A Curious Case Of Cardiac Arrest

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CASE PRESENTATION

- 28 y/o M with no significant co morbidities had a SCA while exercising in a correction facility.
- Rhythm reported was ventricular tachycardia.
- 5 rounds of CPR and 3 rounds of shocks.
- ROSC and was AAO X 3 after regaining consciousness.
Outside Facility course

- Pt reports long standing history of lightheadedness with cardio exercises, which is relieved by rest.
- Vitals were stable
- Troponins were minimally elevated
- Echo showed severe hypertrophic septum with a max diameter of 2.8 cm
- Patient was started on amiodarone drip and transferred for further care.

St. Joseph’s hospital course
ECHO

- Normal left ventricular size and systolic function.
- No obvious regional wall motion abnormalities.
- Asymmetric septal hypertrophy - no specific SAM nor LVOT gradient.
- The calculated left ventricular EF is 60%.
- Normal right ventricular size and systolic function.
- No significant valvular abnormalities.

Coronary angiogram

- Normal coronaries.
- High anterior take-off of right coronary artery from left coronary ostia with travel between PA and AO great vessels.
- Recommended further imaging.
Cardiac CT

- Anomalous right coronary artery from the left sinus of Valsalva running a dangerous course between the pulmonary artery and the aorta with very severe compression resulting in a slit-like vessel for at least 15 mm of its proximal portion
- Normal left ventricular systolic function with severe isometric septal hypertrophy.

Anatomy of anomalous RCA
Cardiac CT

Intramural course?
Causes of Sudden cardiac death in young athletes

Evaluation of sudden cardiac arrest

- ECHO- HCM
- Troponin
- EKG
- Electrolytes

- If < 35 yrs old – CCTA
- If >35 yrs old – coronary angiography.
Unroofing with Translocation

- Coronary artery unroofing with the creation of a new ostium in the right coronary Sinus, effectively transferring the coronary ost from the left sinus to the right coronary sinus.

Post op course

- Uneventful.
- Symptom free for last 6 months.
- Follow up stress ECHO was negative for exercise induced ischemia.
Congenital coronary artery anomalies

- Left circumflex from right sinus of valsalva
- Right coronary artery from left sinus of valsalva (ARCA)
- LAD from right sinus of valsalva (ALCA)

Presentations

- Benign asymptomatic – seen with ARCA
- SCD in asymptomatic – usually seen with ALCA
- SCD with ARCA – Rare
Treatment

- Asymptomatic ARCA - B blockers
- Symptomatic ARCA – Surgery
- Asymptomatic / symptomatic ALCA - Surgery

Take away points

- Anomalous coronary artery 2nd most common cause of SCD in young athletes (<35 yrs)
- CCTA when suspected.
References

- A Review of Sudden Cardiac Death in Young Athletes and Strategies for Preparticipation Cardiovascular Screening. Koester M.

THANK YOU.