Abnormal Sexual Behaviors During Sleep

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Parasomnias

“In all of us, even in good men, there is a lawless, wild-beast nature which peers out in sleep.”

PLATO – The Republic

“Acts done by a person asleep cannot be criminal, there being no consciousness”
Basic Drives

- Sleep
- Sex
- Feeding
- Aggression
- Disorders of Arousals
  - Sleep-related abnormal sexual behaviors
  - Sleep related eating disorder
  - Sleep Violence
Sleepwalking

- Serious of complex behaviors that are usually initiated during arousals from SWS
- Altered state of consciousness and impaired judgement
Sleepwalking in adults

- Dreaming sometimes reported
- Dream enacting behavior may be difficult to distinguish from RBD
- Vivid Hallucinations
Adult Sleepwalkers

- Slow wave sleep dysregulation
- High amounts of SWS fragmentation
- Significant increase in delta power just prior to an arousal
- Increased slow wave activity across all NREM sleep cycles
Changes in Slow Wave Activity

- Recent study of EEG spectral analysis prior to sleepwalking episodes as well as normal awakenings.
  - Increase in SWA and slow oscillation density in the 3 minutes prior to SW episodes.
  - Not present when sleepwalkers having a normal non disoriented arousal.
Changes in Slow Wave Activity

- A burst of SWA often precedes confusional arousals and sleepwalking episodes.
- Often referred to as Hypersynchronous Delta
- May be an attempt by the cortex to block an arousal by increasing the density of SWA.
- The arousing stimulus partially overcomes the brains attempt to maintain sleep and patient is awoken in a disoriented state.
Sleepwalking and Medications

- Ambien
- Sonata
- Topamax
- Lithium
- Paxil
- Wellbutrin
- Risperdal
Parasomnia due to Drug or Substance

- SSRI
- Effexor
- TCA
- MAO inhibitors
- Remeron
- Withdrawal from cocaine, amphetamine, alcohol, barbiturates
Confusional Arousals

- Confusional behavior during or following arousal from sleep
- Often prominent anterograde and retrograde memory impairment
- Inappropriate – even violent
- Episode can last minutes or hours
- Behaviors can be simple or complex and protracted even aggressive sexual activity
Confusional Arousals

- Genetic factors
- Rotating shift work
- Night shift work
- Stress
- Anxiety
- Bipolar
- Depression
- OSA
- PLMD
- ETOH and Drug Abuse
Parasomnias

- Teen sleepwalks to top of 130 ft. crane.
- Electrician froze to death while sleepwalking barefoot in his underwear.
- Woman banned from eBay for refusing to pay for items while sleepshopping
- Sleepshoplifting
- Sleep Driving
- Sleep Working
Sexsomnia

- Inappropriate sexual behavior during sleep
- Most likely a variant of somnambulism
- Vastly underreported
- 50% medical legal cases
- Common precipitating factors
  - Sleep deprivation
  - Psycho physiological stress
  - Alcohol
  - Polysubstance abuse
- Must differentiated between a true sleep disorder and the “Twinkie Defense”
Sexual Activity and Sleep

- Popular notion that sexual activity followed by orgasm has a facilitatory effect on sleep.
- Experiment with ten volunteers – 5 men and 5 women, 21-35 years old
- Design – 4 consecutive nights in lab
  - First night adaptation to experiment
Following three nights:

Night A  read in bed for 15 minutes
Night B  masturbate manually for 15 min without reaching orgasm
Night C  masturbate and allowed to reach orgasm

Standard PSG to record sleep

ANAL PROBE to give objective account of orgasm in both men and women.
Sexual Activity and Sleep - Conclusion

- Masturbation with or without orgasm at bedtime has no effect on sleep that follows.
- Limitations
  - small group
  - coitus –more somatic activity and affective relationship
  - presence of researcher in room removing anal probe
  - reading has hypnotic effect
Sexsomnia

- Prevalence unknown.
- Has not been described in children.
- Web based survey (Sleepsex.org) self identified 69% male and 31% female.
- Other surveys also identified a male predominance.
- Prevalence rate suggested to be similar to the prevalence of other adult parasomnias (3-6%)
Sexsomnia

- Originates from NREM sleep
- Occurs any time during sleep
- Wide spread autonomic activation
- Sexual arousal frequently present
- Duration possibly exceeding 30 minutes
- Exceptional violence or injurious behavior
- Predominantly in adults
Sexsomnia

- Sexual vocalization
- Sexualized body movements
- Masturbation
- Cunnilingus
- Fellatio
- Fondling
- Sexual intercourse with orgasm
**Sexsomnia**

- Annoying to bed partner but not harmful, i.e. sexual moaning and sexually related sounds
- Annoying to bed partner and at times harmful to index case, i.e. violent masturbation
- Harmful to bed partner or others, where sex was forcibly imposed on the bed partners
Predisposing Factors

- Sleep deprivation
- Hyperthyroidism
- Migraines
- Head injury
- Encephalitis
- Stroke
- OSA and other sleep related respiratory events
Priming Factors

- Sleep deprivation
- Stress
- Medications
- Fever
- Alcohol
Precipitating Factors

- Travel
- Sleeping in unfamiliar surroundings
- Febrile states in children
- Physical or emotional stress
- Premenstrual period
- Medications
- Internal stimuli
- External stimuli
Sexsomnia-Diagnosis

- NREM parasomnia
- REM Behavior Disorder
- Partial Complex Seizures
- OSA
Causes of Sexsomnia

- NREM parasomnia sleepwalking and confusional arousals.
- Sleep Disordered Breathing.
- REM Behavior Disorder
- Sleep Epilepsy
- Sleep related Dissociative Disorders
- Medication
- Malingering
Sexsomnia – PSG

- Increased rate of arousals.
- Sleep Instability.
- Presence of characteristic arousals.
- Lower levels of SWS activity
Sexsomnia - Treatment

- Clonazepam
- Other Benzodiazepines
- Antidepressants
- Stress management
- Nasal CPAP for OSA
What to do?

**Protect** subject and bedpartner

- Recommend separate bed / bedroom
- Have subject sleep in a room on ground floor
- Cover windows with heavy drapes
- Take mirror and furniture out of bedroom
- Have subject sleep in a sleeping bag with zipper up.
Forensic Issues

The legal defense of sleep-related violence has been that the violent act is committed under a state of sleep, rendering the individual not responsible or accountable for that action.
Sexsomnia - Concerns

- Creates a convenient defense for sex offenders attempting to avoid responsibility for voluntary intentional sex crimes.
- Question of how to reliably and validly diagnose sexsomnia and ensure that it accounts for the actor’s behavior at the time of the episode.
Sexsomnia - Concerns

- Erections during sleep occur during St REM when somnambulism does not occur due to paralysis of voluntary muscles.

- Is sexsomnia a mental disorder and addressed by the legal system as sane or insane automatism.
Sexsomnia – Guidelines for Assessment

- Detailed history – preexisting bona fide sleep disorder.
- Brief duration of action (less than 20-30 min).
- Behavior abrupt, impulsive, senseless and without premotivation.
- Inappropriate and out of character.
- Victim is often someone who happened to be present.
Sexsomnia - Canada

- 10 known sexsomnia cases, 5 have resulted in acquittals.
- First case in 2003 – defendant found not criminally responsible on account of a mental disorder.
- The other 5 cases were found guilty due to “a lack of supporting evidence”.
- Reverse onus of proof on the accused.
Sexsomnia- My Private Practice

- The Wrestling Coach’s Wife.
- The Sleep Technologist with OSA.
- The Abstain until We get Married Couple.
- The Hypnotic induced Sensual Companion (several cases).
- The Child Molesting Malingeringer.
- Reverse Sexsomnia.
REM Sleep Behavior Disorder

- Absence of REM sleep atonia
- Acting out of dreams
- Dramatic violent or injurious behaviors
- Recall next day
- Misdiagnosed as seizure or psychiatric disorder
- Male predominance
REM Sleep Behavior Disorder

- The diagnosis is well demonstrated by videotaped behavior and polysomnography.
- REM sleep is demonstrated by EEG and EOG, with excessive augmentation of EMG in the chin and limb muscles.
- Presence of abnormal and very frequent twitches can also be found.
- Videotaping demonstrates limb-body jerking, complex movements and violent movements.
REM Sleep Behavior Disorder

- Clinically is associated with a history of agitated sleep, which recurs throughout the night, mostly in the 2nd half of sleep.
- Can be seen in isolation or with neurological symptoms:
  - Olivo-ponto-cerebellar degeneration
  - Parkinson’s disease
  - Multisystem atrophy
  - Progressive supranuclear palsy
  - Narcolepsy
- Can be seen in association with intake of norepinephrine reuptake inhibitors such as antidepressants.
Parasomnia due to Drug or Substance

- CAFFEINE and CHOCOLATE ABUSE implicated in causing or unmasking REM Behavior Disorder
OSA and Treatment

- OSA induced arousals from REM sleep mimicking RBD with immediate postarousal, dream related, complex or violent behavior.
- OSA induced arousals from NREM sleep with complex or violent behavior similar to primary disorders of arousals.
- NCPAP of OSA may result in SWS rebound.
OSA and Treatment

- OSA induced arousals from NREM can trigger recurrent episodes of sleep related eating disorder
- OSA induced cerebral anoxic attacks or nocturnal seizures with complex or violent behavior
Polysomnography

- Can provide support for the clinical diagnosis
- Can document multiple arousals from SWS unaccompanied by any parasomnia activity
- Can document arousals from SWS accompanied by the partial or full sequence of behaviors typical of sleepwalking
Polysomnography

- Helpful in identifying parasomnia arousal precipitants (OSA, PLMS)
- Helpful excluding diagnosis of Rem Behavior Disorder
- Normal PSG does not rule out the diagnosis of sleepwalking
Polysomnographic and other objective findings

- Sleepwalking typically begins after an arousal from SWS
- Occasionally can emerge from St 2 NREM
- Hyper synchronous delta waves may occur before an arousal in adults
- Heart rate acceleration, increased muscle tone and muscle twitching may rarely occur before SWS arousal
Legal Defense – Woman sleepwalking during alleged rape

- Lawyer for man accused of raping University of Cincinnati student said encounter could have been consensual.
- Victim takes prescription medication and has history of sleepwalking.
- Dexter Ford charged with raping 23 year old student near interstate 71 in Cincinnati.
- Goes to consent – how does accused differentiate between a “dream yes” and “awake yes”.
Legal Defense – Woman sleepwalking during alleged rape

- Two passing motorists called police after seeing Ford on top of student near a White Castle restaurant close to I-71.
- When police arrived, the woman was still asleep.
- Hamilton County Municipal Judge Fanon Rucker said he also was told the victim was asleep through the encounter.
- Ford homeless and HIV positive.
Summary

- You must inquire about abnormal or automatic behavior during the consultation and diagnostic workup.
- The policy of “Don’t Ask, Don’t Tell” does not apply to Sleep Medicine. May need to interview several times to elicit sexual history.
- Nocturnal Penile Tumescence test may have an important role in the future.
- Sexsomnia is greatly unrecognized and underdiagnosed.