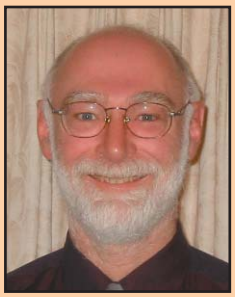
Parasomnias

Things that go thump in the night

Philip King



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BACKGROUND General practitioners are well versed with patients presenting to the surgery with sleep symptoms, however, the approach to evaluating these symptoms is often haphazard. Insomnia is the commonest presenting complaint. Sleep apnoea, although readily treatable, carries with it significant morbidity and mortality.
OBJECTIVE This article aims to highlight those disorders that occur infrequently during the night but which interrupt sleep – the parasomnias.
DISCUSSION Knowledge of the spectrum of parasomnias and their symptoms usually allows a reasonably accurate clinical diagnosis and the assistance of a sleep physician or sleep laboratory is not often required. Parasomnias may be classified by the sleep phase during which they occur. Nonrapid eye movement (NREM) parasomnias are most likely to occur during the first episode of stages 3 and 4 of NREM sleep (slow wave sleep) which is approximately one hour after sleep onset. Rapid eye movement (REM) sleep density is usually greatest in the last few hours of sleep, therefore REM sleep parasomnias are most likely to occur during this time.

NREM sleep parasomnias

Parasomnias may be classified by the sleep phase during which they occur (Table 1). Sleep terrors, confusional arousals and sleep walking are the commonest nonrapid eye movement (NREM) parasomnias and are different manifestations of the one arousal disorder. Genetic factors are important and illustrate their relatedness: some family members may have one combination of the three manifestations and others will have another. The distinction of these disorders from normal sleep activity is not as clear as it may seem. For example, normal subjects when roused from stages 3 and 4 of NREM sleep may be:

- briefly confused
- may carry out seemingly normal activity, and
- may have poor recollection of the event afterwards.

Who cannot recall such events from resident nights on call in hospitals? Predisposing conditions include:

- young age
- recovery from sleep deprivation
- stress
- alcohol and other drugs
- pain
- fever, and
- arousals from noise or other environmental stimuli.

Table 1. Classification of parasomnias

NREM sleep parasomnias	
	Sleep terrors
	Sleep walking
	Confusional arousals
REM sleep parasomnias	
	REM sleep behaviour disorder
	Nightmares
	Isolated or familial sleep paralysis
Other parasomnias	
	Hypnic jerks (if severe)
	Sleep talking
	Rhythmic movement disorder
	Exploding head syndrome

Sleep terrors

Sleep terrors most commonly occur in children between the ages of five to seven and usually remit during adolescence. The marked predilection for childhood suggests that maturational factors are important and the frequent positive family history indicates the importance of genetic factors. When seen in adulthood it is more commonly a continuation of the childhood disorder and therefore apparent onset in the adult should prompt careful consideration of other diagnoses such as epilepsy.

Sleep terrors usually have a sudden and dramatic onset. The child will often scream or cry at the onset, appear sweaty and have a rapid pulse and breathing, and is unable to be communicated with or consoled. It is best not to wake the patient, but if this happens there is usually poor recall of what has occurred and no dream recall. By contrast, following nightmares, patients are usually easy to communicate with and have dream recall that is often elaborate. The clinical features of sleep terrors are so typical that the history alone is usually sufficient to make the diagnosis.

Management

Management typically involves explanation, however, stress reduction, hypnosis and a monitored course of clonazepam may be used in selected patients. Waking the patient ('forced arousals') just before the time after sleep onset when the activity usually begins may be helpful. Most sleep terrors occur during the first stage of 3 or 4 of NREM sleep which is approximately one hour after sleep onset.

Sleep walking

Sleep walking is the general descriptive phrase for a disorder that includes other ambulatory activity. This may be diverse and include:

- running
- searching for objects
- food preparation and possibly,
- driving.

The patient may talk during the episode but speech is often unintelligible. The event may terminate with the patient waking, in which case recall of the activity is poor or nonexistent. Where patients return to sleep without waking there is variable recall of the event in the morning. It is uncommon to sustain serious injury during sleep walking but its occurrence often prompts referral to a sleep physician. Injury may occur 'en passant', eg. falling down stairs or knocking against sharp or solid objects. In a small group of patients there is sudden arousal and violent movement and ambulation. Patients may have vague recall later of fearful dream content, such as being pursued, spiders dropping from the ceiling or rats crawling over them. Bed partners may be partly smothered ('protected from the danger') or patients may injure themselves by hitting into objects or by going through doors and windows.

Some of the features of sleep walking resemble rapid eye movement sleep behaviour disorder (RBD), but in this condition dream recall is elaborate and the patient remains in bed or nearby. Seizures or postictal confusion must also be considered.

Management

Management includes explanation and possible investigations for RBD and epilepsy. The usual place of sleep should be made as safe as possible. Clonazepam may be used intermittently for occasions when the patient is sleeping elsewhere. Hypnosis, attention to stress and sleep deprivation are sometimes helpful. Adults with sleep walking and other NREM parasomnias rarely have significant psychopathology, contrary to what was previously thought.

Confusional arousals

Confusional arousals are varied in length (30 seconds to 5 minutes) and content. Moaning or talking are common features. Patients remain in bed and often sit up but they may thrash about and kick. No or poor recollection is characteristic. An episode of sleep walking may follow. Distinguishing confusional arousals from sleep terrors and sleep walking is purely clinical and based on the history and/or video evidence. Rapid eye movement sleep behaviour disorder and seizures must be distinguished by their different clinical features and polysomnography (PSG) and electroencephalogram (EEG) features. Attention to risk factors is often all that is required as the risk of injury and disturbance of the bed partner is usually less than that seen with sleep walking.

REM sleep parasomnias

REM sleep behaviour disorder

In RBD, patients literally act out their dreams. The dreams often have a violent or frenetic content. Verbal activity usually consists of shouting and swearing, the latter even occurring in patients who are unaccustomed to such behaviour. Motor activity usually consists of punching and kicking. Bed partners are more frequently unintentionally injured than the subject of direct attack. Patients usually remain in bed but occasionally may fall out. In contrast to patients with NREM parasomnias who are difficult to rouse to full consciousness during an episode, patients with RBD are relatively easy to rouse and are usually able to describe a dream appropriate to the verbal and motor activity.

Rapid eye movement sleep behaviour disorder is more common in the elderly and in males. Coexisting degenerative neurological conditions such as Parkinson disease or its variants, or Alzheimer disease are often present. Occasionally RBD may predate the symptoms of the neurological illness. Alcohol, benzodiazepine and other drug withdrawal, and tricyclic and other antidepressant drugs predispose to this condition.

The occurrence of RBD in humans may have been predicted by experiments on cats performed years earlier where it was observed that lesions in the pons adjacent to the locus ceruleus produced unexpected motor activity during REM sleep. The sleep study findings in both the animal experiments and in patients being studied in the sleep laboratory are identical: that of lack of the normal muscle atonia seen in REM sleep. The PSG may show tonic (continuously elevated) and/or an increase in phasic (intermittent) submental electromyographic activity. There are often similar findings in the limb muscles correlating with the observed motor activity.

Rapid eye movement sleep behaviour disorder was first described definitively only recently (in 1986). Lack of awareness of the condition probably accounts for delayed diagnosis. Classic cases are easily diagnosed clinically based on interview with the patient and bed partner. Polysomnography may be helpful to help confirm the diagnosis. It is important to diagnose as RBD usually responds well to low dose clonazepam. Practitioners should have a high index of suspicion for this diagnosis when an elderly patient presents for the first time with a parasomnia.

Nightmares

Nightmares (dream anxiety attacks) are frightening or disturbing dreams which may or may not wake the patient. Prevalence approaches 100% but it is usually only in the context of post-traumatic stress disorder or other obvious psychopathology where nightmares become a clinically significant problem.

Levodopa, propranolol, antidepressants, neuroleptic agents and alcohol or barbiturate withdrawal may all trigger nightmares. The diagnosis is usually made clinically. Sleep studies are rarely required but may be helpful in rare situations where distinguishing nightmares from NREM parasomnias or seizures is important. Polysomnography shows normal REM sleep during nightmares. Tachycardia may be present. Spectral and spatial EEG analysis has shown some subtle changes in REM sleep during nightmares however, this is insufficient to be useful clinically.

Other REM sleep parasomnias

Sleep paralysis, one of the three REM related features of narcolepsy, occurs in patients without this condition either in isolation or in families. Patients report being conscious but unable to move typically for up to 30 seconds or so, but episodes may last up to two minutes. Episodes terminate spontaneously but may do so more quickly if the patient

is touched or if there is a sudden noise. Hallucinations may accompany the paralysis. It is seen more frequently in patients with a disrupted sleep schedule or circadian rhythm disorder. Considering the lifetime prevalence may be as high as 50% it is surprising that it is not a better known condition. Rapid eye movement sleep inhibitors may be useful in the uncommon situation where a patient has frequent disturbing episodes.

Other REM parasomnias include migraine and cluster headache and are not discussed further here.

Other parasomnias

Hypnic jerks (sleep starts) are almost universal, occur precisely at sleep onset and consist of a single jerk of the limbs. A feeling of falling and less commonly a flash or cry may accompany the sensation. Occasionally multiple hypnic jerks may occur and these may disturb sleep onset.

Sleep talking without any other associated parasomnia is a benign condition and is seen almost universally. It occurs more commonly during drowsiness and stages 1 and 2 of NREM sleep than in REM sleep.

Rhythmic movement disorder encompasses head banging and other rhythmic body movements. It occurs during drowsiness and NREM sleep and must be distinguished occasionally from other disorders such as seizures and periodic limb movements of sleep by PSG.

Exploding head syndrome is a rare but probably under diagnosed parasomnia characterised by an explosive noise or feeling inside the head just before or during sleep. Some patients have repetitive episodes that prevent sleep onset. Once a diagnosis has been made, reassurance is usually the only necessary treatment.

Conclusion

The history from the patient and witness is the most important tool for assessment of parasomnias. Knowledge of the conditions, age of onset, predisposing factors, sleep phase when the events occur, and other clinical information will then enable a diagnosis to be made. Certainty of diagnosis, ability to manage the patient appropriately and implications of an incorrect diagnosis determines whether referral to a sleep physician is appropriate. Most children with occasional sleep walking episodes are usually diagnosed and best managed by the family physician without sleep study or referral whereas an adult with undiagnosed episodes of potentially dangerous activity is best referred. Drug treatment usually has a minor role and where used should always be carefully monitored to avoid dependency. Expertise at sleep physician level in nonrespiratory sleep disorders is variable and occasionally tertiary or second referrals are necessary. Where seizures are included in the differential diagnosis, a neurological opinion may be helpful.

* Sleep medicine is not rocket science. You just have to know the code. (International Morse code).

SUMMARY OF IMPORTANT POINTS

- Genetic factors are important in the NREM parasomnias.
- GPs should have a high index of suspicion when an adult patient presents for the first time with a parasomnia.
- RBD may predate the symptoms of neurological illness.
- Parasomnias are treatable however, drug treatment, if used, must be carefully supervised.

Conflict of interest: none declared.

Further reading

Kryger M H, Roth T, Dement W C. Principles and practice of sleep medicine (3rd edn). Philadelphia: W B Saunders Company

REPRINT REQUESTS

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