

Hypnic headaches: what are they?

Hypnic headache syndrome is a benign, recurrent, late-onset headache disorder that occurs exclusively during sleep. It affects elderly men and women with a mean age of presentation of 60 years. Pathogenesis is poorly understood and a secondary cause can often be found in this age group. In this article, **Drs Bhaskar Mukherjee and Francis Vaz** discuss the differential diagnosis and management of hypnic headache in the elderly.

The prevalence of headaches usually declines with age¹, but there are some types of headaches that can persist into old age or change character as a patient ages. Other headaches occur almost exclusively in older people such as hypnic headache. First described by Raskin in 1988, hypnic headache is a rare, distinctive nocturnal headache disorder that affects elderly men and women with a mean age of presentation of over 60 years².

Clinical features

The headache is dull in nature, mild to moderate in intensity and bilateral in over two thirds of patients. It characteristically occurs only during sleep, waking the patient at a constant time, and hence is often described as the 'alarm clock' headache. The headaches occur over 15 times a month for at least a month at a time, and the duration of each attack varies from about 15 minutes to almost three hours.

There are no cranial autonomic features such as conjunctival injection, lacrimation and rhinorrhea as occurs with the Short-lasting Unilateral Neuralgiform headache attacks with Conjunctival injection and Tearing (SUNCT) syndrome, which is predominant in males with a mean age of onset around 50 years³.

In addition, a hypnic headache is not associated with the features of migraine such as photophobia, phonophobia or nausea.

Possible mechanisms

The pathogenesis is poorly understood. Some studies have shown a relationship with Rapid Eye Movement (REM) sleep, but this is not consistent and numbers investigated are small². Others have speculated that melatonin deficiency may be a causative factor⁴. Lithium, which is effective in the treatment of this condition is known to increase absorption of tryptophan and its subsequent conversion to serotonin and melatonin. Lithium thus may act modulating the normal serotonergic tone. Disorders in some of the hypothalamic nuclei, which are thought to regulate sleep have also been postulated².

Differential diagnosis

Though benign causes still form an important part of the aetiology of headaches in the elderly (e.g., migraine, tension-type and cluster headaches), every attempt should be made to rule out secondary causes as their importance increases with age (*Table 2*). Up to one-third of headaches experienced by mature adults are caused by an underlying medical condition.

Table 1. Criteria of hypnic headache

- > Age over 60 years
- > Awakens person from sleep with 'alarm clock' regularity
- > Dull and usually bilateral
- > Occurs almost nightly for at least a month
- > Duration from 15 mins to three hours
- > No associated autonomic features
- > Lithium is effective.

The diagnosis is one of exclusion since secondary causes of nocturnal headaches include drug withdrawal, temporal arteritis, sleep apnoea, oxygen desaturation, pheochromocytomas, primary and secondary neoplasms, communicating hydrocephalus, subdural haematomas, and vascular lesions⁵.

Posterior fossa meningiomas

Cases of posterior fossa meningiomas presenting as hypnic headaches have been reported⁶. These are tumours that lie on the underside of the brain that can compress the cranial nerves causing facial symptoms or loss of hearing.

Migraine

The prevalence of migraine headaches decrease in the older age group but two per cent of them do start in this age group. Auras also are a less frequent presentation in the elderly but a number of migraine attacks do occur with just an aura and these can be mistaken for Transient Ischaemic Attacks (TIA). A good general rule is to do some imaging tests (computed tomography or magnetic resonance imaging) in anyone who has a change in symptomatology.

Giant cell arteritis

Giant cell arteritis is a systemic inflammatory vasculitis of unknown aetiology that affects medium- and large-sized arteries. It is a disease of elderly persons and can result in a wide variety of systemic, neurologic, and ophthalmologic complications. It is another condition that can be confused with a hypnic headache.

Its prevalence increases with age, the headaches

Table 2. Types of headaches

Primary headache and sleep disorder

Cluster headache
Chronic paroxysmal hemicrania
Hypnic headache

Primary sleep disorder causing headache

Insomnia
Hypersomnia
Sleep apnoea syndrome

Other conditions associated with headache and sleep disorder

Chronic pain syndrome
Fibromyalgia
Depression and anxiety
Chronic substance misuse.

are very fixed in location and invariably associated with systemic symptoms. This vasculitis if ignored can have devastating complications in the form of optic atrophy. Intracranial masses especially secondary masses from the lung and the breast do give rise to headaches in the elderly.

Chronic subdural haematomas

Chronic subdural haematomas also need to be kept in the differential diagnosis. These headaches are difficult to describe, but they are more common in the elderly because of increases in patients' tendency for falls, cerebral atrophy (which stretches bridging dural veins), and impaired haemostasis¹.

Vertebrobasilar insufficiency

This is obstruction of the vertebral-basilar system manifested by disturbances of consciousness, vertigo, headache, hemi- or quadriplegia, dysarthria, and facial paralysis. It can present as nondescript headache and can be followed by florid brain stem ischaemic signs of vertigo, diplopia, dysphagia and severe dizziness.

Cervical spondylosis

Cervical spondylosis, which is a degenerative joint disease of the cervical spine, results in a progressive erosion of the cartilage that line the weight bearing joints in the neck. It can also give rise to headaches and these are dull, persistent and located on the posterior aspect of the head. Progressive bony calcification can lead to

obstruction of exiting nerve roots resulting in these neurological symptoms.

Exposure to carbon monoxide and headaches

Exposure to carbon monoxide can cause dull headache, which can be very difficult to diagnose unless a proper history is taken. They are often the worst on awakening and tend to ease after the patient gets up, particularly after going outside or opening windows.

Carbon monoxide exposure is particularly likely to occur in elderly people who live in impoverished circumstances, where dwellings may have improper heating units that cause incomplete combustion of fuel¹.

Polypharmacy

Polypharmacy is another cause that physicians need to keep in mind when investigating an elderly patient with a headache. The causative agents of headaches in the elderly are usually the vasodilators like nitrates and calcium channel blockers. Atenolol, digoxin, anti-Parkinson's disease medications, sedatives like benzodiazepines, non-steroidal anti-inflammatories like indomethacin and bronchodilators like theophylline can also give rise to dull persistent headaches.

A useful tactic when dealing with unexplained headaches in people of any age, but particularly the elderly, is to have them stop taking any medication that is not essential¹.

Treatment

Hypnic headaches do respond dramatically to lithium medication. Since the number of hypnic headache cases are few there are no clinical trials but a number of these cases have shown a good response to lithium². There is also some evidence that hypnic headache also responds to indomethacin⁷. Flunarizine and caffeine may also help with the headache⁸.

Conclusion

Hypnic headache is a rare cause of headache in the elderly presenting over 60 years of age. It is described as 'alarm clock' headache. The pathogenesis is poorly understood but a relationship with REM sleep has been postulated. Lithium has shown benefit in individual cases and in the elderly it is very important to rule out

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secondary causes of the headache ■ GM

Conflict of interest: none declared

Key points

- > Headaches in elderly patients need to be investigated to rule out secondary causes.
- > Hypnic headache is a benign headache that is very special to the geriatric age group.
- > Hypnic headaches do respond dramatically to lithium medication.
- > The diagnosis is one of exclusion since secondary causes of nocturnal headaches include drug withdrawal, temporal arteritis and sleep apnoea.
- > Polypharmacy also needs to be kept in mind as a cause of headaches in the elderly.