Unknown EP tracing

이화의대
반지은
17 yrs, Female
EPS was performed because of WPW syndrome and a history of syncope.
Baseline
Pacing from distal CS
Interpretation

Case 1
Surface ECG

V1 PQ120ms, QRS100ms, QS,
III R<S
aVF – positive δ wave
I, aVL, V5, V6 -septal q wave (-)

mid-septal bypass tract
Intracardiac ECG during SR

- AH = 62ms.
- Earliest ventricular activation site = HIS
- HV = almost continuous (HV14ms)
- Wenckebach block.
- HV potential & δ wave – no change
Summary

➢ Surface ECG

1. WPW syndrome, mid-septal bypass tract
2. QRS duration is narrow (100ms)

➢ EPS

1. AH interval - 62ms
2. HV potential - continuous potential.
3. Earliest ventricular activation site - His area.
4. Pacing from CS made Wenckebach AVB.
   : AH prolongation, but HV interval and and δ wave had no change.
5. Bradycardia (-), Tachycardia (-)
Diagnosis

Fasciculoventricular pathway

- FV pathway are rare variants of preexitation.
  - Take off from the His bundle or bundle branches and insert into the ventricular septum.

- Preexitation due to FV pathway is benign and does not require therapy
  - does not give rise to reciprocating tachycardia and only conducts anterogradely.
Electrophysiologic findings

1. Normal PR and AH interval

2. Short HV interval (<35ms)

3. Atrial pacing that produces prolongation of the AH interval without changes of HV interval and preexcited QRS configuration

4. His bundle stimulation that produces preexcited QRS with short HV interval

5. Response to adenosine triphosphate-prolongation of the PR interval(AH interval) does not change the degree of preexitation and the HV interval.
Case 2
1 What kind of tachycardia should we think?

2 What should be done for the diagnosis
1. V wave in QRS wave and RV apex precedes His potential
SVT pattern

A wave

V A V A V A V A V A V A V

V wave

300 300 300 320 300 320 300 320 300
VT pattern

A wave

V wave
2. AA interval (or HH interval) depends on preceding VV interval
1. V wave in QRS wave and RV precedes His potential
2. AA interval (or HH interval) depends on preceding VV interval

**diagnosis**: VT

What kind of VT?
1. Idiopathic left VT
2. BBR-VT, RBBB type
3. Interfascicular VT
4. Automatic fascicular VT
5. Intramyocardial VT
Types of BBR VT

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EWHA WOMENS UNIVERSITY MEDICAL CENTER
Entrainment of Bundle branch reentry

- **Concealed entrainment**
- **Manifest entrainment**

**Atrial Entrainment**

**Ventricular Entrainment**
Postpacing interval

- If pacing site is close to circuit, as RVA is in BBR, PPI is similar to TCL.
The methods for diagnosis

1. ATP injection
   AV dissociation ⇒ VT is more likely

2. Atrial pacing
   Ventricular capture ⇒ VT
   (this is not applied to BBR-VT because of concealed entrainment)

3. RVA pacing
   PPI = TCL ⇒ the possibility of BBR-VT becomes high
Diagnostic features of bundle branch reentry

1. Tachycardia morphology is a typical LBBB (rarely RBBB)

2. Induction is dependent upon H-P conduction delay

3. Terminates with block in H-P system

4. His potential precedes each QRS complex

5. Variations in the V-V intervals are preceded by similar changes in the H-H intervals

6. QRS morphology during atrial entrainment is identical to QRS morphology during BBR; not true with ventricular entrainment.

7. PPI-TCL ≤ 30msec with entrainment from RV apex.