**Hypnagogic Hallucinations**

**Description**

Hypnagogic or hypnopompic hallucinations are visual, tactile, auditory, or other sensory events, usually brief but occasionally prolonged, that occur at the transition from wakefulness to sleep (hypnagogic) or from sleep to wakefulness (hypnopompic). The phenomenon is thought to have been first described by the Dutch physician Isbrand Van Diemerbroeck in 1664. The person may hear sounds that are not there and see visual hallucinations. These visual and auditory images are very vivid and may be bizarre or disturbing.

Usually it is part of the tetrad of narcolepsy that includes:

- Excessive daytime sleepiness
- Cataplexy
- Hypnagogic hallucinations
- Sleep paralysis

This tetrad is rarely seen in children.

See the separate Narcolepsy and Cataplexy article.

**Epidemiology**

Hypnagogic hallucinations can occur without narcolepsy. People may be reluctant to admit to them for fear of being thought mentally ill. However, they are thought to occur in most people at least once in their lives. The wide variation in reporting rates has resulted in a wide variation in quoted lifetime incidence: (hypnopompic 6-13%, hypnagogic 25-38%). Sex ratio is equal.

One study of 14,000 individuals reported that people with anxiety, depression, or bipolar affective disorder have a two-fold increase in experiencing hypnopompic or hypnagogic hallucinations at least once weekly.

The same study reported that patients with adjustment disorders had a 1.5-fold increase in experiencing these phenomena at least once weekly.

The study also reported that over half the individuals who experienced hypnagogic or hypnopompic hallucinations had no evidence of physical disorder, substance-abuse disorder, sleep disorder, or other psychiatric disorder.

**Risk factors**

- There is a tendency for hypnagogic and hypnopompic hallucinations associated with narcolepsy to be associated with certain HLA phenotypes.
- Tricyclic antidepressants have been reported to be associated with hypnagogic and hypnopompic hallucinations.

**Presentation**

- Hypnagogic hallucinations can occur at the onset of sleep, either by day or at night. They are usually quite vivid and visual.
- Visual hallucinations usually consist of simple forms such as coloured circles or parts of objects that may be constant or changing in size. A formed image of an animal or a person may appear and it is often in colour.
- Auditory hallucinations are common but other senses are seldom involved. Auditory hallucinations can range from a few sounds to an elaborate melody. Threats or criticism are also reported.
- Another type of hallucination that is sometimes reported at the onset of sleep involves elementary cenesthesiopathic feelings (such as experiencing picking, rubbing, or light touching), changes in location of body parts (such as an arm or a leg), or feelings of levitation or extracorporeal experiences (like moving the body in space or floating above the bed) that may be quite elaborate.
- There may be a history of narcolepsy with the ability to fall asleep if at all tired or bored, often with social embarrassment. It may lead to the inability to hold down a job.

**Signs**

There are usually no abnormal physical signs.

**Differential diagnosis**

- It is important to decide if this is narcolepsy as it is a treatable condition.
- Schizophrenia can cause hallucinations, including derogatory auditory remarks.
Musical release hallucinations are complex auditory phenomena, affecting mostly the deaf elderly population, in which individuals hear vocal or instrumental music. Progressive hearing loss from otosclerosis disrupts the usual external sensory stimuli necessary to inhibit the emergence of memory traces within the brain, thereby ‘releasing’ previously recorded perceptions.

- There may be drug abuse.
- Sleep terrors in children.
- Focal seizures.
- Absence seizures.

Investigations

- Blood tests and imaging are likely to be normal.
- Referral to a special sleep laboratory may be required to diagnose narcolepsy.

Management

- Hypnagogic hallucinations can be treated with REM-suppressing antidepressants, such as venlafaxine (Effexor®) or other selective serotonin reuptake inhibitors.[6]
- Despite their alleged role in causing hypnagogic and hypnopompic hallucinations, tricyclic antidepressants are also recommended for their treatment when associated with narcolepsy.[6] However, a Cochrane review was unimpressed by the evidence.[7]
- Fluoxetine has also been recommended for this indication.[6]
- Musical hallucinations may be helped by olanzapine, quetiapine, fluvoxamine, clomipramine, carbamazepine, valproate and donepezil.[8]

For the treatment of narcolepsy see the separate Narcolepsy and Cataplexy article.

Prognosis

If the patient has narcolepsy the prognosis is as for that disease. If not, reassurance is all that is required. If it is disturbing, medication may be used intermittently.

Further reading & references

- Ballas P; First-Known Hypnopompic Hallucination: Occurring In-Hospital: Case Report, 2006.
- Management of Common Sleep Disorders; American Family Physician

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