LEFT POSTERIOR FASCICULAR VENTRICULAR TACHYCARDIA

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CASE

- 15-year-old boy
- Chief Complaint: intermittent palpitation
  (1 times/year, 15mins sustained, Verapamil sensitive)
- Past medical history – none
  - Echo – EF 71%, NL
- No med
Chest X-ray (2019.02)
12-lead EKG (2019.2)

QRS 141 ms

HR 170/min
12-lead EKG (2018.12)

PR 132 ms

QRS 100 ms

HR 57/min
EP study
Catheter position
Initial NSR
(CL 683ms, AH 84ms, HV 54ms, QRS 94ms)
RVP 420 ms
RVP 400 ms
VT (TCL 395ms)
VT (154 bpm, QRS 132ms)
VT (154 bpm, QRS 132ms)
LV angiogram

RAO 35

LAO 35
Map catheter position

RAO 35

LAO 35
Map 30ms faster (than surface QRS)
Pace map
RF#1 start
During RF#1, VT term
SAEST 400/260
(AH 195ms)

SAEST 400/250
(AH 195 \(\rightarrow\) 249ms: AH Jump)
After RF#1, DVEST 400/200/200
(No IND)
After RF#1, TVEST 400/210/200/200
(No IND)
After RF, NSR
12-lead EKG (2019.2 after RF)

PR 152 ms

QRS 102 ms

HR 84/min
Summary

• Earliest retrograde atrial activity at CS 56 during RVP
• AH jump during SAEST
• Inducible sustained monomorphic VT (RBBB, LSA, TCL=395ms, VA dissociation) by DVEST 500/260/210, 500/250/200ms
• Induced VT was identical to the clinical one.
• Stable hemodynamic status during VT

→ RF was successfully performed at the area of purkinje potential(+)
Macrotegment circuit of fascicular VT
Proposed schema for the Reentrant Circuit

B

Ventricular Tachycardia

Sinus Rhythm

P1 (diastolic potential, pre-purkinje potential)
P2 (purkinje potential)
Mechanism of Fascicular Ventricular tachycardia.

Left Septal/Purkinje-Related VT

Patient’s ECG

John M Miller etc. *Case study in clinical cardiac electrophysiology* of 2017
Ablation strategies

1. Ablation at the site of connection of the left posterior fascicle and diastolic pathway

2. Ablation along the diastolic pathway

3. Linear ablation in the basal septum to try to transect the diastolic pathway

4. Ablation of the posterior fascicle
Purkinje and diastolic potential

THANK YOU VERY MUCH