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Syncope

MUDr. Anna Hasara, ARK FNUSA

MUDr. Lukáš Dadák

Learning objectives:

- Student will learn the most common causes of syncope.
- Student will learn the FA to a casualty with a syncope.

Introduction

- Syncope is a clinical syndrome in which **transient loss of consciousness** (TLOC) is caused by a period of **inadequate cerebral blood flow**, most often the result of an abrupt drop of systemic blood pressure
- Brief duration (8 to 10 seconds)
- By definition spontaneously self-limited

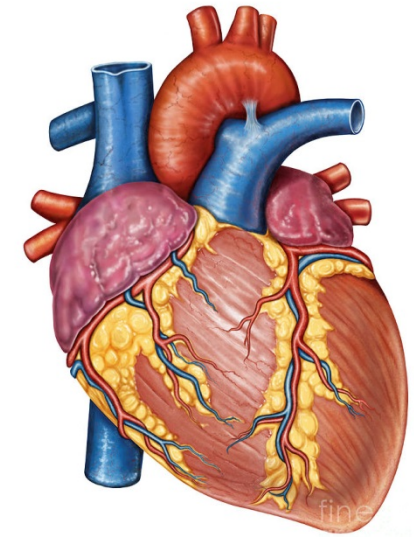
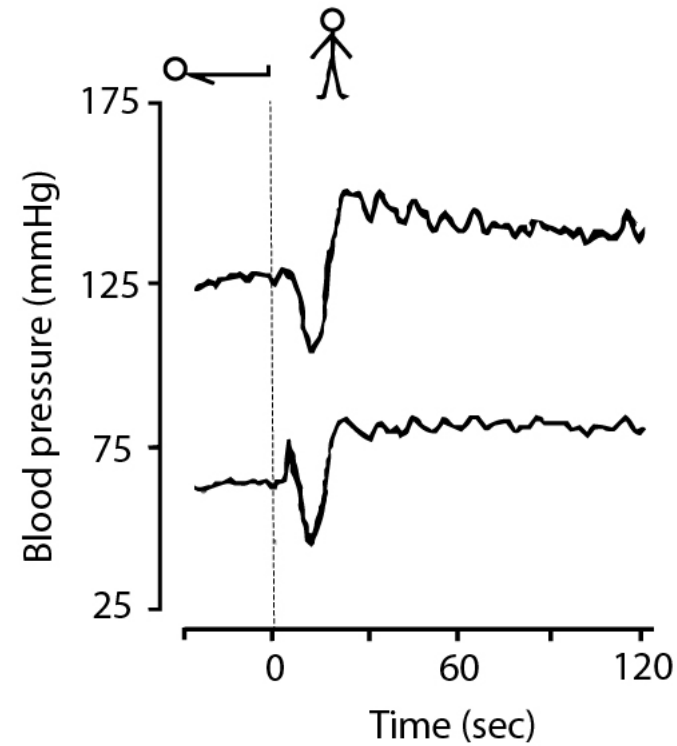
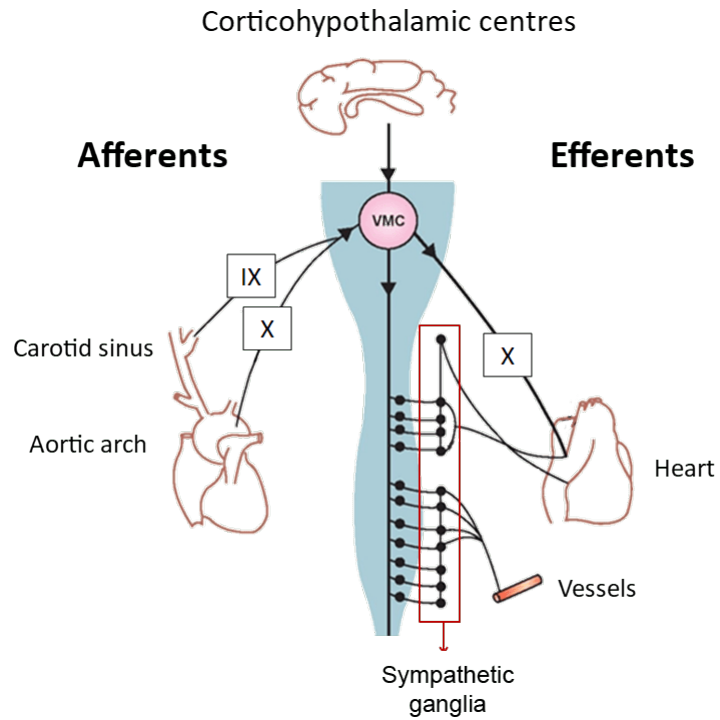
Epidemiology

- Prevalence in the population of approximately 20%
- Only 1 % needs hospital admission
- Incidence of syncope is roughly bimodal
 - in late adolescence to early adulthood
 - in older age, with a sharp rise after age 70 years

Reflex-related

Ortostatic

Cardiac



Causes

Reflex-mediated	Orthostatic hypotension	Cardiac
<p>1. Vasovagal</p> <ul style="list-style-type: none"> - Orthostatic vasovagal syncope: usually after prolonged standing, frequently in a warm environment, etc - Emotional vasovagal syncope: secondary to fear, pain, medical procedure, etc - Unknown trigger 	<p>1. Medication-related</p> <ul style="list-style-type: none"> - Diuretics (eg, thiazide or loop diuretics) - Vasodilators (eg, dihydropyridine calcium channel blockers, nitrates, alpha blockers, etc) - Antidepressants (eg, tricyclic drugs, SSRIs, etc) 	<p>1. Tachyarrhythmias</p> <ul style="list-style-type: none"> - Ventricular tachycardia - Supraventricular tachycardias
<p>2. Situational</p> <ul style="list-style-type: none"> - Micturition, defecation - Swallowing - Coughing/sneezing 	<p>2. Volume depletion</p> <ul style="list-style-type: none"> - Hemorrhage - Gastrointestinal losses (ie, vomiting or diarrhea) - Diminished thirst drive (primarily in older patients) 	<p>2. Structural disease</p> <ul style="list-style-type: none"> - Severe aortic stenosis - Hypertrophic cardiomyopathy - Cardiac tamponade - Prosthetic valve dysfunction
<p>3. Carotid sinus syndrome</p>	<p>3. Autonomic failure</p> <p>Primary: pure autonomic failure, Parkinson's disease, multiple system atrophy, Lewy body dementia</p> <p>Secondary: diabetes mellitus, amyloidosis, spinal cord injuries, autoimmune neuropathy (eg, Guillain-Barré), paraneoplastic neuropathy</p>	<p>3. Cardiopulmonary /vascular</p> <ul style="list-style-type: none"> - Pulmonary embolus - Severe pulmonary hypertension - Aortic dissection

Clinical symptoms

1. Prodromal symptoms

- Lightheadedness
- A feeling of being warm or cold
- Sweating
- Palpitations
- Nausea or nonspecific abdominal discomfort
- Visual "blurring" occasionally proceeding to temporary darkening or "white-out" of vision
- Diminution of hearing and/or occurrence of unusual sounds (particularly a "whooshing" noise)
- Pallor reported by onlookers

2. Transient loss of consciousness (! CAVE trauma!)

First aid

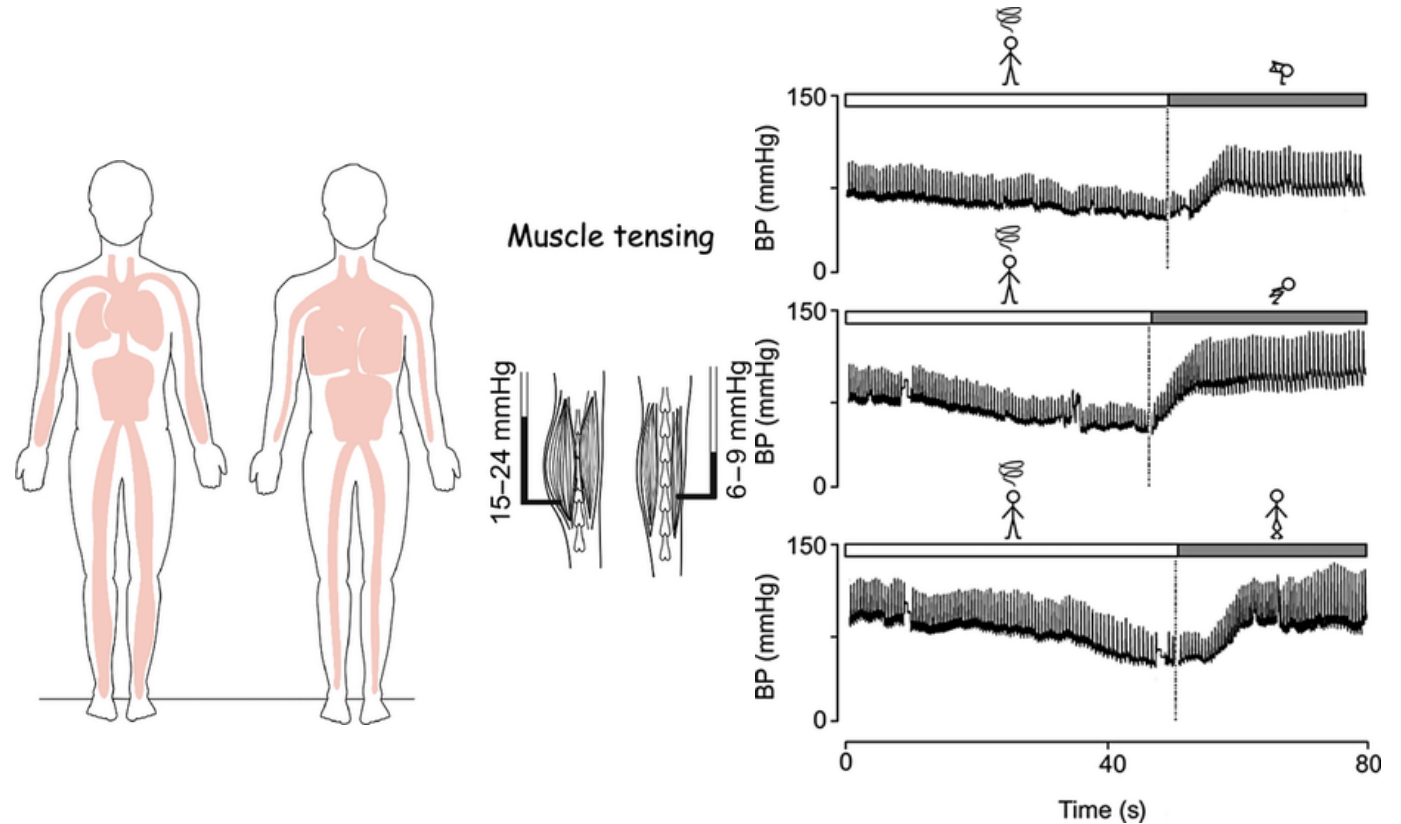
1. Identification and treatment of prodromal symptoms
2. Immediate treatment of syncopal patients

Identification and treatment of prodromal symptoms

- Avoiding hazards
(pulling off to the side of road if driving or lying down to avoid a fall)
- Respond to the warning by finding a safe location
(seated or ideally supine)
- **Physical isometric counterpressure** maneuvers:
 - leg-crossing
 - lower body muscle tensing

Isometric Counterpressure Maneuvers

- Sit down and tilt head forward
- Squat
- Leg-crossing



<https://onlinelibrary.wiley.com/doi/full/10.1111/joim.12249>

Treatment of syncopal patients

Safety

1. Assist the patient to the ground, chair, or stretcher to avoid traumatic injury. When necessary, remove the patient from any potential external dangers (eg, high places, water, electrical wires, etc).
2. Lay the patient supine.

Stimulate

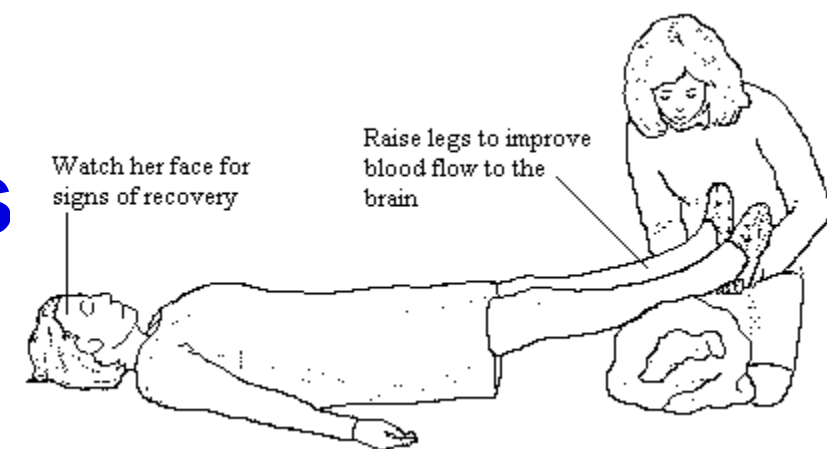
(Unresponsive → Alert)

3. Attempt to arouse the patient. Do not try to raise the patient up until the patient indicates readiness to do so. Raising the patient too soon may trigger recurrent transient loss of consciousness

Shout for help



Treatment of syncopal patients



http://exfau.tripod.com/firstaid/blood_circulation_system.html

Airways (usually patent and open)

Breathing (normal breathing)

Circulation (puls is present)

elevate legs if possible to enhance venous return to the heart and thereby restore adequate cerebral perfusion)

- Observe for other signs (pallor, diaphoresis, seizure activity) that may assist in establishing the etiology.
- Obtain medical history to identify cause of syncope.
- Give fluids (only fully consciousness casualty).

When to call emergency (155/112)

- Not normal consciousness > 5 minutes
- Possibility of **cardiac** cause of syncope
 - syncope while sitting, lying, effort syncope
 - „cardiac prodroms“- palpitation, breathlessness, chest pain ...
 - previous medical history of cardiac problems (heart attack, arrhythmias,...)
- Trauma as a result of syncope and fall

Video of syncopal patients

- https://www.syncopedia.org/aiovg_videos/orthostatic-vasovagal-syncope/
- https://www.syncopedia.org/aiovg_videos/post-exercise-vasovagal-syncope/

Learning outcomes:

- Student is able to list the most frequent reasons of syncope.
- Student is able to list the most frequent symptoms of syncope.
- Student is able to administer first aid to a casualty with a syncope.

Literature

- <https://www.uptodate.com/contents/syncope-in-adults-clinical-manifestations-and-initial-diagnostic-evaluation>
- <https://www.syncopedia.org/>
- <https://www.syncopedia.org/video-library/>

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