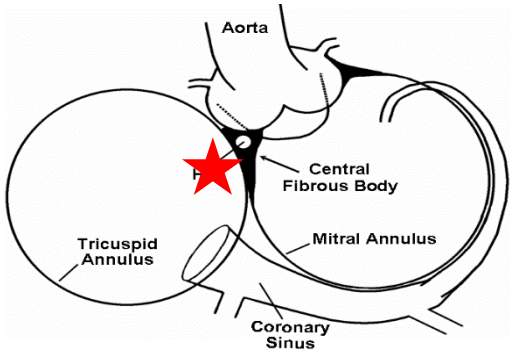
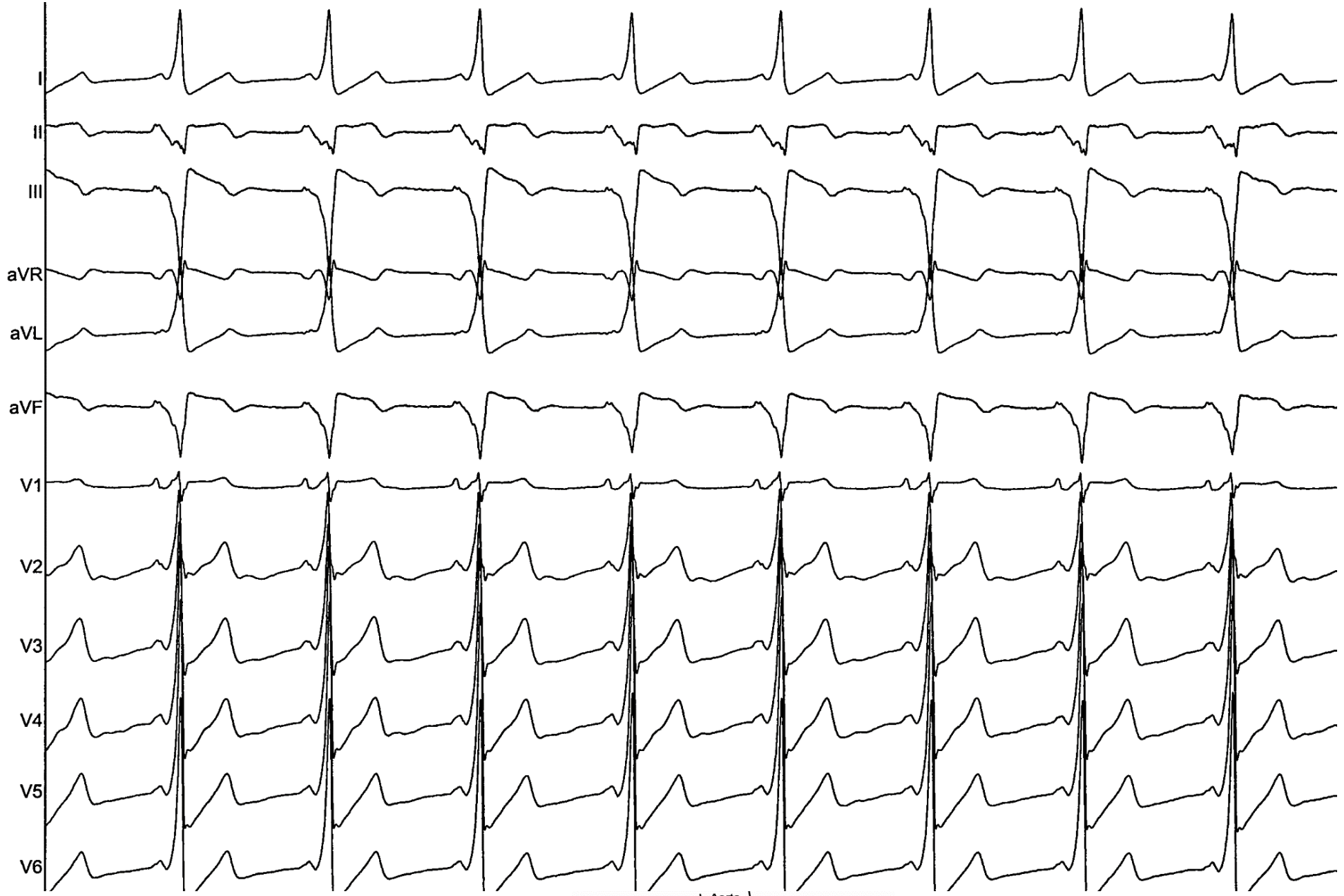
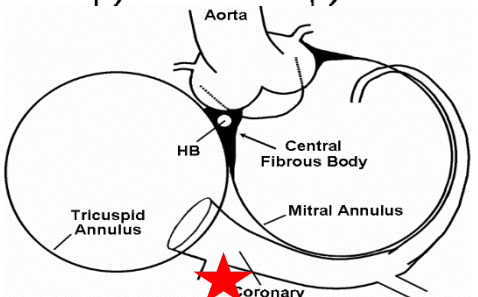


Figure 5.11E.



Score = -3



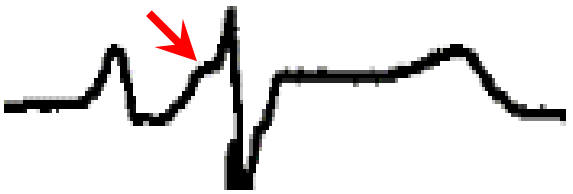
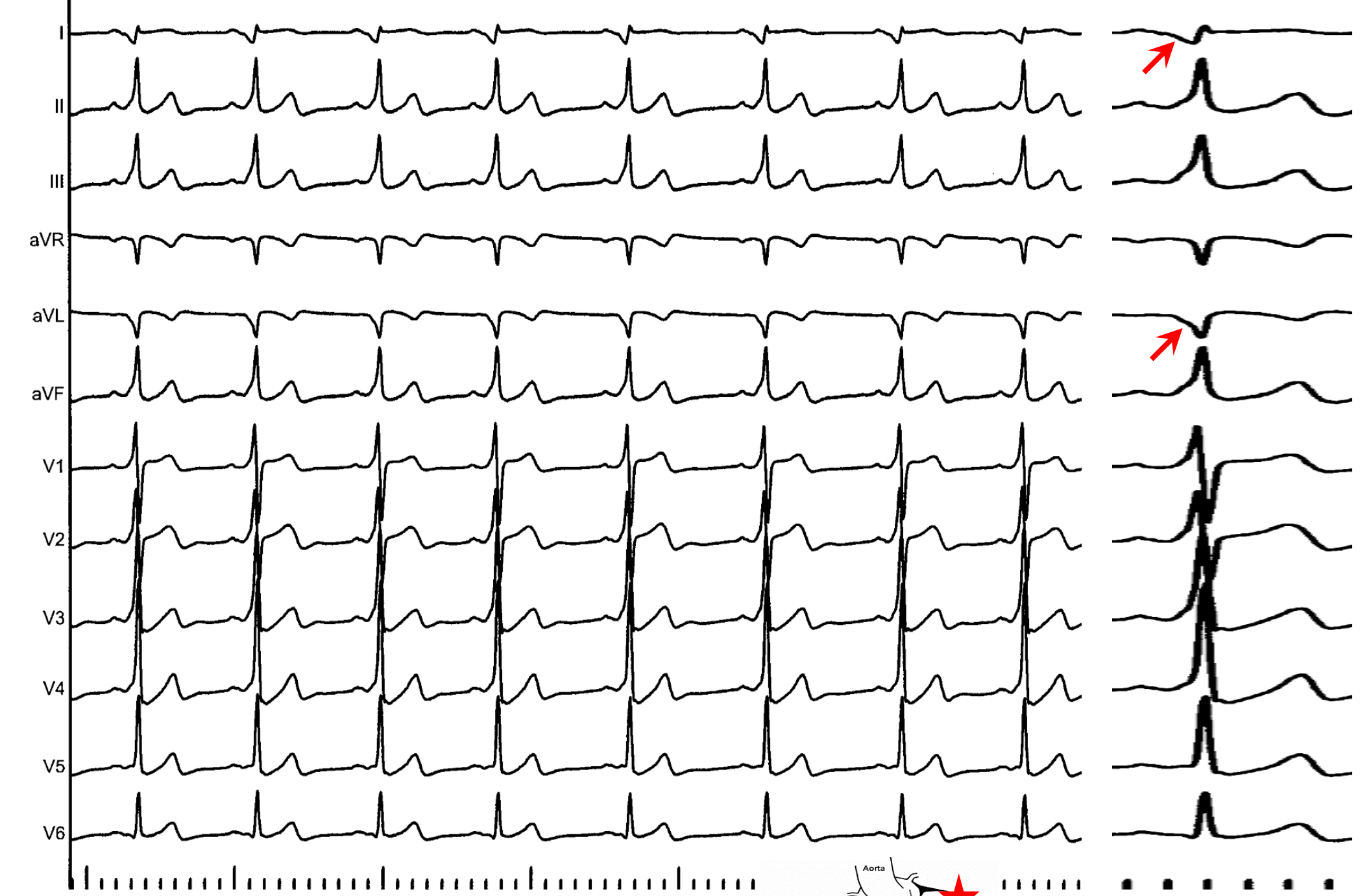
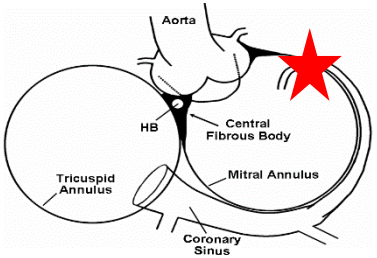


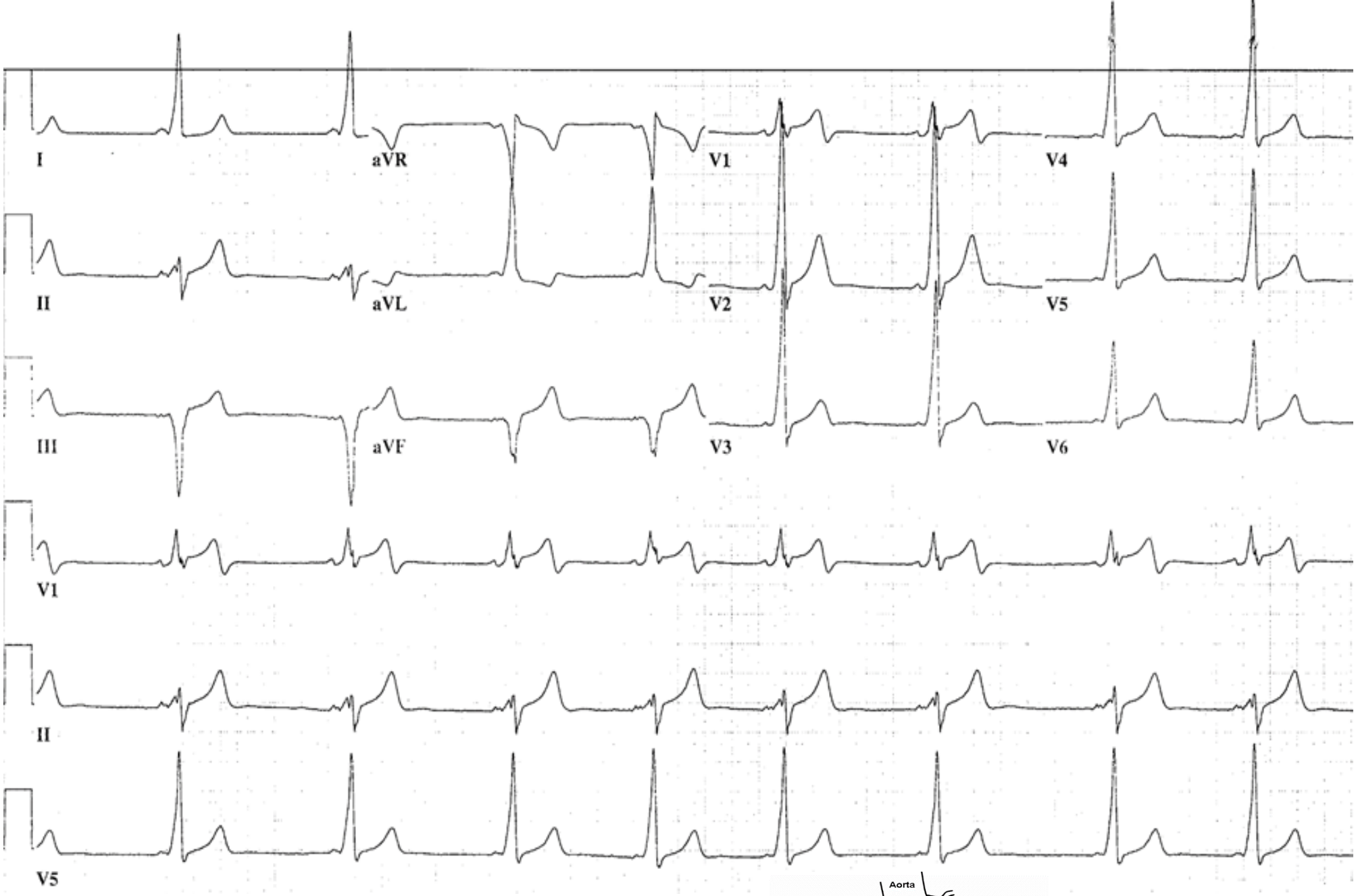
Fig. 6.11F

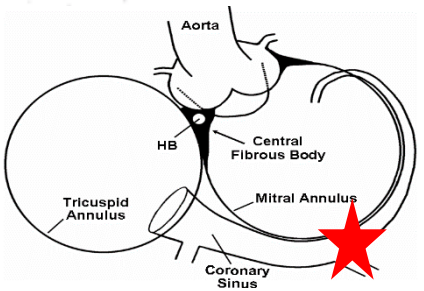




Score = 3

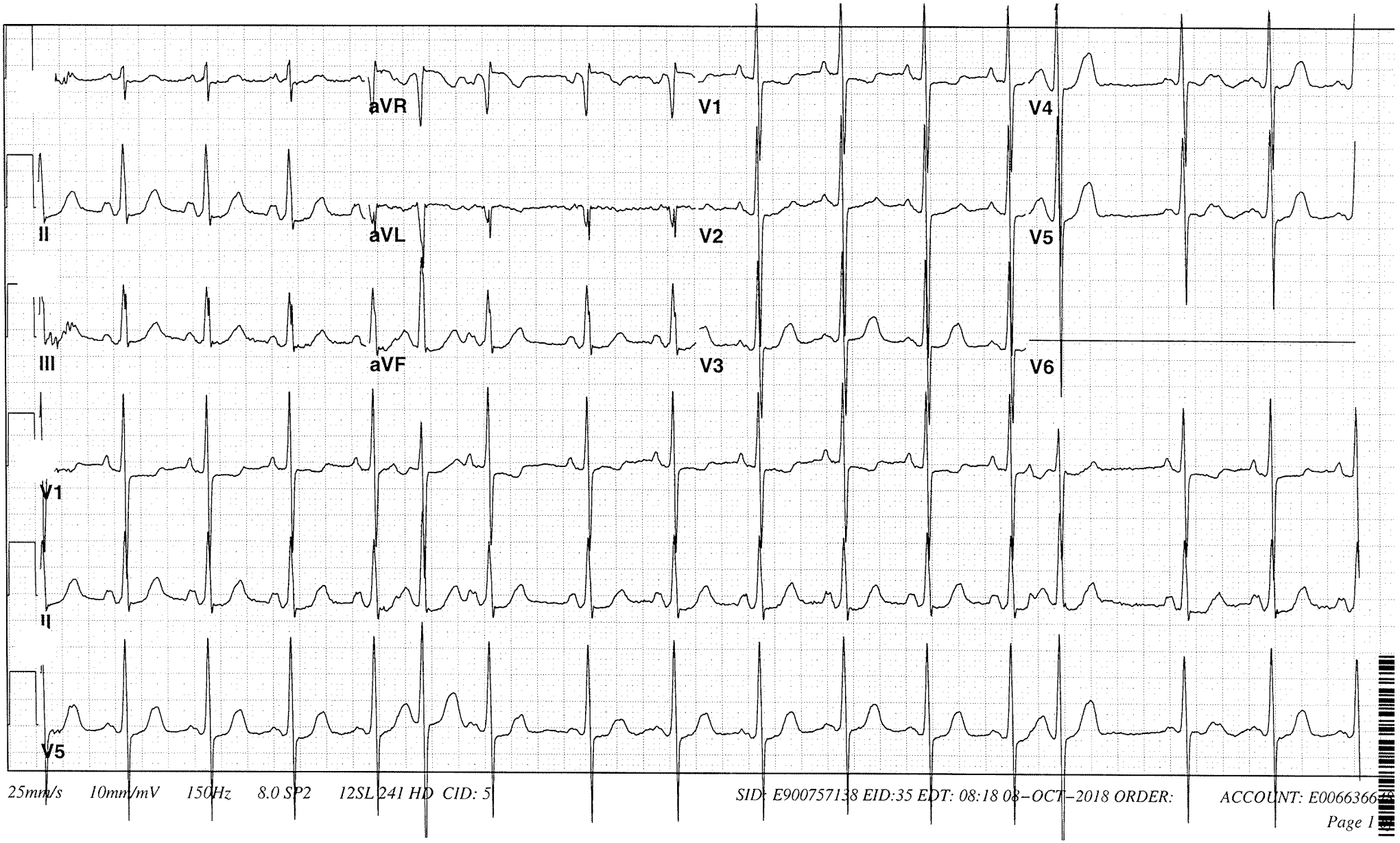
Figure 5.12A.





Score = 1

Figure 5.12B.


aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1
II
V5
25mm/s 10mm/mV 150Hz 8.0 SP2 12SL 241 HD CID: 5
SID: E900757138 EID:35 EDT: 08:18 08-OCT-2018 ORDER:
ACCOUNT: E0066366
Page 1

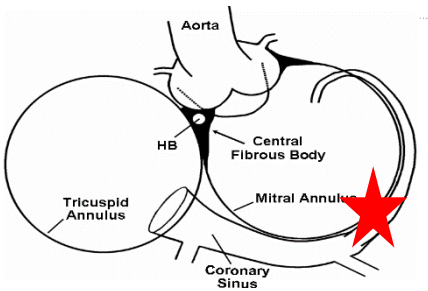

Aorta
HB
Central
Fibrous Body
Tricuspid
Annulus
Mitral Annulus
Coronary
Sinus

Figure 5.12C.

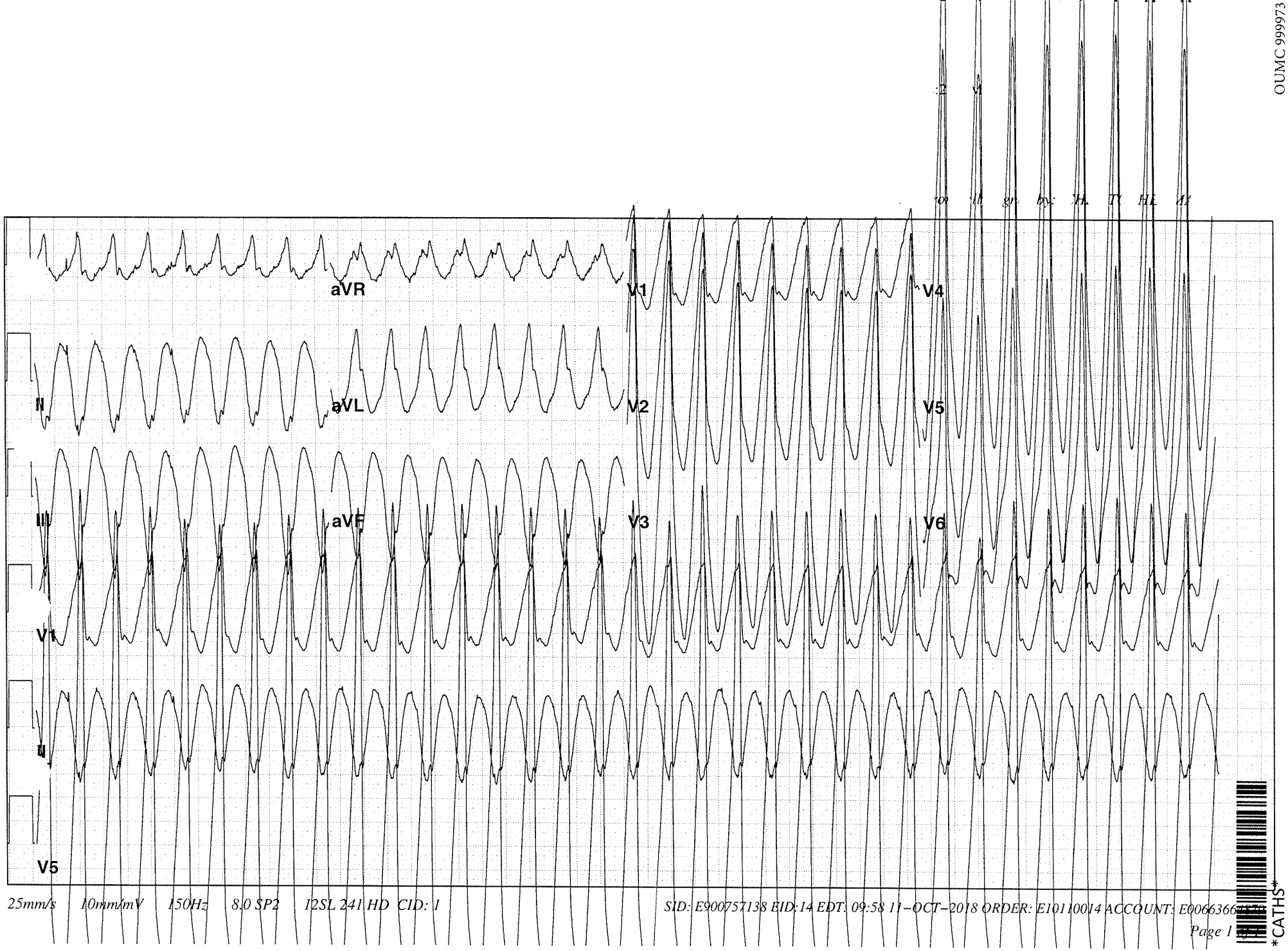

aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1
II
V5
25mm/s 10mm/mV 150Hz 8.0 SP2 12SL 241 HD CID: 1
SID: E900757138 EID: 14 EDT: 09:58 11-OCT-2018 ORDER: E10110014 ACCOUNT: E0066366
Page 1
OUMC 999973
CATHS

Figure 5.12D.

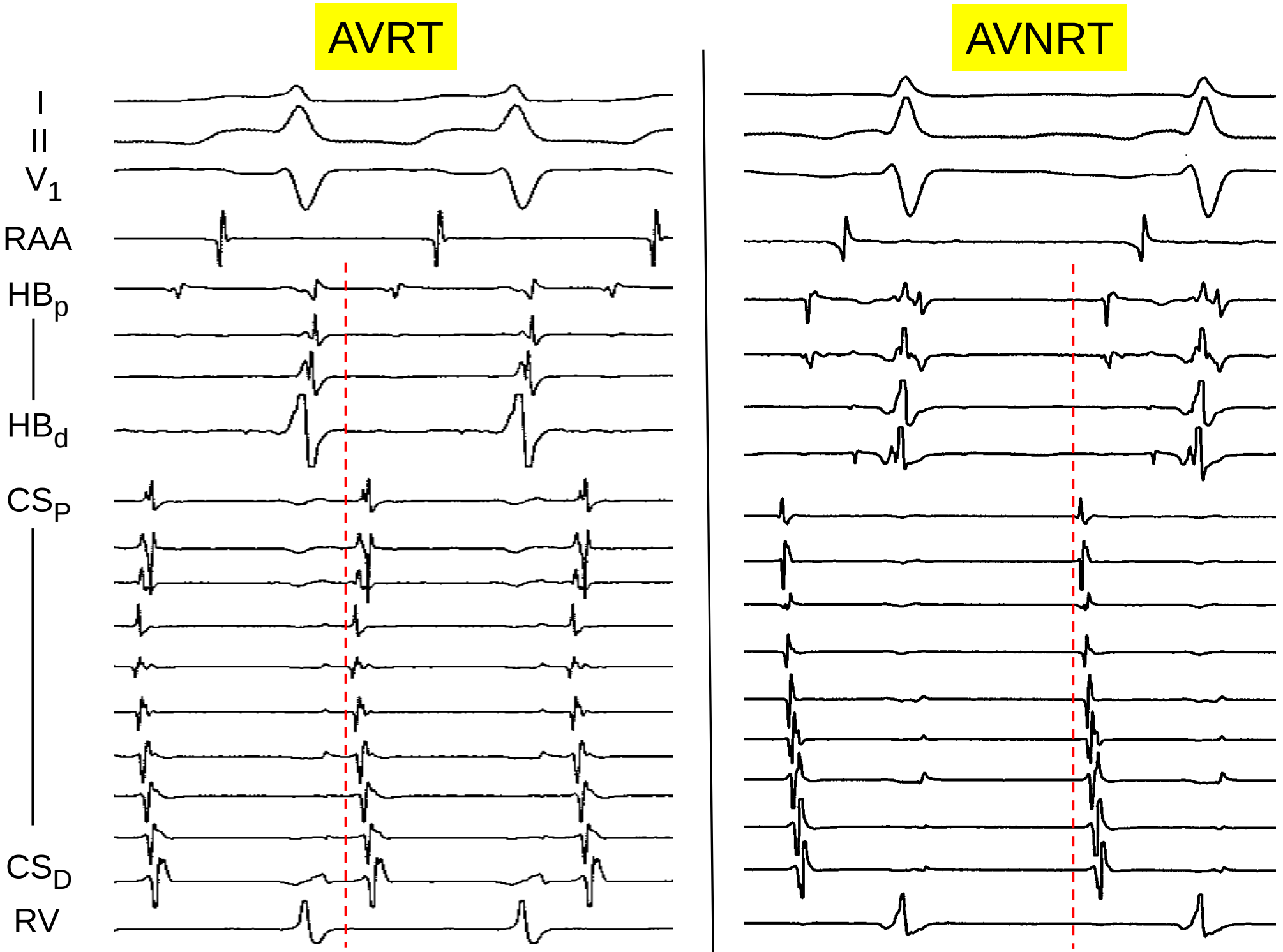
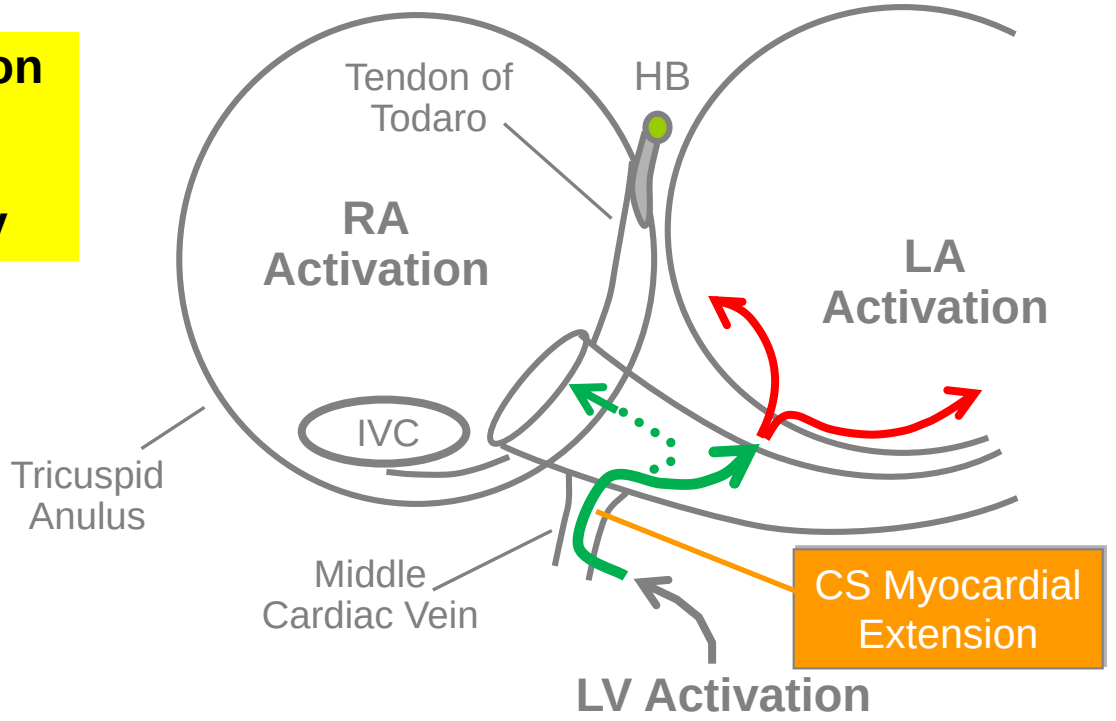


Figure 5.13A

Retrograde Conduction Over an Epicardial Posteroseptal Accessory Pathway



Retrograde Slow AV Nodal Pathway (Rightward Inferior Extension)

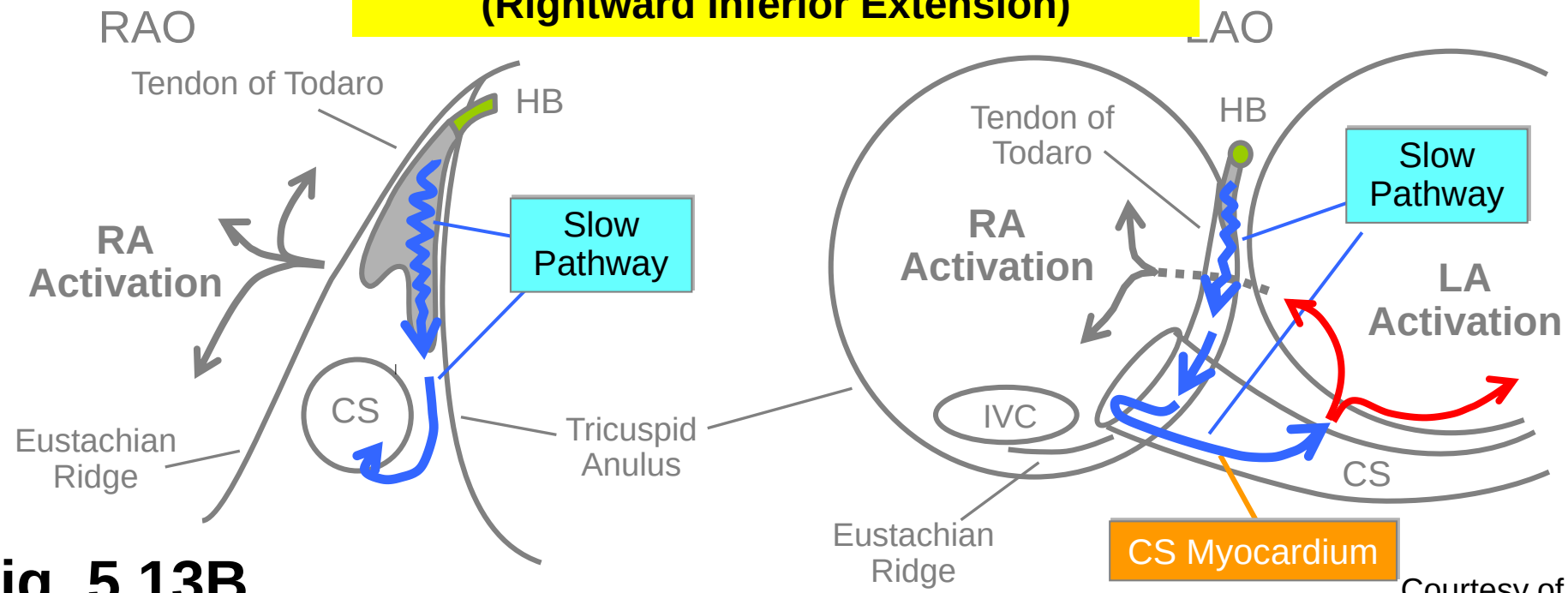


Fig. 5.13B

Courtesy of Dr. Jackman

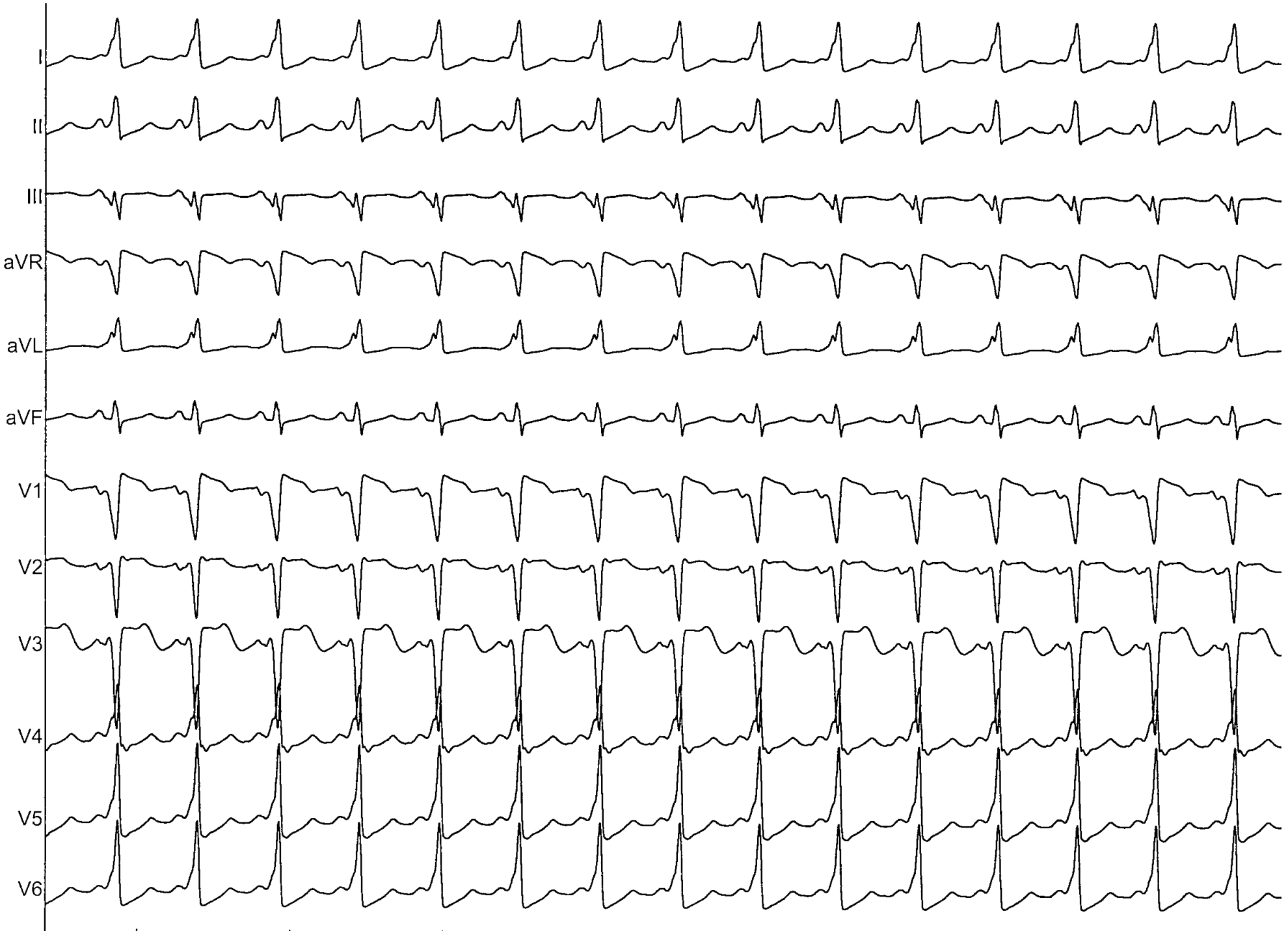


Fig. 5.13C

Fig. 5.13D

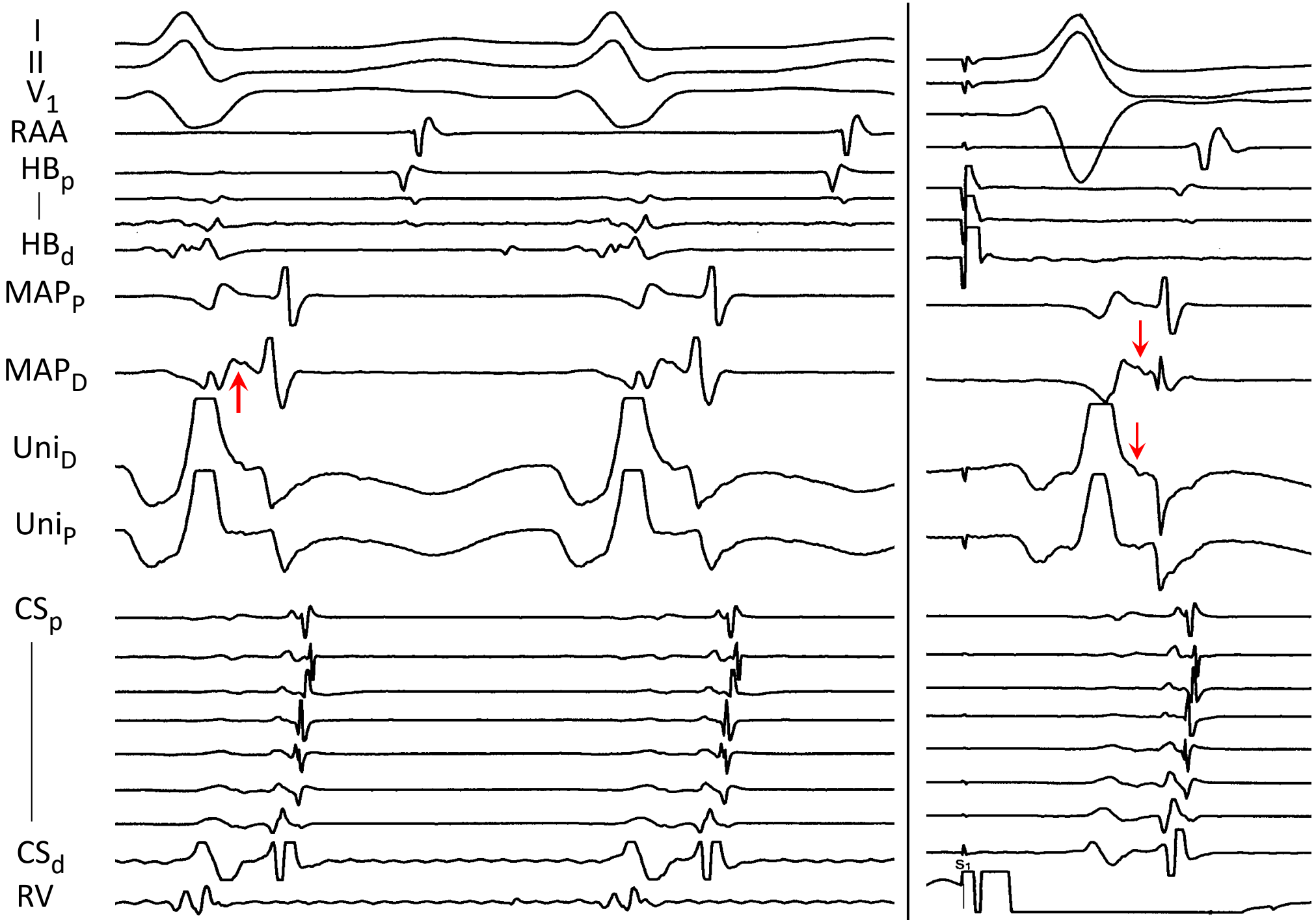
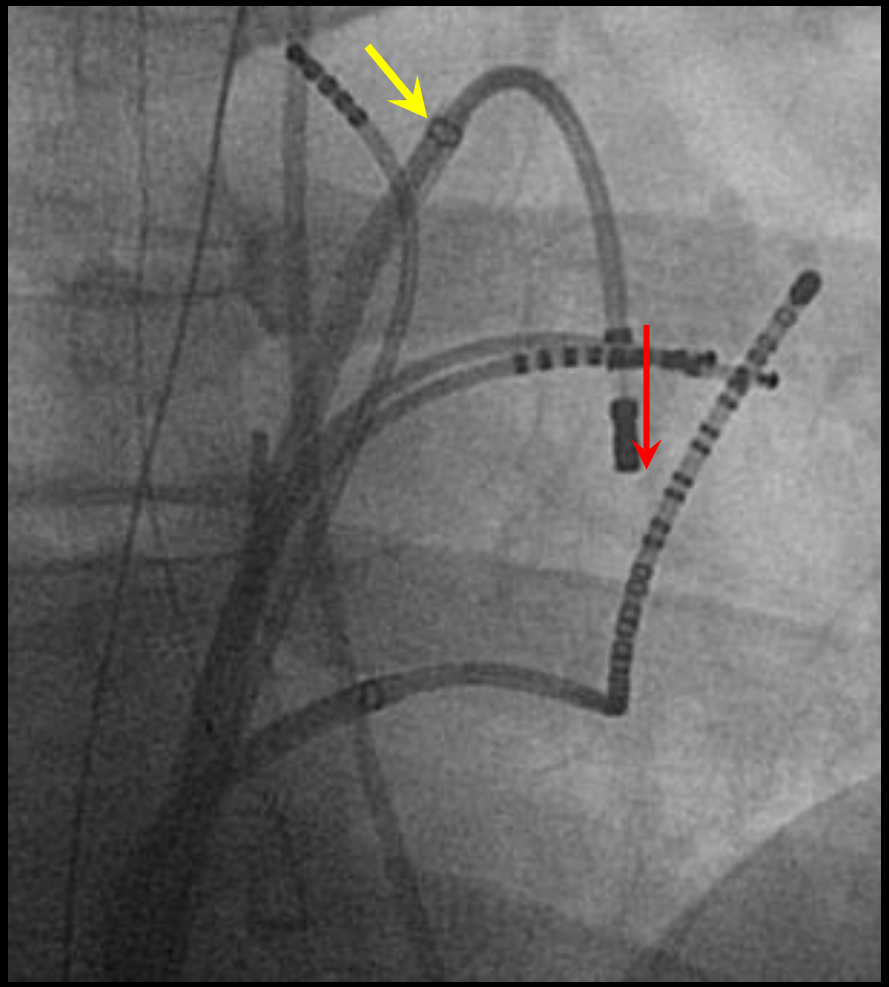
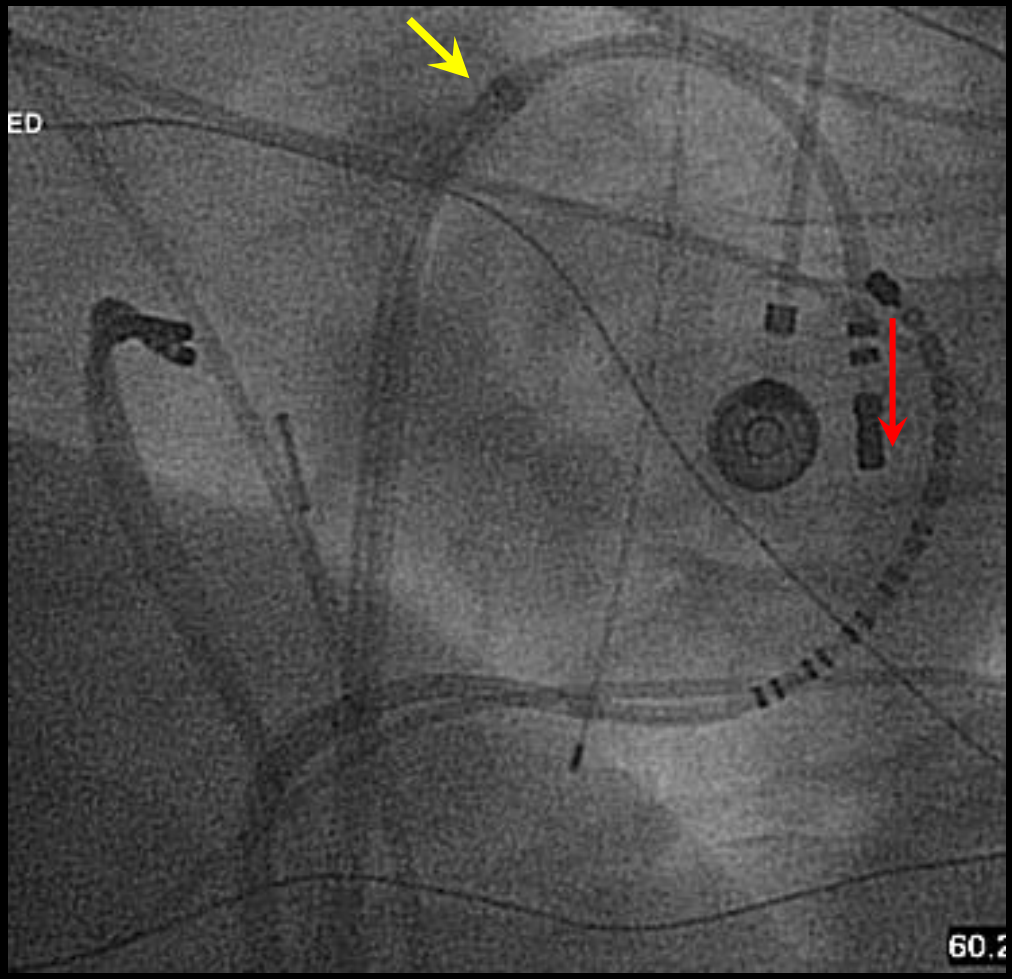


Fig 5.14A.

SL1 Sheath Distant from Annulus



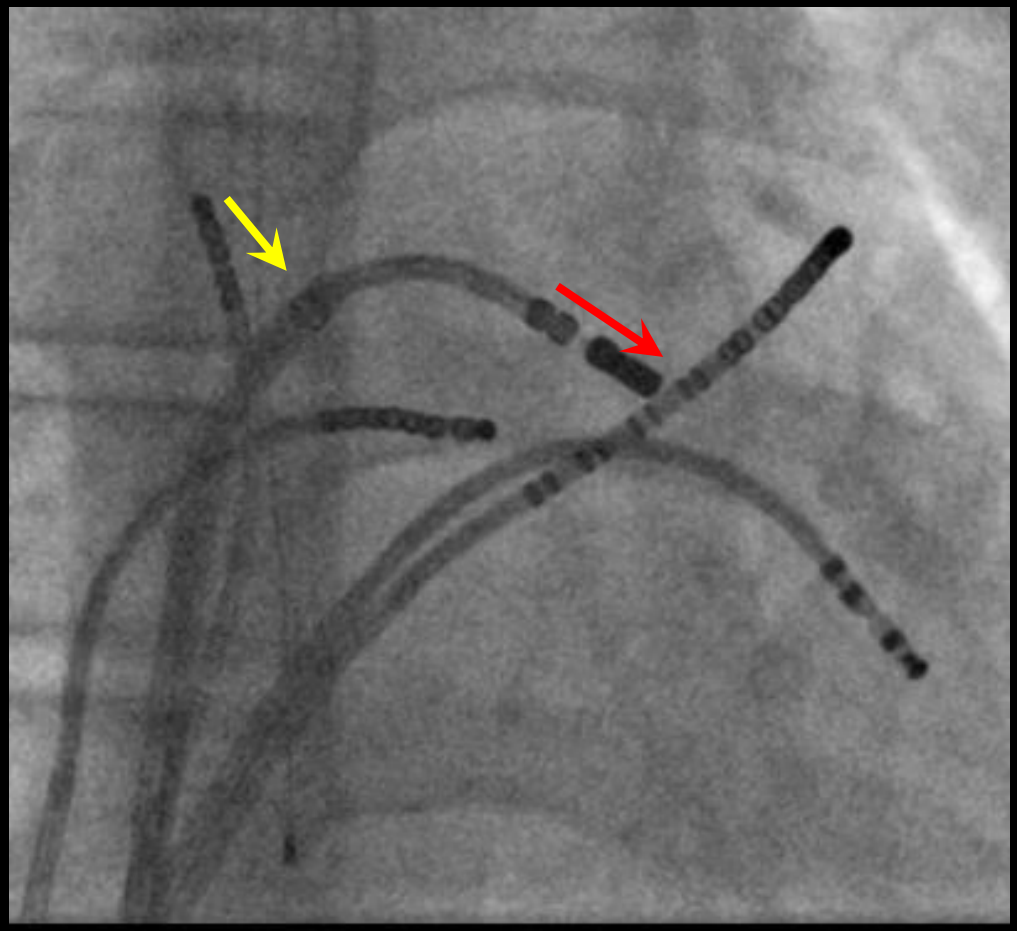


RAO

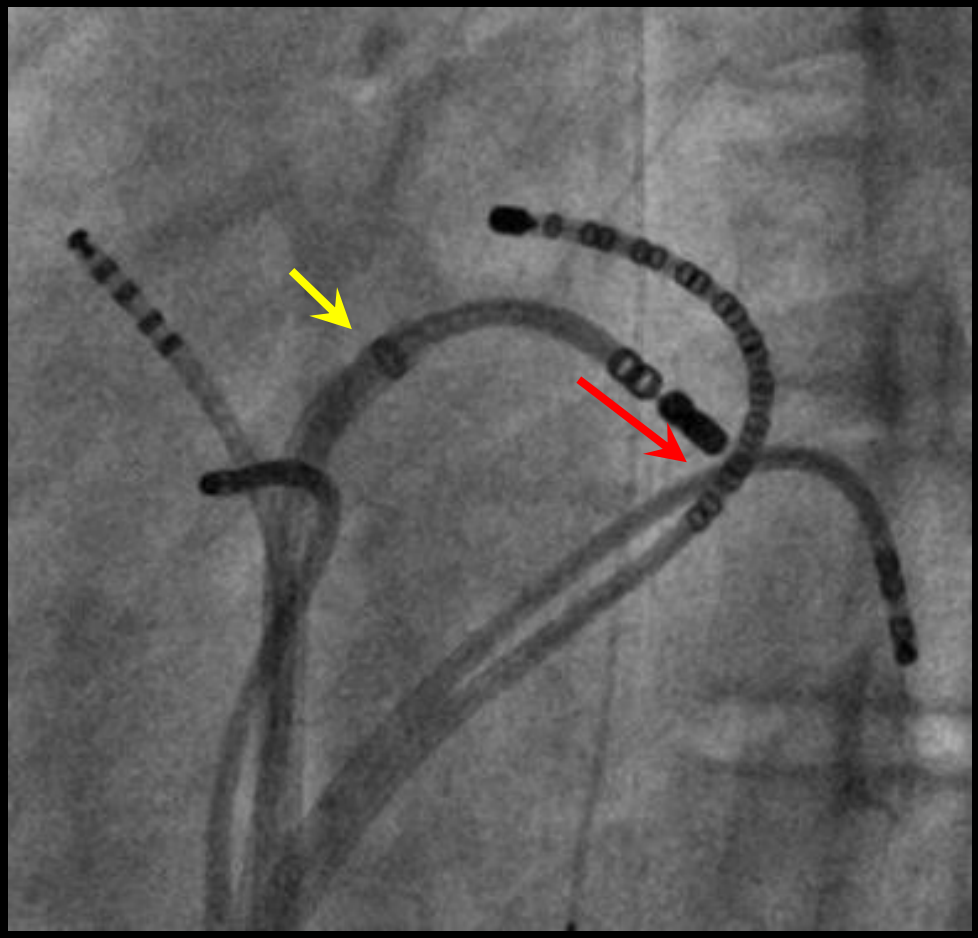
LAO

Fig 5.14B.

SL1 Sheath; Catheter Pointed Straight at the Target



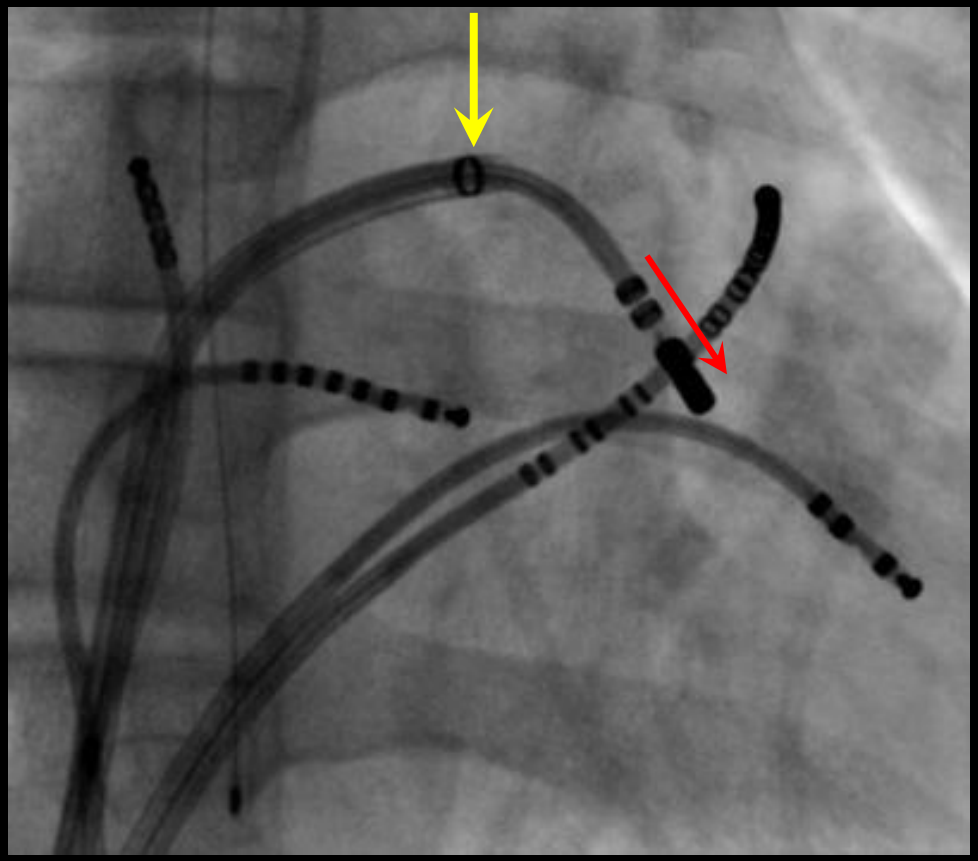
RAO



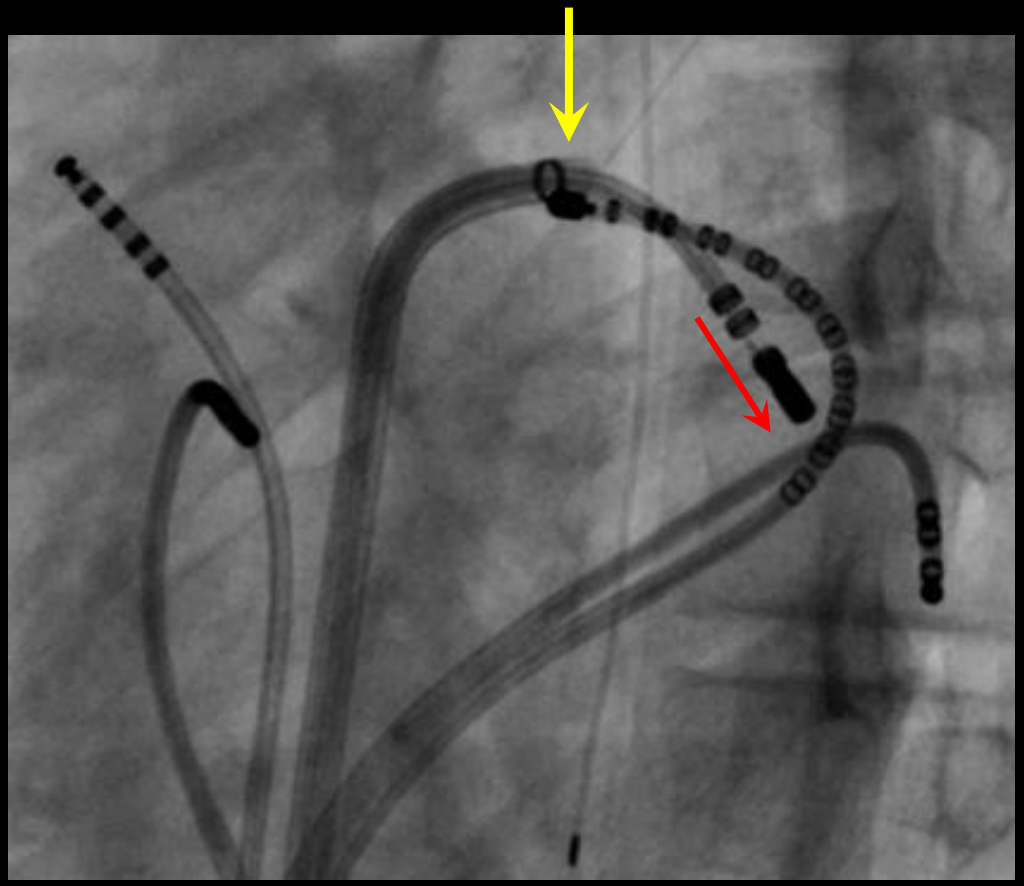
LAO

Fig 5.14C.

SL2 Sheath; Catheter Pointed Straight at the Target



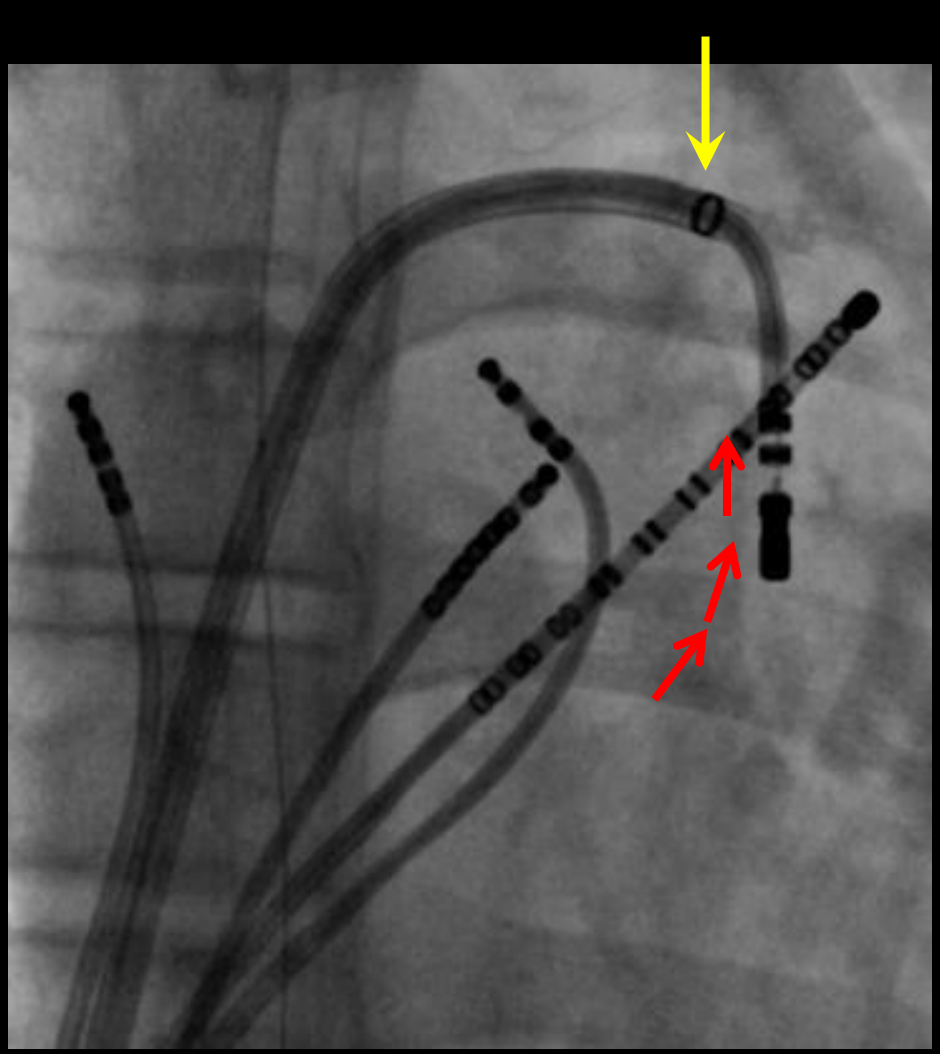
RAO



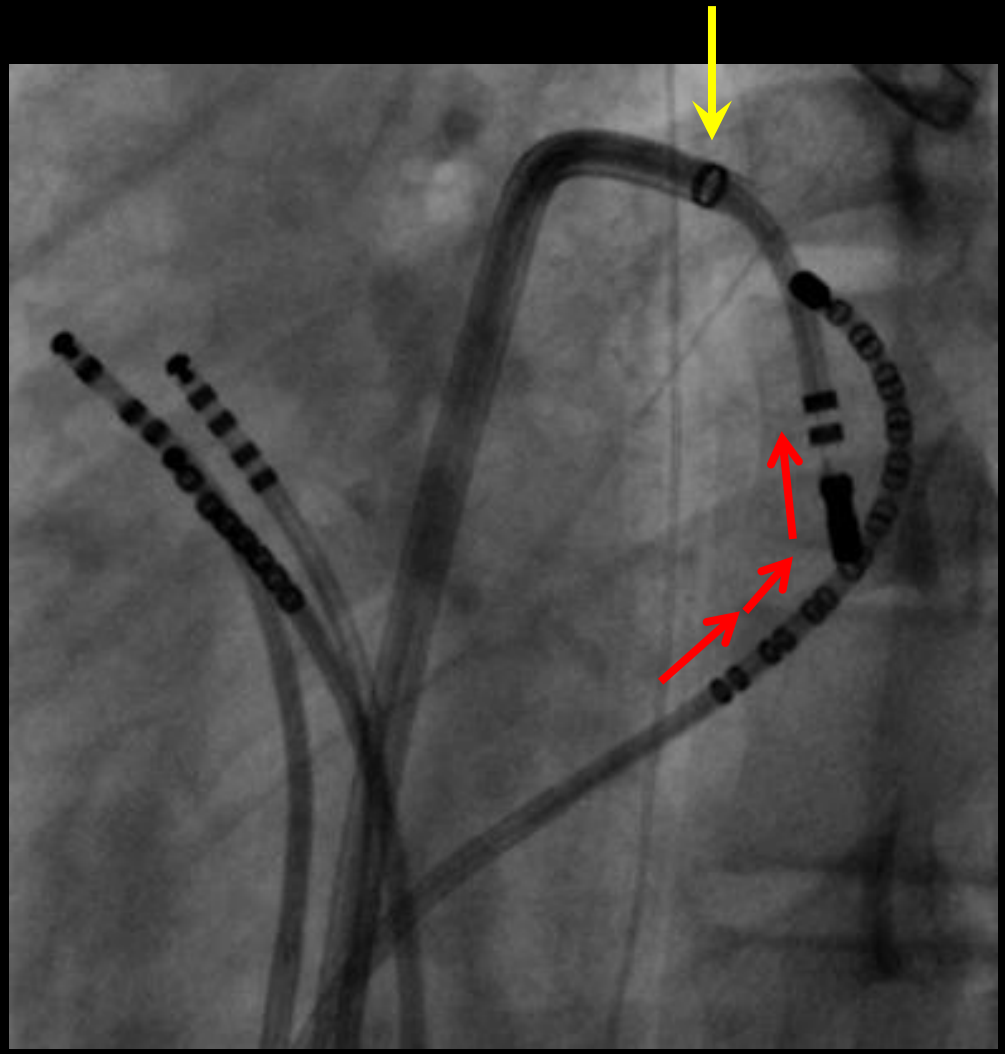
LAO

Fig 5.14D.

SL2 Sheath; Catheter Laid Parallel with Annulus



RAO



LAO

Fig 5.14E.

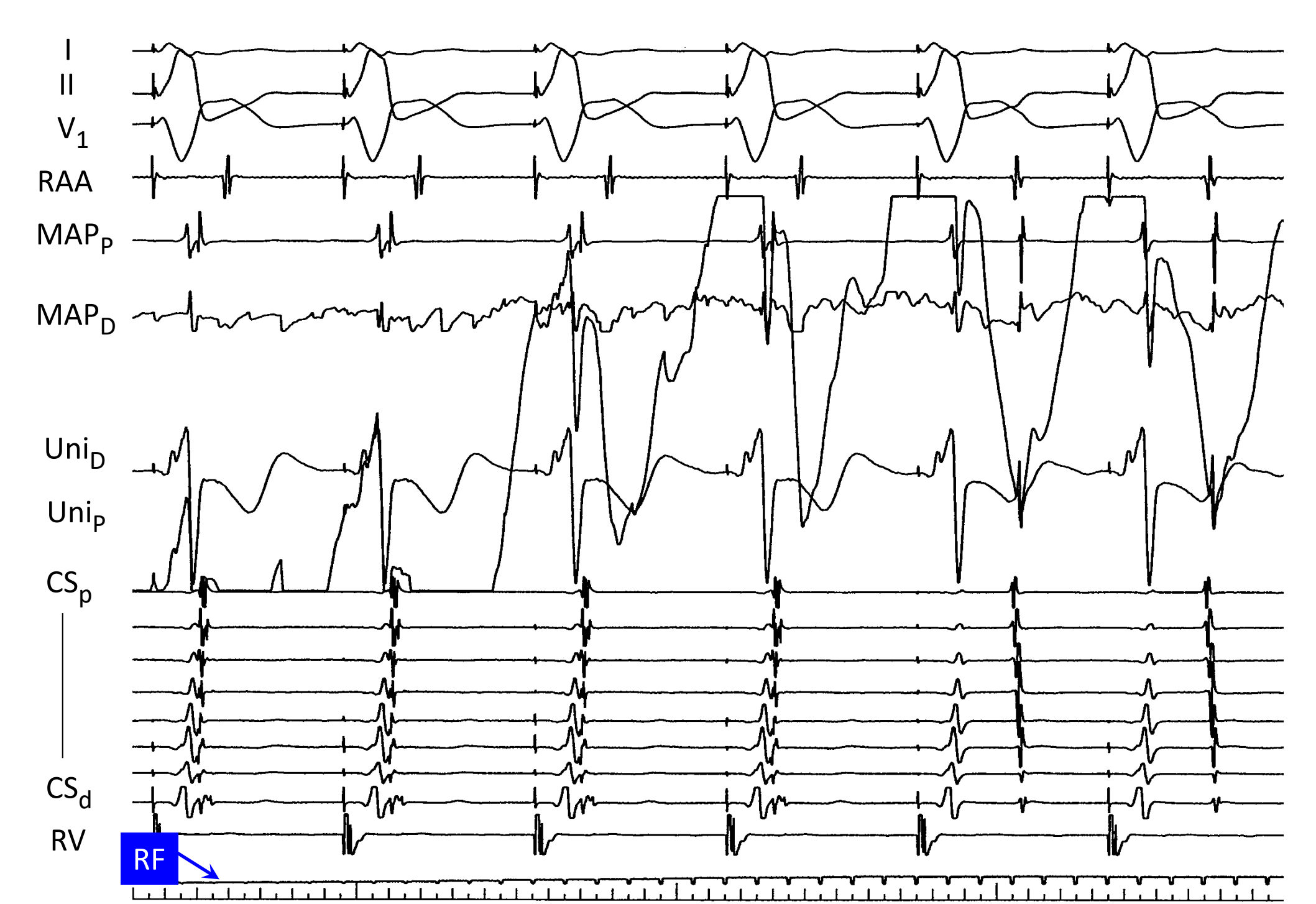
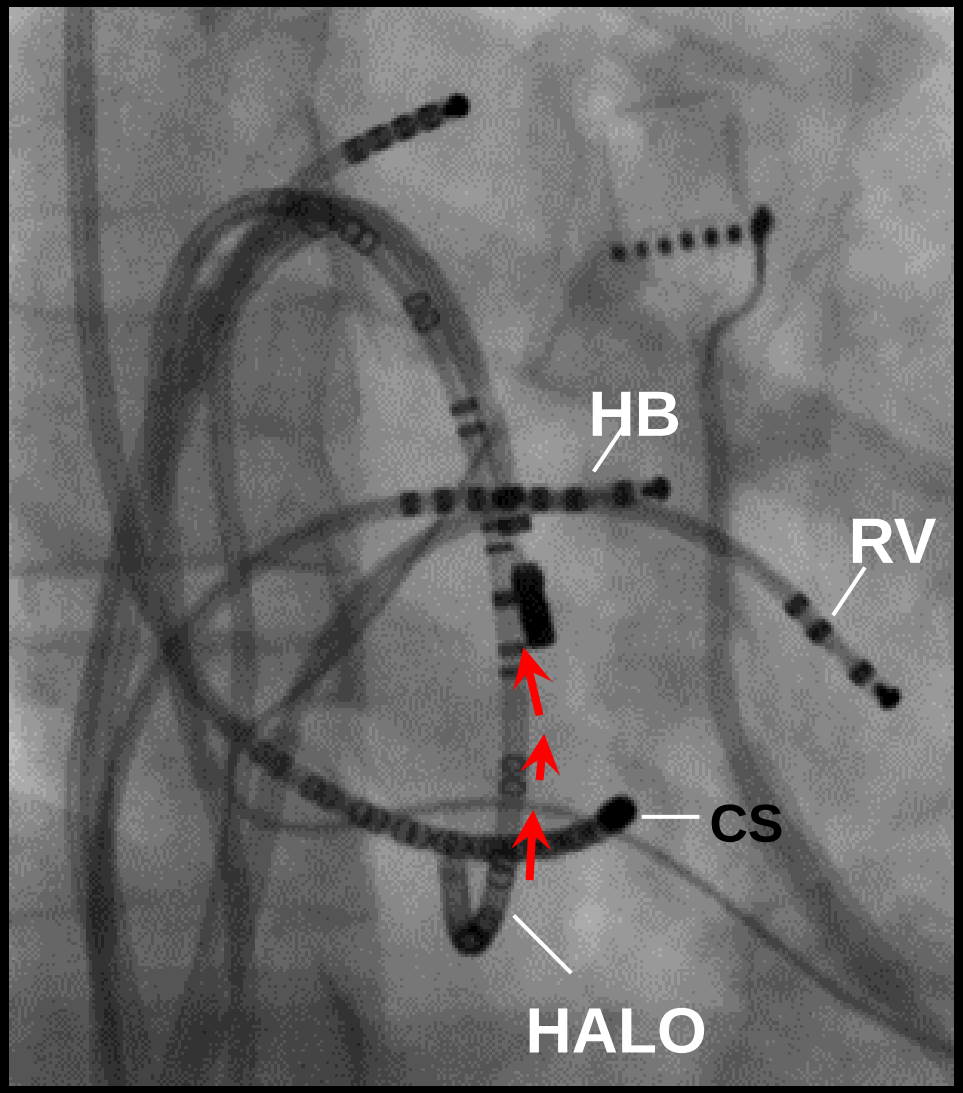
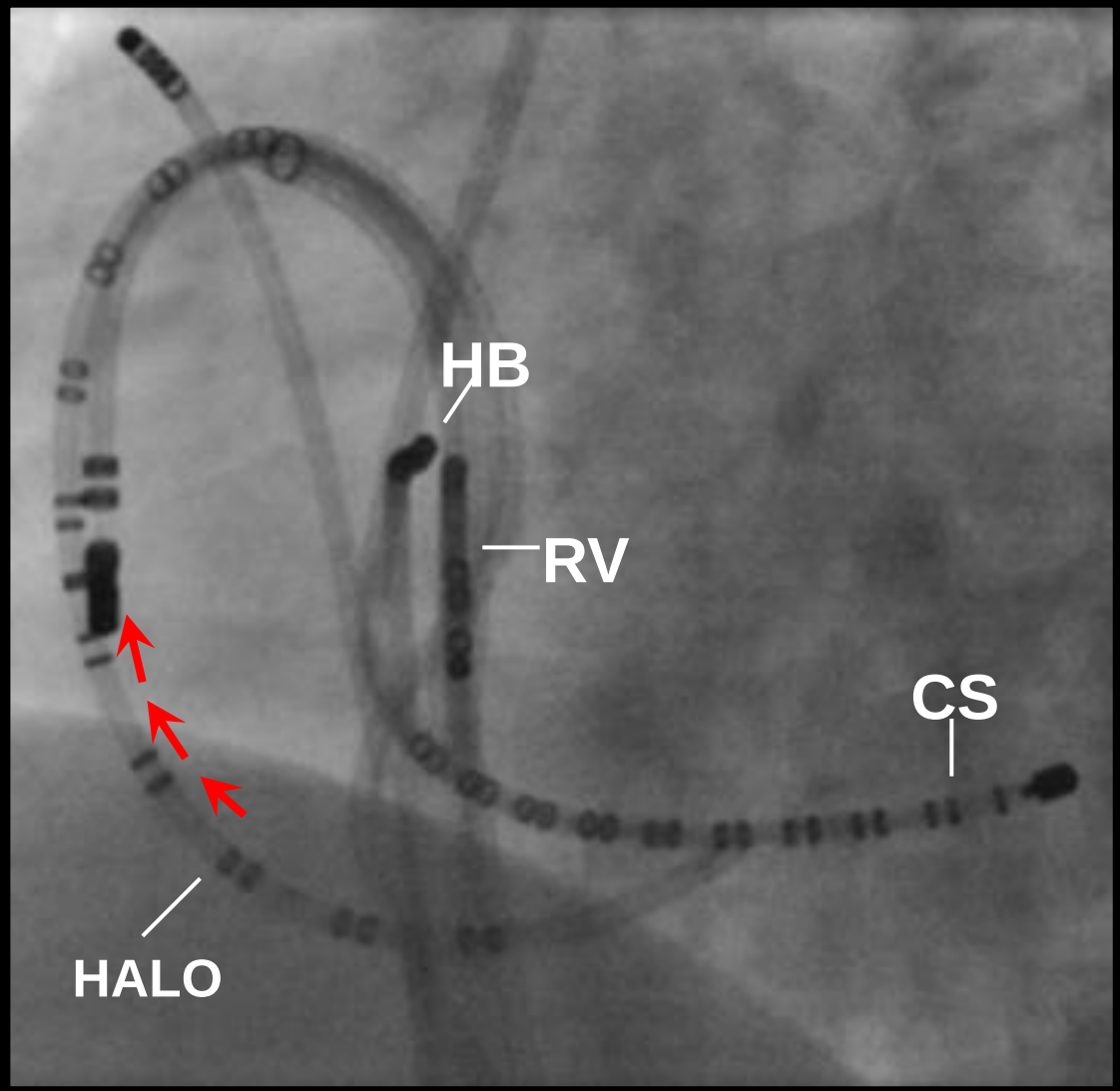


Fig 5.14F.





Lay ablation catheter in parallel to tricuspid annulus

Fig 5.15A.

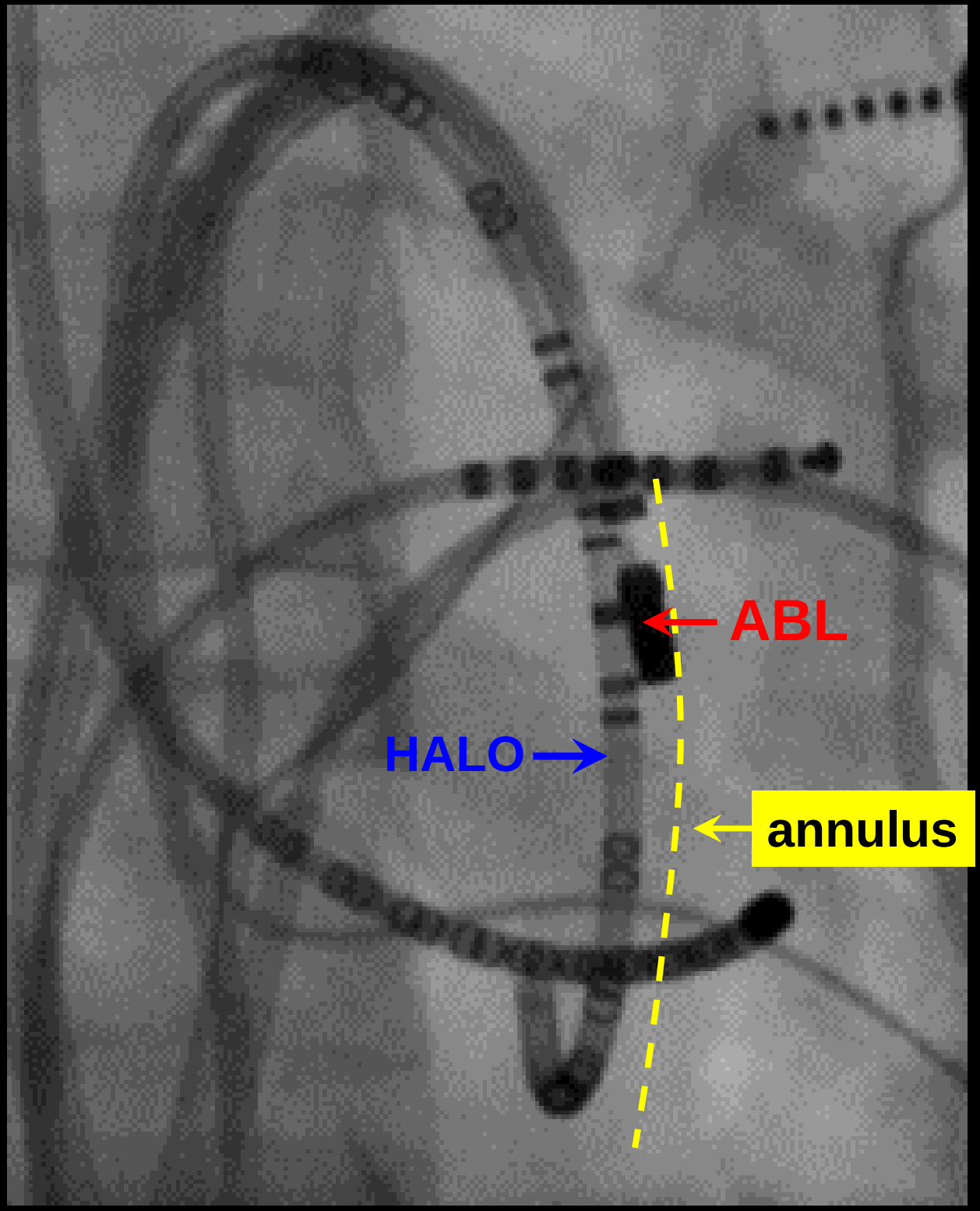
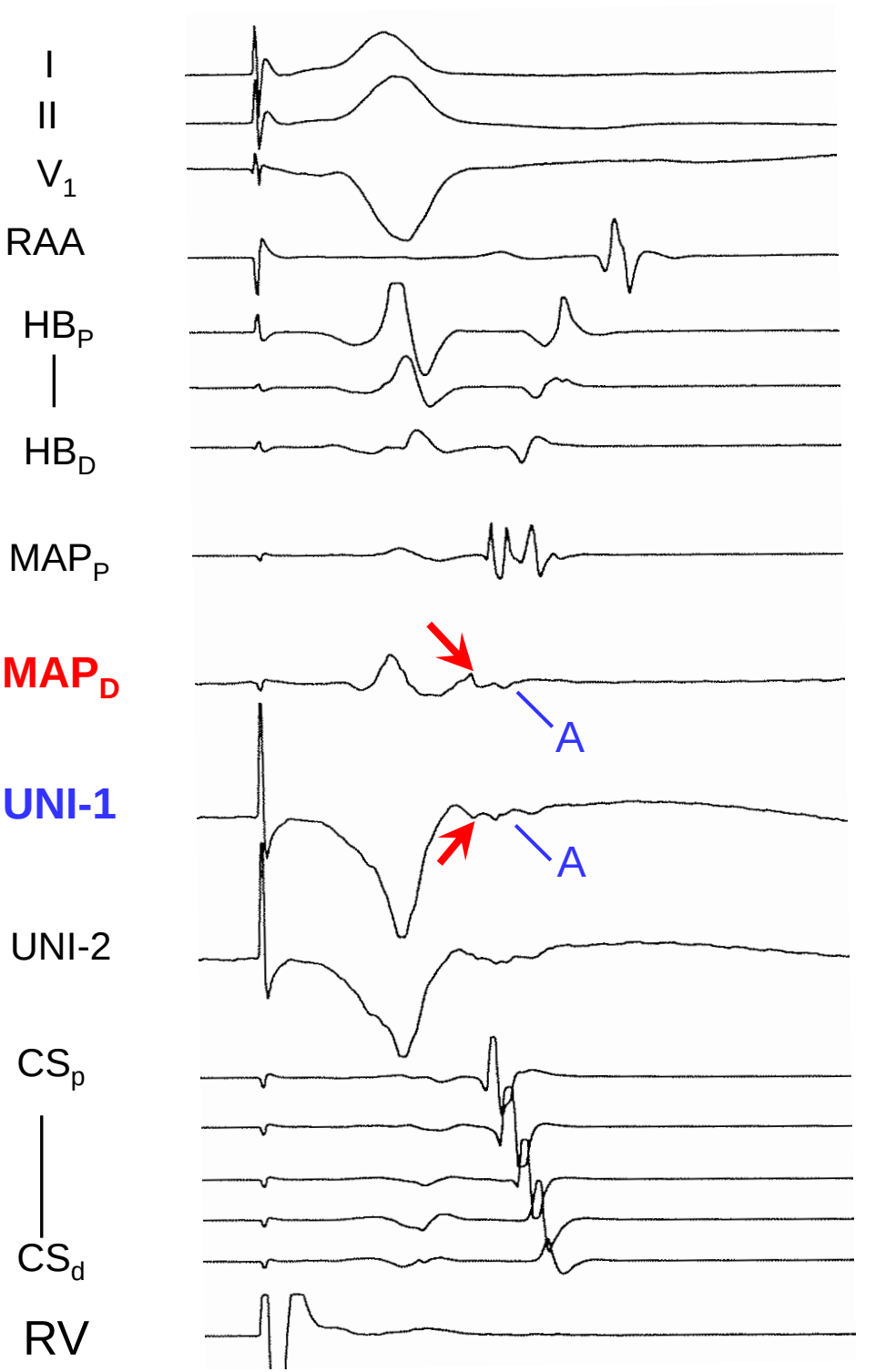


Fig 5.15B.



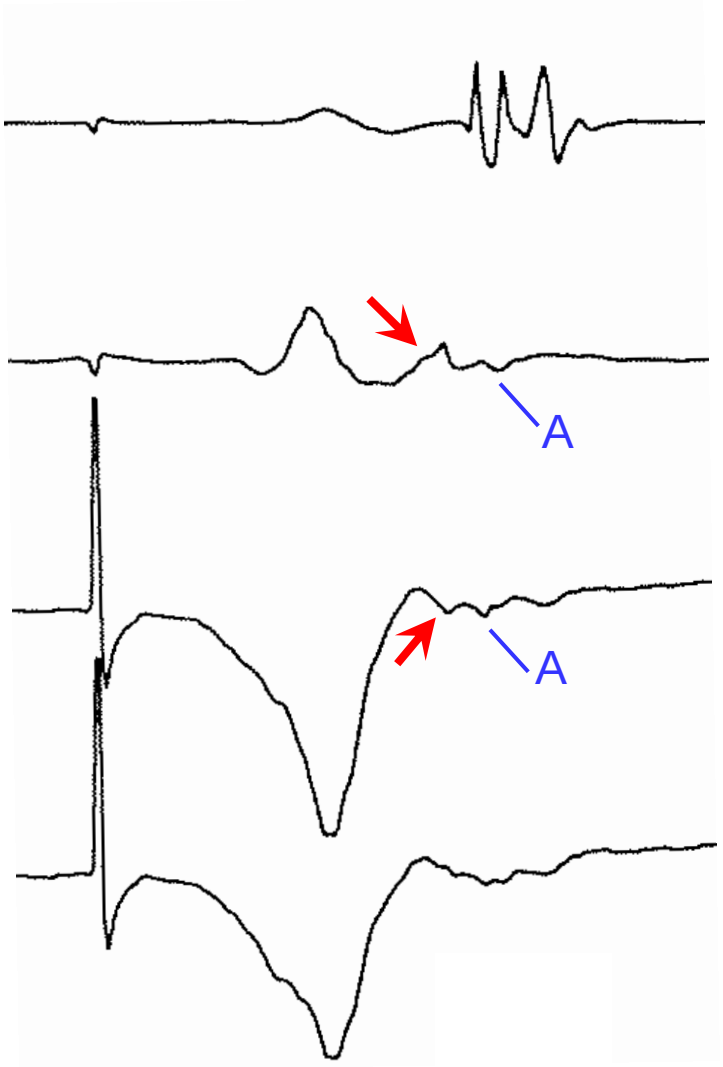


Fig 5.16A.

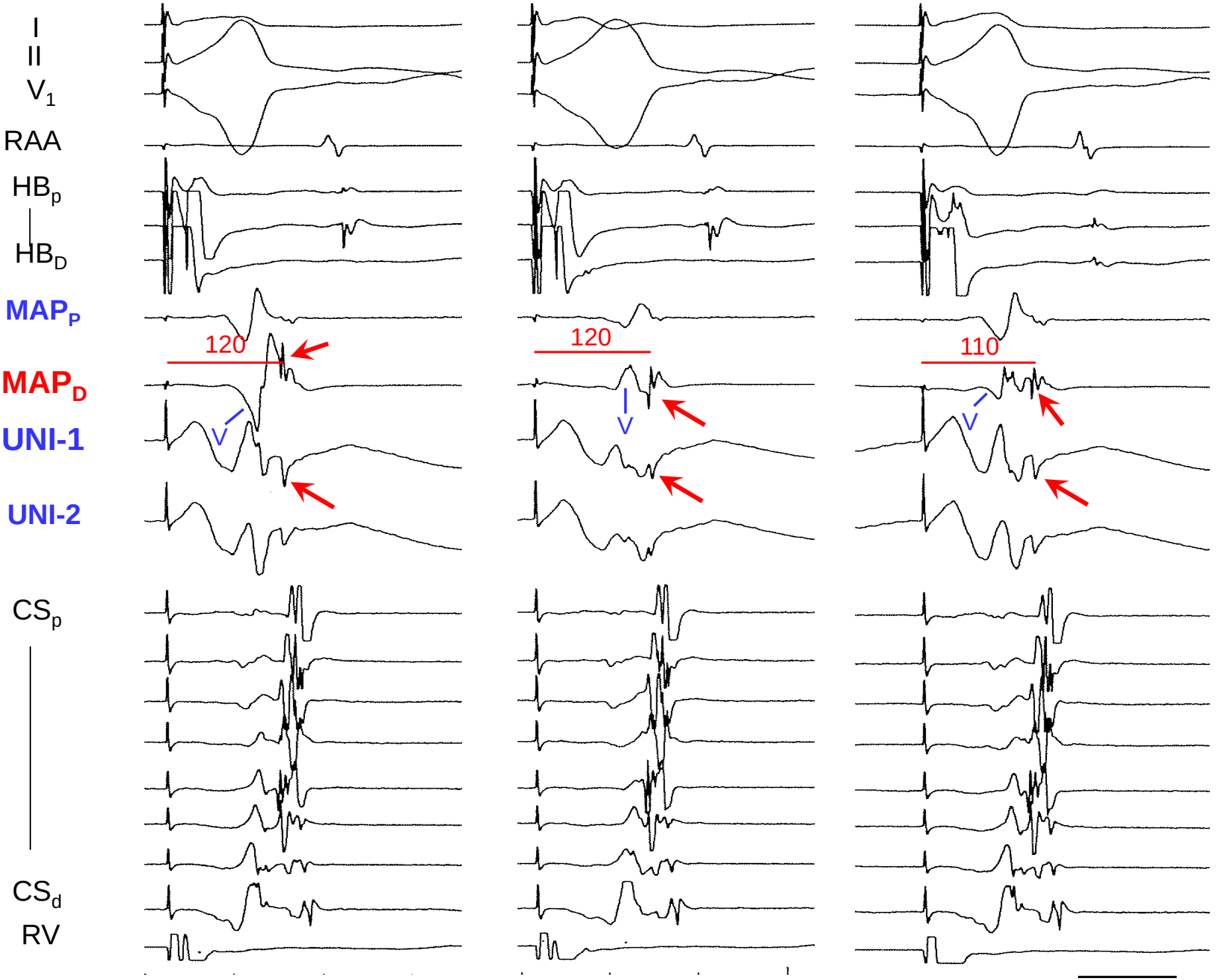

I
II
V1
RAA
HBp
HBD
MAPP
MAPD
UNI-1
UNI-2
CSp
CSd
RV
120
120
110
V
V
V
100 ms

Fig 5.16B.

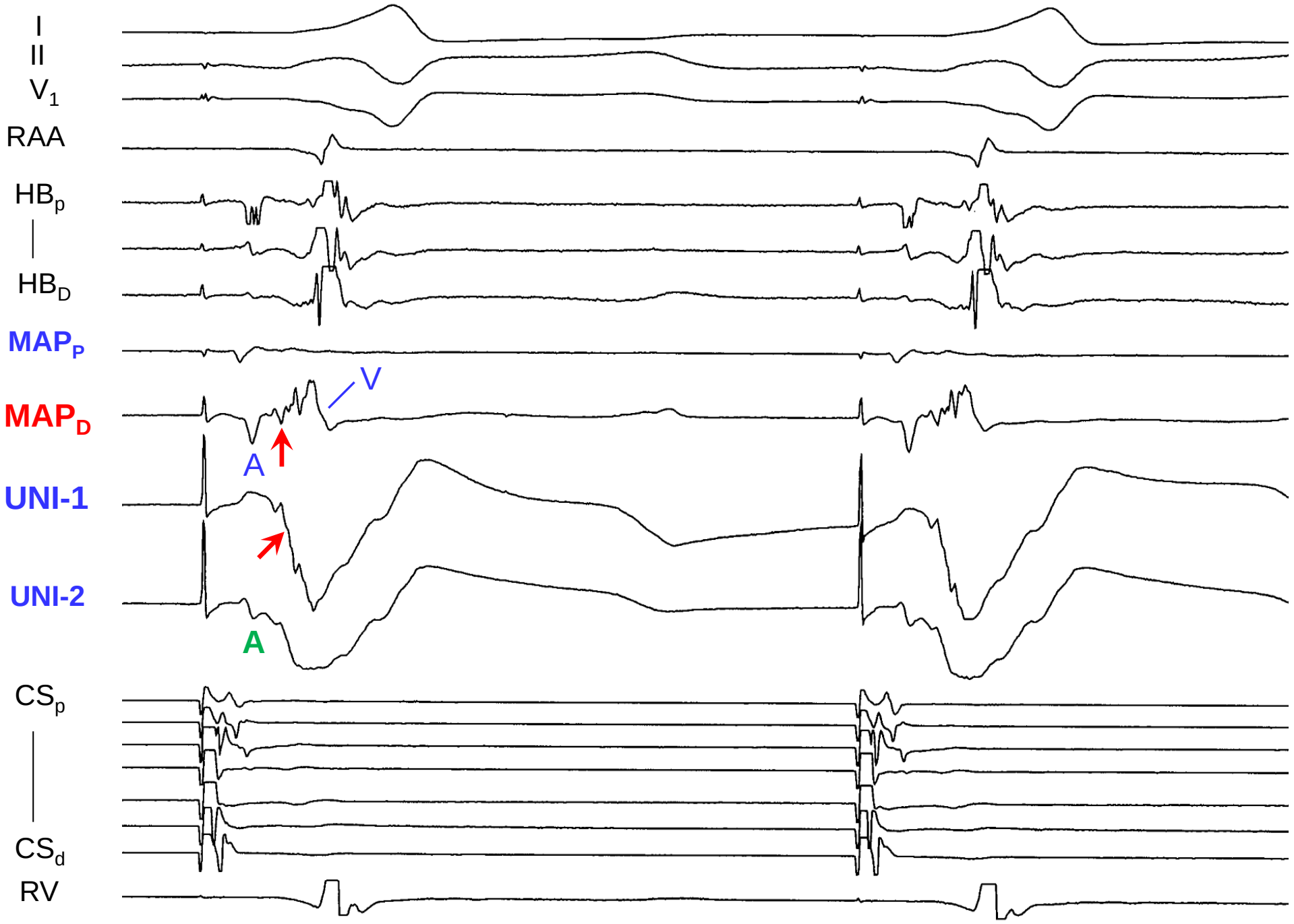


Fig 5.16C.

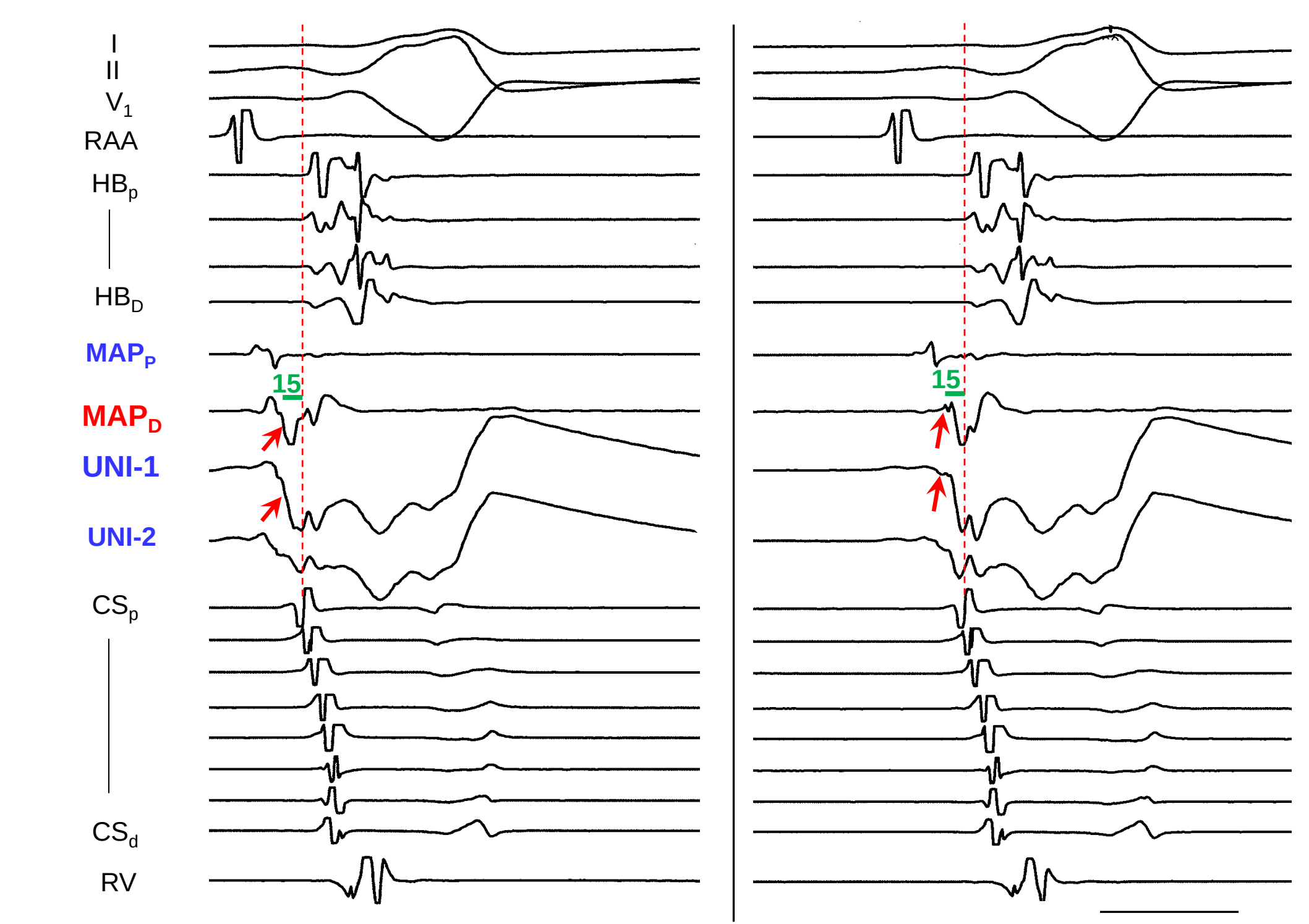


Fig 5.16D.

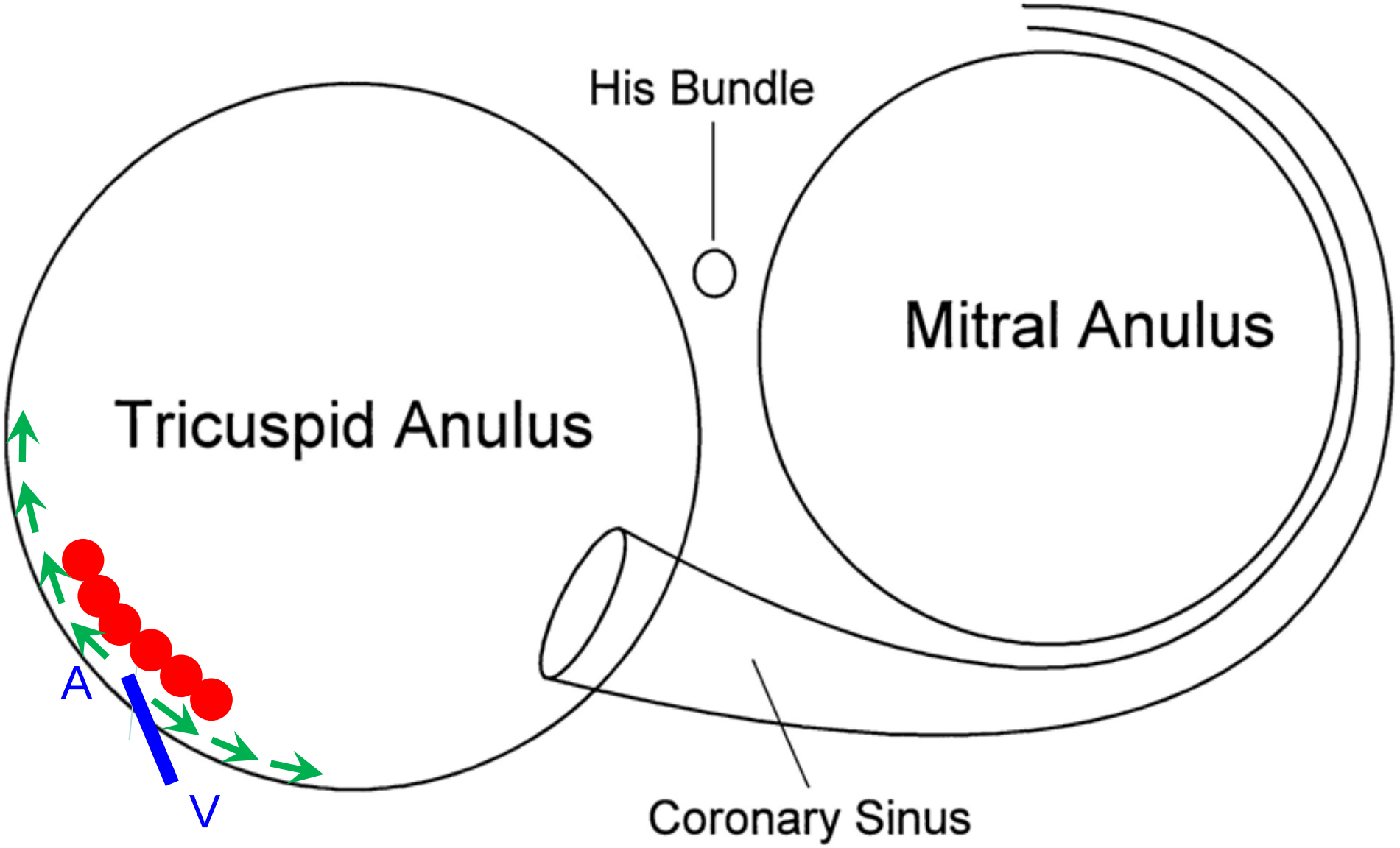

His Bundle
Mitral Anulus
Tricuspid Anulus
A
V
Coronary Sinus

Fig 5.17A.

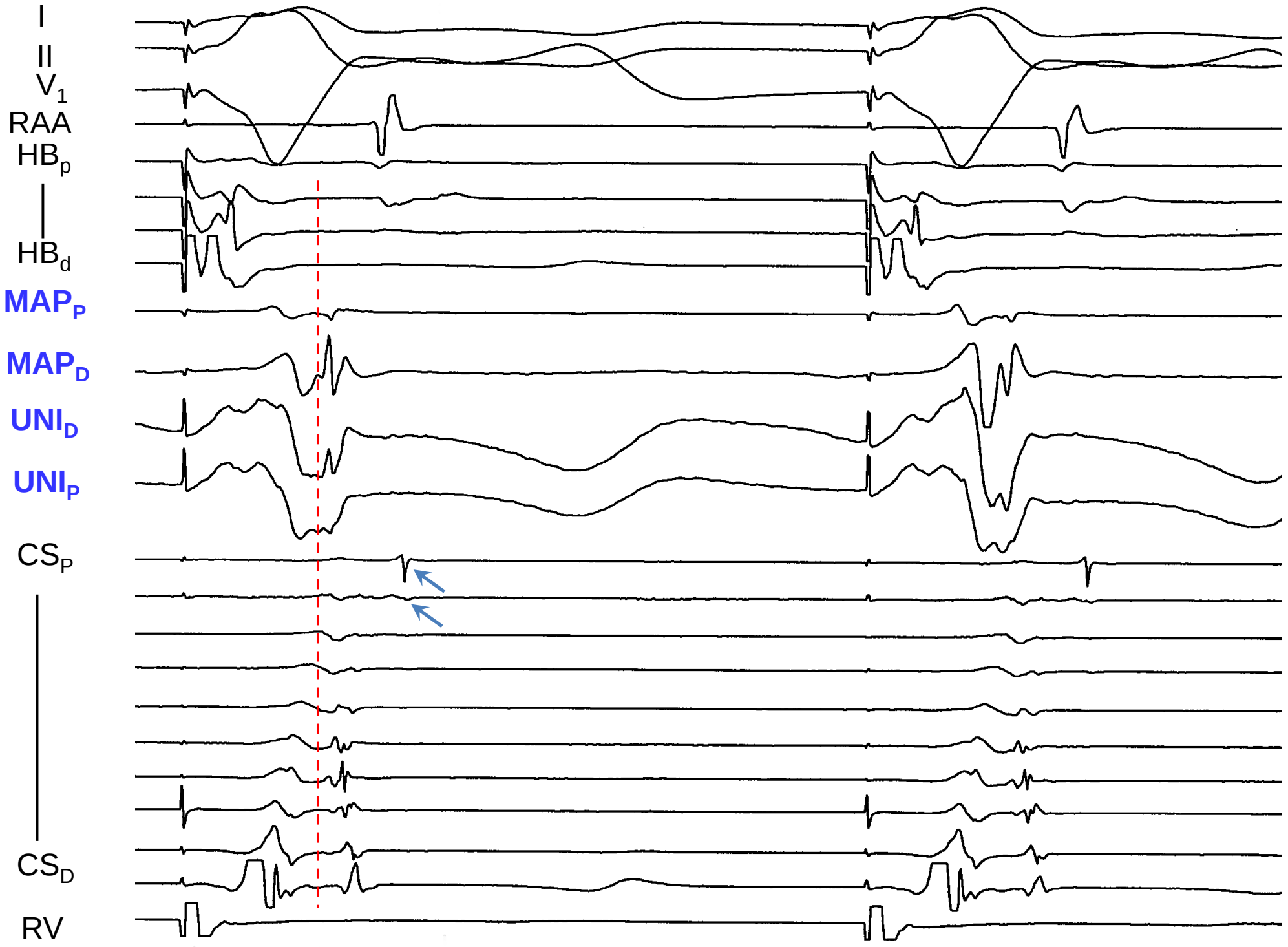
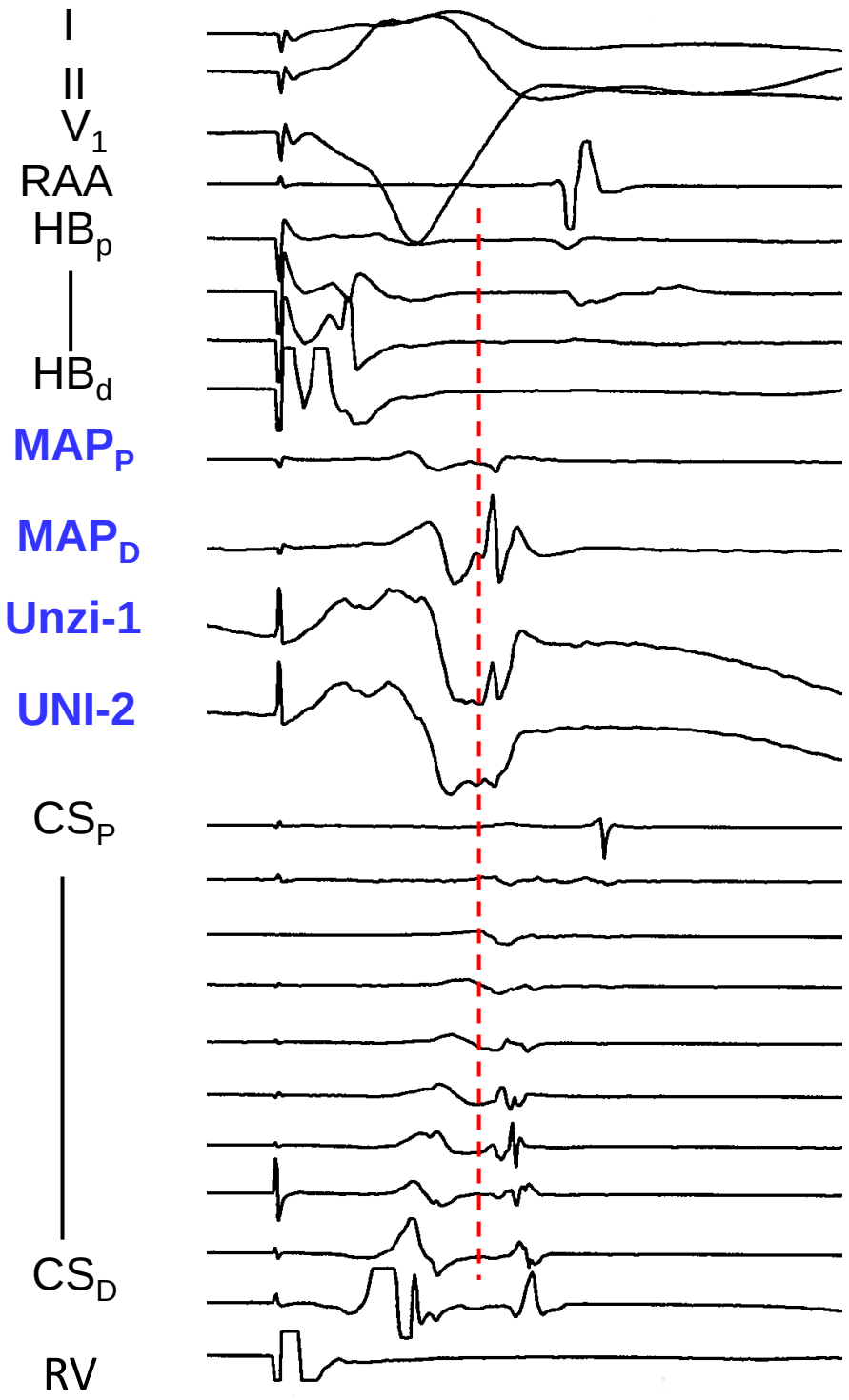


Fig 5.17B.


I
II
V1
RAA
HBp
HBd
MAPP
MAPD
Unzi-1
UNI-2
CSP
CSD
RV

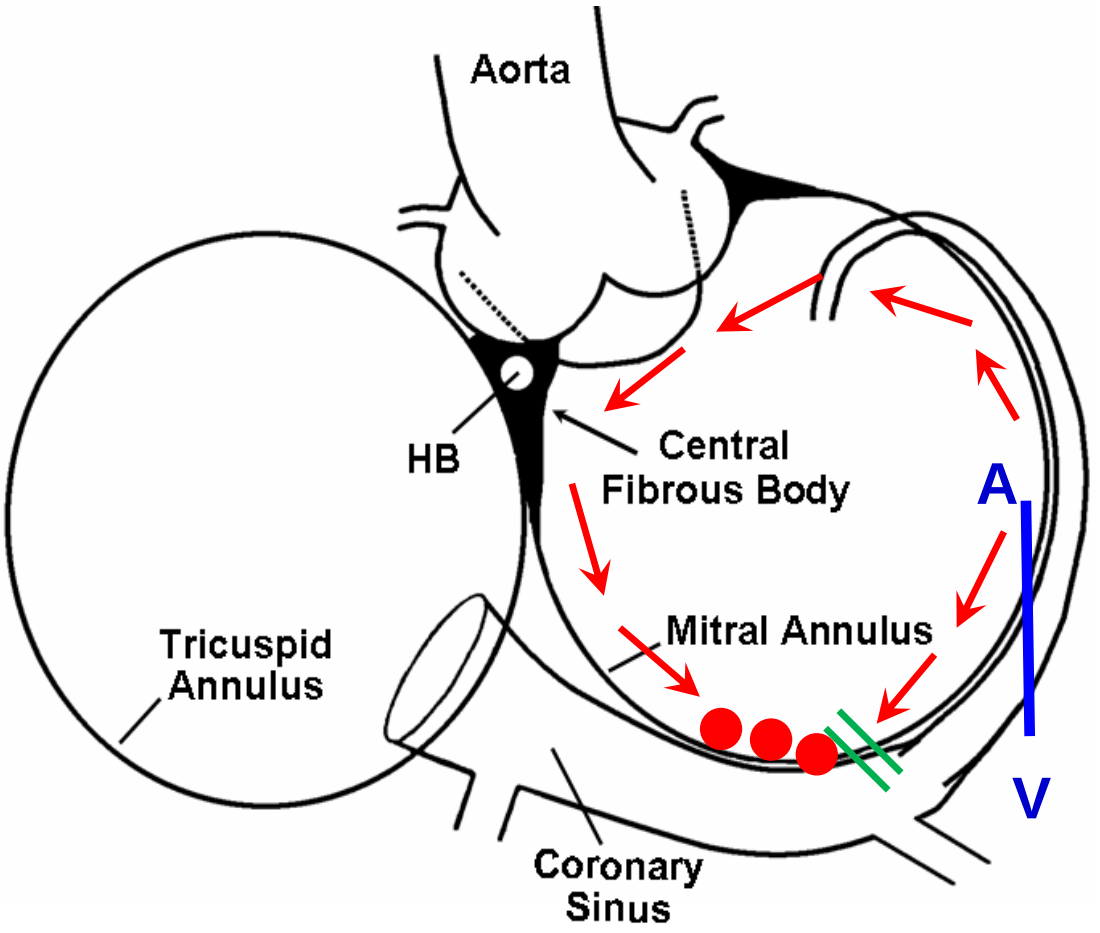
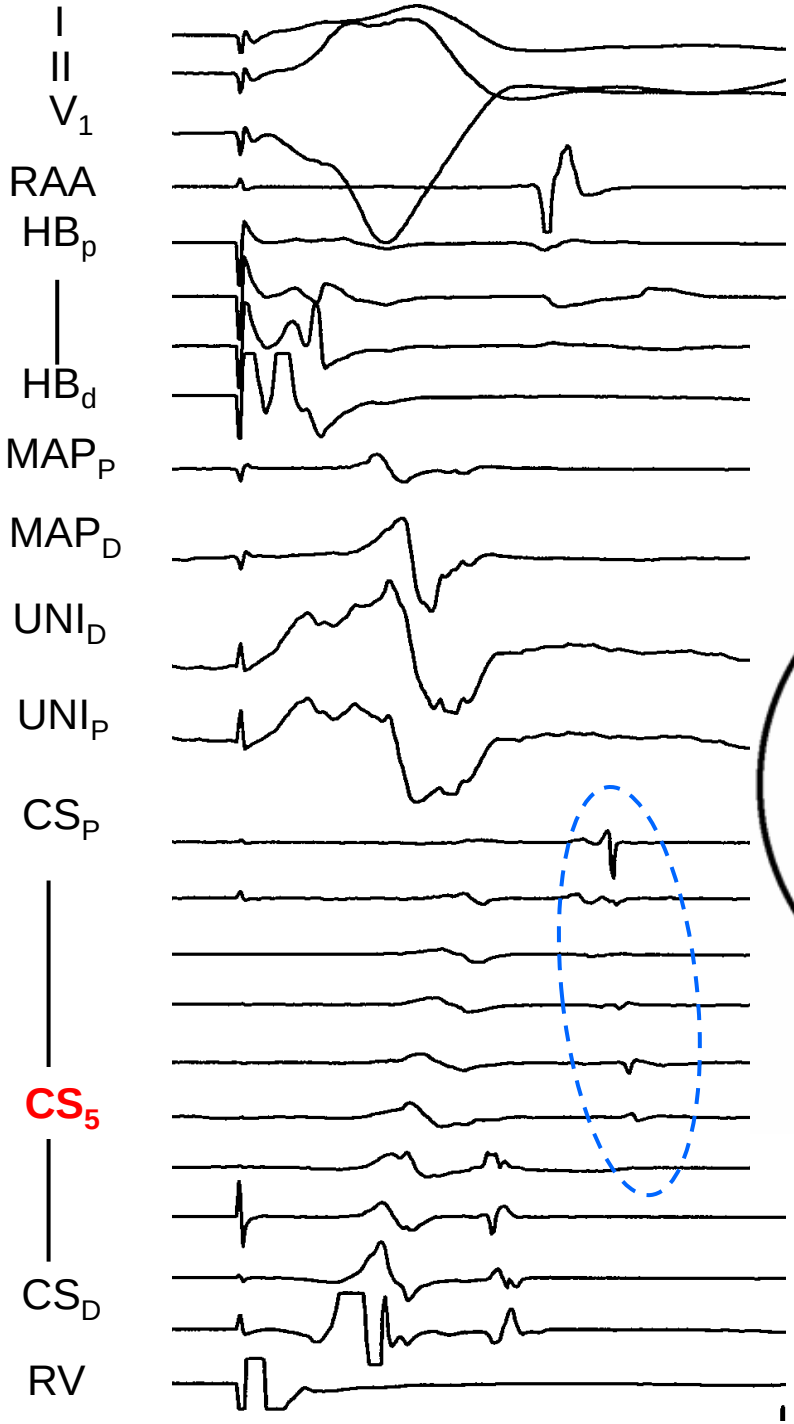

Aorta
HB
Central
Fibrous Body
A
Mitral Annulus
Tricuspid
Annulus
V
Coronary
Sinus

Fig 5.17C.


I
II
V1
RAA
HBp
HBd
MAPP
MAPD
UNID
UNIP
CSP
CS5
CSD
RV

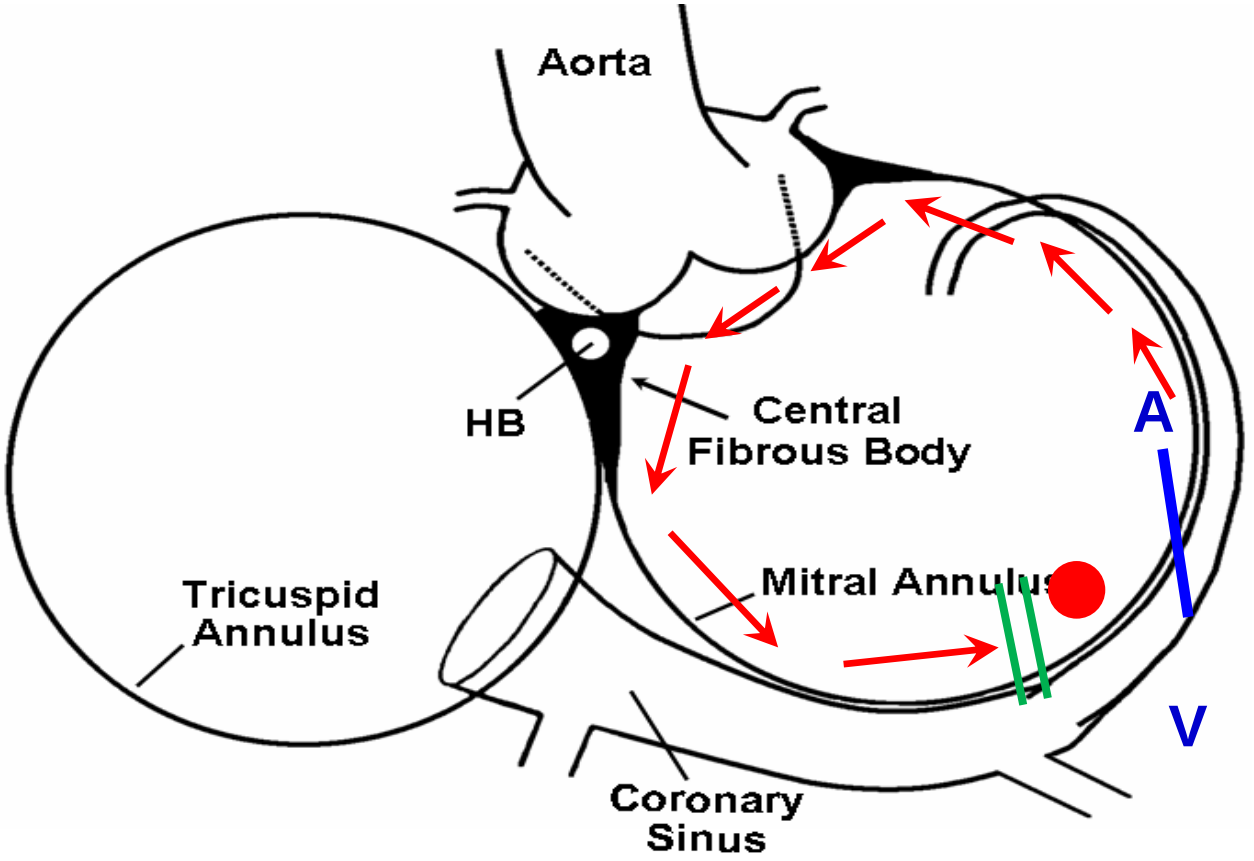

Aorta
HB
Central
Fibrous Body
A
Tricuspid
Annulus
Mitral Annulus
V
Coronary
Sinus

Fig 5.17D.

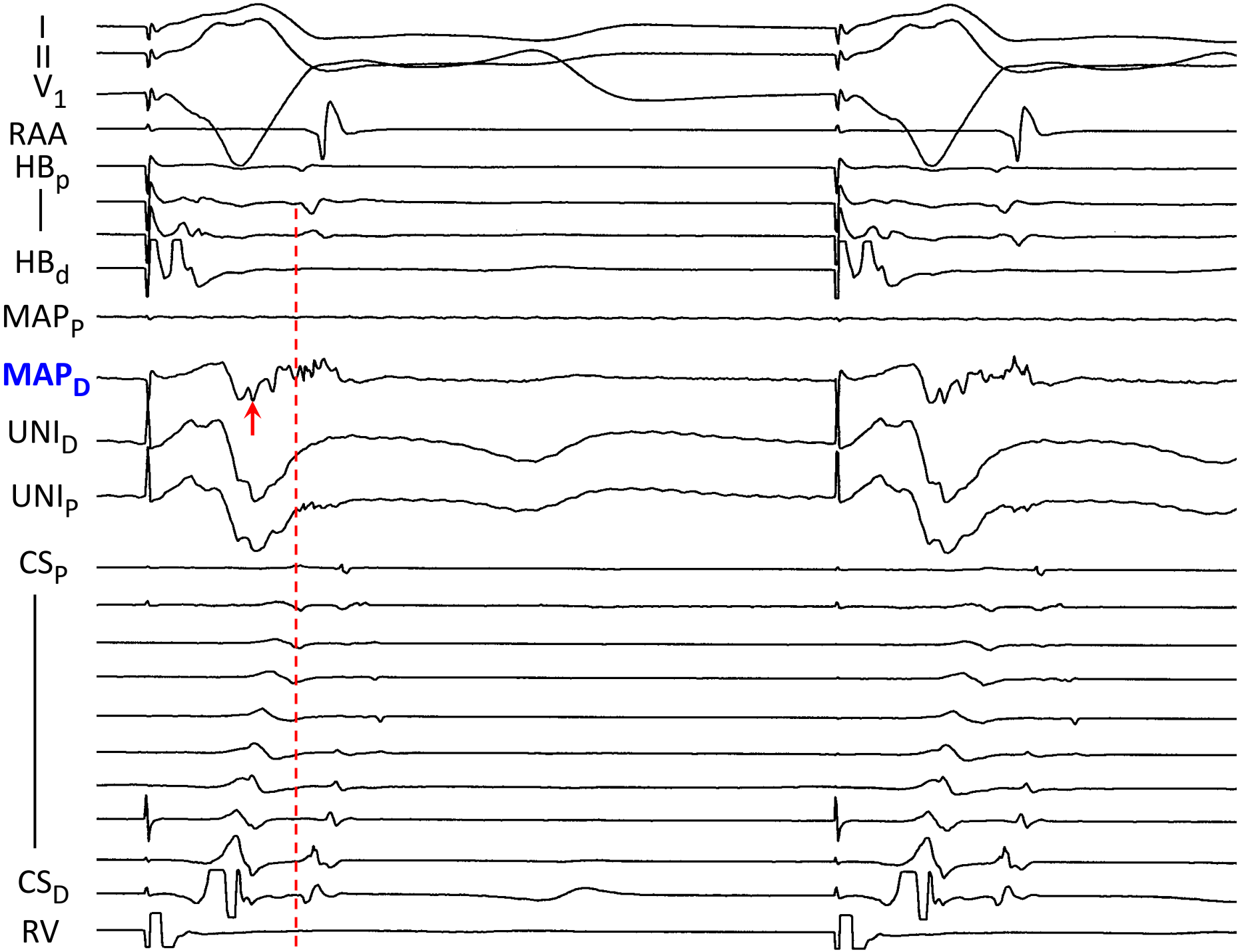


Fig 5.17E

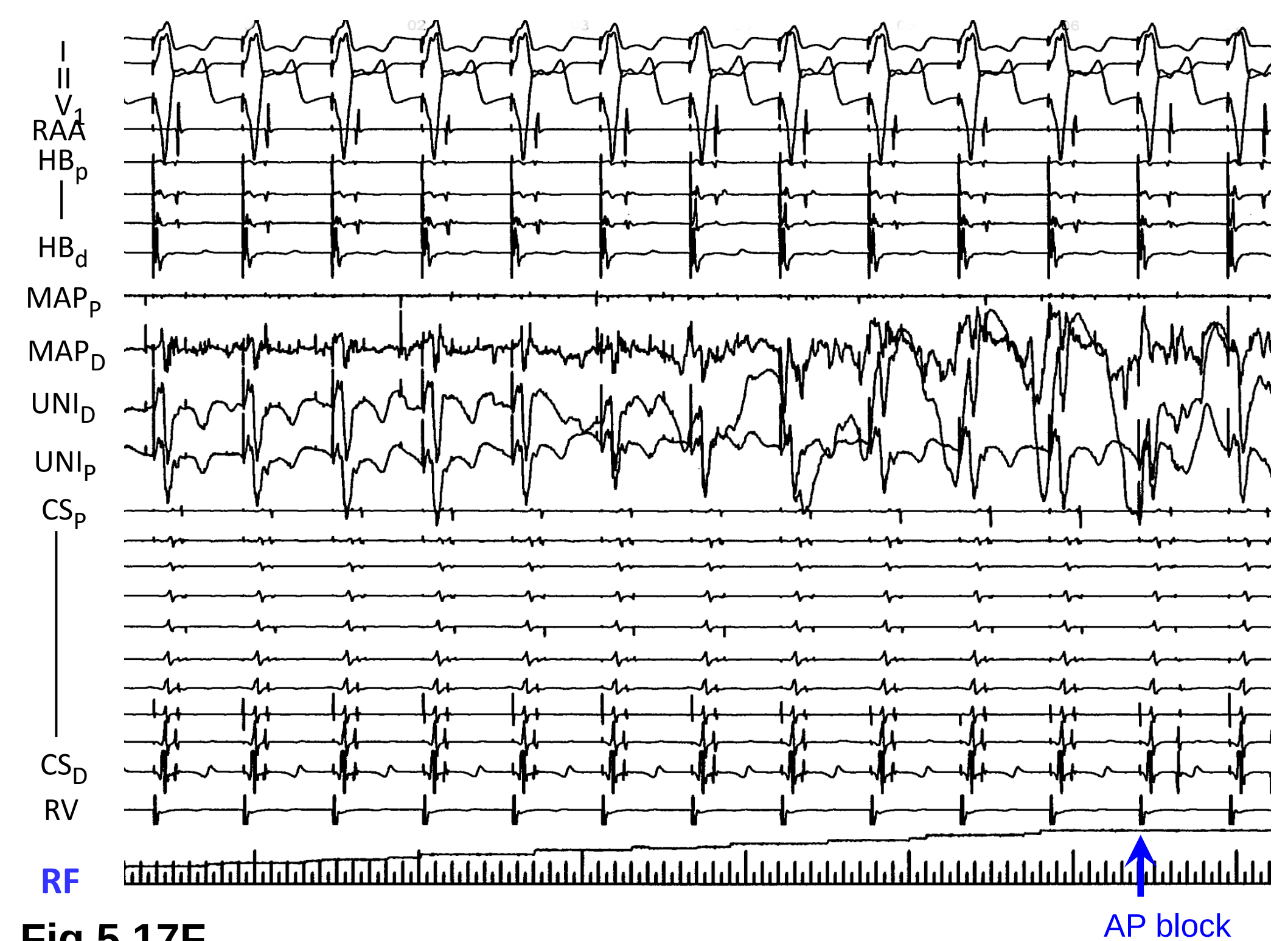


Fig 5.17F.

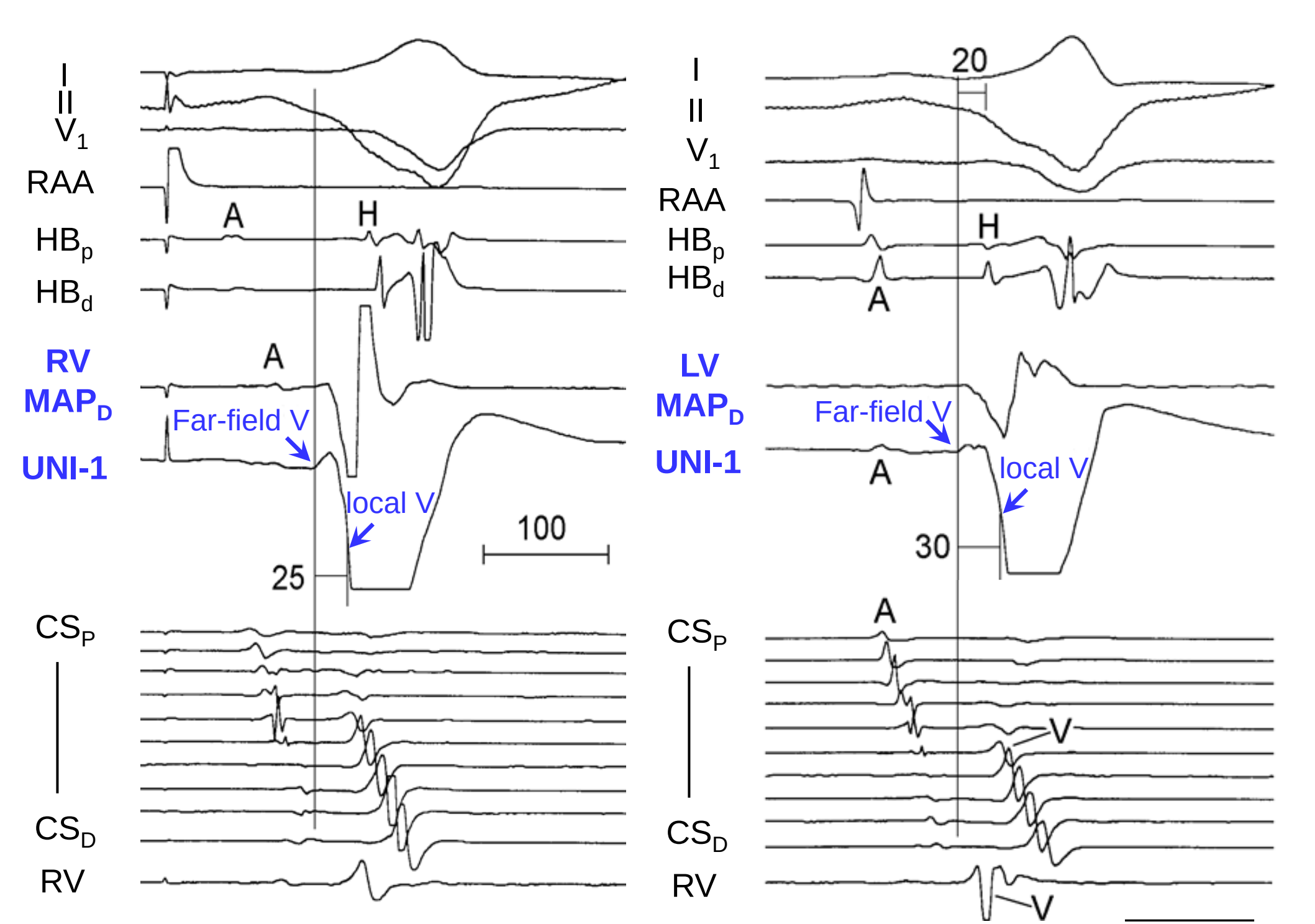

I
II
V1
RAA
HBp
HBd
RV
MAPD
UNI-1
CSP
CSD
RV
A
H
Far-field V
local V
100
25
20
LV
30
V
100 ms

Fig 5.18A.

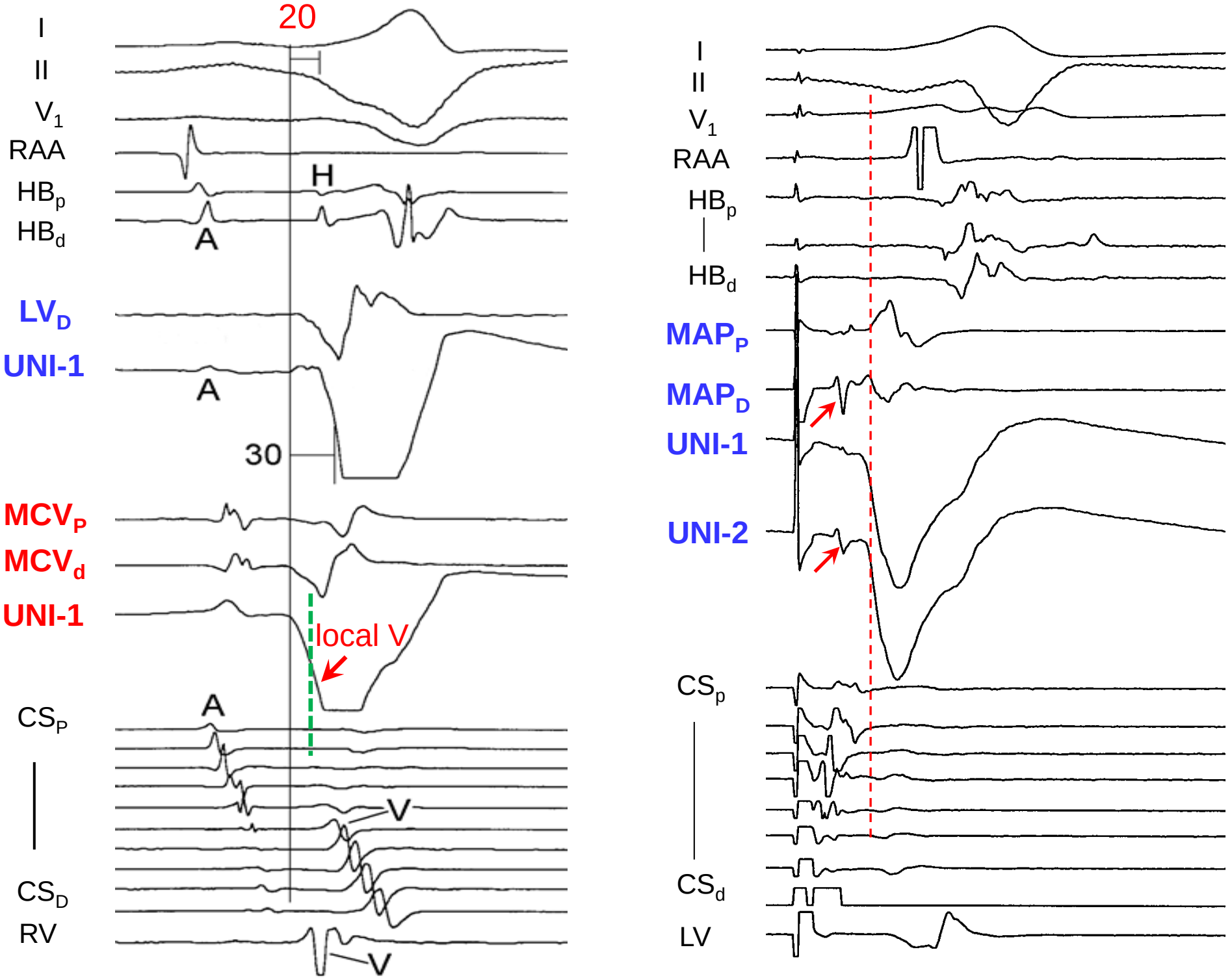

I
II
V1
RAA
HBp
HBd
LVD
UNI-1
MCVP
MCVd
UNI-1
CSP
CSD
RV
20
30
H
A
A
local V
A
V
V
I
II
V1
RAA
HBp
HBd
MAPP
MAPD
UNI-1
UNI-2
CSp
CSd
LV

Fig 5.18B

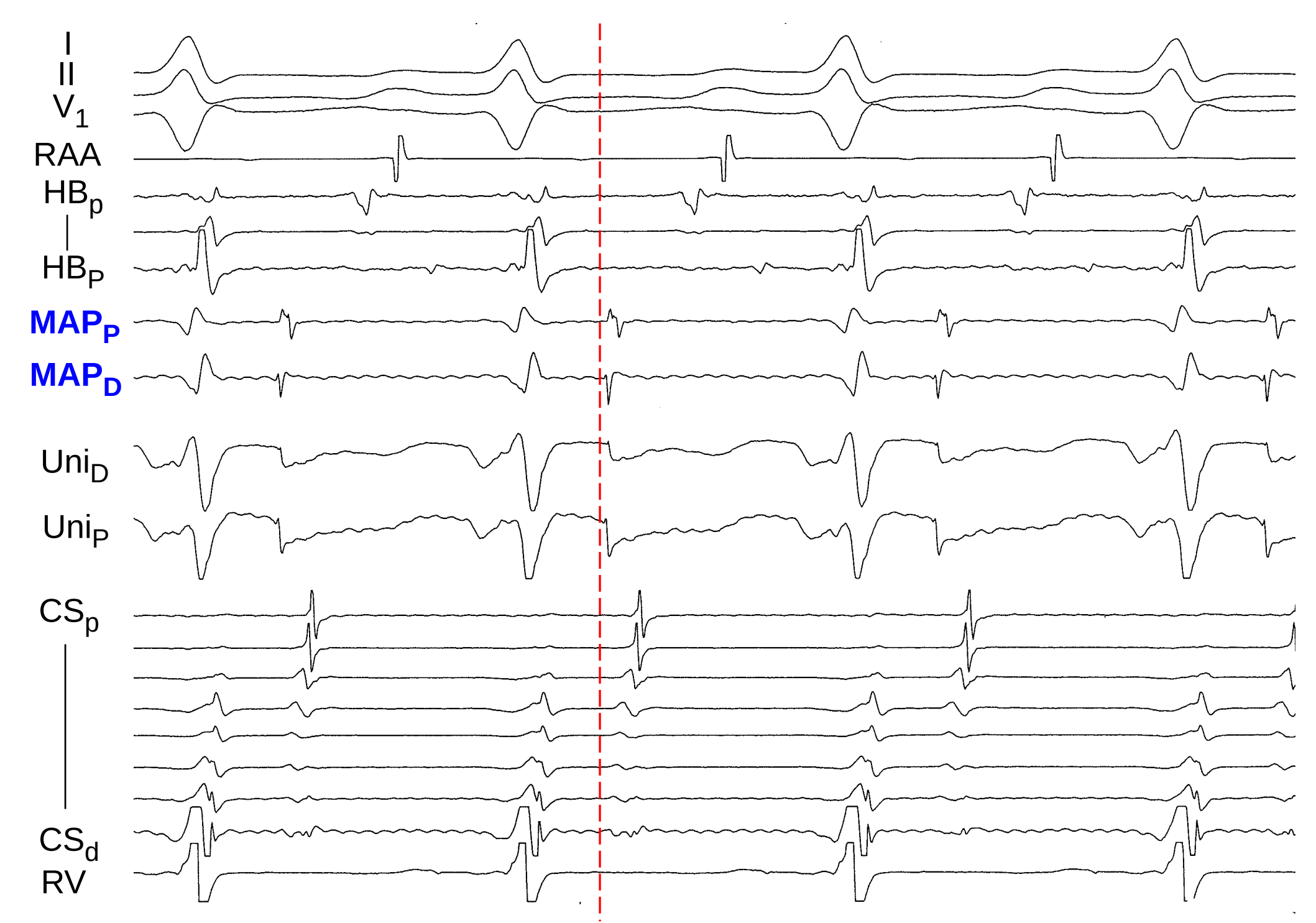


Figure 5.19A

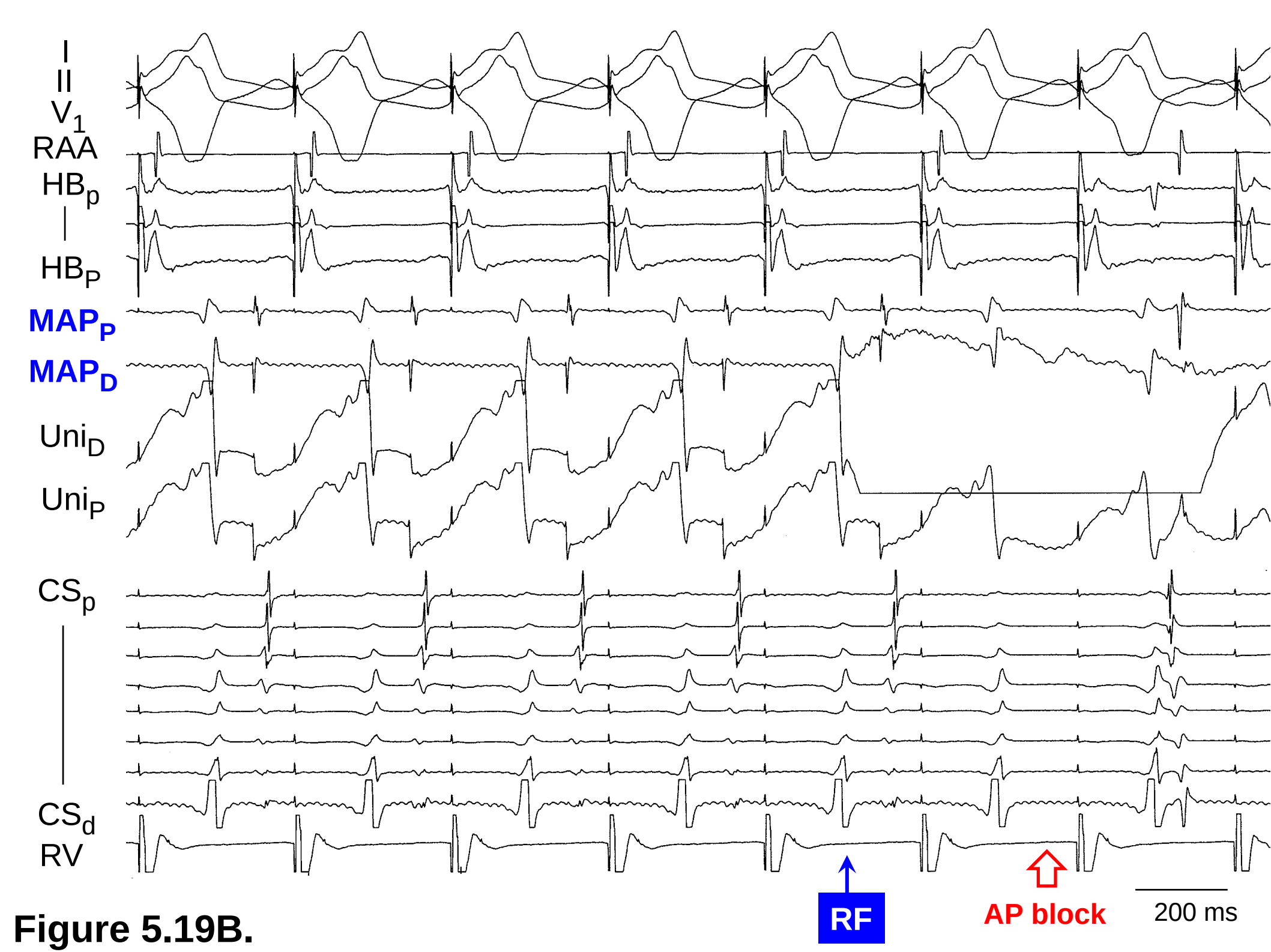

I
II
V1
RAA
HBp
HBP
MAPP
MAPD
UniD
UniP
CSp
CSd
RV
RF
AP block
200 ms

Figure 5.19B.

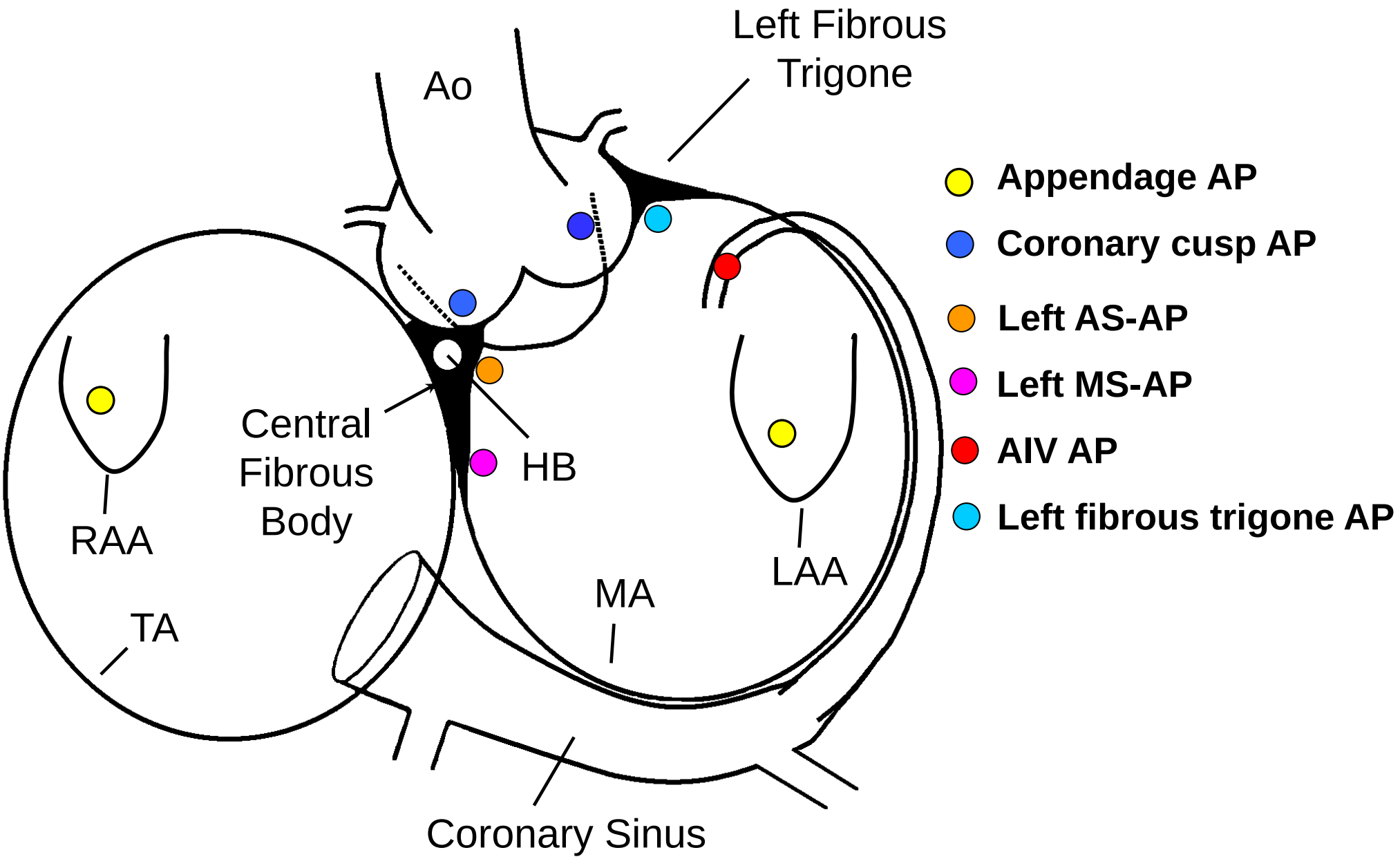

Left Fibrous
Trigone
Ao
Appendage AP
Coronary cusp AP
Left AS-AP
Left MS-AP
AIV AP
Left fibrous trigone AP
Central
Fibrous
Body
HB
RAA
LAA
MA
TA
Coronary Sinus

Fig 5.20A

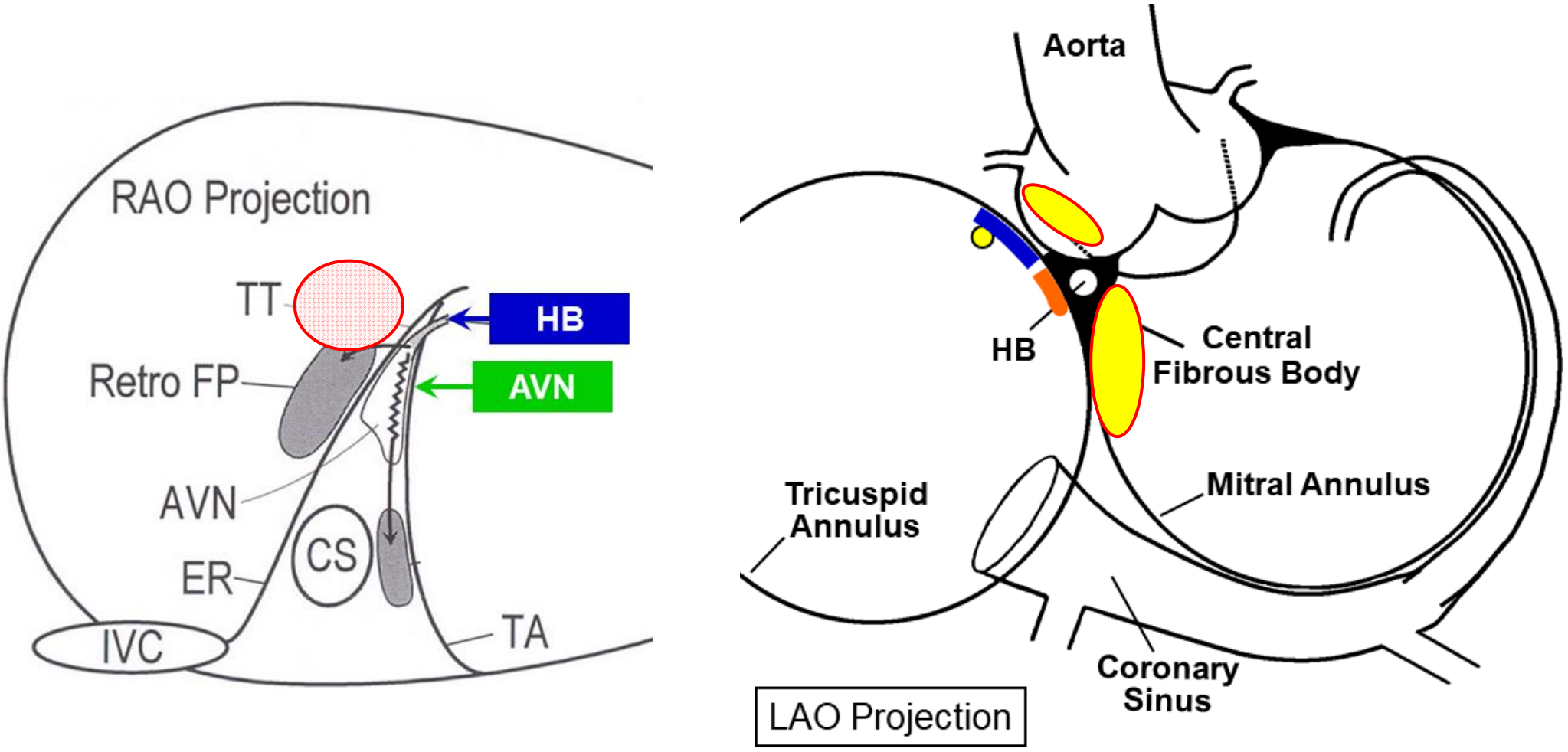

RAO Projection
TT
HB
Retro FP
AVN
AVN
CS
ER
IVC
TA
Aorta
HB
Central
Fibrous Body
Tricuspid
Annulus
Mitral Annulus
Coronary
Sinus
LAO Projection

Fig. 5.-20B

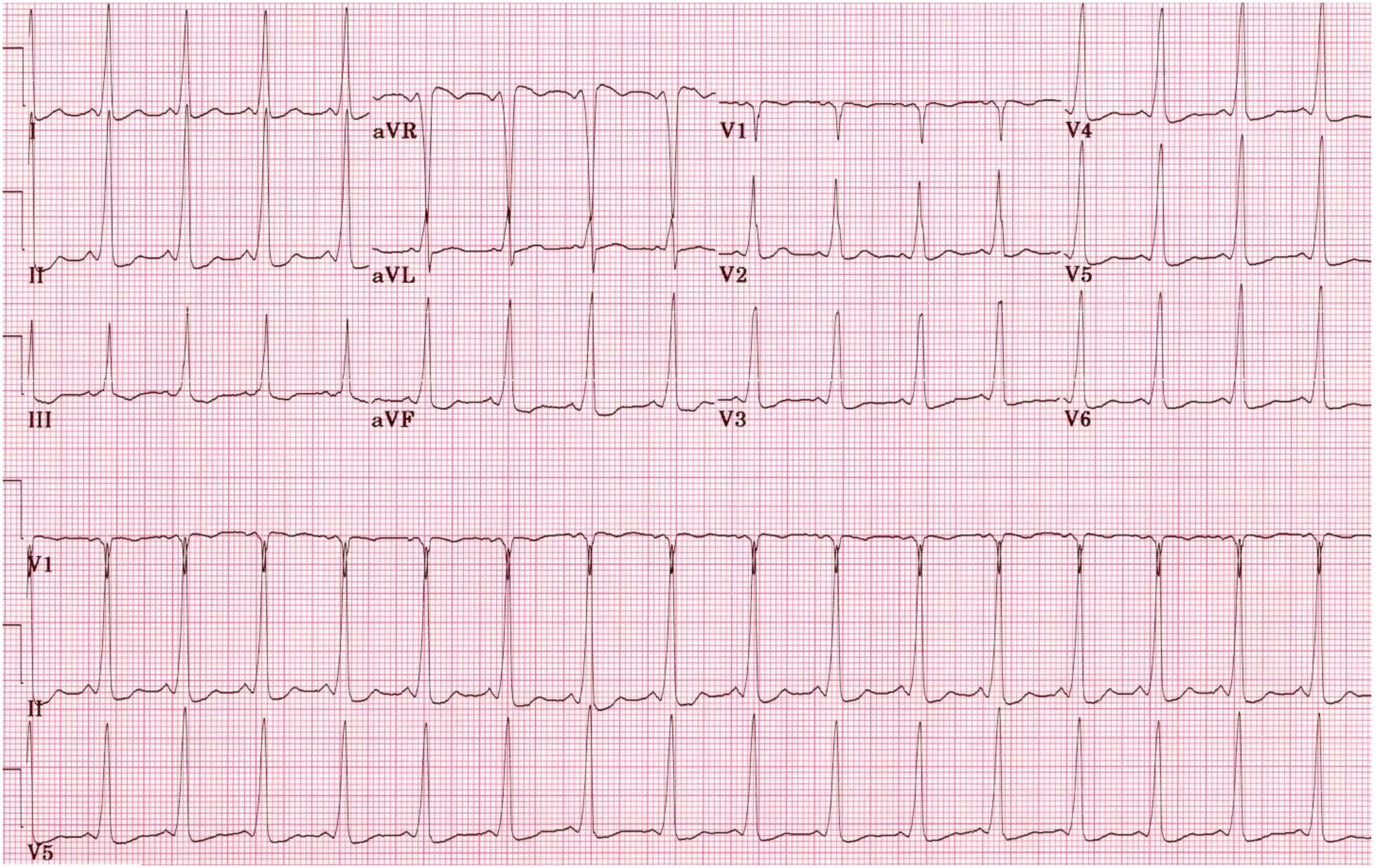


Fig 5.21A

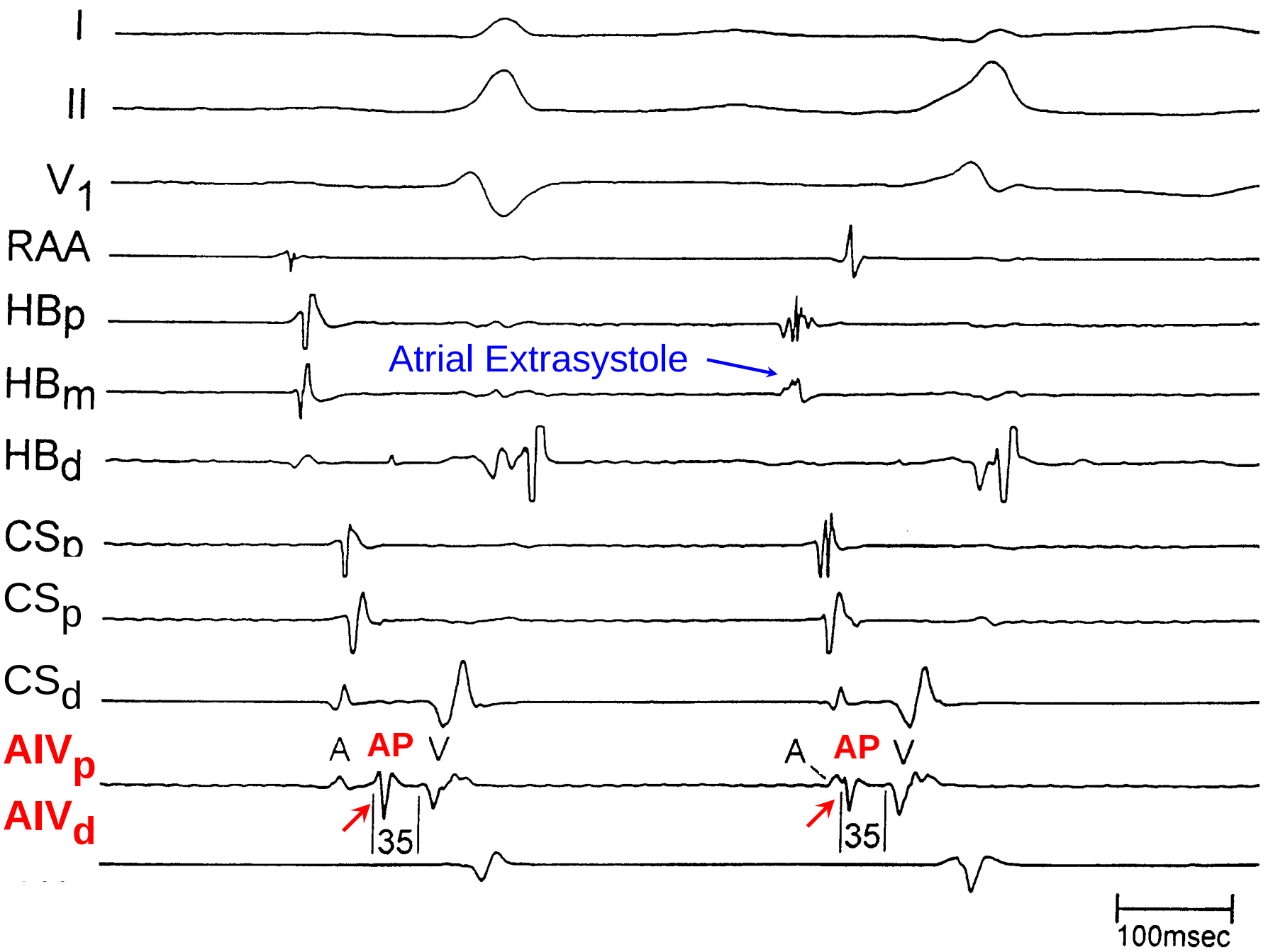


Figure 5.21B

Courtesy of Dr. Jackman

AP at the junction of great cardiac vein and anterior interventricular vein

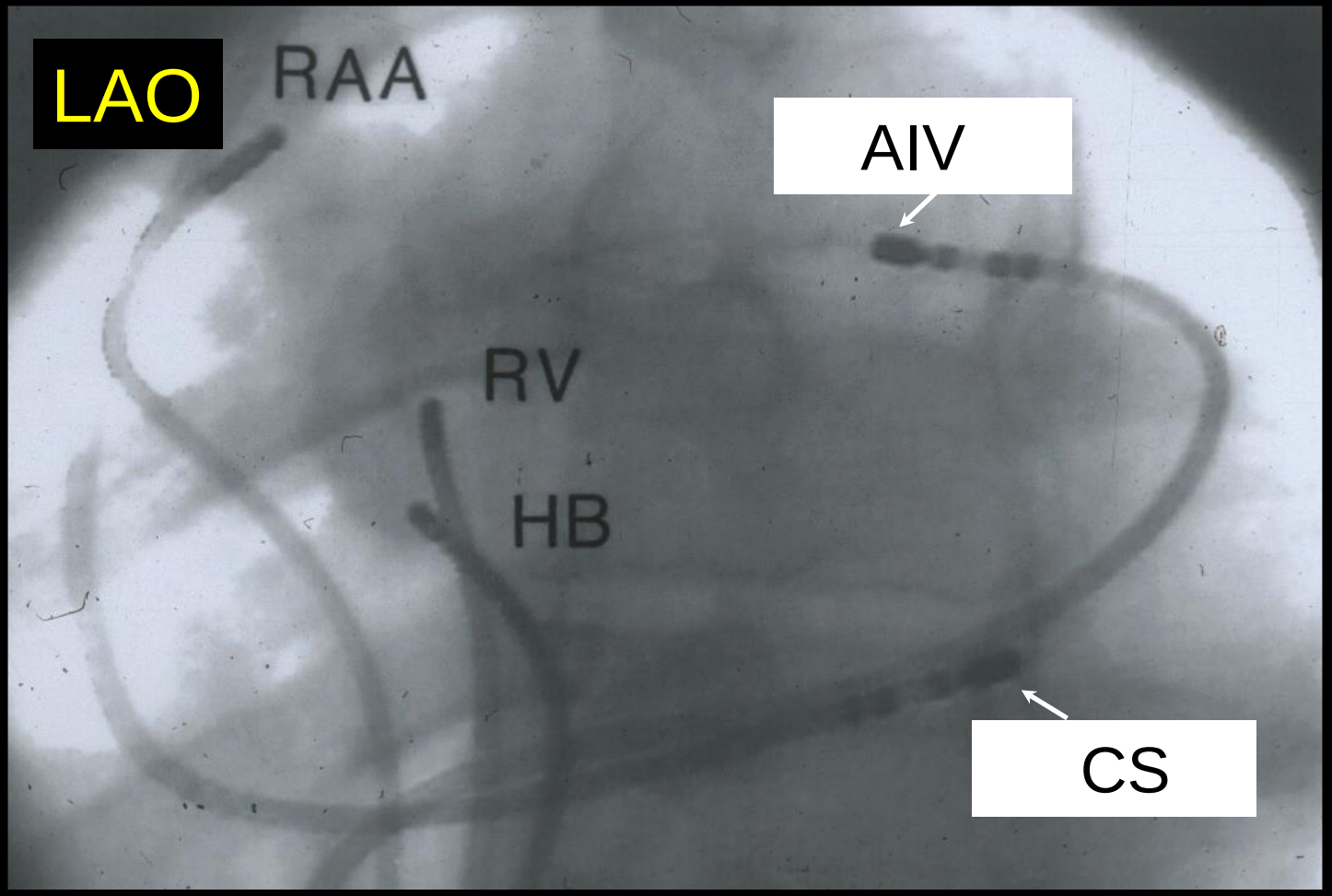


Figure 5.21C

Preexcitation Pattern Suggesting Left Anterolateral AP

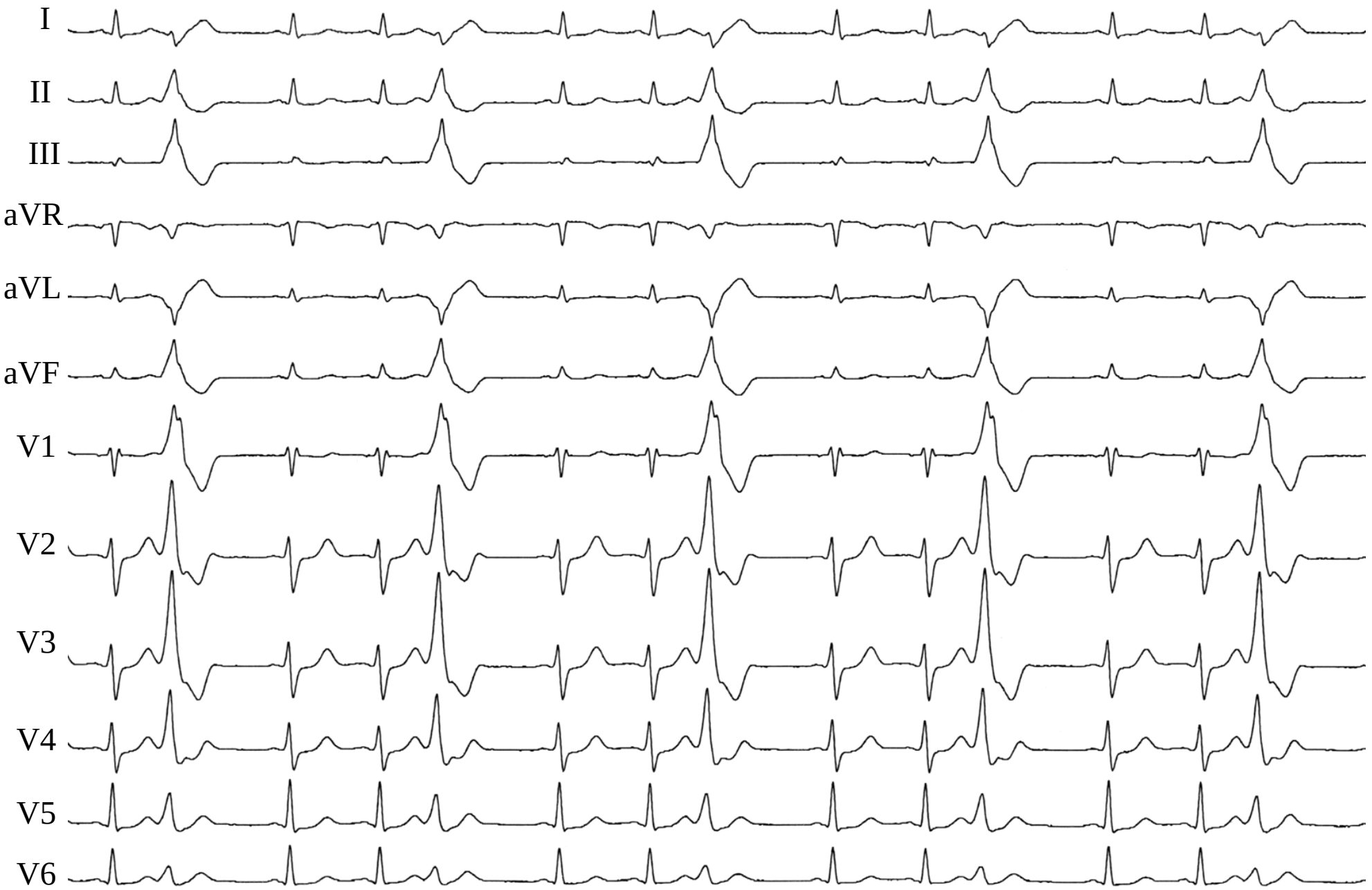


Figure 5.21D

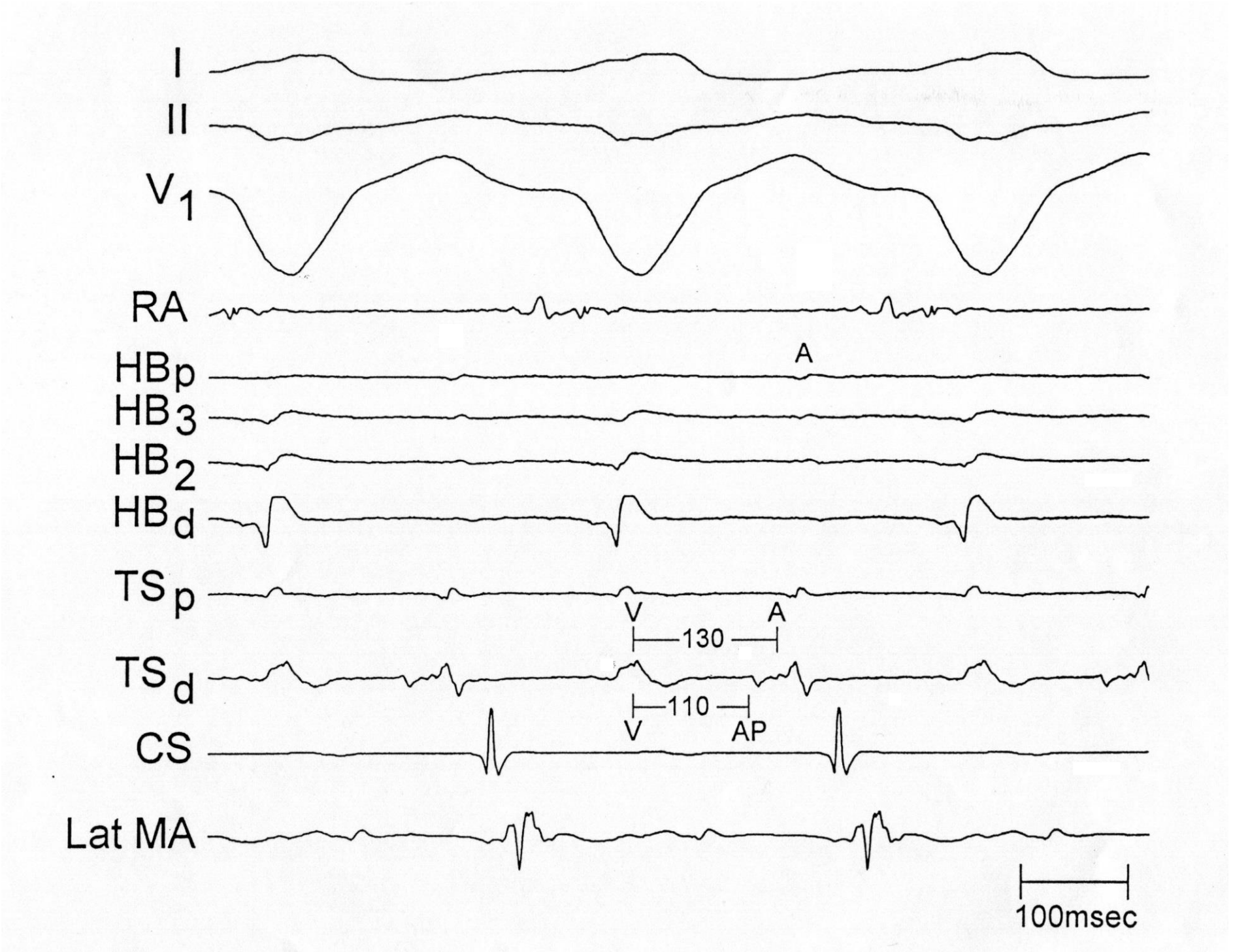


Figure 5.21E

Courtesy of Dr. Jackman

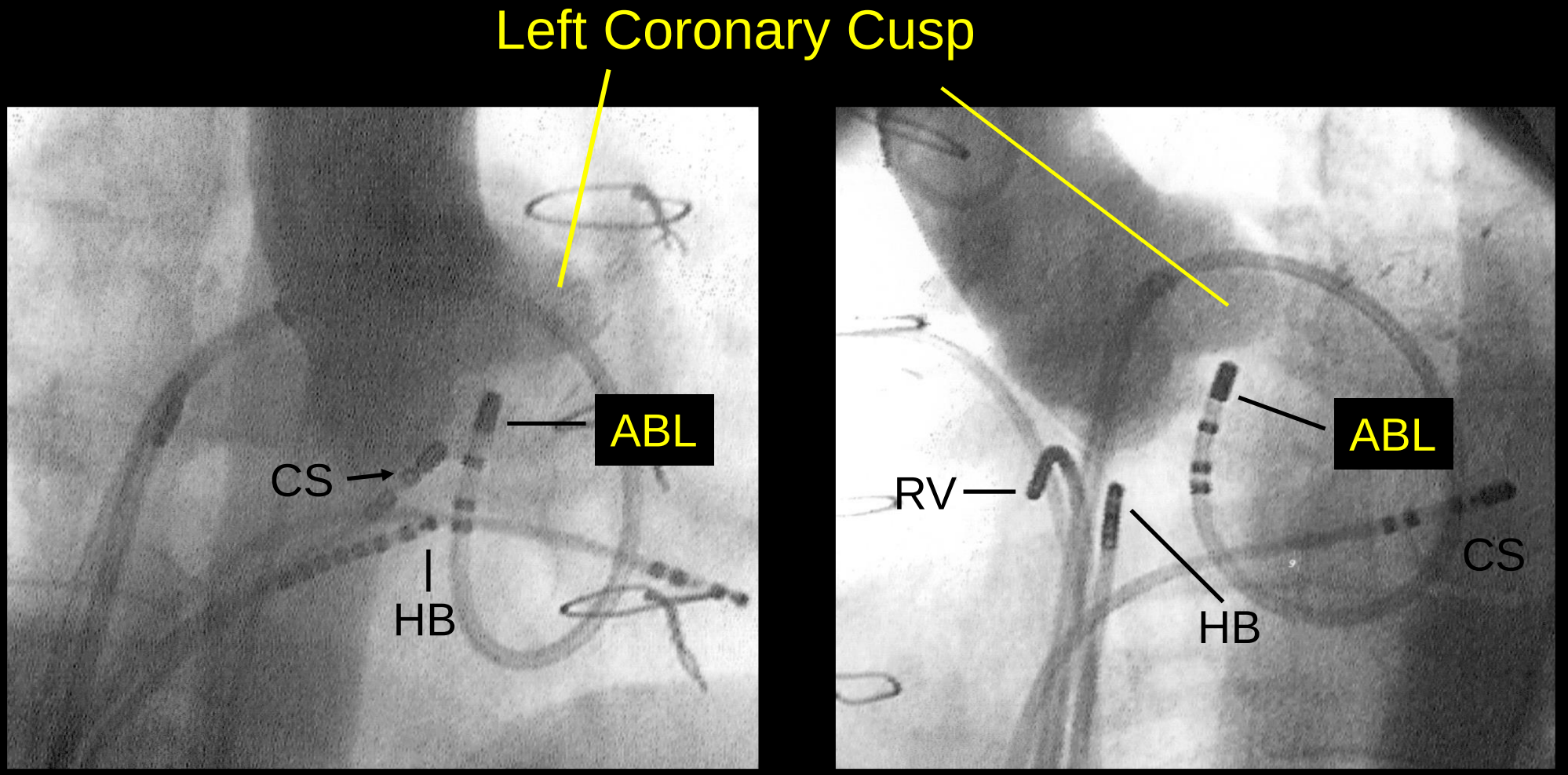


Figure 5.21F

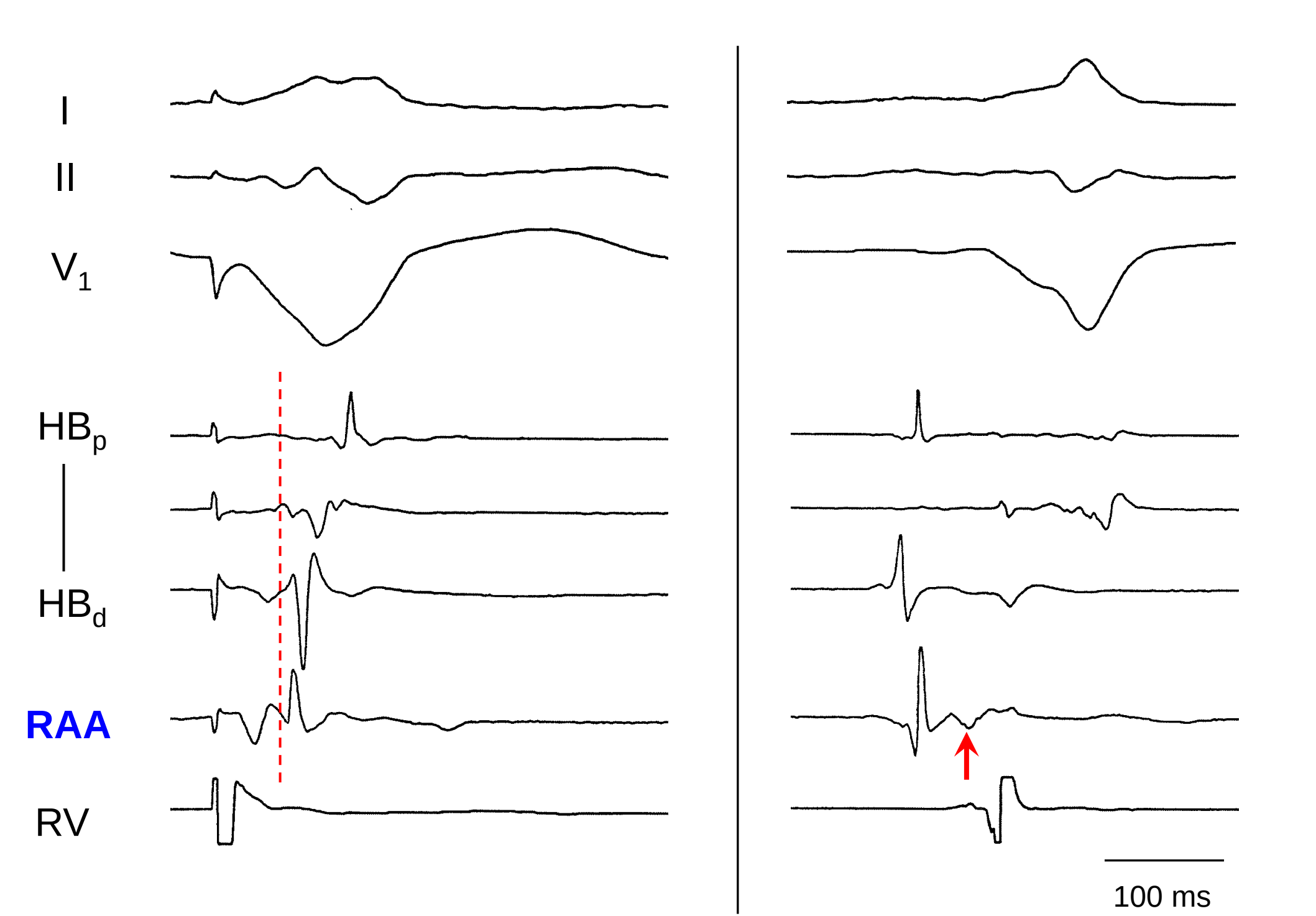


Fig 5.22

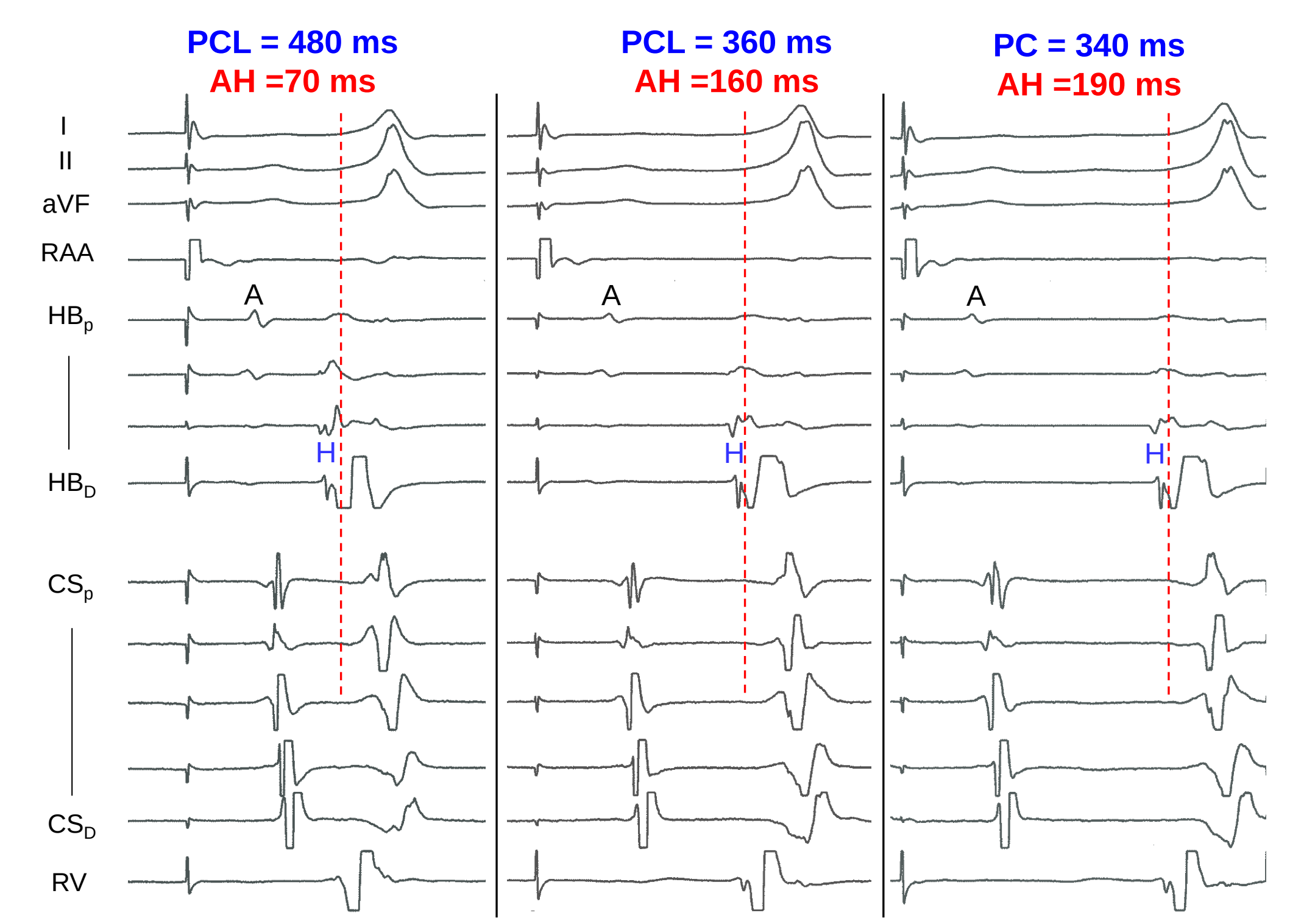

PCL = 480 ms
AH =70 ms
PCL = 360 ms
AH =160 ms
PC = 340 ms
AH =190 ms
I
II
aVF
RAA
A
A
A
HBp
H
H
H
HBD
CSp
CSD
RV
100 ms

Figure 5.23A

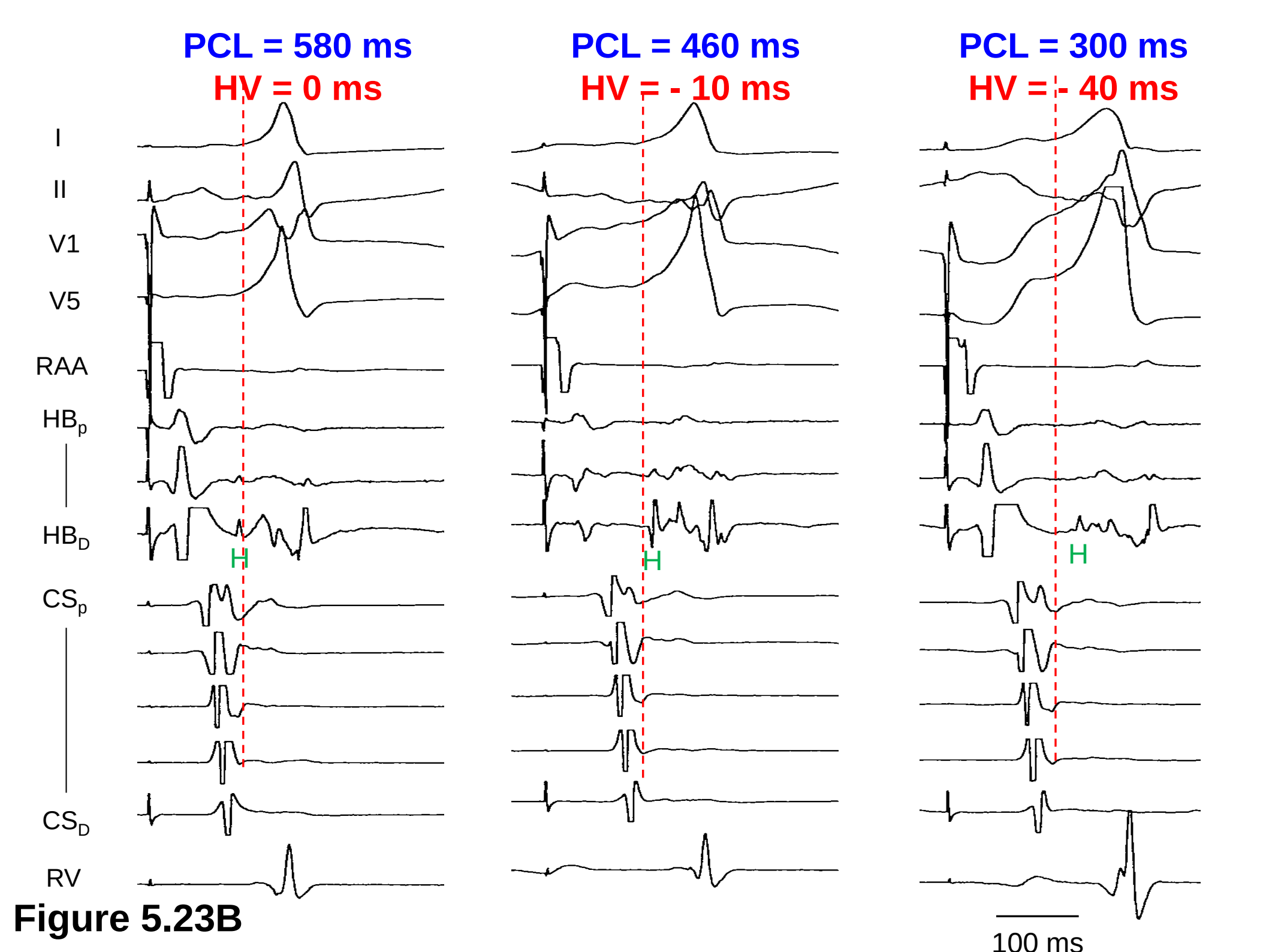

PCL = 580 ms
HV = 0 ms
PCL = 460 ms
HV = - 10 ms
PCL = 300 ms
HV = - 40 ms
I
II
V1
V5
RAA
HBp
HBD
CSp
CSD
RV
H
H
H
100 ms

Figure 5.23B

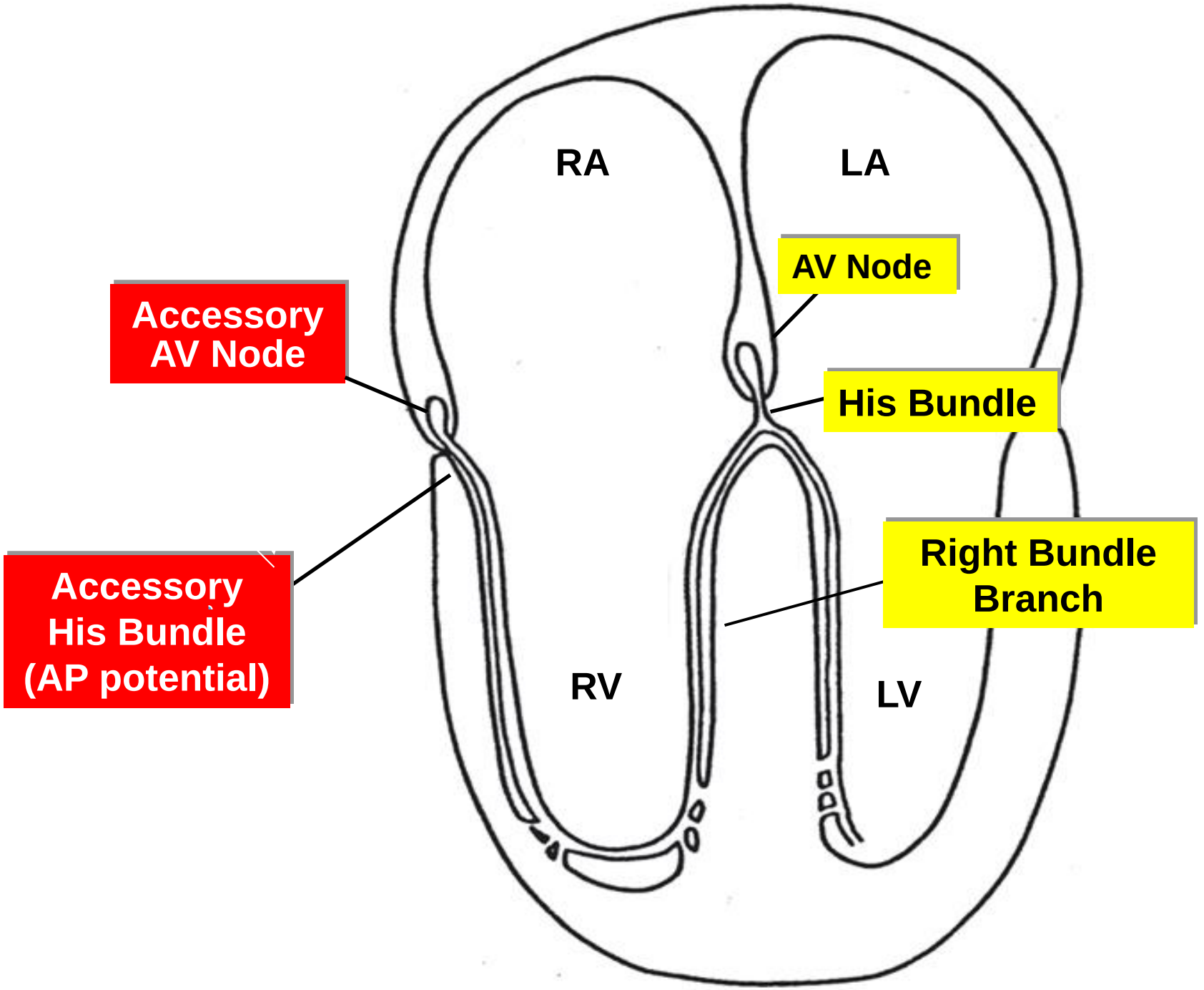

RA
LA
AV Node
Accessory AV Node
His Bundle
Right Bundle Branch
Accessory His Bundle (AP potential)
RV
LV

Figure 5.24A

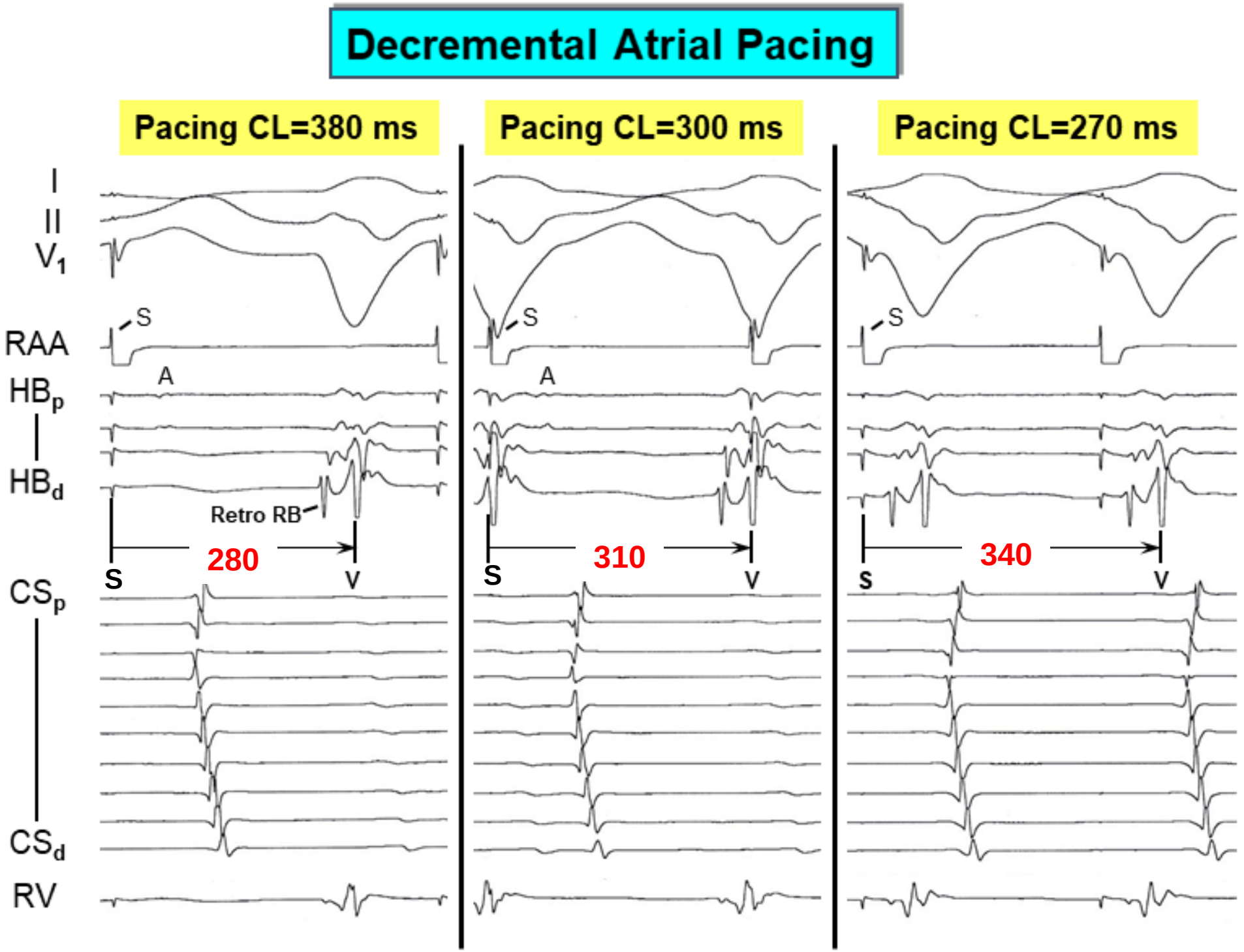

Decremental Atrial Pacing
Pacing CL=380 ms
Pacing CL=300 ms
Pacing CL=270 ms
I
II
V1
RAA
HBp
HBd
CSp
CSd
RV
S
A
Retro RB
280
310
340
S
V

Figure 5.24B

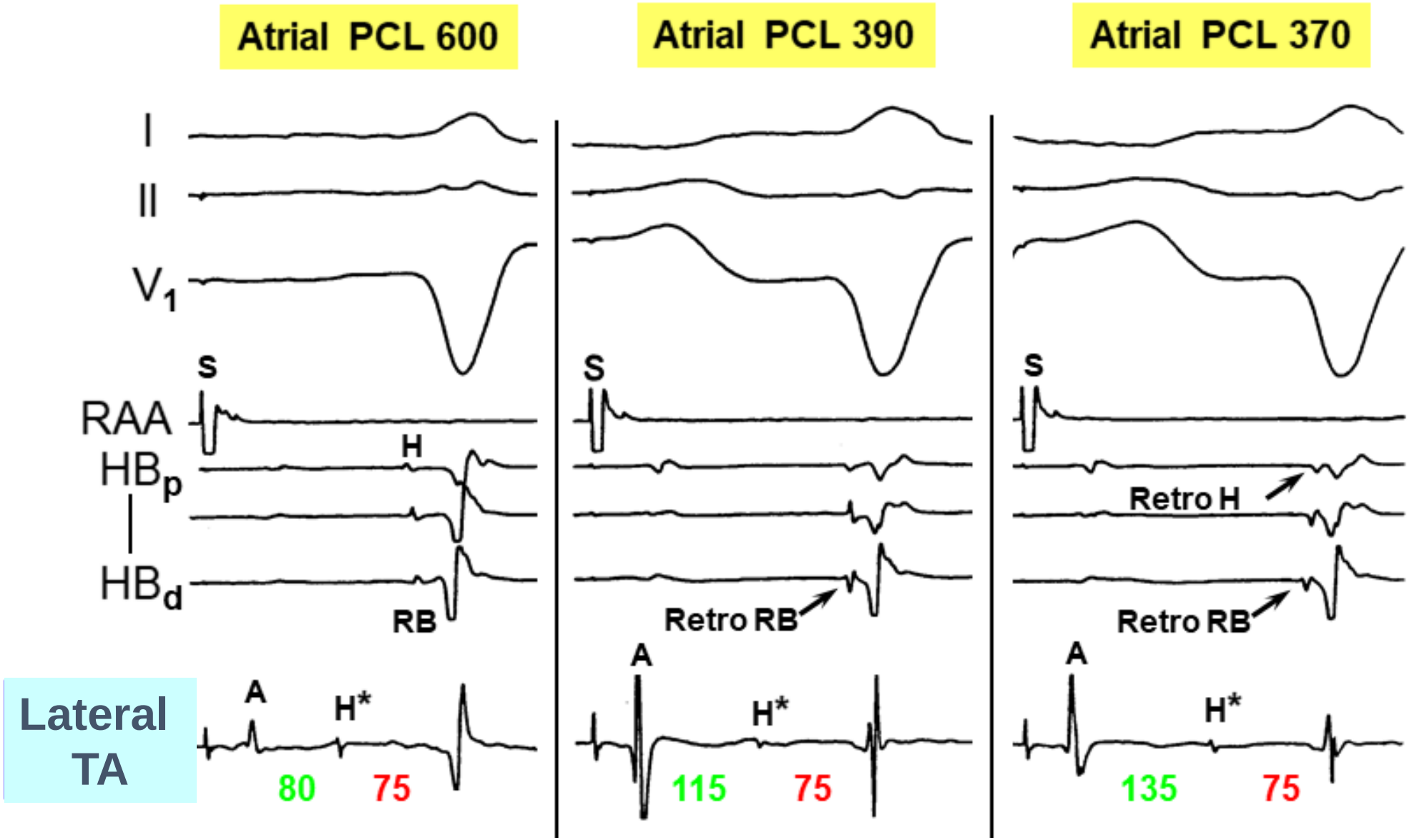

Atrial PCL 600
Atrial PCL 390
Atrial PCL 370
I
II
V1
S
RAA
HBp
HBd
H
RB
Retro H
Retro RB
Retro RB
A
H*
80
75
115
75
135
75
Lateral TA

Figure 5.24C

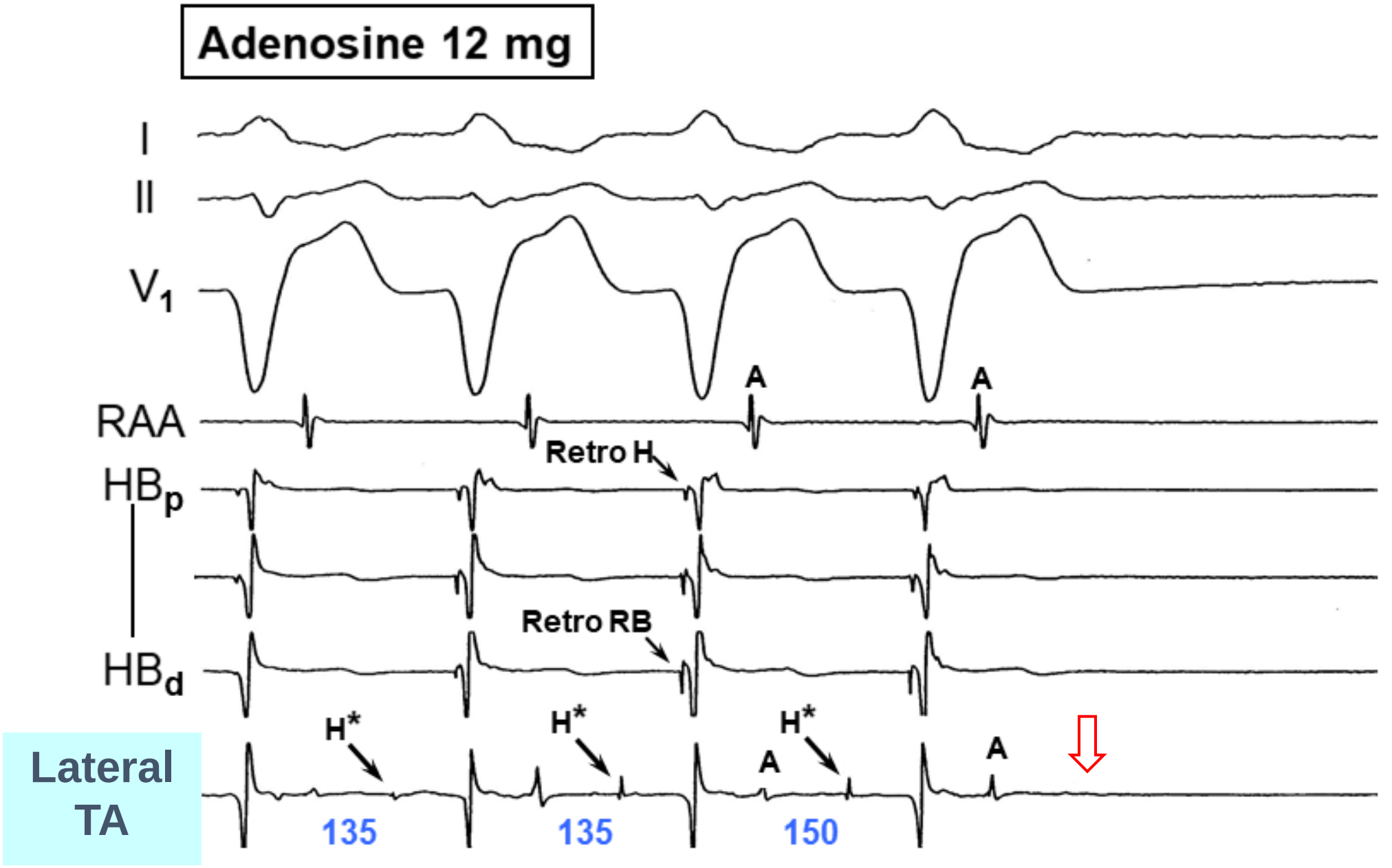
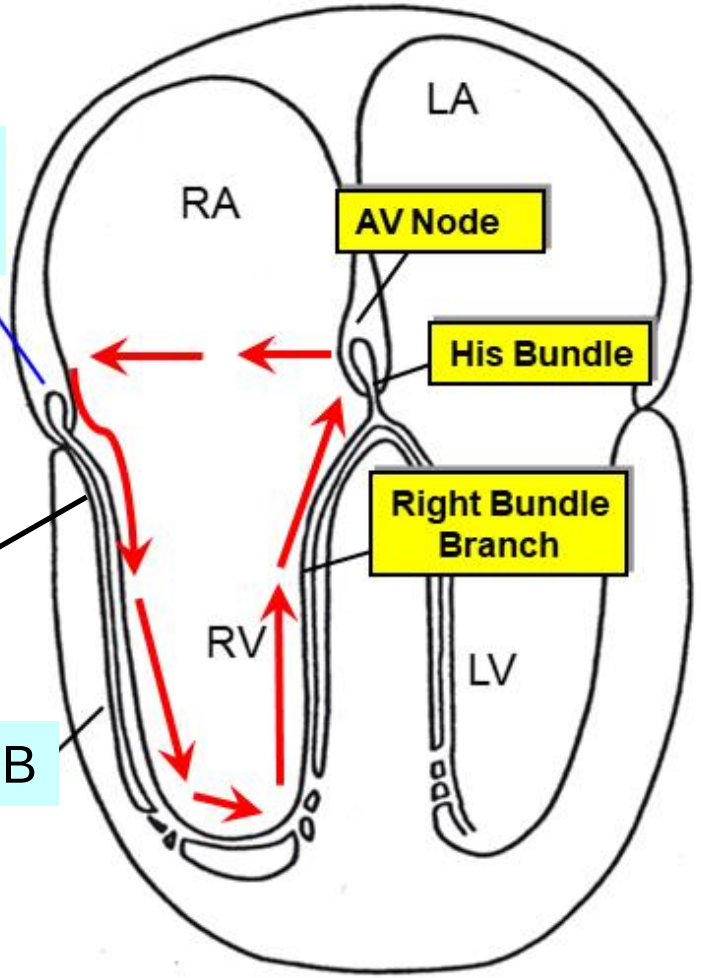

Adenosine 12 mg
I
II
V1
A
A
RAA
Retro H
HBp
Retro RB
HBd
H*
H*
H*
A
A
Lateral TA
135
135
150

Figure 5.24D

Antidromic AVRT

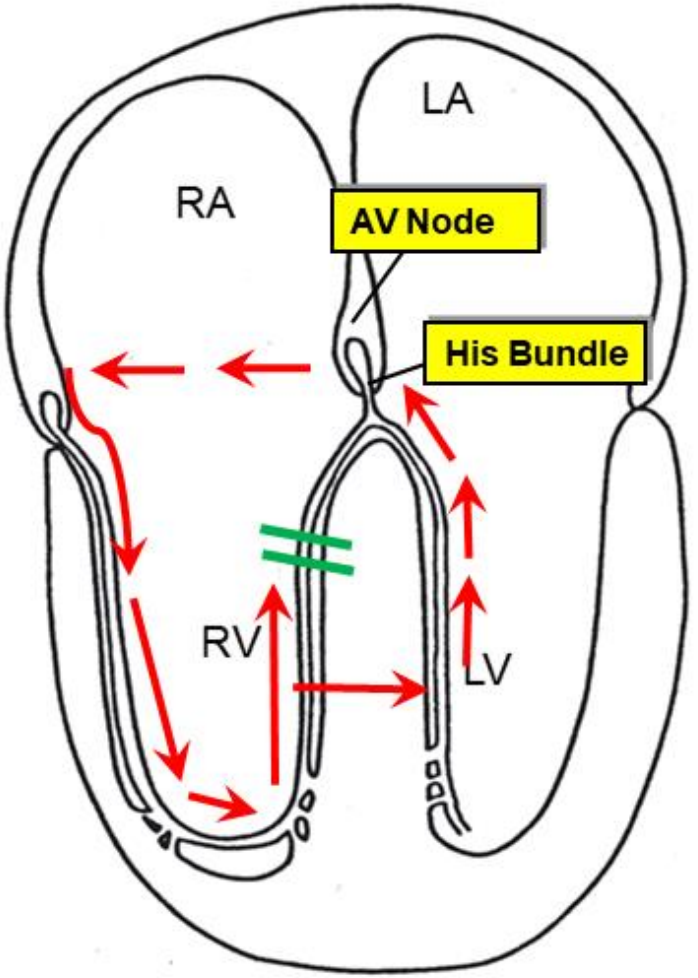


Accessory AV node

Accessory His Bundle

Peripheral RBB

Antidromic AVRT with RBBB



- Longer VH interval
- Longer VA interval

Figure 5.25A

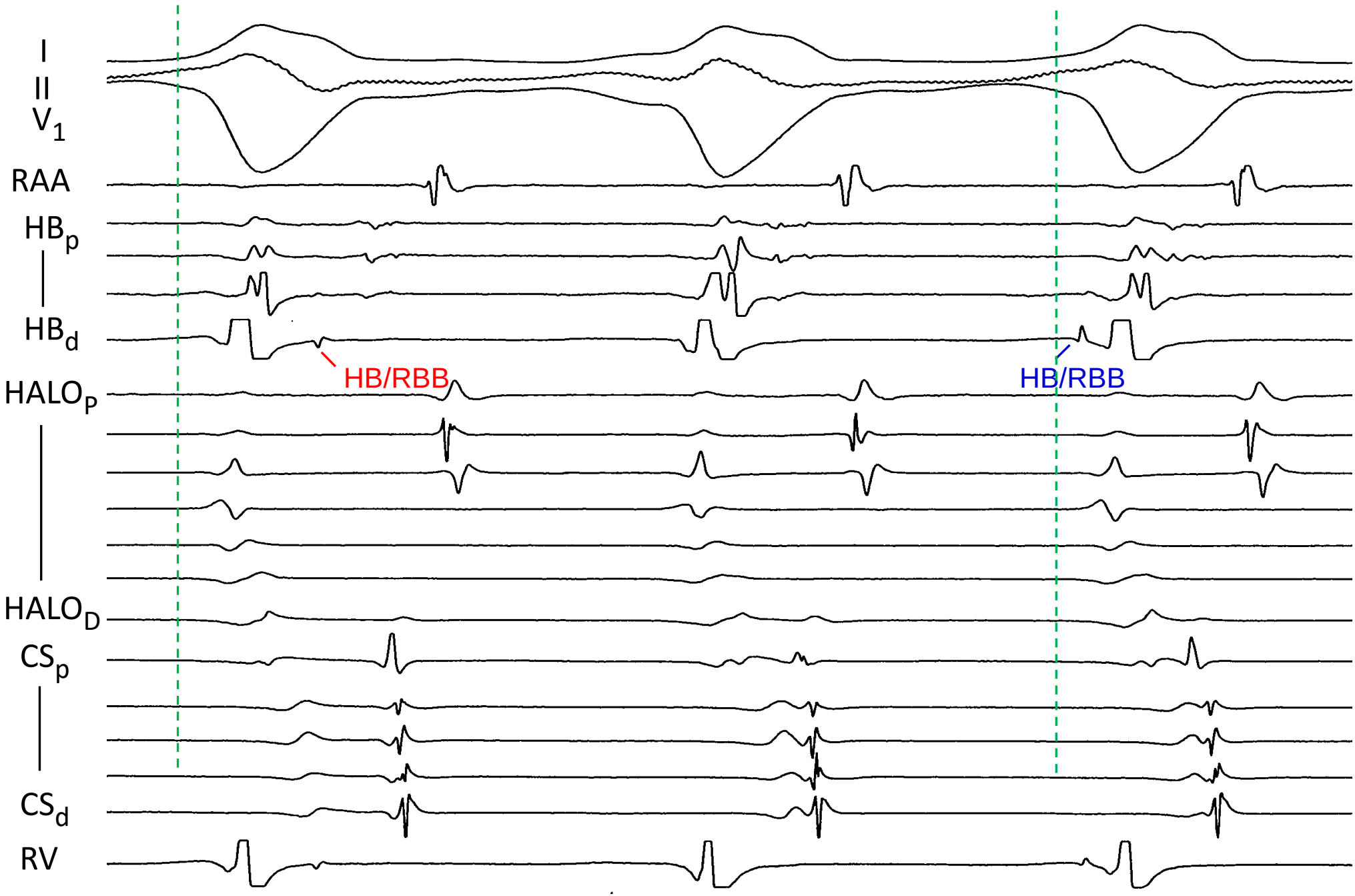


Figure 5.25B

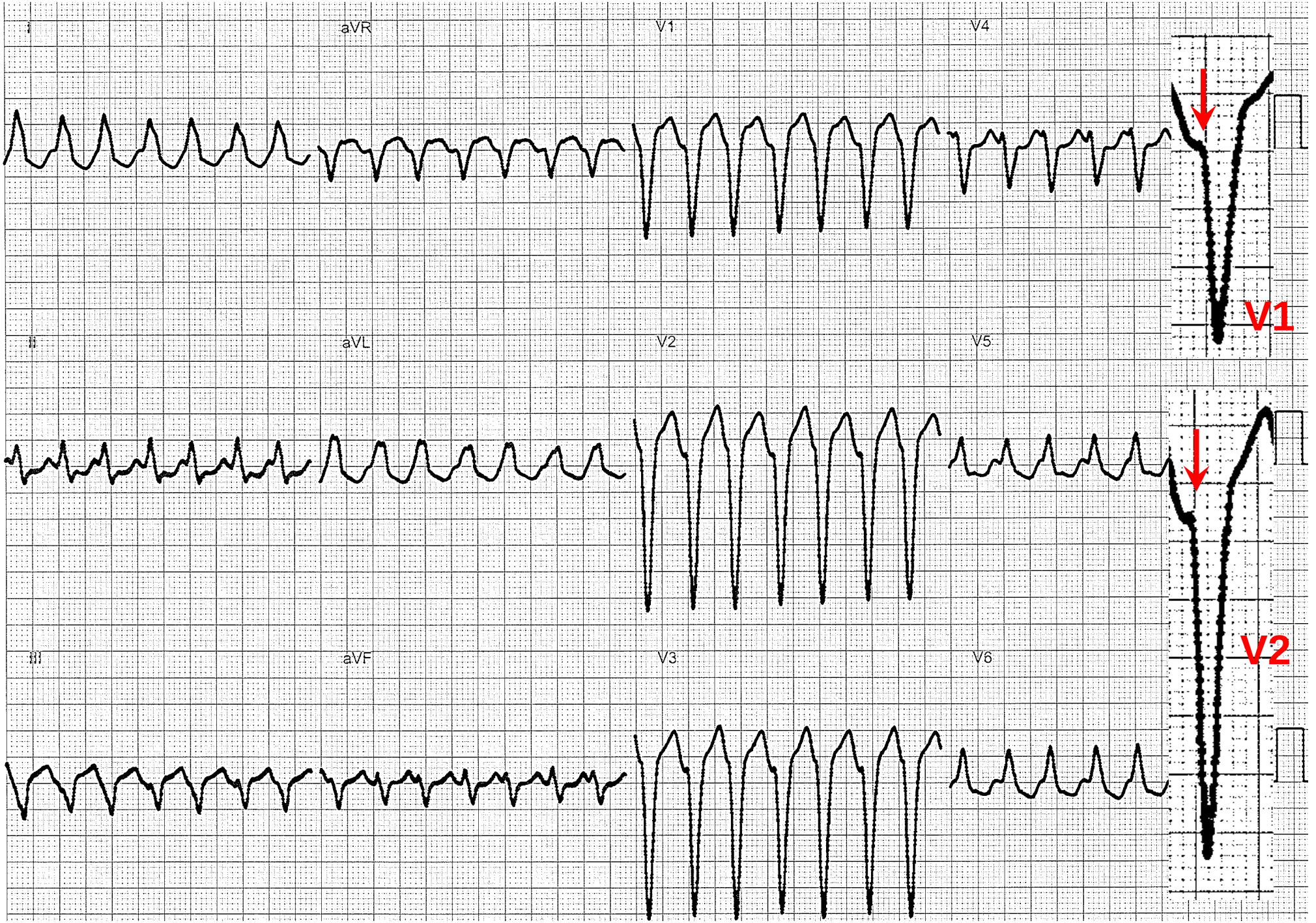


Figure 5.26A

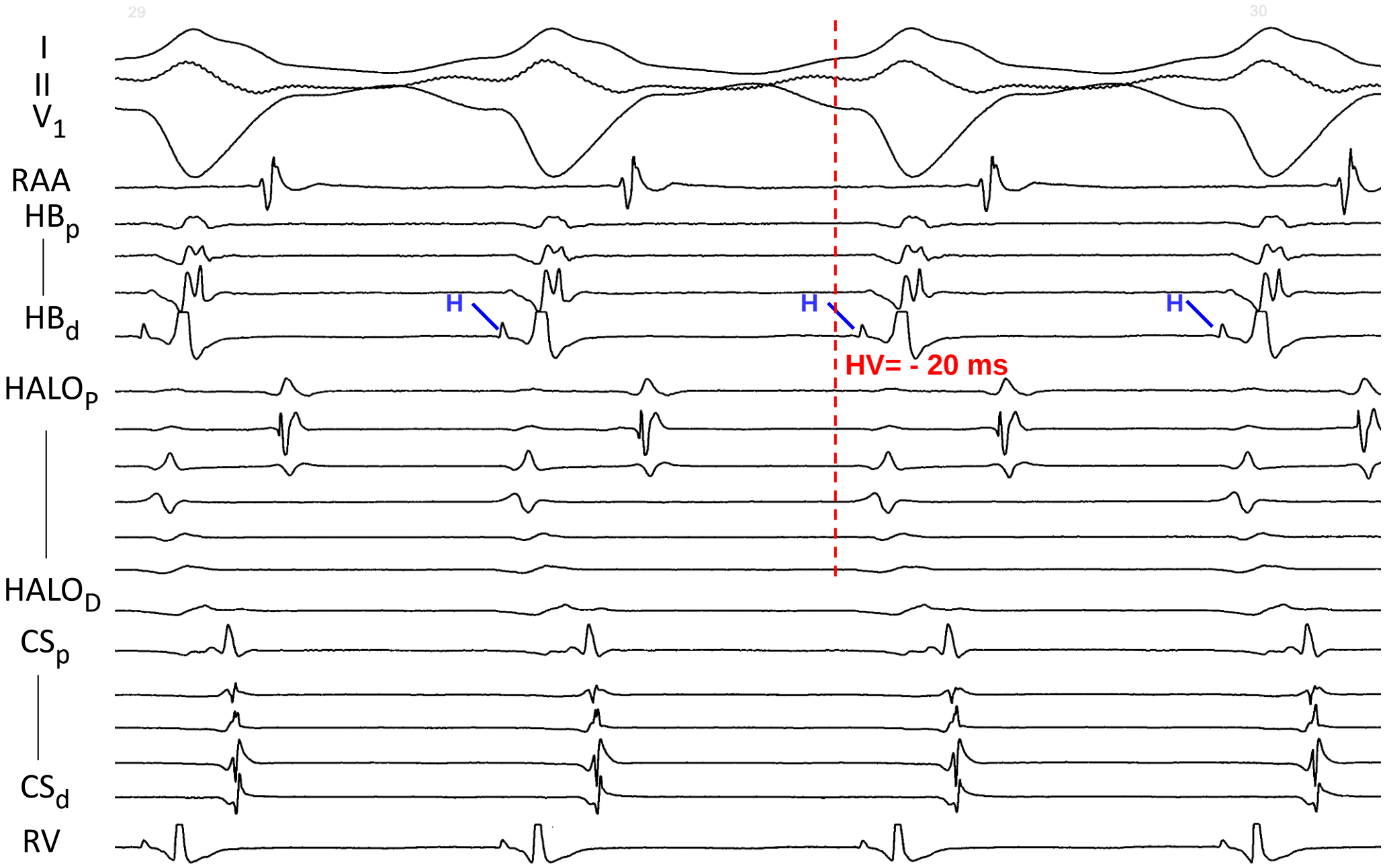


Figure 5.26B.

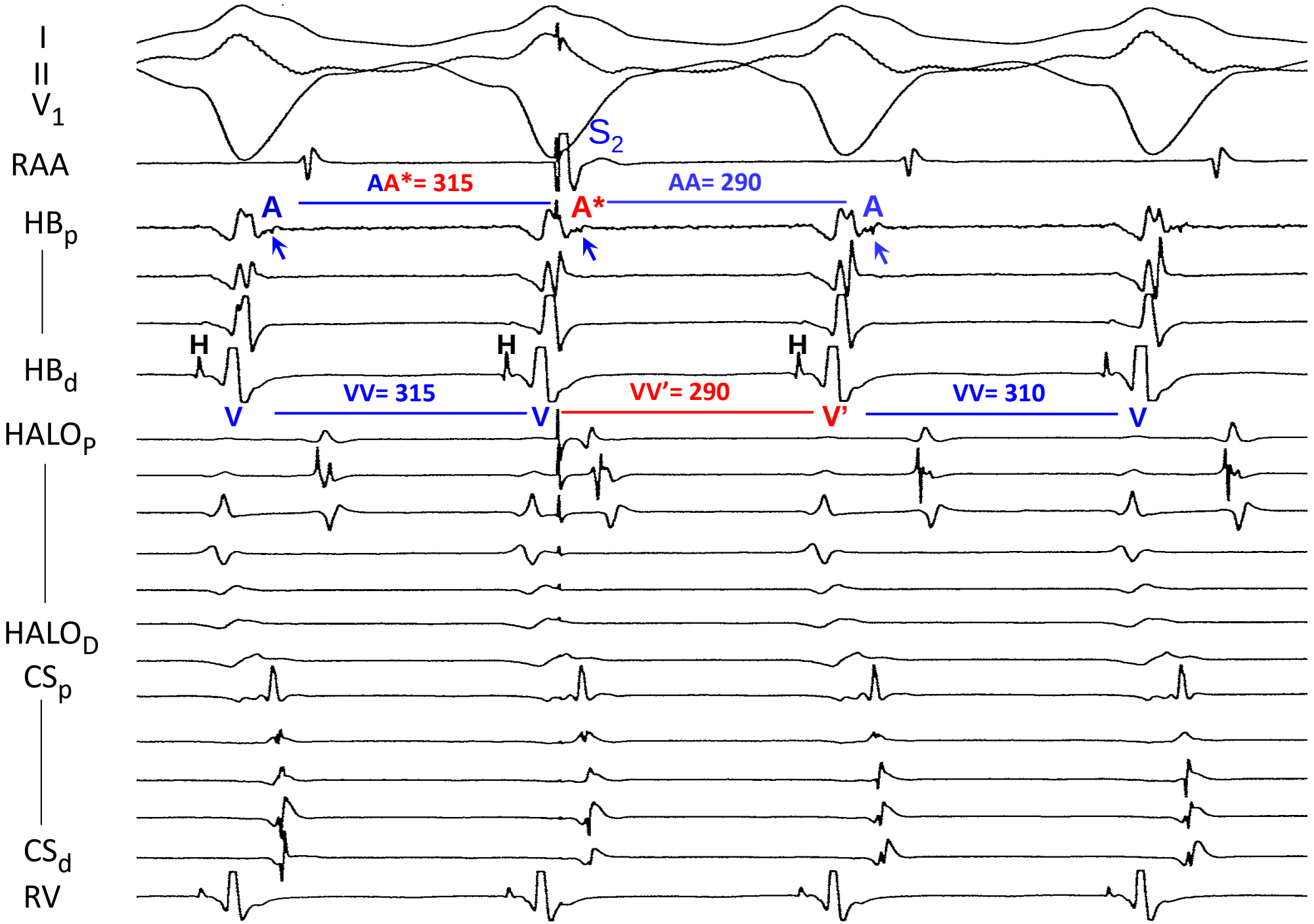

I
II
V1
RAA
HBp
HBd
HALOP
HALOD
CSp
CSd
RV
S2
AA*= 315
AA= 290
A
A*
A
H
H
H
VV= 315
VV'= 290
VV= 310
V
V
V'
V
200 ms

Figure 5.26C.

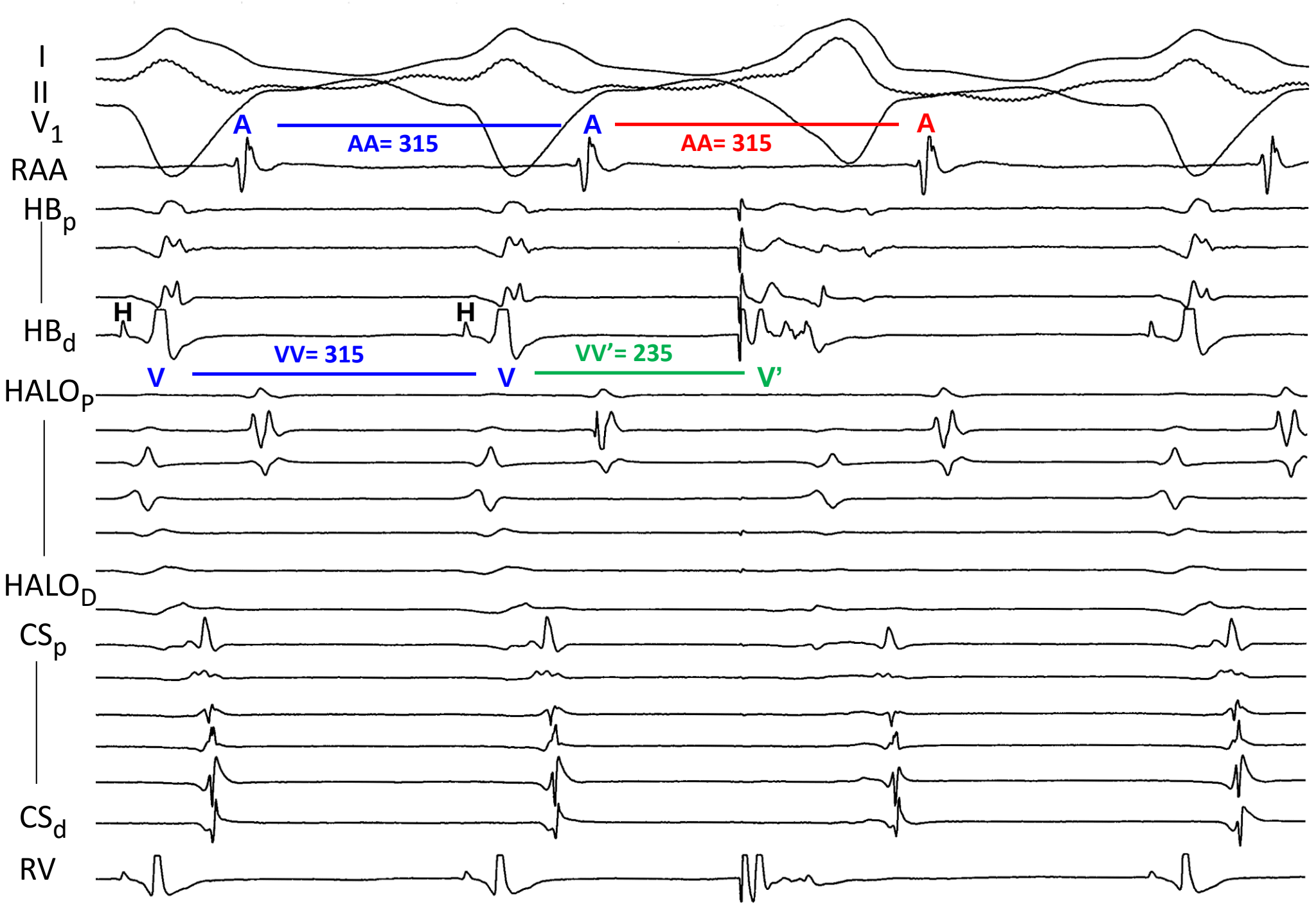

I
II
V1
RAA
HBp
HBd
HALOP
HALOD
CSp
CSd
RV
A
AA= 315
A
AA= 315
A
H
H
VV= 315
VV'= 235
V
V
V'
100 ms

Figure 5.26D.

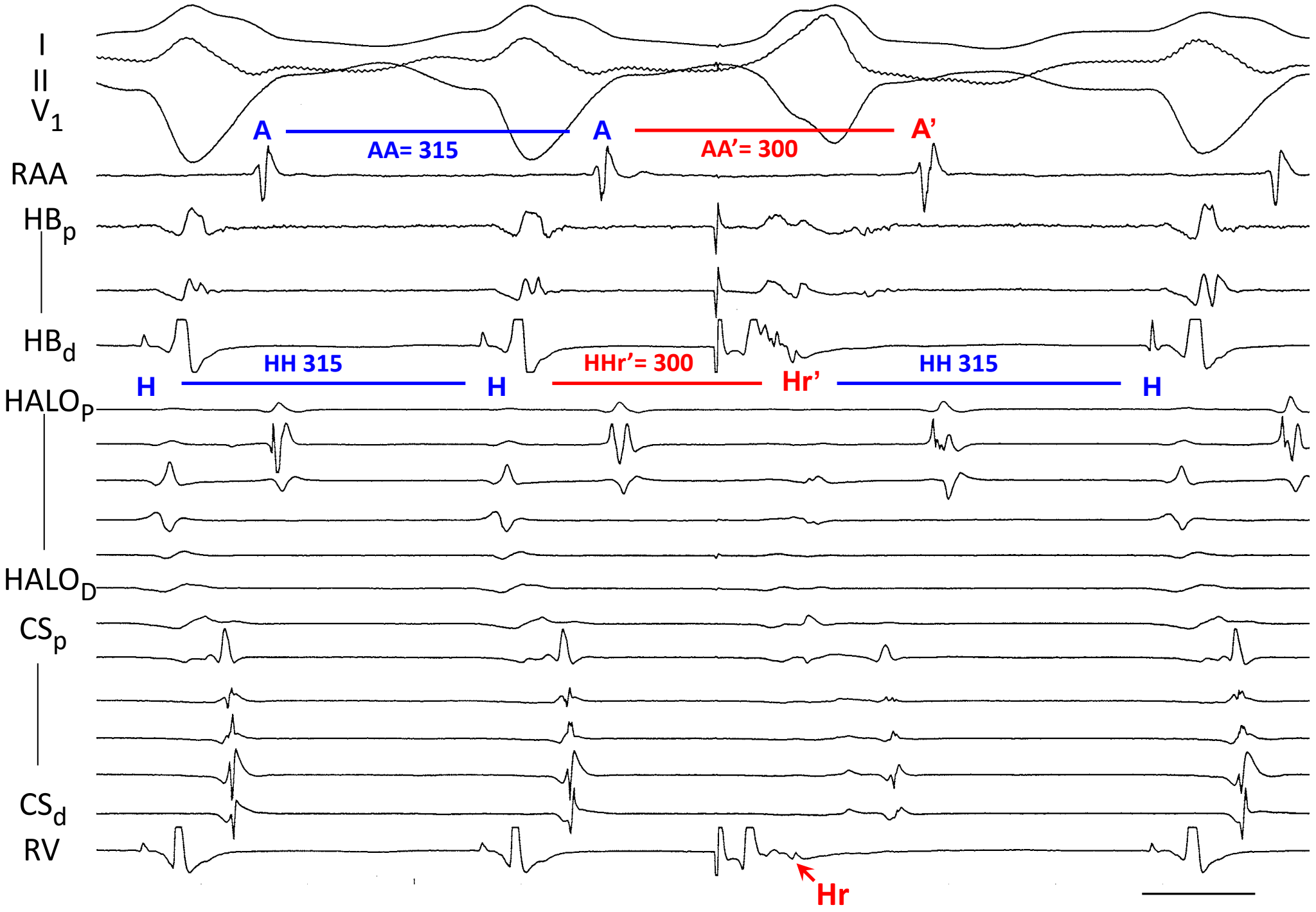

I
II
V1
A
AA= 315
A
AA'= 300
A'
RAA
HBp
HBd
HH 315
HHr'= 300
HH 315
H
H
Hr'
H
HALOP
HALOD
CSp
CSd
RV
Hr
100 ms

Figure 5.26E.

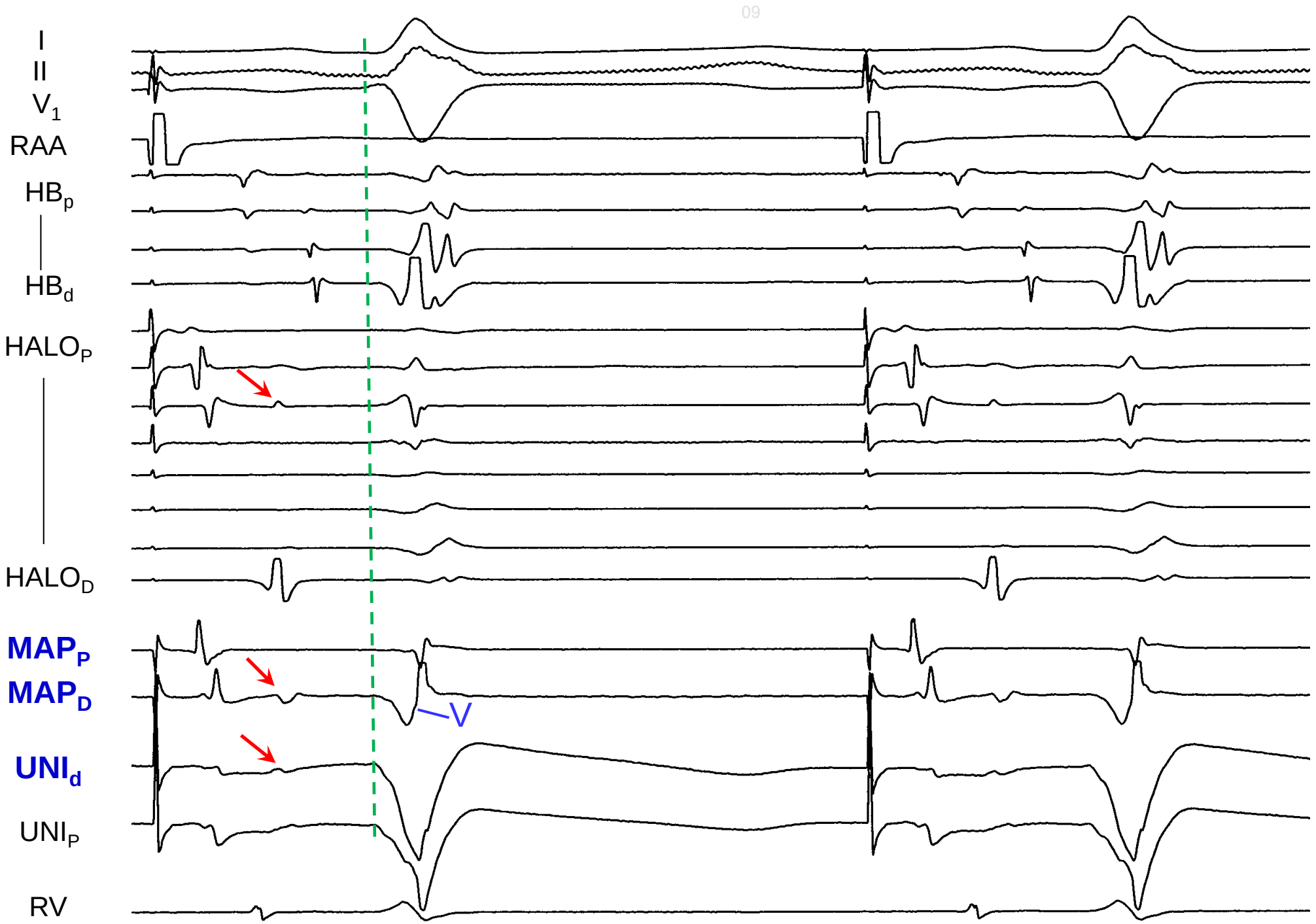


Figure 5.26F.

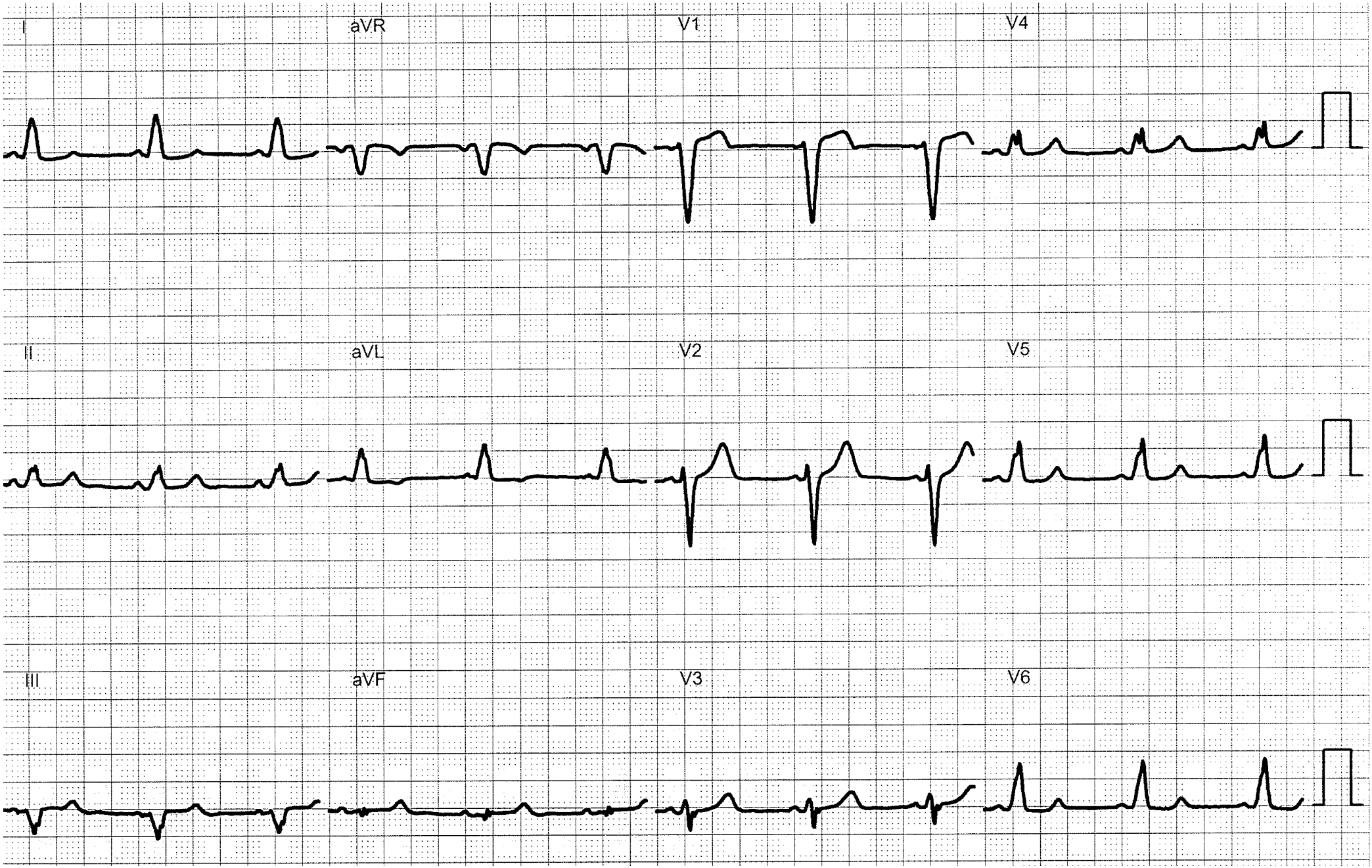


Figure 5.27A.

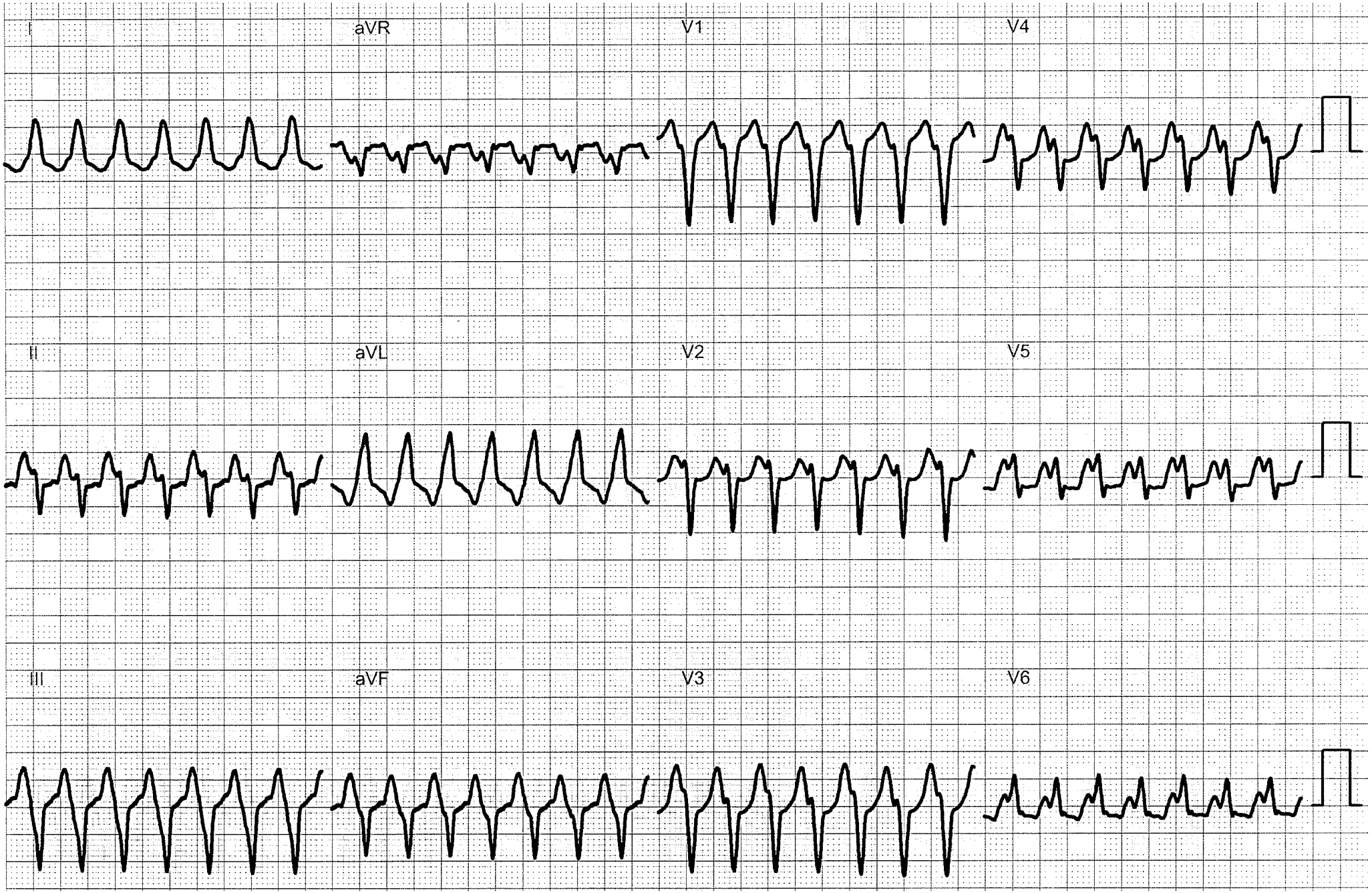


Figure 5.27B.

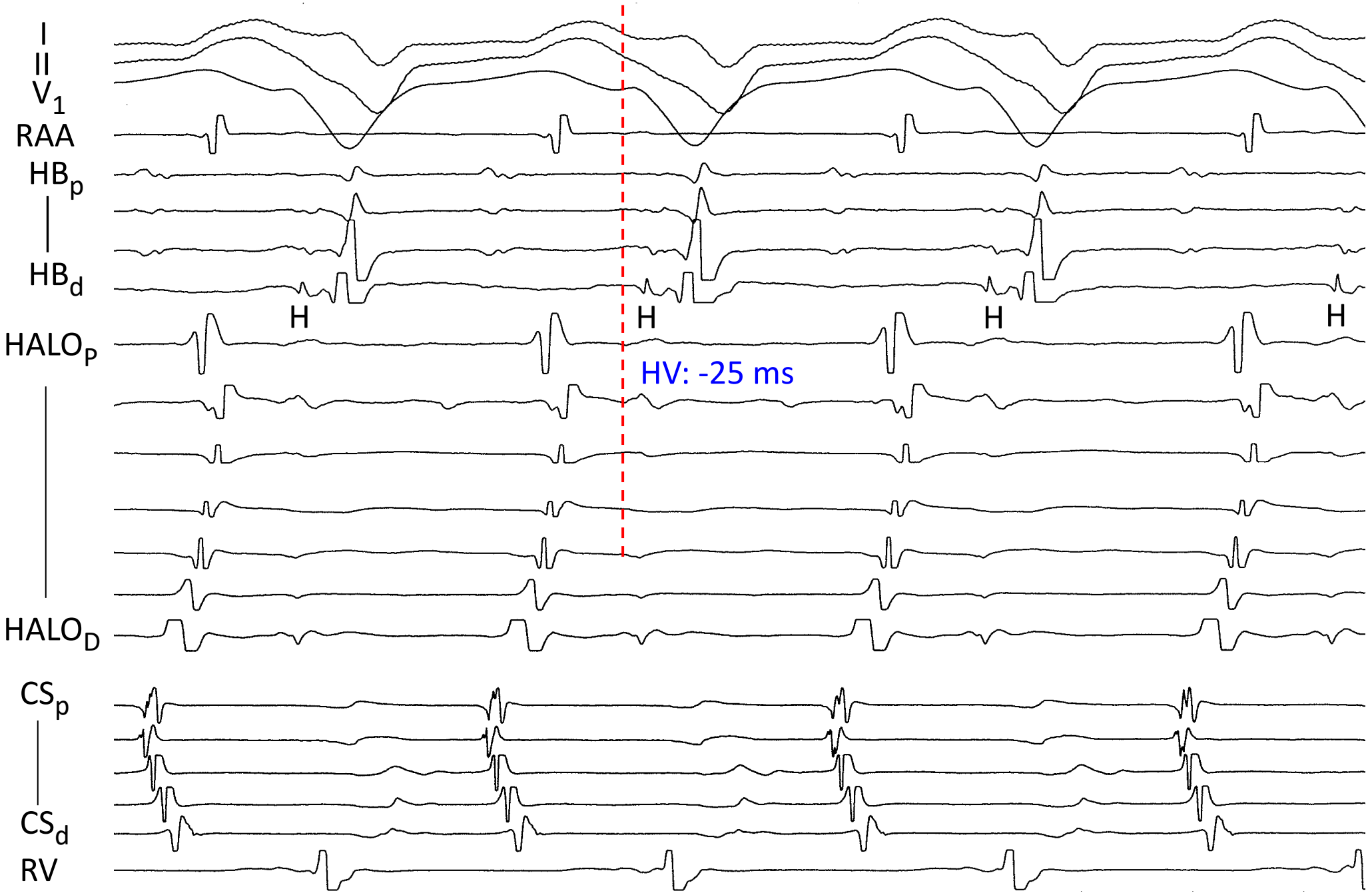


Figure 5.27C.

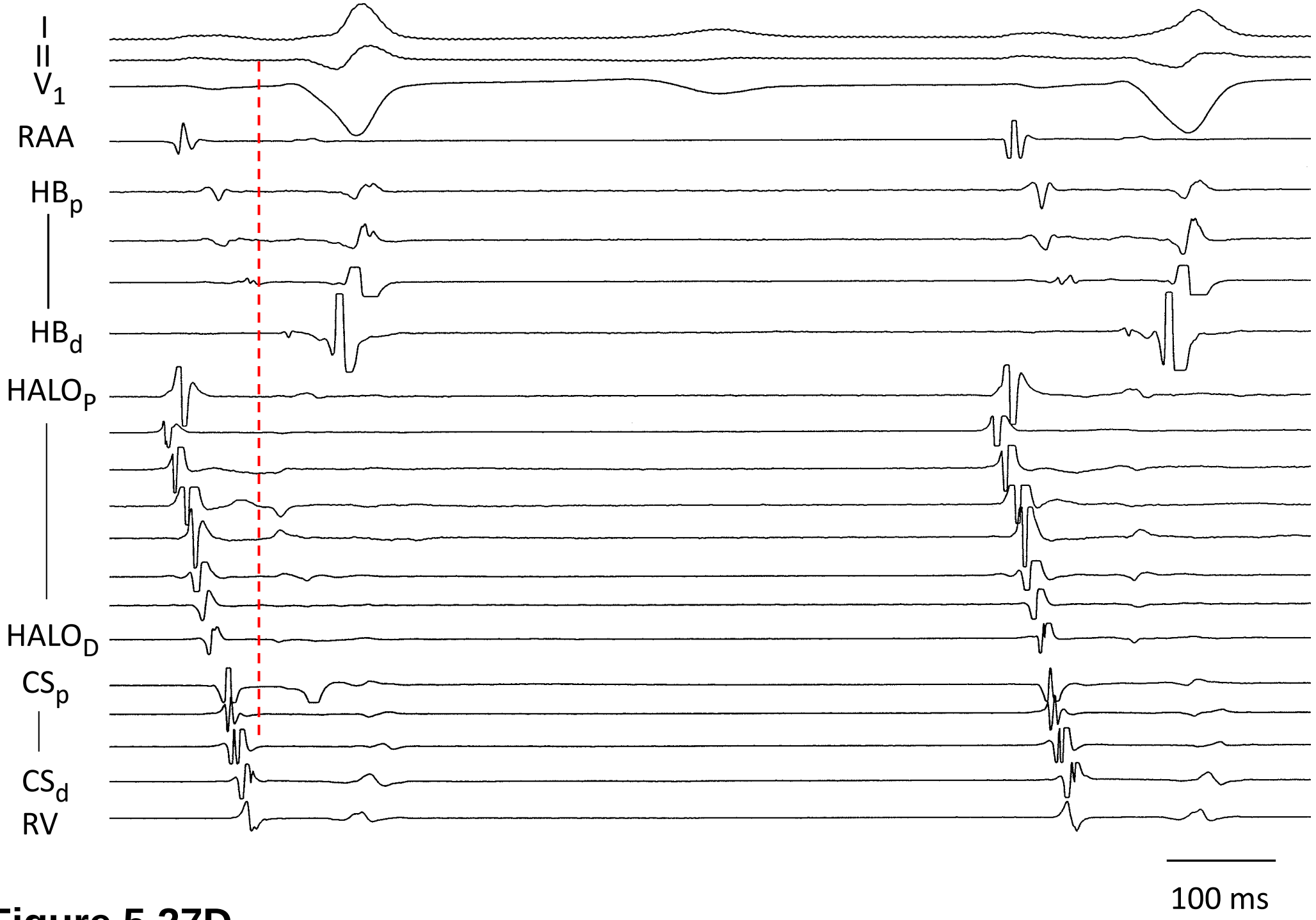


Figure 5.27D.

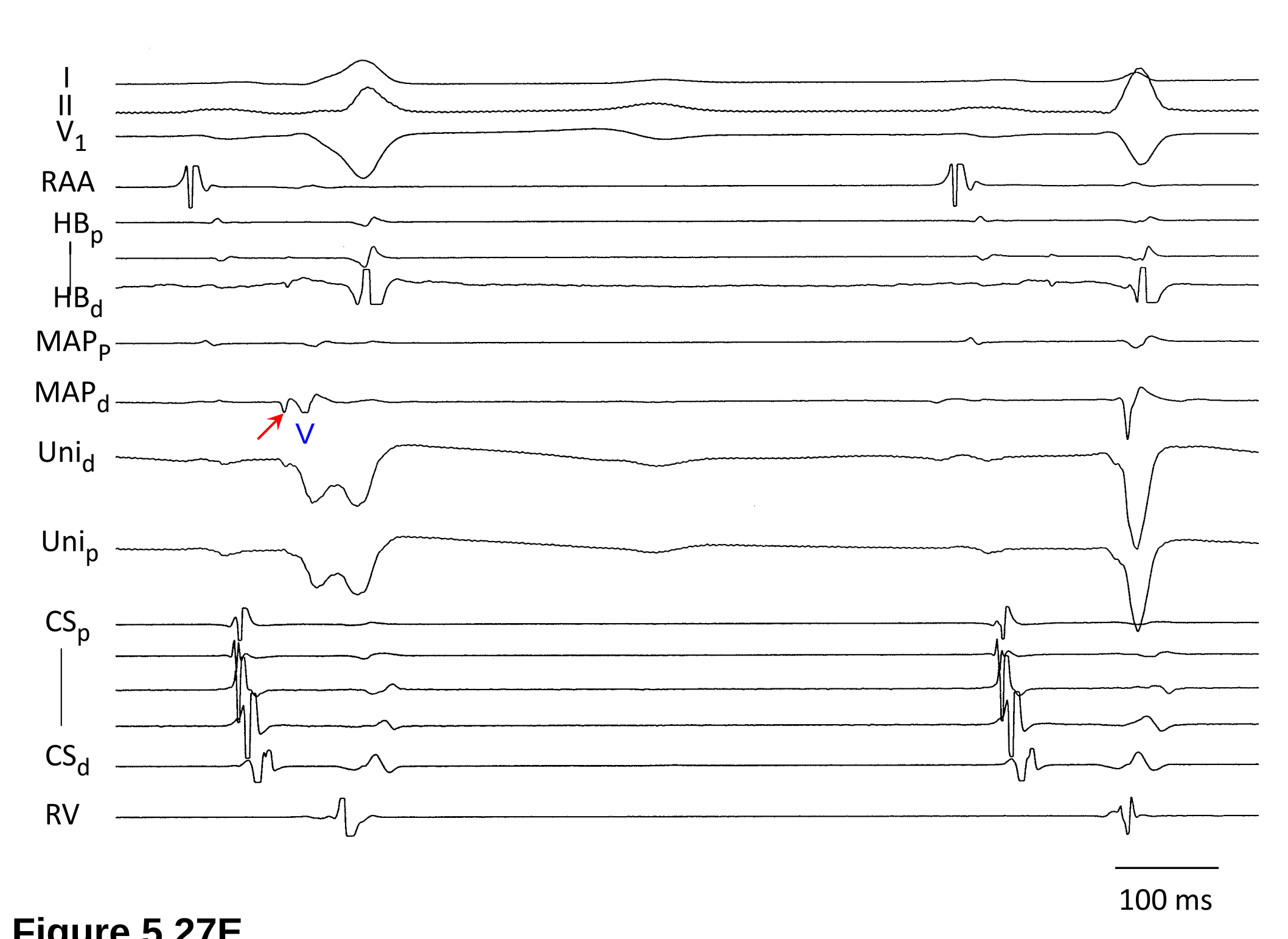


Figure 5.27E.

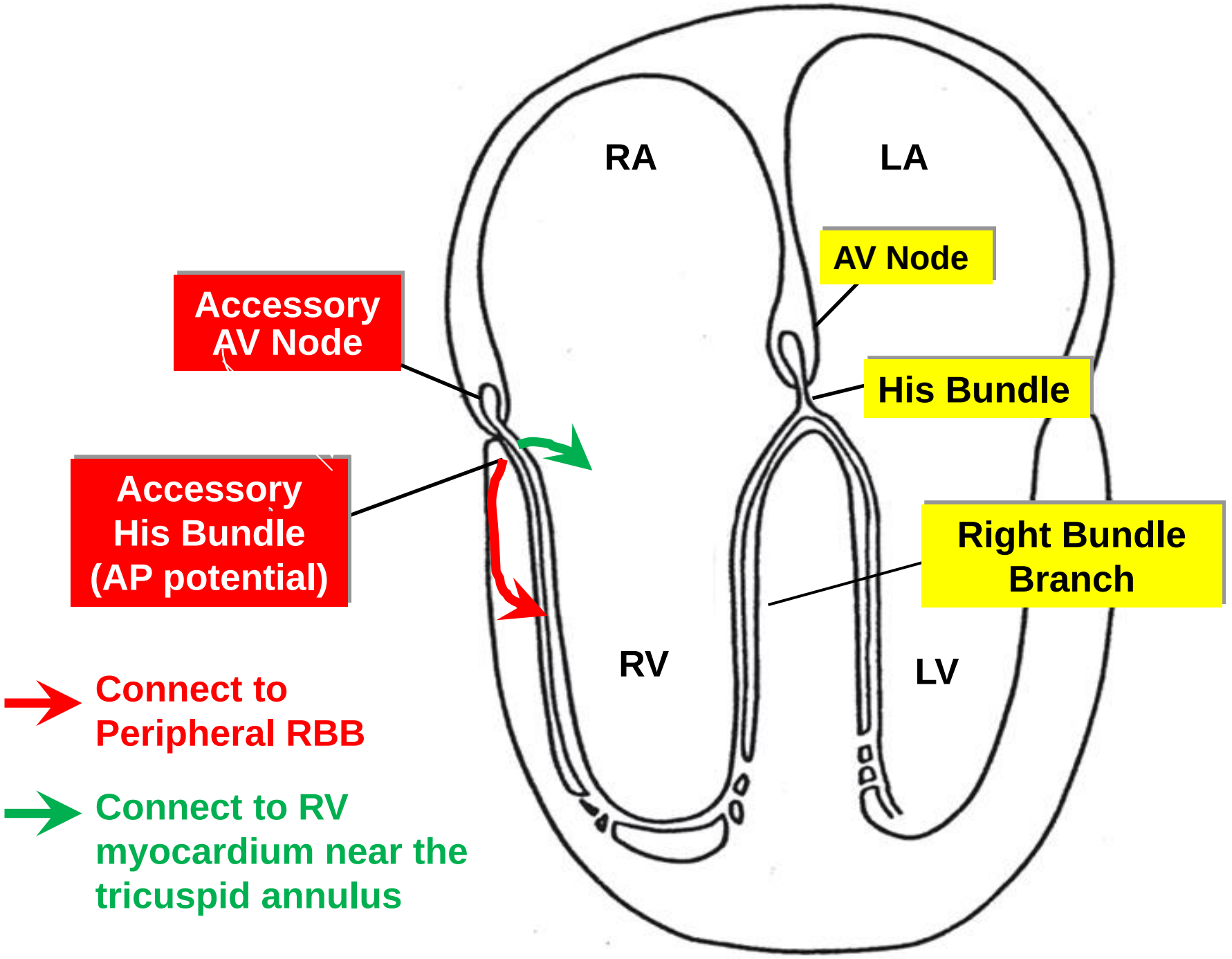

RA
LA
AV Node
Accessory AV Node
His Bundle
Accessory His Bundle (AP potential)
Right Bundle Branch
RV
LV
Connect to Peripheral RBB
Connect to RV myocardium near the tricuspid annulus

Figure 5.27F.