RBD & Non-REM Sleep Parasomnias

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Disclosure Slide

No Disclosures

Learning Objectives

- To provide diagnostic criteria, clinical features, treatment, and important associated findings in REM sleep behavior disorder (RBD), and Non-REM sleep parasomnias (sleepwalking; sleep terrors; sexsomnia as a variant of confusional arousals; and sleep related eating disorder).
- To discuss the clinical implications of the strong link between RBD and parkinsonian disorders.
- Key Messages: Parasomnias can be properly diagnosed and effectively managed in most cases. RBD commonly heralds parkinsonism

RBD Diagnostic Criteria: ICSD-3 (2014)*

A. Repeated episodes of sleep-related vocalization and/or complex motor behaviors.

B. These behaviors are documented by PSG to occur during REM sleep, or based on clinical history of dream enactment, are presumed to occur during REM sleep.

*(International Classification of Sleep Disorders, 3rd Ed)

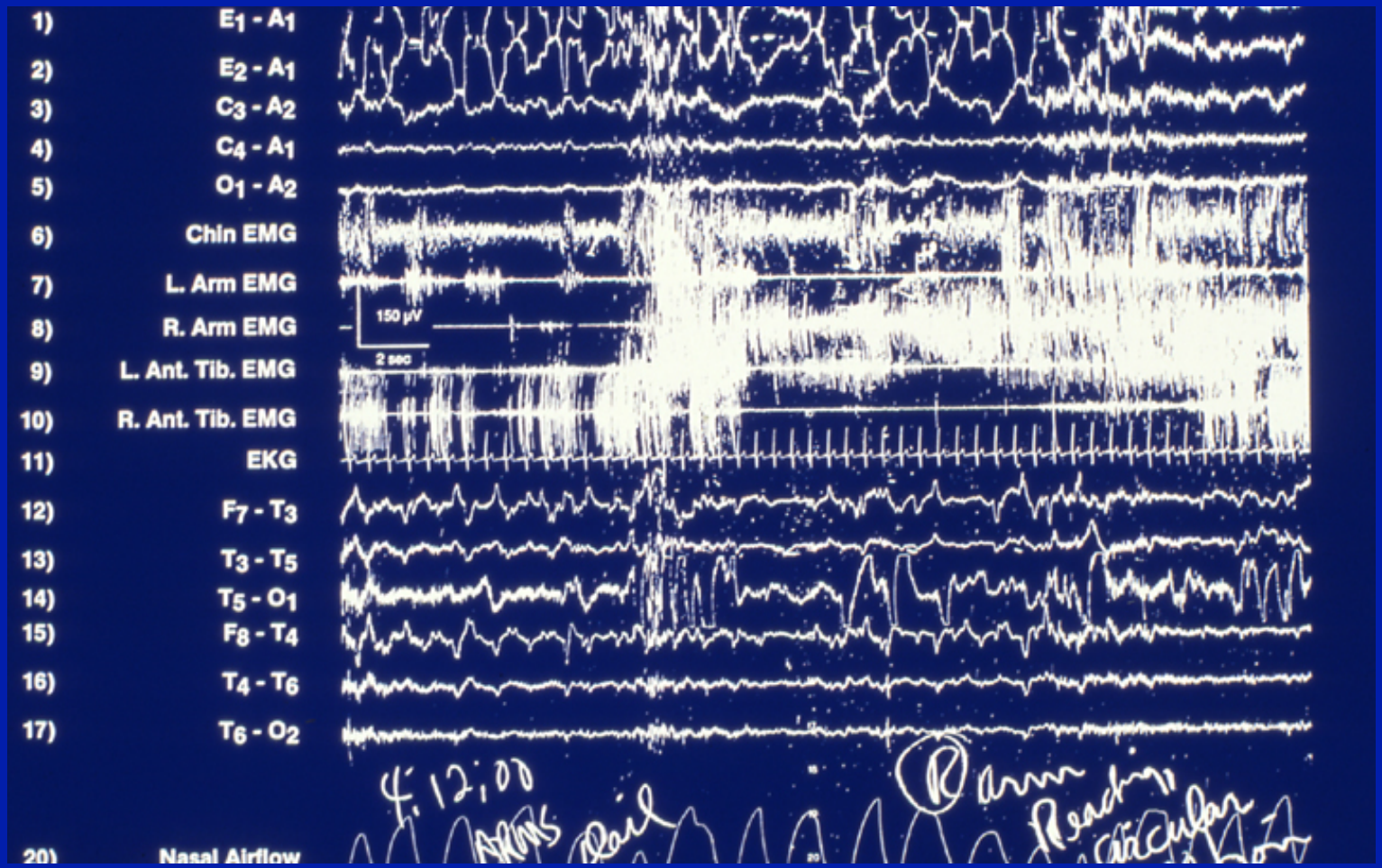
C. Polysomnographic recording demonstrates REM sleep without atonia (RWA).

D. The disturbance is not better explained by another sleep disorder, mental disorder, medication or substance use.

Montage of Vigorous, Aggressive, and Violent Behaviors During REM Sleep in RBD

**Please reference the included CD-ROM for footnotes related to this video.*

REM Sleep Behavior Disorder—Dream-Enacting Episode



RBD behaviors:

Loss of REM-atonia: core, universal feature.

1) Minimal: limb twitching and jerking
2) Complex: hand waving, hand grabbing, reaching and searching motions, gestures
3) Vigorous and violent: punching, kicking
4) Vocalizations: talking, yelling, profanities, anger, laughter.

J Sleep Res 1993 (N=96) [U of Minnesota]

- Males: 87.5%
- Mean age of RBD onset: 52.0 years (9-81 yrs)
- Dream-Enacting Behaviors: 87%
- Sleep Related Injury (chief complaint): 79.0%

Brain 2000 (N=93) [Mayo Clinic]

- Males: 87.0%
- Mean age of RBD onset: 61.0 years (36-84 yrs)
- Dream-Enacting Behaviors: 93%
- Sleep Related injury (chief complaint): 97%

RBD—Sleep-Related Injuries

- Ecchymoses
- Subdural hematomas
- Lacerations (arteries, nerves, tendons)
- Fractures (including high cervical—C2)
- Dislocations
- Abrasions/rug burns
- Tooth chipping, hair pulling

RBD—Treatment
(control of behavioral and dream disturbances associated with RBD)

1) Maximize the safety of the bedside environment.
2) Clonazepam: 0.5-1.0+ mg at bedtime.
3) Melatonin: 6-15 mg at bedtime.
4) Clonazepam/melatonin combined Rx.

Chronic RBD

A) Idiopathic (Cryptogenic—Evolving Neurodegeneration)

B) Associated with Neurologic Disorders (virtually all categories)

C) Medication-induced

Medication-Induced RBD

- Antidepressants: SSRIs, venlafaxine, mirtazapine, TCAs–but not bupropion (dopaminergic/noradrenergic)
- Beta-blockers: bisoprolol, atenolol
- Selegiline
- Anticholinergics
- Rivastigmine (Ach-esterase inhibitor)
- (Caffeine/chocolate in excess)

RBD and Parkinsonism:

Minnesota Regional Sleep Disorders Center

Experience: 1986-present

Newly diagnosed RBD patients:

1. 50% idiopathic
2. 50% symptomatic (neurologic disorders)

What was the outcome of idiopathic RBD?

Minnesota Group iRBD Outcome Data

- 80.8% (21/26): eventual conversion rate.
- 14.2 ± 6.2 years: mean interval, RBD onset to onset of parkinsonism/dementia.

"Delayed emergence of a parkinsonian disorder or dementia in 81% of older males initially diagnosed with idiopathic REM sleep behavior disorder (RBD): 16 year update on a previously reported series"

Sleep Med 2013; 14 (8): 744-748.

Schenck CH, Boeve BF, Mahowald MW

Barcelona Group iRBD Outcome Data

82% (36/44) of patients with idiopathic RBD eventually developed neurodegeneration.

"Neurodegenerative disease status and post-mortem pathology in idiopathic rapid-eye-movement sleep behaviour disorder: an observational cohort study"

Lancet Neurology 2013; 12 (5): 443-453.

Iranzo A, Tolosa E, Gelpi E, et al.

Onset of RBD to Onset of Parkinsonism/ Dementia/MCI

Rate of Conversion From Idiopathic RBD

- 81% Schenck et al. (2013)--Minnesota
- 82% Iranzo et al. (2013)—Barcelona

Mean Latency Period

- 14.2 yrs (range 5-29) Schenck et al. 2013
- 11.5 yrs (range 5-23) Iranzo et al. 2013
- 12.0 ±9.6 years Postuma et al. 2009

RBD Prevalence in Parkinsonism

- Almost 50% in Parkinson's Disease:

  1) Non-tremor predominant subtype.

  2) The presence of RBD in PD is associated with widespread PD morbidity, across many dimensions.

- 90% in Multiple System Atrophy
- 75% in Dementia with Lewy Bodies

RBD is a marker of widespread neurodegeneration in PD

1) Increased level of motor impairment.
2) Increased frequency of freezing of gait.
3) Increased level of cognitive impairment.
4) Increased presence of visual hallucinations.
5) Greater impairment in quality of life status.

Disorders of Arousal (From Non-Rapid Eye Movement Sleep)

General Diagnostic Criteria (ICSD-3)

(Confusional Arousals, SW, Sleep Terrors)

A. Recurrent episodes of incomplete awakening from sleep.

B. Inappropriate or absent responsiveness to efforts of others to intervene or redirect the person during the episode.

C. Limited or no associated cognition or dream imagery (e.g., a single visual scene).

D. Partial or complete amnesia for the episode.

E. The disturbance is not better explained by another sleep disorder, mental disorder, medical condition, medication, or substance use.

Sleepwalking

Diagnostic Criteria (ICSD-3)

A. The disorder meets general criteria for NREM disorders of arousal.

B. The arousals are associated with ambulation and other complex behaviors out of bed.

Sleepwalking Video

Sleep Terrors

Diagnostic Criteria (ICSD-3)

A. Meets general criteria for NREM DOA.

B. Arousals are characterized by episodes of abrupt terror, typically beginning with an alarming vocalization such as a frightening scream.

C. There is intense fear and signs of autonomic arousal, including mydriasis, tachycardia, tachypnea, diaphoresis during an episode.

Sleep Terror Video

Disorders of Arousal--Treatment

- Maximize the safety of the sleeping environment (& remove weapons).
- Door alarms.
- Minimize precipitating factors, including sleep-disordered breathing.
- Discontinue triggering medication, e.g. zolpidem, other sedative-hypnotics.

Disorders of Arousal--Treatment

- Sleep hygiene, including maintenance of a regular sleep-wake schedule, and sufficient total sleep time.
- Stress reduction—at times counseling may be indicated.
- Hypnosis: learning self-hypnosis
- Relaxation techniques
- Pharmacotherapy: in high-frequency and/or injurious cases—benzodiazepine at hs

Confusional Arousals

Diagnostic Criteria (ICSD-3)

A. Meets general criteria for NREM DOA.

B. Episodes are characterized by mental confusion or confused behavior which occurs while the patient is in bed.

C. There is an absence of terror or ambulation outside of the bed.

Confusional Arousals (ICSD-3)

Clinical or Pathologic Subtypes

"Sleep related abnormal sexual behaviors"
(Sexsomnia; Sleepsex)

- Primarily classified as Confusional Arousals:

  Typically occurs in the bed (or chosen sleeping accommodation).

- Less commonly associated with Sleepwalking.

Terms and Definition

1. Sexsomnia
2. Sleepsex
3. Atypical Sexual Behavior During Sleep
3. Abnormal Sleep-Related Sexual Behaviors (ICSD-3)

(*Problematic* sexual behaviors emerging during sleep. Often chronic, recurrent.)

Sexsomnia

Problematic Sexual Behaviors

Masturbation

Sexual Fondling

Sexual Intercourse/attempted intercourse

Sexual vocalizations/verbalizations ("sleepsextalking")

Sexsomnia: Causes

No Reported Association With:

1) Increased sex drive.

2) Sexual deprivation.

3) Sexual perversion (paraphilia).

Sexsomnia:
Two Most Common Causes

1. Non-REM Parasomnia: Confusional Arousals, Sleepwalking

There is usually a history of parasomnias, often childhood-onset: Sleepwalking, Sleep Terrors, Confusional Arousals, Sleep Related Eating Disorder, Sleeptalking, RMD, etc.

Sexsomnia:
Two Most Common Causes

2. Obstructive Sleep Apnea (OSA)
   (inducing Confusional Arousals from NREM)

   Typical history: onset or increase of snoring with the onset of the sexsomnia, as reported by the bed partner.

Sexsomnia: Parasomnia & Sleepsex (31 published cases; 47 cases--update)

Males: 80.6% (n=25) ; 78.7% (n=37)
Females: 19.4% (n=6) ; 21.3% (n=10)

Age: 31.9 ± 8.0 yrs ; 34.6 ± 9.0 yrs
Duration: 9.5 ±6.1 yrs ; 7.3 ± 5.8 yrs

Masturbation: 22.6% ; 23.4%
Sexual vocal/verbal: 19.3% ; 19.1%
Fondling: 45.2% ; 40.4%
Sexual intercourse: 41.9% ; 48.9%

Sexsomnia (n=31)

Amnesia for sleepsex:	100%	(31)
Assaultive sleepsex behaviours:	45.2%	(14)
Sleepsex with minors:	29.0%	(9)
Legal repercussions:	35.5%	(11)
Polysomnography, performed:	83.9%	(26)
Total #, parasomnias:	71	
Mean #, parasomnias/pt:	2.2 $\pm$1.0	
	(range: 1-4)	

Sexsomnia Video

Sexsomnia: Treatment Efficacy

1) Parasomnia: clonazepam: 83% (10/12)
2) Parasomnia: SSRI: 100% (2/2)
3) OSA: nCPAP: 100% (5/5)
3) Epileptic Sexsomnia: 100% (5/5)
   (anticonvulsant therapy)

[Need to identify all target symptoms when starting Rx and assessing its efficacy.]

Sleep-Related Eating Disorder (SRED)

Classified as a Parasomnia

International Classification of Sleep Disorders, 3rd Edition 2014

SRED—Diagnostic Criteria (ICSD-**3**)

A. Recurrent episodes of dysfunctional eating that occur after an arousal from sleep, during the main sleep period.

B. One or more of the following must be present with the recurrent episodes of involuntary eating:

Adverse Health Consequences From SRED

1) Excessive weight gain/obesity.
2) Destabilization (or precipitation) of diabetes mellitus (type I or II).
3) Hypertriglyceridemia/Hypercholesterolemia.
4) Allergic reaction from carelessly eating foods to which one is allergic.
5) Dental problems: tooth decay & chipped teeth.
6) Secondary depression from loss of control.

SRED—Diagnostic Criteria (ICSD-3)

C. There should be at least partial loss of conscious awareness during the eating episode with subsequent impaired recall.

- Female-predominant disorder:

  60%-83% of patients in reported series.
- Mean age of onset: 22-40 years.
- Nightly frequency of nocturnal eating:

  very common (>50% of reported cases).
- Overweight/obese (BMI criteria): 50%
- Hunger is virtually never reported


Eating Arising From Stage 2
Sleep in a 47 Year-old Woman
*Please reference the included CD-ROM
for footnotes related to this video.

Co-Morbidities of SRED (N=38)

60.5%: Sleepwalking (SW)

7.9%: SW-combined (PLMD, Circadian Rhythm Disorder, Amitriptyline)

13.2%: RLS/PLMD

10.5%: OSA (including n=1 with PLMD)

5.3%: Eating disorder (bulimia nervosa)

2.6%: Triazolam abuse

Schenck CH et al. *Sleep* 1993

SRED--Treatment

1. Treat any comorbid sleep disorder (e.g. nasal CPAP for OSA; or dopaminergics/ opiates/benzodiazepines for RLS/PLMD
2. Eliminate any triggering or aggravating medication:

a) zolpidem (immediate/sustained release)-most frequently implicated medication.

SRED—Treatment With Topiramate

- Starting dose: 25 mg HS
- Increase by 25 mg HS every 5-7 nights (and not more frequently to minimize emergence of paresthesias)
- Typical therapeutic dose: 50-150 mg qHS
- Maximum recommended dose: 300-400 mg HS (rarely needed or tolerated)

SRED—Summary of Pharmacotherapy (monotherapy or combined therapy)

Sleepwalking and Idiopathic Subtypes

(and RLS or OSA patients with persistent SRED despite control of their comorbid sleep disorders):

a) Topiramate

b) Dopaminergics

c) Fluoxetine/other SSRIs

d) Bupropion

e) Trazodone