Case Discussion – VT

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Case 1
73yoM presented to the ED complaining of ICD shocks.

Complex PMHx significant for ICM (s/p 4v CABG 2002, EF 25%), MMVT (s/p VT ablation 2010) c/b ICD shocks despite AAD attempts (amiodarone toxicity, sotalol ineffective), PAD (s/p aortic endograft, L iliac stent), prostate cancer (XRT, no chemo), and COPD.

Reported palpitations in bathroom earlier in the evening, then abruptly woke up on the floor. Called EMS → ICD shock while waiting for them on his porch.

Temp 100.6, BP 100/53, HR 62, satting well once BiPAP started.
Presentation

• Physical exam significant for mild anxiety, a soft systolic murmur, clear lungs, and 1+ pitting edema.

• Labs demonstrated AKI on CKD, a macrocytic anemia with no leukocytosis, a therapeutic INR, and negative troponin.

• EKG was A-paced, unchanged from priors. CXR and CT head largely unremarkable.

• Pertinent findings on device interrogation:
<table>
<thead>
<tr>
<th>Type</th>
<th>ATP Seq</th>
<th>Shocks</th>
<th>Success</th>
<th>ID#</th>
<th>Date</th>
<th>Time</th>
<th>Duration</th>
<th>Avg bpm A/V</th>
</tr>
</thead>
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![Heart rhythm diagram with annotations and data](image_url)
Clinical Course

• Got ASA load, NaCl bolus, and IV morphine for pain.
• Admitted, started on lidocaine and amiodarone gtt.
• Coronary angiography:
Clinical Course

• EP consulted, stopped amiodarone and converted lidocaine to PO mexiletine.

• Only one (early) recurrence on telemetry:
Clinical Course

• Blood cultures grew MSSA.
• TEE:
Differential for WCT

• Ventricular tachycardia
• SVT with aberrant conduction
• SVT with accessory pathway conduction (e.g. WPW)
• V-paced rhythms
• EKG artifact
Differential for VT

- Structural heart disease
  - CAD/ischemia
  - Scar
  - HCM
  - DCM
  - Sarcoid
  - Amyloid
  - ARVC
  - Chagas
  - Complex congenital
  - Duchenne MD
  - Barth syndrome
- Idiopathic
- Inflammation (e.g. myocarditis)
- Catecholamine surge (sepsis, exercise, etc.)
- Anemia
- Adverse drug effects
- Electrolyte disturbances
- Hypoxia
- Heritable channelopathies
  - Brugada
  - LQTS
  - CPMVT
Who gets an ICD? (Secondary Prevention)

• Prior resuscitated VT/VF arrest w/ no reversible cause.
• Spontaneous sustained VT in chronic heart disease (e.g. the aforementioned conditions).
• Mortality benefit available
• EXCEPTIONS:
  • Idiopathic
  • Channelopathies in lower-risk patients
Questions/Discussion