Syncope Evaluation and Diagnosis

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Case

- 22yo female OCS candidate at Newport Navy Base, presenting sudden onset recurrent syncope, 3 times in past 2 weeks after prolonged standing on parade grounds.
- No pro-drome except brief lightheaded, no Sz or post-ictal, responds quickly to IV fluids.
- No prior history, or sig PMH
- College athlete – no issues
- No Fam hx syncope or sudden death
- PE – normal, non-orthostatic
- ?Most likely diagnosis

Syncope

- Abrupt and transient loss of consciousness associated with absence of postural tone, followed by complete and usually rapid spontaneous recovery
- Syncope is most often benign and self-limited, although it can be a harbinger of a multitude of disease processes.
- Injuries resulting from syncopal attacks occur in about one-third of patients, and recurrent episodes can be psychologically devastating.
- Syncope can be a premonitory sign of cardiac arrest, especially in patients with organic heart disease.

Syncope - Etiology

- Reflex (neurally-mediated/vasovagal) – 58%
- Cardiac – Arrhythmias – 23%
- Neurologic/Psychiatric – 1%
- Unexplained – 18% (up to 41% in some studies)

Syncope – History

- Most important aspect of the work-up
- Take your time – be thorough
- Specific circumstances involving event(s)
- Activity/Positions/How Long?/Onset?
- Associated, Pre-, and Post- symptoms
- EMS records/Witnesses – “Seizures” do not = Epilepsy
- PMH and medications (especially new)
- Family history of syncope and sudden death

Syncope – Physical Exam

- VS – orthostatics
- Neuro – especially Romberg/Nystagmis if near-syncope
  - Neuro testing rarely cost-effective or elucidating
- CV exam – Heart sounds in multiple positions
  - Murmurs
  - Absent or extra heart sounds
  - Tumor “plops”

Syncope - EKG

- Don’t trust computer reading
- Rhythm
- Intervals (short or long PR or QT)
- AV, Bundle Branch or Fascicular Blocks
- RBBB pattern with ST elevation V1-3 (Brugada syndrome)
- Abnormal ST/T waves not easily explained
- Fax EKG to your favorite cardiologist if concerned!

Syncope - Echocardiography

- Structural heart disease or arrhythmia substrate
- Hypertrophic CM
- Dilated CM
- Un-diagnosed MI
- Myocardial non-compaction or infiltrative disease (Sarcoid)
- Valvular or para-valvular obstructions
- RV pathology/dysplasia
- Don’t forget specific history in request

Syncope - Challenges

- Carotid Artery Message
  - Age >40
  - No bruits, recent TIA, known severe disease
  - On monitor
  - + if syncope reproduced with >3sec asystole or fall in SBP>50mmHg
- Tilt-table testing
  - Helpful in unique situations for postural syncope
  - Performed by EP doc
- Exercise Testing
  - If sxs are exercise induced or if ischemia suspected

Syncope - Monitors

- Continuous 24-48 (Holter) Monitoring
  - for frequent symptoms - daily
- External Event Monitor
  - for less than frequent sxs - < monthly
- Implantable Loop Recorders
  - Good for rare, but severe, sxs

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- 22yo female OCS candidate at Newport Navy Base, presenting sudden onset recurrent syncope, 3 times in past 2 weeks after prolonged standing on parade grounds.
  - EKG negative
  - Echo negative
  - Tilt table testing + for syncope/HR – 30/BP 50/palp
  - Dx – Neuro-cardiogenic Syncope
  - Tx – Hydration/Liberal Salt/Low dose BBs

Syncope - Conclusions

- Allow your careful and thorough history and physical guide you in your differential diagnosis and testing approach
- Great majority is reflex, cardiac or un-explained
- Rarely Neurologic unless truly seizure-related
- Early Cardiology or EP consultation can be helpful in difficult cases and can avoid unnecessary and costly over-testing