

Parasomnias

Things That Go Bump In The Night

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Sleep is an essential, a health giving restorative....
Yet, darkness is also a cloak for hobgoblins and
evildoers... Seizures are probably more common
in sleep than in wakefulness. Phenomena such as
extreme restlessness, excessive swallowing
movements, nightmares and sleep-walking may
possibly be seizures, masked and disguised by the
altered physical and mental state of sleep
Lennox & Lennox, 1960

Nocturnal Spells Differential Diagnosis

- NREM Arousal Disorders
- REM Behavior Disorder
- Sleep Related Movement Disorders
- Psychiatric Disorders
- Seizures

An 18 year-old college student had lifelong attacks of frequent arousals from sleep, sometimes accompanied by a scream or by getting out of bed and walking around. These attacks occurred approximately one hour after falling asleep. Recently, her roommate found her outside the dorm room standing by a pond. She had no recall of walking outside. Her mother and brother had similar spells which they "outgrew" in their 20's.

NREM Arousal Disorders

- A spectrum of behaviors typically arising from delta (Stage 3) sleep
- NREM arousal disorders include
 - Confusional arousals
 - Somnambulism
 - Night terrors
- Isolated sleep talking is not considered a true disorder

NREM Arousal Disorders Diagnostic Elements

- Non-stereotyped
- Occur as a spectrum
- Usually occur in the first half of the night
- Limited to sleep and naps
- Strong family history
- Precipitants common

Confusional Arousals

- Sudden arousal from sleep
- Complex behaviors without full alertness
- Common in children
- May persist into adulthood
- Decreases with age
- May recur with precipitants

Patient #1
Tossing and Turning
in Bed

Somnambulism – Sleep walking

- Complex automatisms in sleep
- Common in children
- May persist into adulthood
- Decreases with age
- Must protect the patient from injury
- May recur with precipitants

Night Terrors

- Inconsolable fear arising from sleep
- Common in children
- Decreases with age
- Extreme agitation may result in injuries

NREM Arousal Disorders Polysomnography

- Delta sleep preceding an event
- Sleep walking
- Video should be used in the evaluation
- Expanded EEG coverage should be used in the evaluation (to exclude the possibility of seizures)

NREM Arousal Disorders Precipitants

- Sleep deprivation
- Febrile illnesses
- Alcohol
- Medications
- Emotional stress
- Physical stress (injuries, surgery, etc.)

NREM Arousal Disorders Treatment

- Avoid precipitants
- Reassurance (if infrequent)
- Prevent injury

- Tricyclic anti-depressants
- Benzodiazepines

A 63 year-old accountant, who had been in the military, experienced combative sleep behaviors for ten years. He was diagnosed with post-traumatic stress disorder, but treatment was ineffective. He continued to have early morning episodes of kicking, punching, screaming, sitting up and breaking furniture. Upon awakening, he was amnestic of his actions but did recall vivid dreams of combat.



REM Sleep Behavior Disorder

- Patients act out their dreams with punching, kicking, talking, screaming, jumping out of bed, etc.
- Prodrome of sleep talking, screaming, and limb twitching
- Behavior is often discordant with the patient's waking personality

REM Sleep Behavior Disorder Demographics

- Male >> Female (9:1)
- Mean Age = 59 years
- Most patients have no neurological history at presentation but frequently develop neurologic disorders
- Frequently associated with the subsequent development other neurologic disorders

RBD: Associated Neurologic Conditions

- Multiple system atrophy
- Parkinson's disease
- Progressive supranuclear palsy
- Multiple sclerosis
- Dementia
- Stroke
- Narcolepsy
- PTSD

RBD: Associated Medications

- Tricyclic anti-depressants
- Serotonin re-uptake inhibitors
- MAO inhibitors
- Drug intoxication or withdrawal

RBD Treatments

- Clonazepam
- Melatonin
- Tegretol
- Sinemet
- ReQuip
- Mirapex

Sleep Related Movement Disorders

- Periodic limb movements of sleep
- Bruxism
- Rhythmic movement disorder

Periodic Limb Movements of Sleep

- Periodic slow twitches of the extremities
- Must occur at least 4/120 seconds
- Can cause arousals
- May cause excessive daytime somnolence
- Bedpartner may complain of the movements

Buxism

- Teeth grinding
- May wear teeth flat
- Treat with bite-block
- Occasionally medication management

Rhythmic Movement Disorder

- Includes
 - Head-banging
 - Head-rolling
 - Body rocking
 - Limb movements less common
- Repetitive movements of the head neck and trunk occur at 0.5-1 Hz



Rhythmic Movement Disorder

- Episodes last seconds to minutes
- Most common in infants
- May persist into adolescence and adulthood
- May be associated with developmental delay or static encephalopathy

Sleep Related Psychiatric Disorders

- Nocturnal Panic Disorder
- Post-traumatic stress disorder
- Non-epileptic events/seizures
- Psychogenic sleep

Nocturnal Panic Disorder

- Awaken from sleep with panic attacks
- May include
 - Tachycardia
 - Diaphoresis
 - Palpitations
 - Frightened appearance
- May result in excessive daytime sleepiness and/or insomnia
- May be confused with apneic events

Non-epileptic Events/Seizures

- Patient must be awake or drowsy at the onset of the event
- Normal EEG during event
- Often includes thrashing, pelvic thrusting and asymmetric movements

Sleep Related Epilepsy Syndromes

- Benign childhood epilepsy with centrotemporal spikes (Rolandic Epilepsy)
- Epilepsy with generalized tonic clonic seizures on awakening
- Juvenile myoclonic epilepsy
- Electrical status epilepticus of sleep
- Temporal lobe epilepsy

Sleep Related Epilepsy Syndromes

- Frontal lobe epilepsy
 - Clinical manifestations vary markedly depending on the ictal onset zone
 - May be inherited as an Autosomal Dominant Nocturnal Frontal Lobe Epilepsy
 - Seizures may occur only during in sleep and therefore be unrecognized for years

Partial Seizures May Have

- Bizarre clinical manifestations
- Preserved consciousness
- Rapid recovery
- No tonic clonic movements
- No change in scalp EEG

Manifestations of Partial Seizures

- | | |
|-----------------------|-------------------------|
| • Automatism | • Tonic clonic activity |
| • Thrashing | • Fear |
| • Kicking | • Tachycardia |
| • Running | • Shouting |
| • Bicycling movements | • Screaming |
| • Undirected violence | • Laughing |
| • Posturing | • Talking |

Diagnosis of Nocturnal Spells

- History
 - Are events recurrent?
 - Are events stereotyped?
 - What time of night do events occur?
 - Do events occur during wakefulness/daytime/
 - Is there a family history?
 - Is there a neurologic history?
 - Is the patient taking any medications?

Diagnosis of Nocturnal Spells

- Polysomnography with Expanded EEG
 - Cost efficient
 - EEG detects inter-ictal and ictal epileptiform activity
 - Video allows characterization of the events
 - Allows sleep scoring
 - Excludes other sleep related disorders

Diagnosis of Sleep Related Seizures

- Consider nocturnal seizures in patients with a history of epilepsy, even if well controlled
- Stereotyped events support seizures
- Occur at any time of night (NREM>REM)
- May have similar events during the day
- Response to a trial of anti-epileptic drugs

Questions
