The Exploding Head Syndrome

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Current Pain and Headache Reports 2001, **5**:279–280
Current Science Inc. ISSN 1531–3433

This article reviews the features of an uncommon malady termed "the exploding head syndrome." Sufferers describe terrorizing attacks of a painless explosion within their head. Attacks tend to occur at the onset of sleep. The etiology of attacks is unknown, although they are considered to be benign. Treatment with clomipramine has been suggested, although most sufferers require only reassurance that the spells are benign in nature.

The "exploding head syndrome" is an uncommon syndrome characterized by an awakening with the sensation that an explosive noise has occurred in the head, but without an actual headache (Table 1). The experience is typically so terrifying that sufferers cannot be certain that there has been no head pain, often raising concern that a low volume subarachnoid hemorrhage may have occurred. This syndrome generally occurs during the transition of wakefulness to sleep. Patients may report sensations of lights flashing as well [1,2•]. Some patients in Pearce's series [2•] reported feeling as though they had stopped breathing and required effort to respire.

Armstrong-Jones [3] first described the syndrome in 1920 as a "snapping of the brain." Mitchell [4] has previously described light flashes and loud sounds as phenomena that can occur during the transition from wakefulness to sleep. A description of the exploding head syndrome was included in a paper on ice pick headaches by O'Donnell and Martin [5]. The first reports of multiple cases of this syndrome were from Pearce [6], but there have been several additional cases reported since that time, including 44 other patients reported by Pearce [2•].

The prevalence of the syndrome is unknown. It was noted by Pearce [2•] following the publication of his first paper on the subject, that more than 50 patients reported this symptom to him. Individual attacks can be random and rare, or cluster with frequent attacks occurring nightly over weeks, followed by prolonged remissions [7•]. Sufferers are almost universally terrorized by the symptoms. The syndrome can involve any age, although most reported cases are over 50 years of age. There does not appear to be any clear precipitating cause of attacks, nor do they have any prodromal symptoms.

The spells tend to occur during the transition from wakefulness to sleep, although some have noted attacks after awakening at night and then resuming sleep. Patients have been reported to have attacks during the day. Sachs and Svanborg [7•] did polysomnograms on nine patients with this syndrome. In all recorded cases, attacks occurred while the subjects were awake and relaxed. In two of the cases, the polysomnograms suggest increased alertness during the attacks. In three patients, there were no electroencephalographic changes recorded during attacks. Other attacks have been reported during wakefulness as well as during REM sleep. Another entity, known as "sleep starts" or "hypnic jerks," also occurs during the twilight period of sleep. Sudden jerking of body parts may awaken the individual or bed partner and these motor symptoms are common in the population. Sensory sleep starts, which include visual and auditory hallucinations or even the sensation of pain, are less common [8]. It has been suggested that the exploding head syndrome is a manifestation of this problem.

Attacks are always benign and have not been associated with any structural pathology. Three patients in Pearce's series [2•] described a positive family history of the syndrome. Similar symptoms as a manifestation of a seizure have been reported [9]. The cause of the disorder, including the noise, is elusive.

Treatment

There have been no trials of therapies of the exploding head syndrome. In the Sachs and Svanborg paper [7•], clomipramine was prescribed to three patients who immediately responded. Reassurance that the syndrome is benign seems appropriate.

Conclusions

The exploding head syndrome causes the unique symptom of a painless explosion within the head, generally in association with sleep. It is benign in nature and generally not treated with medication.

Table 1. Exploding head syndrome

Symptoms
Awakening from sleep
Sensation of explosive noise within the head
Flashing lights
No actual head pain
Demographics
Majority are women
Usually middle age or elderly
Differential diagnosis
Low volume subarachnoid hemorrhage
Seizure disorder
Treatment
Clomipramine
Reassurance
Prognosis
Benign
Self-limited

References and Recommended Reading

Papers of particular interest, published recently, have been highlighted as:

- • Of importance
- •• Of major importance

1. Bongers KM, ter Bruggen JP, Franke CL: **The exploding head syndrome.** *Ned Tijdschr Geneeskd* 1991, **135:**617–618.
2.• Pearce JMS: **Clinical features of the exploding head syndrome.** *J Neurol Neurosurg Psychiatry* 1989, **52:**907–910.

Contains the most cases and descriptions of the phenomenology of the exploding head syndrome.

3. Armstrong-Jones R: **Snapping of the brain.** *Lancet* 1920, **11:**720.
4. Mitchell WS: **Some disorders of sleep.** *Int J Med Sci* 1890, **100:**109–127.
5. O'Donnell L, Martin EA: **Cephalgia fugax: a momentary headache.** *BMJ* 1986, **292:**663–664.
6. Pearce JMS: **Exploding head syndrome.** *Lancet* 1988, **2:**270–271.
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This reference attempted to determine the relationship of the syndrome to sleep architecture, although no reproducible link was found.

8. Parkes JD: **The parasomnias.** *Lancet* 1986, **2:**1021–1025.
9. Fornazzari L, Farcnik K, Smith I: **Violent visual hallucinations and aggression in frontal lobe dysfunction. Clinical manifestations of deep orbitofrontal foci.** *J Neuropsychiatry Clin Neurosci* 1992, **4:**42–44.