Syncope Evaluation and Diagnosis

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September 2011
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
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.
  - 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 unexplained

• 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