Tips and tricks in ablation of rare type of ventricular tachycardia

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History

• Mr E. M is 17-year-old man with a history of palpitations,
• presented to the emergency department with a history of several attacks of palpitation with severe constant pressure-like substernal chest pain which was associated with shortness of breath and dizziness.
• He stated that the symptoms initially began after exertion and did not abate
The patient was noted to be tachycardic (HR: 170 beat/minute), with a normal blood pressure and physical examination.

The electrocardiogram (ECG) shows:
• Patient was haemodynamically stable with blood pressure 120/75.

He was initially treated with intravenous verapamil which terminated the tachycardia with resultant normal sinus rhythm.

ECHO : normal

After that patient referred for preparation for EP study.
Ventricular pacing: A-V dissociation
VT: Recognition in the EP lab:

1. Induction and termination from the ventricle
2. V-A dissociation.
3. Reset tachycardia from V without affecting A
4. Successful VT initiation often is achieved with premature atrial and/or ventricular stimulation

**Diagram:**
- Monomorphic VT in structurally normal heart
- VT morphology
  - LBBB pattern, inferior axis
  - S wave in L1, R-wave transition in V1 or V2
  - S wave in V5 or V6 absent
  - S wave in V5 or V6 present
  - RVOT VT
  - Supravalvular LVOT VT
  - Infravalvular LVOT VT
  - RBBB, left axis
  - RBBB, right axis
  - Posterior fascicle exit
  - Anterior fascicle exit
  - ILVT

None of the above morphology, sensitive to β-blocker

Idiopathic propranolol-sensitive (automatic) monomorphic VT (IPVT)
**Fascicular VT**

- Idiopathic left fascicular VT = fascicular VT = LBB-ANT/POST
- ECG classify to left posterior fascicular VT, left anterior fascicular VT, and left upper septal VT.
- LPFVT- most common then LAFVT & septal is rare
- young male (60%) - 15 and 40 years, younger female.
- paroxysmal
- Exertion.
- Symptoms – palpitations/syncope/tachycardia-mediated cardiomyopathy.

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**Fascicular Ventricular Tachycardia**

- Fascicular tachycardia has been classified into three subtypes:
  - (1) left posterior fascicular VT with a right bundle branch block (RBBB) pattern and left axis deviation (common form);
  - (2) left anterior fascicular VT with RBBB pattern and right-axis deviation (uncommon form)
  - (3) upper septal fascicular VT with a narrow QRS and normal axis configuration (rare form)
<table>
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<th>Classification of fascicular tachycardia</th>
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<td><strong>Types</strong></td>
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<td>Posterior fascicular tachycardia (PFT)</td>
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<td>Inter fascicular tachycardia (IFT)</td>
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Anatomically, it is believed that the re-entrant loop for posterior fascicular VT involves a verapamil-sensitive septal myocardium that exhibits decremental properties from the base to the apex of the LV.4Nogami et al. elegantly demonstrated the presence of a mid-diastolic pre-Purkinje potential (P1) and a pre-systolic potential (P2) P1 is described as a low frequency mid-diastolic potential during VT whereas P2 is described as a sharp, shortduration, high-frequency presystolic potential.5

The septal myocardium serves as the antegrade limb for the VT and is responsible for the creation of P1 during VT.

The majority of patients had successful ablation with initial energy delivery when P1 and P2 were both identified in the midseptum and the interval between P1 and the surface QRS complex was 29-60 ms.
Highlighted are the pre-Purkinje potential (pre-PP or P1) and Purkinje potential (PP or P2). The proposed antegrade circuit travels in the myocardial septum creating P1. The turnaround point occurs in the apical third of the left ventricle resulting in P2 as the impulse travels retrograde.
Slow potent. sinus
Ablation site
SUCCESS

Try and fail, but never fail to try.

Jared Leto
References

THANK YOU....... 
DO YOU HAVE ANY QUESTIONS?