

Headaches and Exertion (2006)

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Background

Headaches that occur during exertion may be primary or secondary. Because headaches that are exertionally precipitated may be the harbinger of a serious disorder, the diagnosis of the primary form is predicated on testing to uncover secondary causes. This review will focus on the primary causes of exertional headaches.

Primary Cough Headache (ICHD-2 code 4.2)

Primary cough headache typically affects men over 40 years of age and while often described as a severe headache of sudden onset, it is by definition benign. These headaches peak within seconds of coughing, sneezing, straining or other Valsalva maneuvers. The headache usually resolves within minutes; however, some sufferers may continue to experience a dull ache for several hours afterward. The pain is typically bilateral in location, and is maximal at the vertex, frontal, occipital or temporal areas. Associated neurological features and nausea/vomiting are absent.

While the precise etiology of primary cough headache is unknown, it may relate to a sudden increase in intracranial pressure with traction on pain sensitive structures resulting from a downward displacement of cerebellar tonsils.

When cough headache occurs in a younger patient, is of long duration, is strictly unilateral or is associated with other features, the diagnosis must be questioned. Secondary cough headache has been described in Chiari malformation, brain tumor, generally in the posterior fossa, either malignant or benign (meningioma/acoustic neuroma), cerebral aneurysm and carotid or vertebrobasilar disease. Neuroimaging is mandatory in distinguishing the secondary causes from primary cough headache, and MRI is the procedure of choice, in that it best visualizes the posterior fossa.

Indomethacin is the treatment of choice in those patients who frequently experience primary cough headache and the sustained release formulation (75mg QD or BID) is often the best choice. A positive response to indomethacin may be seen in secondary cases and is therefore not diagnostic of primary cough headache. In a small case series, lumbar puncture provided prompt relief.

Primary Exertional Headache (ICHD-2 code 4.3)

Primary exertional headache, as the name suggests, occurs following strenuous exertional effort, such as physical exercise, athletic activity or weight-lifting. The headache is of sudden onset and often bilateral in location, but unlike cough headache, the pain is often pulsatile and of longer duration. Primary exertional headaches may last from 5 minutes to 48 hours.

As with cough headache, neuroimaging to rule out a posterior fossa or craniocervical junction abnormality should be undertaken in a patient presenting with new exertional headache, particularly when the headache is unilateral. In addition to unilaterality, secondary exertional headache often begins later in life, has a longer duration (24 hours – weeks) and when resulting from subarachnoid hemorrhage (SAH), the headache is associated with neurological features such as meningismus. Other secondary causes include Chiari malformation, subdural hematoma, neoplasm

(primary and metastatic) and platybasia. A 'first-ever' presentation of exertional headache requires a work-up to rule out SAH or arterial dissection.

The pathophysiology of primary exertional headache is unknown, but it may be the result of venous distention following exercise or arterial distention as a result of exercise (especially in a warm environment). Treatment with indomethacin or ergotamine prior to exercise may be helpful.

Primary Headaches Associated With Sexual Activity (ICHD-2 code 4.4)

Headaches with sexual activity affect men more often than women; they have also been reported to occur more commonly during illicit sexual encounters. These headaches have also been referred to as benign sex headaches, coital cephalalgias, benign vascular sexual headaches, or benign orgasmic headaches. Because these headaches may be provoked by activities besides coitus, (similar headaches provoked by masturbation and during nocturnal emissions have been reported), and not necessarily with orgasm, the ICHD-II has classified these as primary headaches associated with sexual activity. Three varieties of these headaches were described in the first edition of the ICHD; a dull type, an explosive type, and a postural type. In ICHD-II, however, primary headaches associated with sexual activity are now simply divided into preorgasmic and orgasmic headaches.

Preorgasmic headaches (previously classified as the dull subtype) make up approximately 20% of sexual headaches and are characterized by a dull ache or tightness in the muscles of the head, neck or jaw, beginning during sexual activity. Preorgasmic headaches are bilateral, worsen as sexual excitement builds, and can be prevented or reduced by deliberate muscle relaxation.

Orgasmic headaches (previously called the explosive subtype) are the most common of the sexually associated headaches, accounting for approximately 75% of cases. It is estimated that 50% of these sufferers also have pre-existing migraine headaches. These headaches begin abruptly, at or near the moment of orgasm, and may be caused by an increase in blood pressure. The pain is excruciatingly severe, most often described as explosive or throbbing, and may be frontal, occipital, or generalized. On occasion this type of headache may be associated with nausea and vomiting. These headaches typically last from 1 minute to 3 hours.

The postural variety is the least common subtype, affecting approximately 5% of sufferers. This headache resembles the headache that follows lumbar puncture in that it worsens with sitting or standing and is relieved by recumbency. It may be caused by a rent in the dura that spontaneously develops during sexual activity. This rare subtype is no longer included in the ICHD classification of headaches associated with sexual activity. Instead, these headaches are now classified as headaches attributed to spontaneous low CSF pressure.

Like other forms of primary exertional headaches, the diagnosis of primary headache associated with sexual activity cannot be made until secondary causes such as subarachnoid hemorrhage, arterial dissection and lesions of the posterior fossa, CSF pathways, and cervical spine have been excluded. The mainstay of treatment of the primary forms of headaches associated with sexual activity is reassurance, both of the patient and their partner. For most patients, these are self-limited disorders. Headaches often recur during several encounters over a brief period of time and never return again, while other patients experience them at infrequent intervals throughout their lifetime. Often patients can lessen the severity of an impending attack by stopping the sexual activity as soon as the headache begins. Those suffering from frequent, recurrent episodes may require preventive strategies such as indomethacin 25 mg TID, oral ergotamine tartrate taken a few hours prior to planned sexual activity, or prophylaxis with the β -blocker propranolol 40-200 mg daily, which unfortunately may interfere with sexual function.

Recommended Reading:

Pascual J, Iglesias F, Oterino A, Vazquez-Baquero A, Berciano J. Cough, exertional and sexual headaches: an analysis of 72 benign and symptomatic cases. *Neurology* 1996; 46:1520-1524.

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