Case report

Sleep paralysis and hallucinosis

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Background: Sleep paralysis is one of the many conditions of which visual hallucinations can be a part but has received relatively little attention. It can be associated with other dramatic symptoms of a psychotic nature likely to cause diagnostic uncertainty. *Methods and results:* These points are illustrated by the case of a young man with a severe bipolar affective disorder who independently developed terrifying visual, auditory and somatic hallucinatory episodes at sleep onset, associated with a sense of evil influence and presence. The episodes were not obviously related to his psychiatric disorder. Past diagnoses included nightmares and night terrors. Review provided no convincing evidence of various other sleep disorders nor physical conditions in which hallucinatory experiences can occur. A diagnosis of predormital isolated sleep paralysis was made and appropriate treatment recommended. *Conclusions:* Sleep paralysis, common in the general population, can be associated with dramatic auxiliary symptoms suggestive of a psychotic state. Less common forms are either part of the narcolepsy syndrome or (rarely) they are familial in type. Interestingly, sleep paralysis (especially breathing difficulty) features prominently in the folklore of various countries.

Keywords: Sleep paralysis, hallucinations, psychiatry, diagnosis

1. Introduction

A recent review by Barodawala and Mulley [2] illustrates the wide variety of psychiatric and physical settings in which visual hallucinations can occur. Subsequent correspondence added a few more possible causes. Throughout these accounts, however, there was little or no mention of the visual hallucinatory phenomena which can form part of various sleep disorders.

The present case illustrates how striking such sleep-related hallucinations can be, how they may be part of the common condition of sleep paralysis, and how such experiences can cause concern to the sufferer especially if already psychiatrically disturbed. The case

also demonstrates the diagnostic complications that can arise if the nature of these sleep related phenomena are not more widely appreciated.

2. Case report

A 26 year old man was referred to our sleep disorders clinic because of alarming bedtime episodes over the previous 3 years. He reported intermittent sleep problems from early childhood but these had mainly taken the form of sleep onset difficulties and also night waking related to unhappy experiences at school. In addition, at the age of 19 he had been diagnosed as having a bipolar affective disorder. The new alarming episodes were very different to his previous sleep problems and not obviously related to his mood state.

The episodes were confined to sleep onset and occurred in clusters at intervals of several days or weeks. During a cluster period they occurred most nights, usually singly but sometimes several times in sequence. Their nature was so alarming that the patient dreaded going to bed. An invariable feature was the sudden realisation when drifting off to sleep, that he was unable to move except for slight movements of one or other hand or his tongue with effort. This immobility was usually accompanied by very vivid imagery, mainly visual in nature. The image was that of a boy who was normal looking and unknown to the patient. Characteristically he appeared at the foot of the bed, sometimes climbing onto it and sitting on the pillow. The child usually conversed with the patient in a friendly way but, increasingly, the child took on a menacing aspect and often would climb onto the patient's chest causing him difficulty breathing or choking him in some way. In a recent episode, the patient felt he had given the child an answer which it did not like whereupon he experienced 'electrical charges running through his body' which he felt was a punishment. He said this had made him wonder if the child was a demon. The patient remained fully orientated during these episodes.

A general feeling of threat (not necessarily related to this image of a child) has also been a consistent feature of these episodes. The patient described 'feeling a pressure' in the bedroom and 'an evil intent' from something which 'wanted to suck away his strength or kill him.' His reaction was usually to cry out or curse, as far as he could. Typically the episodes ended abruptly and spontaneously after two to several minutes leaving him feeling exhausted. When the episodes occurred serially he would go downstairs for an hour or more in the hope there would be no recurrence on returning to bed. There had been no regular partner to provide an independent history, but the patient's current girlfriend has witnessed some of the episodes and generally confirmed his description. In one episode he had interpreted the concerned look on her face during an episode as 'emanating evil towards him.'

The patient's early development had been unremarkable except for his unhappiness at school where he was bullied. In recent times his work has caused considerable disruption of his sleep wake pattern: several days of little sleep at night with daytime naps, alternating with periods off work when he would stay in bed till midday or later.

During his teens he was described as disruptive, aggressive and depressed. About the time he left university he was diagnosed as suffering from a bipolar affective disorder. Since then he had been treated with various combinations of drugs including tricyclic antidepressants, MAOIs, SSRIs and also lithium which, at the time of referral, he had taken for the previous two years with the recent addition of moclobemide. The course of his illness and his compliance with treatment had been uneven with episodes of self harm. In the past his alarming night time experiences has been variously diagnosed as nightmares and night terrors. There was an ill defined family history of maternal depression, 'mood swings' in his father and 'disturbed sleep' in several members of the family on his mother's side. As the patient had kept little contact with his family for some time, it was not possible to obtain more detailed accounts.

Reassessment in the sleep disorders service revealed that his mental state was previously described during his relatively well periods. No physical abnormality was detected. He appeared to be insightful, co-operative and interested in further help. Close enquiries about his sleep pattern and disturbance produced no convincing evidence of various sleep disorders in which frightening arousals may occur; the episodes did not have the characteristics of true night-

mares, night terrors or sleep-related panic attacks. Although there was a suggestion that the patient snored at times there was nothing in particular to suggest upper airway obstruction during sleep with which disturbed 'awakenings' (of an uncertain character) can be associated. Epilepsy also seemed unlikely in the absence of impairment of consciousness during the episodes and no other types of attack. Although he still used cannabis occasionally, drugs and alcohol had not featured prominently in his life. He smoked 10–20 cigarettes a day and averaged four cups of coffee avoiding evening consumption. He showed no evidence of sleep attacks or cataplexy to suggest the narcolepsy syndrome. His interpretation of being threatened by alien influences at the time of his alarming episodes did not have any convincing first rank schizophrenic features and scrutiny of his past psychiatric notes did not suggest a relationship between the alarming episodes and changes in his affective disorder. However, there was a strong suggestion that these episodes lessened or abated when he was taking tricyclic antidepressant medication.

It was considered that there was good evidence to support a diagnosis of predormital, isolated sleep paralysis as complicated perceptual abnormalities, sense of presence and threat, respiratory symptoms, intense emotional reaction and exhaustion, and responsiveness to tricyclic antidepressants have all been described as auxiliary symptoms of that condition. Physiological sleep studies were not thought necessary but further clarification of his disturbed sleep wake pattern was obtained by means of a sleep diary kept over a 4 week period.

Recommended treatment measures have included explanation and support and self-relaxation techniques for use in general, and also specifically at the time of his alarming episodes. It seemed important (depending on other considerations) to emphasise the antidepressant drugs which most increase 5HT levels (as this seems to be the mechanism by which sleep paralysis is alleviated) and to strongly encourage the patient to acquire regular sleep habits because sleep disruption is strongly associated with an increased rate of sleep paralysis. The patient initially seemed very motivated to be helped in these ways but recently, since reading an article on 'Alien Abduction' in which experiences such as his own are described, his concern about his own condition and his need for treatment have lessened.

3. Discussion

Sleep paralysis is a common neurological condition. It is characterised by recurrent episodes in which the ability to perform voluntary movement is lost for relatively short periods at sleep onset or upon awakening, either during the night or in the morning. During these episodes the sufferer is unable to communicate but ocular and respiratory movements remain intact and consciousness is clear. The episodes end spontaneously or, often, on external stimulation.

Sleep paralysis and the possibility of dramatic accompanying phenomena are not well described in the psychiatric literature. Reference has already been made to the absence of any mention of it elsewhere in otherwise comprehensive reviews of visual hallucinations. One consequence is the diagnostic uncertainty that can surround such events, as illustrated in this case.

Even neuropsychiatric texts pay little attention to these phenomena. Lishman's textbook of organic psychiatry [7] contains a brief reference to hallucinatory voices or sounds accompanying sleep paralysis indicating that these may lead the patient to fear that he is being harmed or attacked. Reference is made to a report by Roth and Bruhova [9] of 10 patients in which the paralysis was always accompanied by terrifying dreams usually preceding the episode. It was said that these patients' feelings of despair often carried over from the dreams and persisted next morning in the form of severe depression. In Gillberg's textbook of child neuropsychiatry [5] there is only a passing reference to sleep paralysis in the context of narcolepsy, without mention of possible dramatic accompaniments.

This general neglect of sleep paralysis in psychiatry (the same seems to be true of neurology other than in relation to narcolepsy) is inconsistent with the frequency with which the condition occurs. The figures quoted in Lindsley's comprehensive review [6] suggest that in isolated ('independent' or idiopathic) form it occurs occasionally in up to 50% of the general population and chronically in 3–6%. Dahlitz and Parkes [3] give a prevalence rate of up to 62%. Its occurrence is likely to be underestimated because of concealment by sufferers too embarrassed or too confused about its significance to seek help. Up to 40% of people with the narcolepsy syndrome (possibly present in about 1 in 1000 of the population) are reported to have sleep paralysis. This form may well be closely linked with particularly terrifying hypnagogic hallucinations which, however, can also occur outside the context of

narcolepsy [12]. A third and rare form is familial and probably an X-linked dominant trait. Poor communication within the present patient's family has frustrated attempts to explore the possibility of this form of sleep paralysis. However, there have been no pointers to sleep paralysis being a feature of the sleep problems described in the various family members.

Certain other characteristic features of the isolated form of sleep paralysis are of particular relevance to the present case: onset is often in adolescence or young adulthood and predisposing factors include irregular sleep habits, sleep wake cycle disorders (such as jet lag), sleep deprivation and stress. Predormital (occurring at sleep onset, as in this patient) and postdormital (associated with awakening) types of sleep paralysis are described. A discussion of the physiology of the condition is provided in Lindsley's review [6] and in the report by Takeuchi and colleagues [11] that isolated sleep paralysis can be elicited by selective sleep interruption aimed at producing sleep onset REM periods.

The differential diagnosis of the sleep paralysis itself includes atonic seizures, other drop attacks of physical origin, cataplexy (which does not occur at sleep onset and is a reaction to, rather than a cause of emotional experience), familial periodic hypokalaemic paralysis, and the more prosaic 'Saturday night palsy.' Dissociative or psychotic states might also need to be considered. It is possible for sleep paralysis to be the first presenting feature of the narcolepsy syndrome if the excessive sleepiness has not been recognised or is concealed. Confirmation of this syndrome would be possible by careful clinical enquiry, overnight polysomnography, Multiple Sleep Latency Test of sleep tendency and positive HLA typing.

The course of isolated sleep paralysis is not well defined but there are indications that it continues if the predisposing factors mentioned earlier continue to operate. Various types of treatment have been proposed. Those of a psychological nature have sometimes been based on speculative theories about psychodynamic origins of the condition. Less controversially explanation, psychological support and advice are helpful in view of the unpleasant nature of the condition and associated features. However, medication is also indicated if the episodes are frequent. At present it seems that serotonergic agents are the most effective such as amitriptyline which has been used in conjunction with L-tryptophan as a precursor of brain 5HT [10].

It is the auxiliary symptoms of isolated sleep paralysis which are the most likely to produce diagnostic un-

certainty, especially if they have the dramatic qualities seen in the present case. These auxiliary symptoms can be viewed as either part of the attack of sleep paralysis itself or as a reaction to experiencing the episode. Precise information about the frequency with which any of these associated features occur is lacking but it seems that visual hallucinations are common in either simple or complex form and ranging in content from the banal to the bizarre. The same is true of the auditory and somatic hallucinations which were also experienced by the present patient. Waking paralysed from terrifying dreams is also often reported. As in this case, the dividing line between hypnagogic hallucinations and hallucinatory accompaniments of sleep paralysis can be difficult to define and might be artificial.

The type of breathing difficulty experienced by this patient is highly characteristic of sleep paralysis and of particular interest. Paradoxically, awareness of this feature (and sleep paralysis in general) seems to have been greater in folklore than in clinical practice. Inability to breathe properly, choking, or heaviness on the chest is often attributed by sufferers to a perceived creature or person sitting on their chest. So common is this experience and interpretation that it has been incorporated into popular folklore in many parts of the world, the specific content varying with the culture e.g., an old hag or witch in Newfoundland and the USA, and 'kanashibari' (related to supernatural powers) in Japan [3]. In Western Europe early awareness of the condition is evident in, for example, the vivid description by Macnish [8] and, well before that, depictions in a series of paintings from 1781 onwards by Fuseli [4]. These paintings portray a night demon (or night 'mare', hag or incubus) sitting on the sleeper's chest causing feelings of suffocation and producing the paralysis. Andrus [1] has suggested that Fuseli's attitude in depicting this scene was more playful than grim, pointing out that caricatured versions were produced later by a number of political satirists such as Rowlandson and Gillray.

It is not surprising that those experiencing this dramatic form of sleep paralysis, especially if associated with a pervading feeling of threatening 'presence' (whether a person or creature is actually seen or heard, or not), produces an extreme emotional reaction. The patient's reactions of terror, with sweating, tachycardia, desperate attempts to move and exhaustion afterwards are all typical in these circumstances and an

unfortunate additional source of stress in someone already psychiatrically disturbed. In cases such as his, if the true nature of the auxiliary symptoms of sleep paralysis was not recognised, the perceptual abnormalities and the sense of presence and threat from alien influences, occurring in clear consciousness, might well be construed as manifestations of a schizophrenic illness. For this reason alone the intricacies of sleep paralysis deserve to be more widely known.

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