MASSACHUSETTS GENERAL HOSPITAL
NEUROSCIENCE

Alarm Bells for Patients with "Spells"

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Disclosures

Neither I nor my spouse/partner has a relevant financial relationship with a commercial interest to disclose.

Objectives

- Review types of transient spells
  - Motor and sensory without altered awareness
  - Spells with altered awareness and confusion
  - Loss of consciousness
- Clinical presentation and differential diagnosis
- Diagnostic approach

Motor and sensory spells

Transient ischemic attacks	Seizures	Migraines	Movement disorders	Functional disorders
• No aura • Sudden onset • Focal motor and/or sensory symptoms • Minutes to hours	• Aura • Sudden onset and rapidly progressing • Semiology varies by site of onset – focal vs. generalized • 1-2 minutes • Post ictal period mins to hrs	• Aura • Gradual onset • May be associated with focal symptoms • 30 mins to hours • Rare post ictal confusion	• No aura • Variable tempo • Tics, chorea, ballismus, spasm etc. • Improve in sleep • Mins to hours • No post ictal period	• Variable aura • Waxing and waning • Focal motor or sensory, abnormal movement • Variable duration • Post ictal – none or variable

Cornes SB, Shih T. CONTINUUM: Lifelong Learning in Neurology. 2011 Oct 1;17(5):984-1009.
Abbatemarco JR, Rae-Grant AD. Cleveland Clinic journal of medicine. 2018 Feb 1;85(2):155-63.
Henry TR, Ezzeddine MA. Neurology: Clinical Practice. 2012 Sep 1;2(3):179-86.

Spells with altered awareness/confusion

Transient ischemic attacks	Seizures	Migraines	Functional disorders	Transient global amnesia
• No aura • Sudden onset • Focal motor and/or sensory symptoms • Minutes to hours **Aphasia, agnosia**	• Aura • Sudden onset and rapidly progressing • Semiology varies by site of onset –1-2 minutes • Post ictal period mins to hrs **Loss of awareness, staring, automatisms**	• Aura • Gradual • May have • focal symptoms • 30 mins to hours • Rare post ictal **Rare and variable confusion**	• Variable aura • Waxing and waning • Variable symptoms • Variable duration • Post ictal – none or variable **Variable and fluctuating**	• **Age 50s-70s** • **No aura** • **Sudden** • **Anterograde amnesia** • **Cognition intact** • **No focal deficits** • **2-24 hours** • **No post ictal**

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Loss of consciousness

Seizures	Syncope	Functional-psychogenic non epileptic seizures
• Aura • Sudden onset • May have focal onset • Tonic-clonic, clonic, myoclonic etc. • 1-2 minutes • Variable tongue biting and incontinence • Post ictal period mins to hrs	• Aura • Sudden onset • From standing • Atonic , myoclonic • < 5 mins • Variable tongue biting and incontinence • No or brief post ictal • Orthostasis	• Variable aura • Waxing and waning • Variable semiology • Variable duration • Post ictal – none or variable • Variable tongue biting and incontinence

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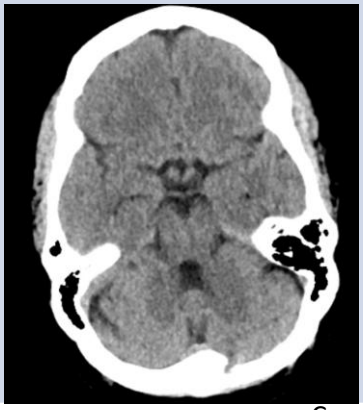
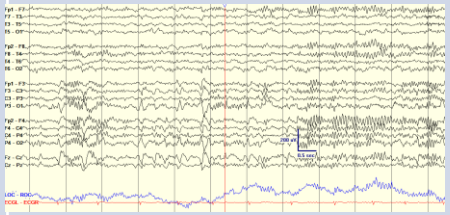
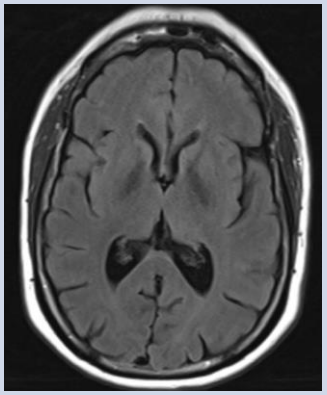
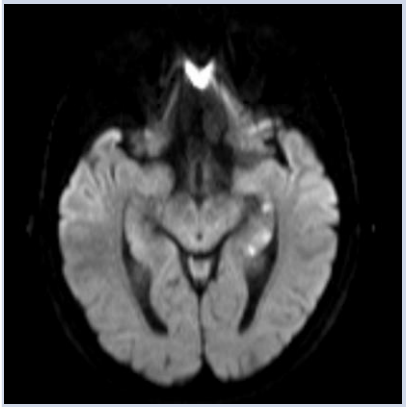
Diagnostic approach

Transient ischemic attacks	Seizures	Migraines	Transient global amnesia
• CTH • MRI brain • Vessel image (CTA/MRA/US) • (EEG may be considered)	• CTH • MRI brain ➢ With contrast ➢ 3 Tesla (epilepsy protocol) • Routine or continuous EEG	• MRI brain particularly if red flags ➢ Focal deficits on exam ➢ Acute worsening ➢ Sudden onset new headaches particularly in older patients	• CTH/MRI brain • EEG









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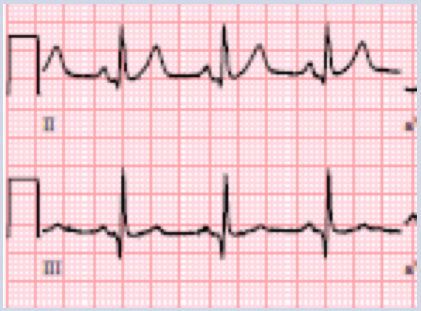
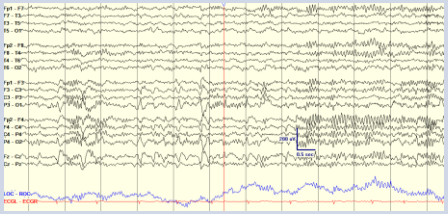
Diagnostic approach

Syncope	Functional-psychogenic non epileptic seizures	Movement disorder
• CTH (and vessel imaging) • EKG • Tilt table testing  • MRI Brain	• CTH/MRI • EEG – ideally EEG that captures the spells 	• Clinical diagnosis • EEG to capture movements • CTH and MRI 

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Summary

- Transient neurological spells can have a broad differential
- Clinical history and semiology provide diagnostic clues
- Work up can be geared towards most likely diagnosis

Thank you