Disturbed Dreaming in Medical Conditions

Tore A. Nielsen

ABSTRACT

Disturbed dreaming has been identified as a common primary or secondary symptom in several medical conditions, in addition to idiopathic nightmares and sleep–wake transition disorders. In these medical conditions, dream disturbances vary along a continuum of dream experience intensity. At the lower extreme of this continuum, dream recall ceases entirely (global cessation of dreaming) or is unusually impoverished in quantity or content (dream impoverishment). Impoverishment affects patients with alexithymia, posttraumatic stress disorder (PTSD), and some brain syndromes. At the higher extreme, dreaming is uncharacteristically excessive, vivid, and emotional, frequently confused with reality or rigidly stereotyped in structure. Conditions such as rapid eye movement (REM) sleep behavior disorder (RBD) with or without parkinsonism, epilepsy, PTSD reexperiencing dreams, migraine dreams, and prodromal cardiac dreams are affected by dream stereotypy. Conditions such as rapid eye movement (REM) sleep behavior disorder (RBD) with or without parkinsonism, epilepsy, PTSD reexperiencing dreams, migraine dreams, and prodromal cardiac dreams are affected by dream stereotypy. In many cases, dream disturbances appear to be aberrations of otherwise normal dream qualities, such as intensification, reality-mimesis, or recurrence. Often, sleep fragmentation is implicated in the disturbance, but causal relationships are not yet clear. Although it is primarily REM sleep that is involved, some disturbances are also seen in disorders affecting non-REM sleep. Effective treatments are available for many common disturbances, and other treatments are under development.

In addition to the common dream disturbances of idiopathic nightmares and sleep–wake transition disorders (see Chapter 77), disturbed dreaming has been identified as a common primary or secondary symptom in several other medical conditions (Table 78–1). These disturbances can be organized conveniently along a continuum of varying vividness or intensity of the dream experience. At the lower extreme of this continuum, dream recall ceases entirely or is unusually impoverished in quantity or content. At the higher extreme, it is uncharacteristically excessive, vivid, and emotional, frequently confused with reality or rigidly stereotyped in structure.

GLOBAL CESSATION OF DREAMING

Changes in the recall of dreams and in their global characteristics as a function of neurologic illness have been appreciated ever since Charcot’s report on a patient with complete loss of visual imagery, including loss of visual dreaming.

About a third of patients with neurologic illness queried about global cessation of dreaming (GCD) report having ceased dreaming altogether.2 Parietal lobe involvement is a significant aid to differentiating between patients with and without GCD, as 42% of GCD patients have parietal lesions and an additional 7% have lesions in close proximity to parietal lobe (periparietal). Parietal involvement confirms findings from a previous study.3 The finding of frontal lobe lesions characterizing some patients (8%) with GCD2 is consistent with the reduced dream recall seen after frontal lobotomy among schizophrenic patients6 but not with results from another study.3 The 43% of GCD cases not linked to parietal or frontal lesions have diffuse and nonlocalizable lesions.2

The findings of relatively intact dreaming after right hemispherectomy7 but extremely impoverished recall after left hemispherectomy8 support a left-hemisphere lateralization explanation of GCD. Neuropsychological reviews7,8 also favor a predominant role for left hemisphere processes in dream generation more generally.

DREAM IMPOVERISHMENT

Dream impoverishment is a chronic attenuation, but not a total cessation, in the recall, length, vividness, emotionality, or narrative complexity of dream imagery. Impoverished dreaming has been documented above all among psychosomatic patients, particularly those with alexithymia, patients with posttraumatic stress disorder (PTSD) (who also have a high incidence of comorbid alexithymia9), and some types of brain syndrome.

Impoverished Dreaming in Alexithymia

Alexithymia refers to a difficulty in verbalizing emotions, literally, to a lack of a lexicon for describing feelings. Early investigations of psychosomatic patients10,11 linked an alexithymic response style with diminished dream recall and an impoverished imaginal life more generally. An absence of affect in dreams was also frequently noted. Levitan12 described dreams from many psychosomatic patients with alexithymia in which either the protagonists in the dreams failed to fully perceive their own feelings or their feelings were minimized by attributing them to other characters.

A study13 of patients with nocturnal asthma—a population with a high incidence of alexithymia14—revealed that rapid eye movement (REM) sleep awakenings produced an elevated incidence of dreams with short sentences and impressions of having dreamed but with no specific recall.

Studies have reported evidence of impoverishment in dream sensory and structural features in alexithymia. One study of
the general Finnish population found that alexithymic subjects reported colorless dreams, and a second found that the dreams of nonclinical alexithymic subjects were less fantastic than those of controls; these groups did not differ on other measures of dream recall and emotion, however.

Sleep studies have not yet identified a consistent pattern of changes that might explain dream impoverishment. In one study, higher alexithymia scores were related to several REM sleep variables: more frequent REM sleep episodes, shorter REM sleep latency, and more stage 1 sleep during and immediately after REM. However, alexithymia was also related to non-REM sleep variables: increased stage 1 and decreased stage 3/4. In a second study, alexithymia scores did not correlate with polysomnographic (PSG) variable or with rapid eye movement density; however, there was an association with shortened REM sleep latency. Finally, a survey study indicated that alexithymia is reliably associated with certain sleep disorders, such as chronic insomnia and parasomnias.

In sum, although converging evidence indicates that dream impoverishment is associated with alexithymia, more research is needed to clarify relationships between alexithymic subcomponents and various attributes of dream recall, dream content, and dream emotion. Sleep measures also require further clarification.

It is also noteworthy that other patterns of disturbed dreaming characterize some alexithymic patients—for example, dreams that are extremely macabre, nightmarish, or lacking in ego and emotional control. A similar manifestation of both impoverished and nightmarish dreams also characterizes patients with PTSD.

**Impoverished Dreaming in Posttraumatic Stress Disorder**

As unlikely as it might appear from the predominance of nightmares in patients with PTSD (see Chapters 46 and 111), convergence of evidence suggests that a long-term consequence of PTSD is impoverishment of some features of dreaming. This evidence, as well as findings of sleep changes, have been reviewed concisely.

Both home and laboratory studies indicate that patients with PTSD have lower than normal levels of dream recall. Furthermore, the dreams tend to be brief, to deal with trivial daily events, and to be associated with paradoxically high eye-movement densities.

A study of subjects with disturbed dreaming found dream recall only 42% to 54% of the time, compared with 89% to 96% for controls. Similarly, a “well-adjusted” group of 12 patients with PTSD had a significantly lower dream recall rate from REM sleep (33.7%) than groups of either 11 less well-adjusted patients (50.5%) or 10 controls (80%). The well-adjusted patients reported dreams that were less complex and less salient; fewer dreams with anxiety, aggression, and conflict; and higher scores for denial of emotions toward their dreams.

Other studies have not demonstrated reduced dream recall in patients with PTSD but at least one has reported, consistent with the previous findings, that laboratory dream recall is negatively correlated with trauma severity.

Impoverished dreaming in PTSD remains unexplained, although at least two, very likely interrelated, explanations are feasible. First, the impoverishment may reflect an adaptive response or strategy that reduces overall dream recall and thereby suppresses the occurrence of nightmares. Second, mechanisms responsible for dream impoverishment in alexithymia (see earlier) may also be active in PTSD. There is a high incidence of comorbidity with alexithymia in one study. 85% of patients with PTSD were in the alexithymic range. Hyperarousal and emotional numbing may be common to the etiologies of both conditions. Emotional numbing, which is thought to be equivalent to alexithymia in the PTSD population, is best predicted by the number of hyperarousal

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**Table 78–1. Medical Conditions in which Dreaming Is Disturbed**

<table>
<thead>
<tr>
<th>Conditions Commonly Affected</th>
<th>Essential Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global cessation of dreaming</td>
<td>Charcot-Wilbrand syndrome, frontal lobotomy, parietal lobe lesions</td>
</tr>
<tr>
<td>Dream impoverishment</td>
<td>Alexithymia, PTSD, brain syndromes</td>
</tr>
<tr>
<td>Excessive dreaming</td>
<td>Epic dreaming, brain damage, drug withdrawal</td>
</tr>
<tr>
<td>Dream–reality confusion</td>
<td>ICU dream delirium, postpartum infant distress, existential dreams, psychotic dream-related aggression</td>
</tr>
<tr>
<td>Dream stereotypy</td>
<td>RBD/parkinsonism, epilepsy, PTSD, migraine, cardiac disease</td>
</tr>
</tbody>
</table>

**Note:**
- ICU, intensive care unit; PTSD, posttraumatic stress disorder; RBD, REM (rapid eye movement) sleep behavior disorder.

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The table outlines various medical conditions that affect dreaming, listing conditions commonly affected and the essential features of dream deprivation associated with each condition.
symptoms in patients with PTSD. Patients with PTSD may expend so much cognitive, behavioral, and emotional effort managing hyperarousal and reactivity symptoms that they exhaust or deplete their emotional resources including, possibly, a depletion of catecholamines.

**Impoverished Dreaming in Brain Syndromes**

In chronic brain syndrome, dream recall from REM sleep deteriorates as the illness progresses from mild (57% recall) to severe (35%) to aged and severe (8%). In Korsakoff’s psychosis caused by chronic alcohol abuse, near-normal REM sleep time (29.4%) but poor dream recall (3%) is observed. Patients with permanent amnesia for recent events due to mild encephalitis also have impoverished dreaming, the frequency of their reports on awakening from REM sleep (28%) is less than normal (73%), and the report content is simpler, nonsymbolic, and more repetitive, stereotyped, and lacking in emotions and day residues.

**EXCESSIVE DREAMING**

There are several conditions in which patients complain that their dreams are too abundant, too vivid, or unrelenting. Schenck and Mahowald proposed the term *epic dreaming* to refer to complaints of both excessive dreaming (“dreaming all night long”) and daytime fatigue. Apart from a subsequent case study published by our group, this interesting category has not been further elaborated. Patients have the impression that throughout the night they dream about activity that is continuous, trivial, or banal or physical in nature—for example, repetitive housework, endless walking through snow or mud. Intense sensations of acceleration or spinning can also occur. Such dreams occur nightly in 90% of affected patients and 4 nights per week in the remainder. Comorbid nightmares are reported by 70%, although, unlike in nightmares, emotional arousal is strangely absent from epic dreams. Thus, although excessive, epic dreams are paradoxically impoverished in some respects (see earlier). Feelings of fatigue or exhaustion, as well as the recall of endlessly repetitive dreams, may produce distress and lead patients to seek help.

Epic dreaming is more commonly reported by women (85%) than men (15%). PSG evaluation reveals no clinical abnormalities, etiology and pathophysiology remain unknown, and treatments (cognitive, hypnosis, relaxation, medications) have proved largely ineffective. Comparative studies of epic dreams with normal dreams, nightmares, and recurrent dreams might shed light on possible pathophysiologic factors, such as whether the repetitive motor imagery is an amplified form of motor imagery in normal dreaming or whether epic dreams are a type of nightmare stripped of affective intensification.

Other types of excessive dreaming occur in patients with brain lesions and include increases in both the frequency and intensification of one or more characteristics of normal dreaming. Such dreams are characterized by a heightened reality mimesis, including distressing emotions (e.g., sadness, despair, guilt), salient bodily feelings (e.g., ineffectuality, paralysis), and failures in goal attainment. Themes frequently involve separation and loss and the appearance of deceased family figures. These features distinguish existential dreams from typical nightmares. Their clinical importance is their appearance during bereavement, which involves a range of distressing emotions other than fear. Bereavement is also characterized by hallucinations and vivid feelings of the presence of the deceased in both dreaming and waking states. Existential dreams are common throughout the bereavement period (0 to 5 years after a loss), whereas other dream types are more salient either immediately after (anxiety dreams) or from 3 to 5 years after (transcendent dreams) a loss. A sense of the presence of the deceased also continues throughout bereavement, whereas hallucinations of the deceased diminish over time.

**Postpartum Infant Peril Dreams**

Postpartum mothers often dream vividly of their infants being either lost or in danger (peril dreams) and may, during these dreams, enact behaviors such as searching, vocalizing, or weeping. A frequent occurrence, what we refer to as BIB (for baby-in-bed) dreams, is that the mother dreams she has lost her infant in the bed and, while asleep, searches anxiously through the covers, weeps, calls out in alarm or touches the spouse thinking that some part of him is the infant.

The prevalence of peril dreams and sleep behaviors is remarkably high. Over 12 postpartum weeks, 77% of women are able to recall the first dream involving their new infant. Of the latter, 73% (50% of total sample) reported at least one peril dream and 63% (44% of total sample) reported associated sleep behaviors. The latter value (44%) is much higher than the number of mothers (28.2%) who reported past or current somnambulism. 

The mother’s intense emotional and motoric arousal during the dream probably contributes to their appearance. The impact of the dreams is also substantial: 41% of mothers reported continuing anxiety after awakening from them, and...
60% reported going to check on the infant. The hallucinated presence of the infant in these dreams suggests possible similarities with mechanisms producing presence imagery in sleep paralysis, narcolepsy, and existential dreams.

Mothers’ responses to questioning revealed that peril dreams were predicted by relatively recent, stress-related factors such as difficult pregnancy, sleep disruption, infant—mother bed sharing, and anxiety, whereas sleep behaviors were predicted by sleep disruption and prior psychopathologic factors such as somnambulism, general psychopathology, and attachment disturbance.57

### Intensive Care Unit Dream Delirium

Nightmarish intensification of dreaming is reported by patients struggling to survive life-threatening conditions in intensive care units (ICUs). The vivid nightmares often convey feelings of extreme horror, dread, or impending mortality, and their content may depict the patients’ afflictions, agonizing treatments, isolation, dependency, and the real possibility of death. Few verbatim narratives have been published, but several studies attest to their high prevalence, their alarming nature, and their potentially traumatizing long-term influence on patients.

One assessment of traumatic ICU memories reported by 80 patients with acute respiratory distress syndrome found that nightmares were by far the most frequently remembered “trauma” (i.e., 64% of patients). They were described to be of a “bizarre and extremely terrifying nature” and were far more common than any of the other three types of trauma evaluated: anxiety (41%), pain (40%), and respiratory distress (38%). A follow-up of 52 patients found that nightmares were still the most prevalent traumatic memory (75% versus 46%, 42%, and 42%) and contributed to accurate prediction of future PTSD.

A study of critically ill patients requiring intubation, ventilation, and sedation found that length of stay in the ICU was the best predictor of nightmares. Of the 127 patients who stayed for more than a day, 18.1% reported nightmares and 14.2% hallucinations—many more than the 16% staying less than a day (2.5%, 0.6%). Two thirds of patients premedicated with benzodiazepines later reported postoperative dreams, half of which were nightmares. Several other likely contributing factors included pain, anxiety, noise, and the inability to lie comfortably in bed.52

Vivid ICU dreams form part of a larger constellation of psychiatric signs and symptoms that include poor orientation, fluctuating levels of consciousness, paranoid delusions, and hallucinations and that are referred to collectively as ICU psychosis, ICU syndrome, or ICU delirium. Prevalence estimates of the syndrome vary considerably: 13% to 38% in one study,54 40% to 57% in another.55 A recent review of 26 studies found the average incidence to be 37%, with a range of 0% to 74%.

It remains unclear whether or how disturbed sleep contributes to ICU dreams and ICU psychosis more generally.60 Sleep deprivation and fragmentation are probable contributing factors, as sleep is readily disturbed by illness stress, near-death trauma, excessive noise, night lighting, pain, interruptions from medical or nursing staff, and numerous other variables. Patients who are sleep deprived are more likely to exhibit signs of altered states of consciousness than those who are not.57

About a quarter of ICU patients claim that lack of sleep is a problem.62 Even when optimal sleep conditions are provided, ICU sleep can be poor. For example, in a study of nine surgical patients, sleep time (stage 1 excluded) for the first 2 days was less than 2 hours out of each 24. Stages 3 and 4 and REM sleep were severely or completely suppressed. Because stage 1 sleep accounted for 40% of total sleep time (versus 5% in controls), it is very likely that sleep-onset hypnagogic hallucinations were more frequent and intense and contributed to increased dream and nightmare recall.

Circadian rhythm abnormalities are another possible disruptive factor in ICU psychosis. Delirious patients in general may display a reversal of the circadian cycle, with daytime somnolence and nocturnal restlessness and agitation.60

### Limbic Lobe Damage

Confusion of dreaming with reality has been described as characteristic of a small subgroup of neurologic patients (10 of 189, or 5.3%).2 These confusions may be the result of localized anterior limbic lesions, but no one specific pattern of lesions within this region is selectively associated with the symptom. Equal numbers of cases show lesions in medial prefrontal cortex, anterior cingulate gyrus, basal forebrain nuclei, and anteromedial diencephalic nuclei. The most severe cases also involve medial frontal cortex.2

### Psychotic Dream-Related Aggression

Dream–reality confusion may be at its most extreme among individuals who are either borderline psychotic or in the throes of a psychotic episode. Reports61-67 of several extreme cases in which violent, psychotic acts were linked to prior dreams raise the possibility of a complete dream–reality fusion in some individuals.

In one recent news report, a 53-year-old “deranged” man used knives to attack 10 young children in a church cafeteria: “In my dreams, I heard a voice saying that my wish will be fulfilled and I will live only if I kill many people”; he also told police that he kept hearing the voice even when awake.

Hempel et al.63 reports five similar cases, two of which involved homicide, and three, violent assaults. All of the individuals were relatively young (27 to 43 years old), four were men, all suffered from paranoid psychosis, and all typically awakened from their dreams in a “very agitated and hostile state” (see p. 611 of Hempel et al.63). These authors propose psychotic dream-related aggression as a nosologic category to encompass this phenomenon and to distinguish it from other forms of sleep-related violence such as that seen in severe somnambulism. They and several others (see review68) concur that the intensification of dreaming to the point that it is mistaken for reality is a hallmark of psychotic dreaming. During acute psychotic phases, dreams may be lived as real events.69 Often, realistic dreams anticipate a violent psychotic act itself. In some instances, the dreams even appear to play a direct causal role in the violence (e.g., an authoritative oneiric voice commands a crime) or an indirect role (e.g., the individual reacts to being repeatedly “killed” by others, in dreams, by acting out).51,63 However, it remains to be determined whether such dreams are, in fact, causally implicated or whether they are simply parallel expressions of a psychotic process that compels its effect independent of sleep state.
DREAM STEREOTYPY

Recurrent dream themes are normal in the general population. Indeed, it might be argued that the predominance of fear in nightmares is the most prevalent stereotyped dream motif. Or, that specific nightmare themes like pursuit, threat, and assault are instances of dream stereotypy, as are the dreams of paralysis and presence seen in sleep paralysis and narcolepsy. However, in the present context, use of the term dream stereotypy is restricted to dreams that occur in conjunction with a medical condition and for which their content, structure, or affective quality has become so highly repetitive that patients are distressed. Neurobiologic or psychological features of the associated medical condition may play a role in shaping the precise stereotypical content of such dreams.

REM Sleep Behavior Disorder/ Parkinsonism Assault/Defense Dreams

REM sleep behavior disorder (RBD) is characterized by excessive motor activity during sleep and REM sleep behaviors that may enact the patient’s ongoing dreams or nightmares. Dream-enacting behaviors were reported by 93%, 87%, and 64% of patients in the three largest series (N = 93, 96, and 52, respectively) reported. PSG recordings indicate that patients do not enact all of the dreams they have in REM sleep. However, partial expression of many dreams is suggested by elevated levels of muscle tone, increased phasic electromyographic activity, and more numerous gross body movements during REM sleep, even in the absence of overt behavior. However, patients do not always recall dream content on awakening from episodes of overt behavior. This may result from factors such as poor recall of dreams among older adults, a lack of salience or memorability of some dreams (e.g., neutral affect, little motor involvement), or the inhibiting effect of sleeping in a laboratory. Nonetheless, most patients do report that since the onset of RBD, their dreams have become more vivid, violent, and action filled and are experienced as nightmares.

Clonazepam not only suppresses the abnormal behaviors of REM sleep but reduces the disturbing dreams associated with them; cessation of the medication is followed by a recurrence of both abnormal behaviors and nightmares. Although a panoply of dream-enacting behaviors has been reported, associated dream themes are largely stereotyped in their structure and emotional content. This is shown in Table 78–2, which summarizes examples of dreams for which their content, structure, or affective quality has become so highly repetitive that patients are distressed.

The pathophysiology of altered dreaming in RBD may not be limited to the sleeping state. Evidence that patients with RBD suffer from deficits in perceptual–organizational processes suggests a more generalized deficit that is linked to dreaming. RBD patients also suffer from disrupted autonomic function during both sleep and waking, a dysfunction that could affect the emotional content of dreams. In sum, the stereotypical nature of RBD dreams may be influenced by consistent pathophysiologic mechanisms that are unique to RBD but that may also affect the waking state. The latter suggestion is further supported by findings of RBD comorbidity with Parkinson’s disease, particularly Parkinson’s disease with waking or sleep-related hallucinations.

Parkinson’s Disease

RBD is now known to presage, often by many years, signs of Parkinson’s disease and other synucleinopathic disorders (SNDs) such as dementia with Lewy bodies and multiple system atrophy. About a third (33% to 39%) of patients with Parkinson’s disease have RBD, and the proportion is much larger (58% to 64%) when probable cases (i.e., of those people who manifest REM sleep without atonia) are included. Vivid dreams, nightmares, and other parasomnias such as nocturnal vocalization and dream enactment are frequent among patients with SND. Presence dreams have also been reported.

Although the precise etiologic overlap between RBD and SND is still unclear, altered dreaming is more prevalent among those patients with SND who hallucinate, and it is possibly also implicated in the genesis of their hallucinations. In one study, 61.3% of hallucinating patients with Parkinson’s disease also experienced altered dreaming. In other studies,
<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Patient Description</th>
<th>Dream Content</th>
<th>Associated Dream-Enacting Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahowald and Schenck (2000)</td>
<td>Case 1: 77-year-old man</td>
<td>Flying above some trees, he swoops down to answer a ringing phone on a table. As he lands, someone hits him and he jumps away</td>
<td>Quickly bolted out of the bed into the hallway</td>
</tr>
<tr>
<td></td>
<td>Case 1: 77-year-old man</td>
<td>Defending wife from an aggressor</td>
<td>Struck wife in bed</td>
</tr>
<tr>
<td>Boeve et al. (1998)</td>
<td>Patient 1: 70-year-old man with Lewy body dementia</td>
<td>Running for a touchdown, spikes a football in the end zone</td>
<td>Held wife’s head in headlock, moved legs as if running, exclaimed “I’m gonna make that touchdown!” and attempted to throw wife’s head down toward foot of the bed</td>
</tr>
<tr>
<td>Chiu et al. (1997)</td>
<td>Case 1: 72-year-old woman</td>
<td>Defending herself against an enemy</td>
<td>Grabbed neck of screaming granddaughter and tried to strangle her</td>
</tr>
<tr>
<td></td>
<td>Case 2: 74-year-old man</td>
<td>Surrounded by snakes, had to roll down a slope to escape</td>
<td>Lying on floor with bruises/lacerations on head and limbs</td>
</tr>
<tr>
<td>Morfis et al. (1997)</td>
<td>77-Year-old woman</td>
<td>Standing in a garden, she leaned forward to pat a child on the head</td>
<td>Standing on the bed, fell to the floor and received laceration to forehead</td>
</tr>
<tr>
<td>Sforza et al. (1997)</td>
<td>61-Year-old man</td>
<td>Someone wanted to shoot him</td>
<td>Talking and smiling, reaching for or picking up something, tried to sit up in bed screaming and sending someone away</td>
</tr>
<tr>
<td>Coy (1996)</td>
<td>45-Year-old man with PTSD</td>
<td>Saw Viet Cong soldiers in the trees outside house, then inside house; chased soldier</td>
<td>Loaded a .22-caliber rifle, checked rooms, tripped over furniture and discharged weapon into his own foot</td>
</tr>
<tr>
<td>Chung and Wong (1994)</td>
<td>79-Year-old man</td>
<td>Trying to stop his friends from beating their children</td>
<td>Flailed arms, screamed, moved vigorously</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Being chased by a lion and screaming for help</td>
<td>Screamed aloud during REM sleep</td>
</tr>
<tr>
<td>Mahowald and Schenck (1990)</td>
<td>MB: 73-year-old man with Parkinson’s disease</td>
<td>In military combat, enemy soldiers above him, aiming their weapons and shooting through a circle made by his arms; clasping his hands down into the ground, he sprang backward rapidly for safety</td>
<td>Flew “over my night table about 4 feet and landed on the floor, cutting my left cheek just below the eye and causing a lengthy nosebleed.”</td>
</tr>
<tr>
<td></td>
<td>Figure 7: 69-year-old man</td>
<td>A man had approached him at a party, yanked off his bowtie, threw it in some mud, stomped on it, irritating the patient, who retaliated by throwing punches with his right arm</td>
<td>PSG revealed right arm twitching, chin activation, activation of four limbs, body lifting, and repeated punching of the bedrail with the right arm; banging head on bedrail awakened patient.</td>
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<td></td>
<td></td>
<td></td>
<td>Woke up to wife’s shouting as he was “strongly grabbing her arm”</td>
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<td></td>
<td></td>
<td></td>
<td>Threw bed covers</td>
</tr>
<tr>
<td>Culebras and Moore (1989)</td>
<td>Patient 5: 70-year-old man, treated for diabetes and hypertension</td>
<td>To prevent an alligator from getting into his car, he held its snout with great force</td>
<td>Made protective hand and arm movements, leg movements, lifted head and neck with eyes closed as if to avoid or escape something, vocalized, made fearful, pained grimaces</td>
</tr>
<tr>
<td>Sforza et al. (1988)</td>
<td>Case 1: 62-year-old man with Shy-Drager syndrome</td>
<td>“I was being beaten by someone I had never seen before and I wanted to get away.”</td>
<td>Moved arms as if to tear someone away, then moved and raised arms and tried to lift legs; after 2 minutes, made sudden body jerks, raised arms in searching and reaching gestures with vocalizations; episode ended in sudden body jerk</td>
</tr>
<tr>
<td></td>
<td>Case 5: 69-year-old man</td>
<td>“I was dreaming of being caught and tied up by people who were going to beat me and I was terrified.”</td>
<td></td>
</tr>
</tbody>
</table>

*Summary of published instances of dreams by patients with REM sleep behavior disorder (RBD) for which a specific dream-enacting behavior was described as associated. Abbreviations: PSG, polysomnography; PTSD, posttraumatic stress disorder; REM, rapid eye movement.
the presence of REM sleep mechanisms may be implicated in both dreams and hallucinations, as there are more REM sleep aberrations (e.g., fragmentation and reduced percentage of time spent in REM sleep) among patients with Parkinson’s disease who hallucinate than among those who do not. PSG recordings of patients with Parkinson’s disease have demonstrated that hallucinations and delirious episodes can correspond with brief daytime REM sleep episodes. Moreover, sleep fragmentation and daytime dozing occur more frequently in patients with Parkinson’s disease than in controls. Hallucinations arising during sleep are also common (e.g., in 22% to 30% of cases).

Although it is also true that drugs commonly used to treat patients with Parkinson’s disease and other SNDs, especially dopaminergic agonists such as levodopa, may account for some of the alterations in dreaming, they do not account for the majority of cases. The prevalence of altered dreaming after long-term treatment with levodopa is only 31% (27 of 88), and there is no difference in levodopa dosage between those who hallucinate and those who do not.

**Epileptic Dream Stereotypy**

Case studies demonstrate stereotypy in the dreams of epilepsy patients in several ways. First, stereotypy is seen when epileptogenic features of seizures (such as auras, phosphene, or ictal visual, auditory, and olfactory imagery) appear in recurrent nocturnal dreams. Second, it is seen in recurrent dream themes that appear in close proximity to seizures. Third, stereotypy is suggested by recurrent nightmares that precede seizures by substantial intervals.

A laboratory case study has confirmed stereotyped dream content in epilepsy patients. One patient reported in two of three recalled REM sleep dreams (out of 32 awakenings from REM sleep) telling someone else he was dying. A second patient reported that in two of three recalled REM sleep dreams (out of six awakenings) and in one of two end-of-night dreams (stage not specified), she was “on a board” going over water and afraid of falling. These themes were also present in nightmares that preceded seizures by substantial intervals.

A form of stereotypy is seen in recurrent dreams—that is, dreams disturbed by ongoing or occult medical conditions. Such themes may even appear in dreams before any overt symptoms of the condition appear, a phenomenon that has been exploited (and often misunderstood) since the earliest days of medical science.

**Prodromal Cardiac Dreams**

A form of stereotypy is seen in the recurrent themes of prodromal dreams—that is, dreams disturbed by ongoing or occult medical conditions. Such themes may even appear in dreams before any overt symptoms of the condition appear, a phenomenon that has been exploited (and often misunderstood) since the earliest days of medical science.
specific illnesses (e.g., gastrointestinal, pulmonary, gynecologic/obstetric, dental, arthritic). Additional cardiac dream themes can be either direct (e.g., wounds and/or pain or pressure in the arm, heart, chest, or neck), indirect (e.g., clutching or squeezing, references to death, blood, pain), or metaphoric (e.g., explosions) in nature. Patients may present with near-fatal cardiac events following so-called killer dreams, although they had had no warning of a cardiac event (i.e., they had no cardiovascular risk factors). To illustrate, a 23-year-old man awoke with crushing chest pain and had a cardiac arrest 1 hour later; before awakening, he had dreamed that he was murdered along with his father.

TREATMENT CONSIDERATIONS

Because of the emotional, and often bizarre, nature of disturbed dreaming in many medical conditions, a patient’s inclination to disclose them to health professionals, and thus the opportunity to provide treatment, is mitigated by various psychological, sociological, and cultural factors. Expressive difficulties, such as alexithymia, may hinder self-disclosure. Many individuals may consider their dreams to directly or indirectly reflect their state of sanity or mental health and may avoid speaking openly about them. Others attribute a spiritual significance to dreams, believing them to originate in the workings of devils or evil spirits, or to signify a personal rupture with the sacred, and may thus feel guilt, shame, or embarrassment in revealing dreams with taboo or incriminating content. Patients may be more likely to reveal problems with dreaming to sleep specialists because of their professed interest in sleep phenomena. Sensitivity to factors that influence patients’ self-disclosures of disturbed dreaming—especially in multicultural settings—may facilitate the accurate diagnosis and treatment of associated sleep disorders.

Successful treatment also depends on proper identification of factors that may perturb sleep and dreaming. Close scrutiny of the medication regimen is important because of the many known and suspected agents that alter sleep and dream quality and whose replacement or dosage change could alleviate symptoms. Similarly, state variables such as stress and anxiety are amenable to short-term interventions that may diminish symptoms rapidly. Evaluation of sleep hygiene is also important to identify behaviors that lead to sleep deprivation and fragmentation, which are known to affect the quality of dreaming. Assessment of personality variables such as alexithymia or depression may also suggest avenues of therapeutic intervention. Many of these factors are amenable to cognitive behavior therapies, which are successful in treating nightmares and other, more common, dream disturbances.

SUMMARY

Dreaming disturbances characterize a variety of medical conditions. These vary along a continuum of intensity from complete cessation of dreaming to total dream–reality confusion. In many cases, these disturbances appear to be aberrations of otherwise normal dream processes, such as recall, intensification, reality mimesis, or recurrence. Often, sleep fragmentation is implicated in the dream disturbance, but causal relationships are not yet clear. Effective treatments are available for many of these disturbances.

Clinical Pearl

Assessment of changes in dreaming (including impoverishment and intensification) in a variety of sleep disorders and medical conditions may reveal serious comorbid symptoms (1) that negatively affect a patient’s recovery and quality of life, (2) that may facilitate diagnosis, and (3) whose prompt treatment may aid long-term prognosis.

REFERENCES

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