Case Discussion

Date: 2011/03/12
Reporter: FM R1 宋泓逸
Supervisor: F1 許瓅文

Discussion

Syncope: in the emergency department

References

- Articles from UpToDate, keyword as “syncope”
- Harrison’s internal medicine, 17th ed., ch.21
- Pocket medicine, 3rd ed., 1-37
- The Washington’s manual of medical therapeutics, 32nd ed, p220-223

Introductions

- Definition: a transient loss of consciousness and postural tone due to reduced cerebral blood flow, with fully spontaneous recovery
  - Presyncope: faintness or near loss of consciousness

- Syncope is a common complaint in the emergency department (1-3% of all ED visits and hospital admissions in the United States)

Common causes of syncope

Neurocardiogenic syncope	**Medication related syncope**
Micturion	Vaso active medications
Defecation	Alpha and beta blockers, calcium
Cough mediated	channel blockers, nitrates,
Deglutition	antihypertensive medications,
Glossopharyngeal nerve	diuretics, erectile dysfunction
	medications
Situational	
Carotid sinus hypersensitivity	Medications affecting conduction
Head turning	Antiarrhythmics, calcium channel
Circumferential neck compression	and beta blockers, digoxin
Shaving	
	Medications affecting the QTc
Orthostatic syncope	Antiarrhythmics, antiemetics,
Volume loss	antipsychotics/depressants
Autonomic dysfunction	
Deconditioning/prolonged bed rest	Diuretics

Major life threatening causes of syncope

Cardiovascular syncope

Arrhythmia

Ventricular tachycardia
Long QT syndrome
Brugada syndrome
Bradycardia: Mobitz type II or 3rd degree heart block
Significant sinus pause >3 sec

Structural Abnormalities

Valvular heart disease: aortic stenosis, mitral stenosis
Cardiomyopathy (ischemic, dilated, hypertrophic)
Atrial myxoma
Cardiac tamponade
Aortic dissection

Ischemia

Acute coronary syndrome, myocardial infarction

Significant hemorrhage

Trauma with significant blood loss
Gastrointestinal bleeding
Tissue rupture: aortic aneurysm, spleen, ovarian cyst, ectopic pregnancy, retroperitoneal hemorrhage

Pulmonary embolism

Saddle embolus resulting in outflow tract obstruction or severe hypoxia

Subarachnoid hemorrhage

Diagnosis

- Many causes are often difficult to determine in the emergency department

- After reviewing the history, examination findings, and the ECG, establish the underlying diagnosis about 50% of the time

History

- Age
- Associated symptoms and triggers
- Position
- Onset
- Duration of symptoms
- Exertional syncope
- Medications
- Prior episodes
- Family history
- Associated injury

Seizure versus syncope

- Aura different from that described for vasodepressor syncope
- Episode of abrupt onset associated with injury
- Presence of a tonic→clonic phase
- Head deviation or unusual posturing during the episode
- Tongue biting
- Loss of bladder or bowel control
- Prolonged postictal phase which the patient is confused and disoriented

Further approach

- Physical examination
  - Focus on vital signs (esp. orthostatic vital sign) and a focused cardiac and neurologic exam
- Ancillary studies
  - Electrocardiogram
  - Cardiac monitor when abnormal cardiac rhythms
  - Glusoce + other tests based on clinical clues
  - Neurologic studies when suspicious of a TIA, stroke, new onset seizure, or SAH
  - Echocardiography

Disposition

- Present concerning symptoms/signs or not
  - Syncope accompanied by chest pain or SOB
  - Exertional syncope
  - Abnormal vital signs
  - Abnormal findings on cardiac, pulmonary, or neurologic examination

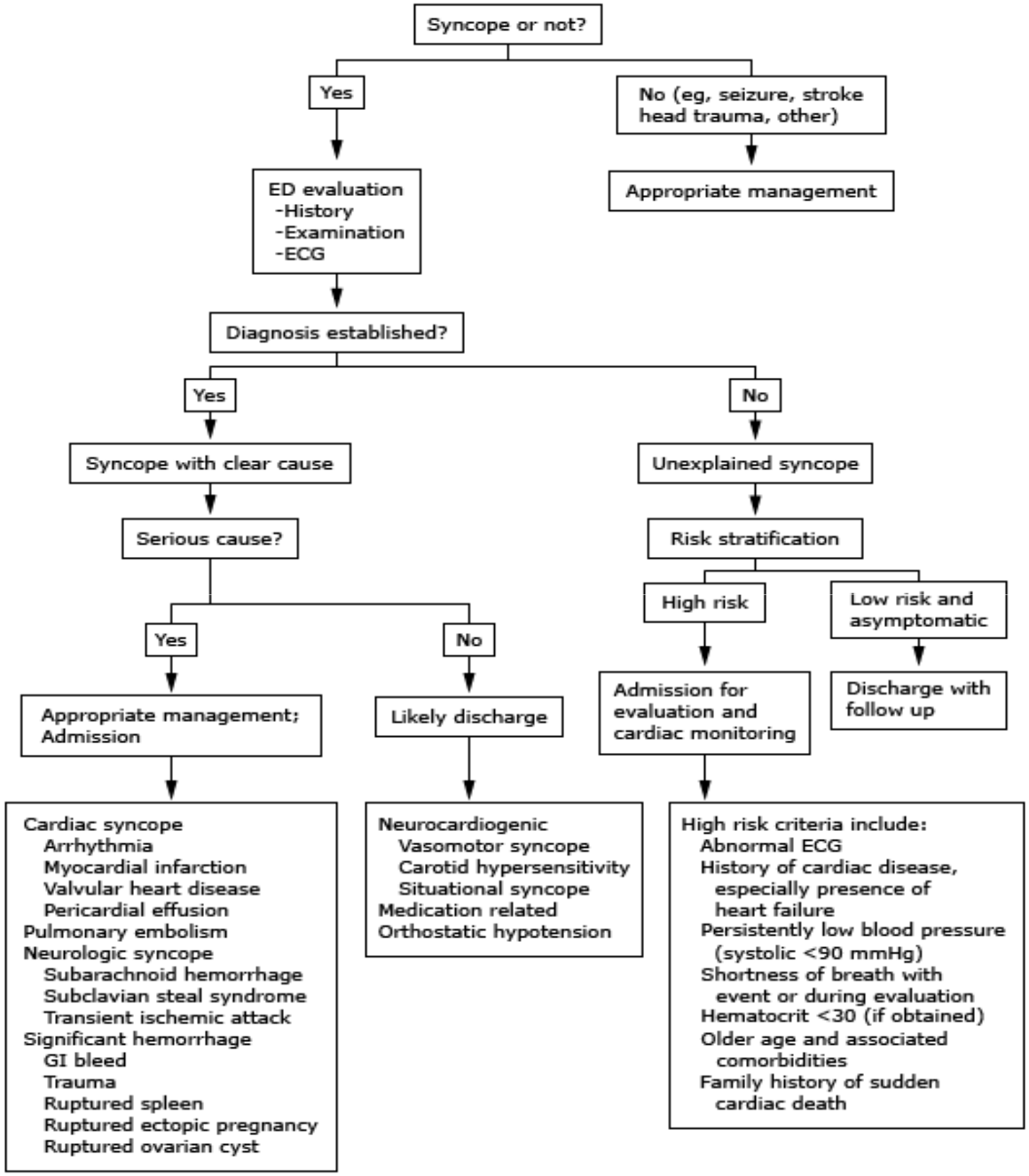
- For well-appearing asymptomatic patients
  →Determine the risk for adverse outcome

High risk for adverse outcome

- Abnormal ECG
- History of cardiac disease (esp. CHF)
- Persistedly SBP <90 mmHg
- SOB (+)
- Hct < 30%
- Older age and associated comorbidy
- Family history of sudden cardiac death

ECG abnormalities

LBBB or bifascicular block QRS duration ≥0.12 seconds Mobitz I second degree AV block Asymptomatic sinus bradycardia, SA block or sinus pause
Pre-excited QRS complexes Prolonged QT interval Brugada syndrome Arrhythmogenic right ventricular dysplasia
Q waves


Syncope or not?
Yes
No (eg, seizure, stroke head trauma, other)
Appropriate management
ED evaluation
-History
-Examination
-ECG
Diagnosis established?
Yes
No
Syncope with clear cause
Unexplained syncope
Serious cause?
Risk stratification
Yes
No
High risk
Low risk and asymptomatic
Appropriate management; Admission
Likely discharge
Admission for evaluation and cardiac monitoring
Discharge with follow up
Cardiac syncope
Arrhythmia
Myocardial infarction
Valvular heart disease
Pericardial effusion
Pulmonary embolism
Neurologic syncope
Subarachnoid hemorrhage
Subclavian steal syndrome
Transient ischemic attack
Significant hemorrhage
GI bleed
Trauma
Ruptured spleen
Ruptured ectopic pregnancy
Ruptured ovarian cyst
Neurocardiogenic
Vasomotor syncope
Carotid hypersensitivity
Situational syncope
Medication related
Orthostatic hypotension
High risk criteria include:
Abnormal ECG
History of cardiac disease, especially presence of heart failure
Persistently low blood pressure (systolic <90 mmHg)
Shortness of breath with event or during evaluation
Hematocrit <30 (if obtained)
Older age and associated comorbidities
Family history of sudden cardiac death

Take home messages

- 是否是真的syncope或是有其他造成意識喪失的嚴重問題?
  - 如Stroke, Seizure, Head injury
- 若是syncope, 有無會影響生命的原因?
  - 如**B**leeding, **P**ulmonary embolism, **H**eart
- 若是syncope原因不明, 病人是否為高危險?

The end

Thanks for your attention!!!