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Understanding Headache Classifications

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Abstract

In this article the authors introduce and discuss the 3rd edition of the International Classification of Headache Disorders (ICHD-3), an important tool in the diagnosis and management of headaches and other causes of orofacial pain such as the cranial neuropathies.

Introduction

The 3rd edition of the International Classification of Headache Disorders (ICHD-3) can be very helpful to clinicians who manage patients presenting with headache as their chief complaint [1]**.** Unfortunately, however, many clinicians are still unaware of this important reference resource, which describes many headache diagnoses with significant overlap in presentation and sometimes subtle points of diagnostic differentiation. If all headaches classifications were best managed using the same treatments, precise identification of the headache types would be less important. However, because therapeutic management varies significantly depending on the specific type of headache, a more precise diagnosis can make a difference in treatment success [2]. Not only is headache a prevalent disorder worldwide in many practice settings, but it is also a particularly common emergency department chief complaint [2-5]. Consequently, by gaining maximal diagnostic competence of this condition, thus improving therapeutic accuracy, clinicians can have a positive impact on the lives of untold numbers of patients. Detailed delineations and diagnostic descriptions of specific headache types are provided in the International Classification of Headache Disorders (ICHD-3), which can be easily accessed online [1]. The goal of this paper, therefore, is not to restate these diagnostic criteria; but to increase awareness of this useful clinical resource, and present some of its higher yield information via simplified tables and an algorithm.

ICHD-3 Classifications

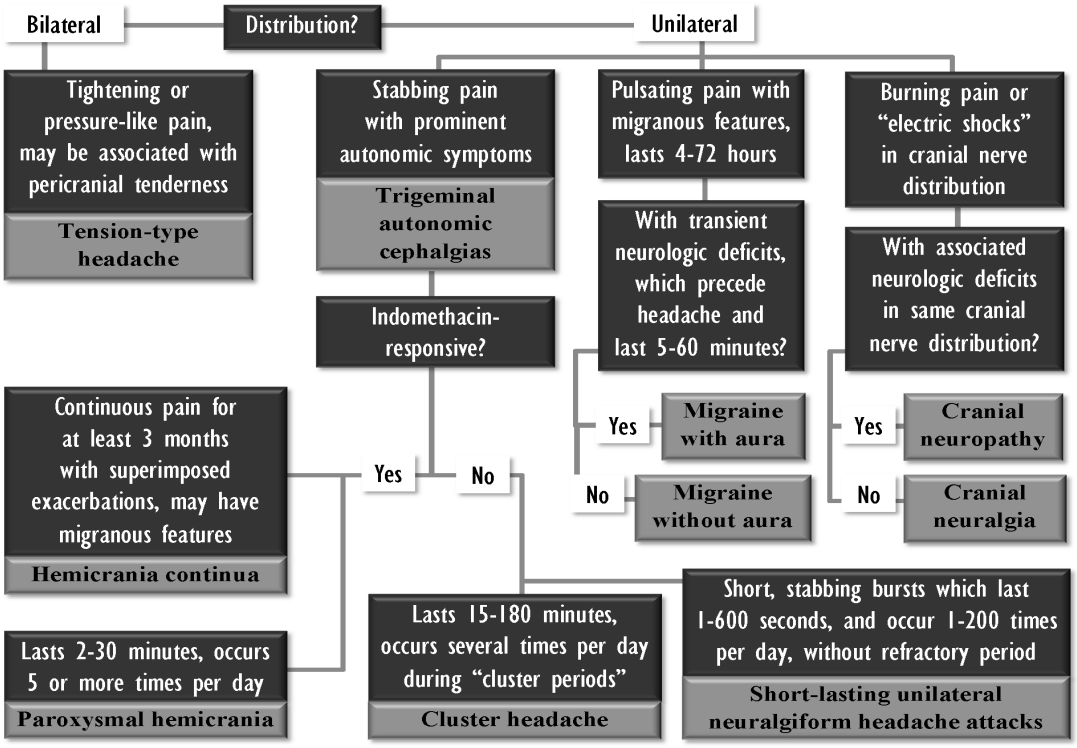
The International Classification of Headache Disorders (ICHD-3) has been developed by an international panel of headache experts. It is now in its third edition and currently is published in a digital beta format, in order to enable input from other the members of the International Headache Society and allow a test period for identification and correction of mistakes [1]. Since the extensive document is nearly impossible to learn by heart, the International Classification of Headache Disorders (ICHD-3) is intended to be a reference tool which can be consulted time and time again.

This classification reference has three main sections. Part one covers primary headaches, part two covers secondary headaches, and part three covers painful cranial neuropathies, as well as other facial pains and headaches. The differentiation between primary and secondary headaches is relatively simple and easy to understand. A primary headache is due to the actual headache condition itself and cannot be attributed to another etiology; while a secondary headache is a symptom of another, underlying condition. Primary headaches include four general types-migraine, tension-type headache, trigeminal autonomic cephalalgias, and other primary headache disorders. Each of these four headache classifications are further sub-classified. The classification of secondary headaches is much more extensive, due to the vast array of underlying conditions which can produce a headache. Examples include headaches due to trauma or injury of the head and/or neck, headaches attributed to cranial or cervical vascular disorders, and headaches attributed to a substance or its withdrawal. These categories, too, are further divided into sub-categories [1]. These sub-classifications of all potential headache types can become quite challenging for the busiest clinicians to remember.

Primary Headache Classifications

Primary headaches include the well-known (but still not well understood) migraine and tension-type headaches, as well as many lesser-known and -diagnosed headaches. Migraine headaches and their sub-classifications have specific diagnostic criteria which differentiate them from other headaches and craniofacial pains [1]. They are most effectively treated with antipsychotics and other antidopaminergic medications, which are usually administered alongside other analgesics and adjunct treatments, sometimes including diphenhydramine to reduce incidence of akathisia [4]. Tension-type headaches, which some consider to be part of a headache spectrum with migraines, also have specific diagnostic criteria and sub-classifications [5]. They respond to the same treatments used for migraine headaches, as well as over-the-counter medications including combinations formulations with caffeine[6]. The third section of primary headaches classification covers the trigeminal autonomic cephalalgias, which include cluster headaches, paroxysmal hemicrania, short-lasting unilateral neuralgiform headaches, hemicrania continua, and probable trigeminal autonomic cephalalgia; each of which have specific diagnostic criteria and distinct treatment recommendations[1]. Without the benefit of the ICDH-3 classification system, the diagnosis and correct treatment of these conditions, all of which present with similar stabbing type pain and ipsilateral autonomic symptoms [1], would be almost impossible for clinicians not specialized in this particular area. The fourth category of primary headaches is for other primary headache disorders, and includes a number of less common headache conditions, including primary cough headache, primary exercise headache, primary headache associated with sexual activity, primary thunderclap headache, cold-stimulus headache, external-pressure headache, primary stabbing headache, nummular headache, hypnic headache and new daily persistent headache [1].

A helpful diagnostic algorithm for primary headaches (Algorithm 1), and a table including the primary headache classifications, current management, prophylaxis recommendations, and mimics (Table 1), are provided in this paper.



Algorithm 1: Diagnosis of Primary Headaches.

	Characteristics		Emergency Department Management	Prophylaxis	Mimics
Migraine Headache	Unilateral, pulsating, severe, 4-72 hours, migrainous features, with or without aura		Neuroleptics or other anti-dopaminergics,combined with an over the-conunter analgesic and an antiematic	Antiepileptics, botulinum toxin injections	Ischemic stroke or TIA, intracranial hemorrhage, giant cell arteritis, central venous sinus thrombosis
	Management alternatnres to consider: sub-dissociative ketamine infusions, triptans Management adjuncts to consider diphenhydramine (for prevention or treatment of akathisia), cortcosteroids (for prevention or recurrence)				
Tension-type headache	Bilateral, tightening or pressure-like, with or without pericranial tenderness		Over the-counter analgesics, may consider formulation with caffeine	Antidepressants, physical therapy, biofeedback	Many types of secondary headaches
Paroxysmal hemicrania	Severe stabbing with ipsilateral parasympathetic autonomic symptoms	Lasts 2-30 minutes, occurs several times per day	Indamethacin	Indomethacin	Cluster headaches
Hemicrania continua		Continuous pain with waxing and waning fluctuations			Migraine
Cluster Headache		15-180 minutes, several per day during “cluster periods”	100% oxygen, subcutaneous/nasal triptan	Suboccipital corticosteroid injections	Migraine, paroxysmal hemicrania
Short-lasting unilateral neuralgiform. headache attacks		Short stabbing bursts which last a few seconds and occur many times per day	IV lidocaine or corticosteroids	Anti-epileptics, gabapentin	Prirmry stabbing headaches, trigeminal neuralgia
Primary stabbing headaches	Short stabbing bursts, no autonomic symptoms		Indumethaan, COX-2 inhibitors	Indomethacin, tricyclic antidepressants, gabapentin	Short-lasting unilateral neuralgiform headache attacks, cranial neuralgias
Primary thunderclap Headache	Severe, sudden onset, maximal at onset		Rule out emergent causes		Acute intracranial hemorrhage or other vascular problems
Nummular headache	Small, well-circumscriped area of mild pain		Over-the-counter analgesics	Only for severe or refractory cases	Underlying structural lesion
Hypnic headache	Onsets exclusively during sleep (2-4 am), usually moderate bilateral pain		Analgesic formulation containing caffeine	Lithium	Variable, depends on features
New dairy Persistent headaches	Occur daily for at least 3 months in patients with limited prior headaches history, variable features		Similar to migraine headaches		Underlying structural lesion

Table 1: Primary headaches, management, prophylaxis, and mimics.

Secondary Headache Classifications

A secondary headache is a headache which is present because of another medical condition, and generally carry a higher level of concern for clinicians because the underlying etiology is sometimes a life-threatening condition such as bacterial meningitis or intracranial hemorrhage [1]. The challenge associated with secondary headaches is in differentiating them from the more common, and less worrisome, primary headache etiologies which they frequently mimic. Failure to accurately diagnose a secondary headache will frequently have serious consequences and complications. See (Table 2) for the International Classification of Headache Disorders (ICHD-3) categories, and (Table 3) for a selection of these secondary headaches which may mimic more common primary headaches, as well as their emergent management.

Part two: the secondary headaches
5.Headache attributed to trauma or injury to the head and/or neck
6.Headache attributed to cranial or cervical vascular disorder
7.Headache attributed to non-vascular intracranial disorder
S. Headache attributed to a substance or its withdrawal
9.Headache attributed to infection
10.Headache attributed to disorder of homoeostasis
11.Headache or facial pain attributed to disorder of the cranium, neck,
eye, ears, nose sinuses, teeth, mouth or other facial or cervical structure
12.Headache attributed to psychiatric disorder

Table 2: Secondary headache classifications.

	May mimic	**Differentiating features**	**Emergency Department Management**
Giant cell arteritis	Migraine, certain cranial neuropathies	Ipsilateral monocular vision changes (very rare with migraine); may also have scalp tenderness, jaw claudication, fevers, polymyalgia	High dose corticosteroids, arrange for temporal artery biopsy
Central venous sinus thrombosis	Migraine, encephalopathy, intracranial hemorrhage, ischemic stroke, or other intracranial vascular problems	Highly variable, may have neurologic findings including seizures, vision changes, focal deficits, alterations of mental status or level of consciousness	Anticoagulation, antiepileptic prophylaxis, monitoring and management of intracranial pressure
Medication overuse headaches	Migraine or tension-type headaches	Worsening or new type of headache in the setting of chronic overuse of medication intended for acute headache management	Tapered or abrupt withdrawal of acute medications, optimize preventative management of chronic headaches
Cervicogenic headache	Tension type headaches, occipital neuralgia	Headache onsets in neck before spreading to head, may have bony tenderness and/or signs of cervical nerve root compression	Consider imaging of cervical spine to evaluate for underlying problem if acute

Table 3: Selected secondary headaches which mimic primary headaches, and their emergent management Painful cranial neuropathies, other facial pains, and other headaches.

Painful Cranial Neuropathies, Other Facial Pains, and Other Headaches

A separate and third section in the International Classification of Headache Disorders (ICHD-3) is dedicated to the cranial neuropathies, other facial pains, and other headaches. Many, but not all of these conditions, are characterized by neuropathic-type pain in a specific cranial nerve distribution. These include trigeminal neuralgia, occipital neuralgia, optic neuritis and other, lesser-known neuropathies, as well as a section dedicated to headaches without a clear-cut etiology or not fitting specific diagnostic criteria for

any other headache diagnosis. Again, the most current diagnostic criteria for each of these conditions, as determined by the ICHD-3 panel of experts, is provided for the clinician. See (Table 4) for a list of these conditions [1].

13 Painful cranial neuropathies and other facial pains
13.1 Trigeminal neuralgia
13.2 Glossopharyngeal neuralgia
13.3 Nervus intermedius (facial nerve) neuralgia
13.4 Occipital neuralgia
13.5 Optic neuritis
13.6 Headache attributed to ischaemic ocular motor nerve palsy
13.7 Tolosa-Hunt syndrome
13.8 Paratrigeminal oculosympathetic (Raeder's) syndrome
13.9 Recurrent painful ophthalmoplegic neuropathy
13.10 Burning mouth syndrome (BMS)
13.11 Persistent idiopathic facial pain (PIFP)
13.12 Central neuropathic pain
14 Other Headaches
14.1 Headache not classified elsewhere
14.2 Headache unspecified

Table 4: Painful cranial neuropathies and other facial pains.

Conclusion

In summary, the 3rd edition of the International Classification of Headache Disorders (ICHD-3) is an extremely valuable tool in the diagnosis and therapeutic management of the complex spectrum of head and face pain syndromes [1]. Because therapeutic success is most likely to occur when the type or cause of the headache or face pain is correctly identified, a precise diagnosis is critical [2].

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