

REVIEW ARTICLE

Headaches of otolaryngological interest: current status while awaiting revision of classification. Practical considerations and expectations

La cefalea di interesse otorinolaringoiatrico: storia dell'arte, attuali linee guida in attesa della revisione classificativa. Considerazioni pratiche e nostre aspettative applicative

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SUMMARY

In 1988, diagnostic criteria for headaches were drawn up by the International Headache Society (IHS) and is divided into headaches, cranial neuralgias and facial pain. The 2nd edition of the International Classification of Headache Disorders (ICHD) was produced in 2004, and still provides a dynamic and useful instrument for clinical practice. We have examined the current IHC, which comprises 14 groups. The first four cover primary headaches, with "benign paroxysmal vertigo of childhood" being the forms of migraine of interest to otolaryngologists; groups 5 to 12 classify "secondary headaches"; group 11 is formed of "headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures"; group 13, consisting of "cranial neuralgias and central causes of facial pain" is also of relevance to otolaryngology. Neither the current classification system nor the original one has a satisfactory collocation for migraine-associated vertigo. Another critical point of the classification concerns cranio-facial pain syndromes such as Sluder's neuralgia, previously included in the 1988 classification among cluster headaches, and now included in the section on "cranial neuralgias and central causes of facial pain", even though Sluder's neuralgia has not been adequately validated. As we have highlighted in our studies, there are considerable similarities between Sluder's syndrome and cluster headaches. The main features distinguishing the two are the trend to cluster over time, found only in cluster headaches, and the distribution of pain, with greater nasal manifestations in the case of Sluder's syndrome. We believe that it is better and clearer, particularly on the basis of our clinical experience and published studies, to include this nosological entity, which is clearly distinct from an otolaryngological point of view, as a variant of cluster headache. We agree with experts in the field of headaches, such as Olesen and Nappi who contributed to previous classifications, on the need for a revised classification, particularly with regards to secondary headaches. According to the current Committee on headaches, the updated version of the classification, presently under study, is due to be published soon; it is our hope that this revised version will take into account some of the above considerations.

KEY WORDS: Headache • Migraine • Facial pain • Cranial neuralgias • International Headache Classification • Sluder's neuralgia • Charlin's neuralgia • Vestibular migraine • ENT

RIASSUNTO

Nel 1988 i criteri diagnostici delle cefalee sono stati stilati dalla International Headache Society (IHS) e strutturati nella "Classificazione delle cefalee, nevralgie craniche e dolori facciali". La seconda edizione dell'IHC risale al 2004 e fornisce a tutt'oggi uno strumento dinamico e utile alla pratica clinica. Abbiamo esaminato l'attuale IHC, la quale comprende 14 gruppi. I primi 4 riguardano le cefalee primarie e tra le forme emicraniche, merita l'attenzione dell'otorinolaringoiatra la "vertigine parossistica dell'infanzia". I gruppi dal 5 al 12 si riferiscono, invece, alle "cefalee secondarie" fra cui al punto 11 viene contemplata la "cefalea o dolori facciali attribuiti a disturbi di cranio, collo, occhi, orecchie, naso, seni paranasali, denti, bocca o altre strutture facciali o craniche". Anche il gruppo 13 costituito dalle "nevralgie craniche e dolori facciali centrali" è di pertinenza ORL. Tuttavia né l'attuale né la vecchia classificazione IHC prevede una collocazione dignitosa della vertigine correlata con l'emicrania: vertigine emicranica. Altro punto critico classificativo riguarda le algie cranio facciali, quali la nevralgia di Sluder, precedentemente inclusa nella classificazione del 1988 nella cefalea a grappolo, attualmente è inserita nel capitolo delle nevralgie craniche e dolori facciali di origine centrale e non è sufficientemente validata. Come abbiamo sottolineato nei nostri studi, tra la Sindrome di Sluder e la Cefalea a grappolo esistono notevoli similitudini: si potrebbe trattare di due varietà differenti della stessa entità clinica; principale fattore distintivo è l'andamento temporale a grappoli che si riscontra solo nella cefalea a grappolo, e la topografia del dolore, con maggior estrinsecazione a livello nasale nel caso della Sindrome di Sluder. In ogni caso riteniamo che sia assolutamente più soddisfacente e chiarificatore, soprattutto in base alla nostra esperienza clinica e ai nostri studi pubblicati, far rientrare questa entità nosologica ben definita dal punto di vista otorinolaringoiatrico, come una variante della cefalea a grappolo. Concordiamo con illustri autori, come Olesen e Nappi, che hanno contribuito alla stesura delle precedenti classificazioni, sulla necessità di una revisione classificativa soprattutto riguardo alle cefalee secondarie. Secondo l'attuale Comitato organizzativo delle cefalee, la nuova versione classificativa, in fase di studio, sarà presto pubblicata; a questo proposito ci auspichiamo che tale versione possa essere rivista e/o integrata secondo le nostre aspettative.

PAROLE CHIAVE: Cefalea • Emicrania • Dolore facciale • Nevralgie craniche • Classificazione della Società Internazionale delle Cefalee • Nevralgia di Sluder • Nevralgia di Charlin • Emicrania vestibolare • Otorinolaringoiatria

Introduction

Cranio-facial pain is a symptom frequently seen in otolaryngological clinical practice and requires knowledge of potential differential diagnoses that comply with criteria universally accepted by the international scientific community. The term “headache” defines a pain with a predominantly neurocranial location, whose topographical extension does not correspond to the territory of distribution of single nerve trunks. This definition of headache, therefore, excludes “neuralgias”, since the areas of pain in these conditions correspond to territories of distribution of the nerve trunks affected^{1,2}. “Primary or idiopathic headaches” appear as independent pathologies, in the absence of any other potential causative condition. “Secondary headaches or pain syndromes” can have local causes (disorder of the cervical spine, sinusitis, refraction errors, etc.), and systemic causes (extracranial infections, pheochromocytoma, exposure to toxic substances, anaemia, etc.). Primary headache is not a disorder that kills... but it does prevent living! Secondary headache is a vital warning bell and a difficult therapeutic challenge!

First edition of the International Headache Society Classification

In 1988, the International Headache Society (IHS) developed diagnostic criteria for headaches and divided these into headaches, cranial neuralgia and facial pain³. This classification system was the result of the combined efforts of an international committee of experts in the field of headache based on their clinical experience given the absence of scientific evidence. Despite this limitation, the classification system was accepted throughout the world, overcoming old prejudices and scepticism that the medical community had previously held.

This classification also defined the clinico-diagnostic characteristics of the “secondary” headaches of interest to otolaryngologists. According to the sophisticated numerical coding system, the 11th group consists of “headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures”. Unfortunately, this classification provided only a partial nosological profile of the types of cranio-facial pain of relevance to otolaryngologists, since the so-called “atypical” pains of the nasal and paranasal district, such as Charlin’s syndrome and Sluder’s sphenopalatine neuralgia, had not been sufficiently validated. Furthermore, the 1988 classification did not provide exhaustive diagnostic criteria regarding headaches associated with vestibular disorders.

Since the pivotal meeting in February in 1988 at San Diego, the classification has been translated into more than 20 languages and distributed worldwide. This has led to greater epidemiological and nosographic awareness of

headaches, which has been accompanied by the accumulation of valid suggestions on the need for a revised second edition.

Second edition of the International Headache Society Classification

The hope of James W. Lance and Jes Olesen of a second edition of the classification to promote further unification of the methods of classifying, diagnosing and treating patients with headache was finally met in 2004⁴. The 2nd edition is designed for use both in research and clinical practice. Indeed, it is now improbable that an international scientific journal would accept research that has been carried out without using the criteria laid out in this classification.

The general set-up of the International Headache Society’s classification of headaches, published in the first supplement of *Cephalalgia* in 2004, is based on a refined system of codes for different types of headaches according to progressive levels of nosological precision. The 2nd edition includes better standardization of diagnostic criteria, to define both clinical characteristics (criterion A) and the causal relationship between a pathology and headache (criteria B, C and D).

The current classification comprises 14 groups. The first four cover “primary headaches” (Table I). Forms of migraine of particular interest to otolaryngologists include “childhood periodic syndromes that are commonly precursors of migraine (1.3)”. Groups 5 to 12 of the classification refer to “secondary headaches” (Table II). Group 11 includes some forms of headache of otolaryngological relevance, such as “headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures” (Table III). Group 13, constituted of “cranial neuralgias and central causes of facial pain”, is also of otolaryngological relevance (Table IV). Group 14 consists of those headaches that are unspecified and not elsewhere classified.

With regards to secondary headaches, while the 1988 classification used the term “associated with”, the current version uses “attributed to” since the causal connection between the underlying disorder and the head or facial pain had, in the intervening 15 years, been clearly established. Furthermore, to keep research on headaches free from a rigid, predetermined scheme and propel it towards new inputs from future studies, the current classification

Table I. IHS Classification ICHD-II. Part one: The primary headaches.

1.	Migraine
2.	Tension-type headache (TTH)
3.	Cluster headache and other trigeminal autonomic cephalalgias
4.	Other primary headaches

Table II. IHS Classification ICHD-II. Part two: The secondary headaches.

5.	Headache attributed to head and/or neck trauma
6.	Headache attributed to cranial or cervical vascular disorder
7.	Headache attributed to non-vascular intracranial disorder
8.	Headache attributed to a substance or its withdrawal
9.	Headache attributed to infection
10.	Headache attributed to disorder of homeostasis
11.	Headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures
12.	Headache attributed to psychiatric disorder

Table III. IHS Classification ICHD-II. Part two: The secondary headaches.

11.	Headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures
11.1.	Headache attributed to disorder of cranial bone [M80-M89.8]
11.2.	Headache attributed to disorder of neck [M99]
11.3.	Headache attributed to disorder of eyes
11.4.	Headache attributed to disorder of ears [H60-H95]
11.5.	Headache attributed to rhinosinusitis [J01]
11.6.	Headache attributed to disorder of teeth, jaws or related structures [K00-K14]
11.7.	Headache or facial pain attributed to temporomandibular joint (TMJ) disorder [K07.6]
11.8.	Headache attributed to other disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cervical structures [code to specify aetiology]

has a separate Appendix that describes a series of disorders awaiting validation and provides sets of criteria that are alternatives to the official ones.

Two years after the publication of the 2nd edition of the ICHD (ICHD-2), an internet-based version became available. Since the classification of headaches cannot be learnt by memory, it is extremely useful for physicians worldwide to be able to find rapid answers on the internet.

The classification is hierarchical and each user must decide how detailed any particular diagnosis should be. Indeed, there are four levels of detail. The first level is a summary of which group the patient belongs to. The depth of detail depends on the purpose of the classification. In a general outpatient clinic, a first or second level diagnosis is usually sufficient, while a third or fourth level diagnosis would be indicated in a specialist clinic or headache centre.

Thus, the modern otolaryngologist faced with making a differential diagnosis of the common problem of headache must not only be aware of the IHS classification, but most importantly, must be able to consult it easily and

Table IV. IHS Classification ICHD-II. Part three: Cranial neuralgias, central and primary facial pain and other headaches.

13.	Cranial neuralgias and central causes of facial pain
13.1.	Trigeminal neuralgia
13.2.	Glossopharyngeal neuralgia
13.3.	Nervus intermedius neuralgia [G51.80]
13.4.	Superior laryngeal neuralgia [G52.20]
13.5.	Nasociliary neuralgia [G52.80]
13.6.	Supraorbital neuralgia [G52.80]
13.7.	Other terminal branch neuralgias [G52.80]
13.8.	Occipital neuralgia [G52.80]
13.9.	Neck-tongue syndrome
13.10.	External compression headache
13.11.	Cold-stimulus headache
13.12.	Constant pain caused by compression, irritation or distortion of cranial nerves or upper cervical roots by structural lesions [G53.8] + [code to specify aetiology]
13.13.	Optic neuritis [H46]
13.14.	Ocular diabetic neuropathy [E10-E14]
13.15.	Head or facial pain attributed to herpes zoster
13.16.	Tolosa-Hunt syndrome
13.17.	Ophthalmoplegic "migraine"
13.18.	Central causes of facial pain
13.19.	Other cranial neuralgia or other centrally-mediated facial pain [code to specify aetiology]

preferably via internet, correctly interpreting the various chapters of further explanation.

Headaches of particular relevance to in otolaryngology

With regards to *primary headaches*, otolaryngologists are particularly involved with basilar-type migraine (1.2.6) and a vertiginous disorder occurring in children, namely benign paroxysmal vertigo of childhood (1.3.3).

Basilar-type migraine

Basilar-type migraine (1.2.6) is one of the types of migraine with aura.

Description:

Migraine with aura symptoms clearly originating from the brainstem and/or from both hemispheres simultaneously affected, but no motor weakness.

Diagnostic criteria:

- A. At least two attacks fulfilling criteria B-D.
- B. Aura consisting of at least two of the following fully reversible symptoms, but no motor weakness:
 1. dysarthria;
 2. vertigo;
 3. tinnitus;

4. hypacusia;
 5. diplopia;
 6. visual symptoms simultaneously in both temporal and nasal fields of both eyes;
 7. ataxia;
 8. decreased level of consciousness;
 9. simultaneously bilateral paraesthesias.
- C. At least one of the following:
1. at least one aura symptom develops gradually over ≥ 5 minutes and/or different aura symptoms occur in succession over ≥ 5 minutes;
 2. each aura symptom lasts between 5 and 60 minutes.
- D. Headache fulfilling criteria B-D for 1.1: migraine without aura begins during the aura or follows aura within 60 minutes/
- E. Not attributed to another disorder.

Note:

History and physical and neurological examinations do not suggest any of the disorders listed in groups 5-12, or history and/or physical and/or neurological examinations do suggest such a disorder but is ruled out by appropriate investigations, or such a disorder is present but attacks do not occur for the first time in close temporal relation to the disorder.

Comment:

Basilar-type attacks are mostly seen in young adults. Many patients who have basilar-type attacks also reported attacks with typical aura (code for both disorders).

If motor weakness is present, code as 1.2.4, familial hemiplegic migraine, or 1.2.5, sporadic hemiplegic migraine. Patients with 1.2.4 familial hemiplegic migraine have basilar-type symptoms in 60% of cases. Therefore, 1.2.6 basilar-type migraine should be diagnosed only when no motor weakness occurs. Many of the symptoms listed under criterion B are subject to misinterpretation as they may occur with anxiety and hyperventilation.

Originally the terms basilar artery migraine or basilar migraine were used, but since involvement of the basilar artery territory is uncertain (i.e., the disturbance may be bihemispheric) the term basilar-type migraine is preferred.

Benign paroxysmal vertigo of childhood

Benign paroxysmal vertigo of childhood (1.3.3) is included in the chapter on migraine, among the childhood periodic syndromes that are commonly precursors of migraine, together with cyclical vomiting (1.3.1) and abdominal migraine (1.3.2).

Description:

This probably heterogeneous disorder is characterized by recurrent brief episodic attacks of vertigo occurring without warning and resolving spontaneously in otherwise healthy children.

Diagnostic criteria:

- A. At least five attacks fulfilling criterion B.
- B. Multiple episodes of severe vertigo, occurring without warning and resolving spontaneously after minutes to hours.
- C. Normal neurological examination and audiometric and vestibular functions between attacks.
- D. Normal electroencephalogram.

Note:

1. Often associated with nystagmus or vomiting; unilateral throbbing headache may occur in some attacks.

By far the most frequent headaches seen in an ear, nose and throat clinic are *secondary headaches*.

In the 2004 revision of the original 1988 classification, the sentence "headache or facial pain attributed to" a given pathological condition has replaced the sentence "headache or facial pain associated with" in all the chapters on secondary headaches. Attributing a headache to a given pathological condition highlights the importance of the close causal relationship between the pathology and headache both in diagnostic and classificatory terms, and bears witness to the fact that, unlike when the first edition was drawn up, it is now possible to identify a precise causal relationship between a pathological event and the headache.

The features that enable a headache to be attributed to a given pathological condition are the close temporal relationship with a pathological event considered to have caused the headache, evidence that the event under consideration is able to induce or worsen a pre-existing headache and its resolution after treatment of the causal pathological condition.

In the 1988 classification, these criteria were applicable only to headaches of new onset, given that only a newly occurring headache could be considered as secondary to a pathology. With this supposition, it is obvious that there were limitations to the application of the classification in the case of a headache pre-existing the causal event, which worsened in a close temporal and causal relationship with a pathological event, satisfying the criteria for a secondary headache. This problem has been overcome in the current classification, which allows a dual diagnosis of primary headache and secondary headache attributed to a given condition recognized as the causal event.

Furthermore, as already highlighted, greater standardization was introduced into diagnostic criteria to better define both the clinical characteristics (criterion A) and causal relation between the pathology and headache (criteria B, C and D). Criterion D is of particular importance: it describes the improvement of the headache or its disappearance within a precise temporal limit from the successful treatment or spontaneous remission of the causal pathological event, in this way enabling the causal relation between the pathological

event and the headache to be established conclusively and, thereby, making a diagnosis of secondary headache certain.

One form of secondary headache of potential pertinence to otolaryngologists, because of the possible complication of vertigo that it can lead to, is *post-traumatic headache*, and in particular acute and chronic headaches attributed to whiplash injury, which are classified at points 5.3 and 5.4. Some details are given below:

Acute headache attributed to whiplash injury

Diagnostic criteria:

- A. Headache, without typical characteristics fulfilling criteria C and D.
- B. History of whiplash (sudden and significant acceleration/deceleration movement of the neck) associated at the time with neck pain.
- C. Headache develops within 7 days after the whiplash injury.
- D. One or other of the following:
 1. headache resolves within 3 months after the whiplash injury;
 2. headache persists, but 3 months have not yet passed since the whiplash injury.

Comments:

The term whiplash commonly refers to a sudden acceleration and/or deceleration of the neck (in the majority of cases due to a road accident). Clinical manifestations include symptoms and signs that relate to the neck, as well as somatic extracervical, neurosensory, behavioural, cognitive and affective disorders whose appearance and modes of expression and evolution can vary widely over time. Headache is very common in post-whiplash syndrome. The Quebec Task Force on Whiplash-Associated Disorders has proposed classification in five categories, which may be useful in prospective studies. There are important differences in the incidence of post-whiplash syndrome in different countries, perhaps related to expectations for compensation.

Chronic headache attributed to whiplash injury

Diagnostic criteria:

- A. Headache, without typical characteristics, fulfilling criteria C and D.
- B. History of whiplash (sudden and significant acceleration/deceleration movement of the neck) associated at the time with neck pain.
- C. Headache develops within 7 days after the whiplash injury.
- D. Headache persists for more than 3 months after the whiplash injury.

Comment:

Chronic post-whiplash injury headache is often part of the post-traumatic syndrome. There is no good evidence that ongoing litigation, with settlement pending, is associated

with prolongation of headache. It is, however, important to assess patients carefully who may be malingering and/or seeking enhanced compensation.

Another "secondary" nosological entity of clinical interest to otolaryngologists is *headache attributed to infection*, described in chapter 9 of the current classification, whereas in the 1988 edition, infections of structures within the cranium were included in the chapter on headaches associated with intracranial disorders.

Headaches attributed to extracranial infections of the head, such as infections of the ears, eyes and sinuses, are classified in chapter 11. The infection-related headaches involving the sinuses or ears include headache attributed to brain abscess (9.1.4) and headache attributed to subdural empyema (9.1.5).

Headache attributed to brain abscess

Diagnostic criteria:

- A. Headache with at least one of the following characteristics and fulfilling criteria C and D:
 1. bilateral;
 2. constant pain;
 3. intensity gradually increasing to moderate or severe;
 4. aggravated by straining;
 5. accompanied by nausea.
- B. Neuroimaging and/or laboratory evidence of brain abscess.
- C. Headache develops during active infection.
- D. Headache resolves within 3 months after successful treatment of the abscess.

Comments:

Direct compression and irritation of the meningeal or arterial structures and increased intracranial pressure are the mechanisms that cause headache.

The most common microorganisms causing brain abscess include streptococci, *Staphylococcus aureus*, bacteroides species and enterobacteria. Predisposing factors include infections of paranasal sinuses, ears, jaws, teeth or lungs.

Headache attributed to subdural empyema

Diagnostic criteria:

- A. Headache with at least one of the following characteristics and fulfilling criteria C and D:
 1. unilateral or much more intense on one side;
 2. associated with tenderness of the skull;
 3. accompanied by fever;
 4. accompanied by stiffness of the neck.
- B. Neuroimaging and/or laboratory evidence of subdural empyema.
- C. Headache develops during active infection and is localised to or maximal at the site of the empyema.
- D. Headache resolves within 3 months after successful treatment of the empyema.

Comments:

Headache is caused by meningeal irritation, increased intracranial pressure and/or fever. Subdural empyema is often secondary to sinusitis or otitis media. It may also be a complication of meningitis. Early diagnosis is best made by computed tomography or magnetic resonance imaging.

In clinical practice, the “secondary headaches” in chapter 11 are also of importance to the otolaryngologist; in this regard, it is important to highlight the inclusion of a previously unclassified entity in the new classification: “headache attributed to craniocervical dystonia” (11.2.3); furthermore, the term “headache attributed to rhinosinusitis” (11.5) has been coined to substitute the previous “acute headache of paranasal sinuses and headache of other nasal pathologies and of the paranasal sinuses”.

Furthermore, chapter 11 now mentions two entities, whose criteria have not yet been completely validated and which are, therefore, included in the body of the Appendix at the margins of the classification “mucosal contact point headache”(A 11.5.1) and “chronic post-craniocervical disorder headache” (A 11.9).

It should be remembered that *secondary headaches* for which the scientific evidence is not completely clear have been placed in the Appendix.

Headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, paranasal sinuses, teeth, mouth or other facial or cranial structures (ICHD Chapter 11)

11.1 Headache attributed to disorder of cranial bone

Interestingly, the note on this entity describes the possibility that headache can be caused by mastoid lesions or by inflammation of the petrous bone.

11.2 Headache attributed to disorder of neck

These headaches are classified into three subgroups: “cervicogenic headache” (11.2.1), “headache attributed to craniocervical dystonia” (11.2.3) and “headache attributed to retropharyngeal tendonitis” (11.2.2); the otolaryngologist must be aware of this latter form in order to reach the correct differential diagnosis from tumours or, as emphasized in the classification, to rule out dissection of the upper tract of the carotid arteries.

11.4 Headache attributed to disorder of ears

As can be seen from Table V, the comments highlight how only pathological conditions able to produce primary otalgia (or otodynia for the otolaryngologist) are among the causal events enabling a headache to be attributed to a disorder of the ears; thus, all those organic lesions that are responsible for referred earache and headache but not due to an ear disorder are excluded.

It is clear that the diagnostic accuracy that can be achieved by fulfilling the criteria proposed by the IHS is dependent on the coherent use of interdisciplinary terms recognized by the specialist otolaryngologist, who must determine the presence or absence of otodynia or otalgia; for example, headache attributed to acoustic neuroma is classified as “headache attributed directly to neoplasm” (7.4.2) since the earache is a reflex pain and, therefore, otalgia.

11.5 Headache attributed to rhinosinusitis

As already mentioned, the 1988 classification of this form of headache, known as acute sinus headache, was reconsidered; in the current classification the diagnostic criteria have been revised, as shown in Table VI.

This headache is associated with a condition classified

Table V. IHS Classification ICHD-II. Headache attributed to disorder of ears.

IHS	Diagnosis	ICD-10
11.4	Headache attributed to disorder of ears [H60-H95]	G44.844
Coded elsewhere	Headache attributed to acoustic neuroma is coded as 7.4.2 Headache attributed directly to neoplasm. Headache attributed to a lesion, not of the ear, giving rise to referred otalgia is coded according to the site and/or nature of the lesion.	

Diagnostic criteria:

- A. Headache accompanied by otalgia and fulfilling criteria C and D.
- B. Structural lesion of the ear diagnosed by appropriate investigations.
- C. Headache and otalgia develop in close temporal relation to the structural lesion.
- D. Headache and otalgia resolve simultaneously with remission or successful treatment of the structural lesion.

Comment:

There is no evidence that any pathology of the ear can cause headache without concomitant otalgia. Structural lesions of the pinna, external auditory canal, tympanic membrane or middle ear may give rise to primary otalgia associated with headache. However, only about 50% of all cases of earache are due to structural lesions of the external or middle ear. Disorders outside this region may lead to referred otalgia as a result of radiation of pain into the ear region. Sensory fibres of the fifth, seventh, ninth and tenth cranial nerves project into the auricle, external auditory canal, tympanic membrane and middle ear. For this reason referred pain from remote structural lesions in any of the anatomical regions to which these nerves project can be felt as referred otalgia. Since these are not disorders of the ear they are coded elsewhere according to the site and/or nature of the lesion(s).

in the Appendix, given its still incomplete validation, as 11.5.1 “mucosal contact point headache”. This could be the already known sore point due to septal-turbinate contact (adhesions, spurs, deviations); see old classification, note 11.5.2.

With regards to point 11.5 of the current classification, an important comment at the margins of the diagnostic criteria highlights the risk of confusion between this type of secondary headache and migraine or tension-type headache; in fact, migraine without aura can present in association with facial pain, nasal congestion and with attacks triggered by changes in the weather.

11.7 Headache or facial pain attributed to temporomandibular joint (TMJ) disorder

Knowledge of this type of headache can be useful for the ear, nose and throat specialist.

11.8 Headache attributed to other disorder of cranium, neck, eyes, ears, nose, paranasal sinuses, teeth, mouth or other facial or cranial structures

This subclassification of headache attempts to provide a profile for those headaches not classified in the rest of chapter 11; the description does, however, remain vague. In addition to secondary headaches, the otolaryngologist must be familiar with several forms of neuralgia included in part III, point 13: “Cranial neuralgias and central causes of facial pain”.

This section includes a vast range of neuralgias of interest to otolaryngologists, and is structured differently from the

old classification, making it fertile ground for constructive criticism, particularly in view of a future revision of the classification.

In fact, there has been a complete transfer of two forms of cranio-facial pain from the chapter on primary headaches to section 13: these entities are Sluder’s neuralgia and Charlin’s neuralgia, previously incorporated within the section on cluster headaches.

Various subtypes of headache of specific interest in otolaryngology classified in chapter 13, are described here with some considerations.

Cranial neuralgias and central causes of facial pain (ICHD Chapter 13)

13.1. Trigeminal neuralgia

The revision of the 1988 classification included a change from the concept of idiopathic and symptomatic neuralgias to that of classical (13.1.1) and symptomatic (13.1.2) neuralgias. Classical forms include those with demonstrated neurovascular conflicts as well as forms for which it has not been possible to demonstrate such a conflict; in the symptomatic forms, pain is identical to that of the classical forms but there is a demonstrated structural lesion other than vascular compression.

13.2 Glossopharyngeal neuralgia

Except for the use of the terminology classical and symptomatic, the diagnostic criteria in the current classification are identical to those in the preceding ver-

Table VI. IHS Classification ICHD-II. Headache attributed to rhinosinusitis.

IHS	Diagnosis	ICD-10
11.5	Headache attributed to rhinosinusitis [J01]	G44.845
Coded elsewhere	“Sinus headaches”	
Diagnostic criteria:		
A.	Frontal headache accompanied by pain in one or more regions of the face, ears or teeth and fulfilling criteria C and D.	
B.	Clinical, nasal endoscopic, CT and/or MRI imaging and/or laboratory evidence of acute or acute-on-chronic rhinosinusitis 1;2.	
C.	Headache and facial pain develop simultaneously with onset or acute exacerbation of rhinosinusitis.	
D.	Headache and/or facial pain resolve within 7 days after remission or successful treatment of acute or acute-on-chronic rhinosinusitis.	
Notes:		
Clinical evidence may include purulence in the nasal cavity, nasal obstruction, hyposmia/anosmia and/or fever. Chronic sinusitis is not validated as a cause of headache or facial pain unless relapsing into an acute stage.		
Comments:		
Other conditions that are often considered to induce headache are not sufficiently validated as causes of headache. These include deviation of nasal septum, hypertrophy of turbinates, atrophy of sinus membranes and mucosal contact. The last, however, is defined in the appendix under A11.5.1 Mucosal contact point headache. Migraine and tension-type headache are often confused with 11.5 Headache attributed to rhinosinusitis because of similarity in location of the headache. A group of patients can be identified who have all of the features of 1.1 Migraine without aura and, additionally, concomitant clinical features such as facial pain, nasal congestion and headache triggered by weather changes. None of these patients have purulent nasal discharge or other features diagnostic of acute rhinosinusitis. Therefore it is necessary to differentiate 11.5 Headache attributed to rhinosinusitis from so-called “sinus headaches”, a commonly-made but non-specific diagnosis. Most such cases fulfil the criteria for 1.1 Migraine without aura, with headache either accompanied by prominent autonomic symptoms in the nose or triggered by nasal changes.		

sion. Classical glossopharyngeal neuralgia (13.2.1) is a severe transient stabbing pain in the ear, base of the tongue, tonsillar fossa or beneath the angle of the jaw. The pain is therefore felt in the distributions of the auricular and pharyngeal branches of the vagus nerve as well as the glossopharyngeal nerve. It is commonly provoked by swallowing, talking or coughing and may remit and relapse in the fashion of trigeminal neuralgia. In symptomatic glossopharyngeal neuralgia (13.2.2), pain may persist between paroxysms and sensory impairment may be found in the distribution of the glossopharyngeal nerve. It is essential to distinguish between a diagnosis of nervus intermedius neuralgia and superior laryngeal neuralgia.

13.3 Nervus intermedius neuralgia

A rare disorder characterized by brief paroxysms of pain felt deeply in the auditory canal. There is a pertinent comment in which it is noted that because of the partial overlap of the territories innervated by the nervus intermedius and the glossopharyngeal nerve, in cases triggered by swallowing, it is possible that some patients may have an otalgic variant of glossopharyngeal neuralgia.

13.4 Superior laryngeal neuralgia

A rare disorder characterized by severe pain in the lateral aspect of the throat, submandibular region and underneath the ear, precipitated by swallowing, shouting or turning the head.

13.5 Nasociliary neuralgia or Charlin's neuralgia

The previously used term was Charlin's neuralgia. Not uncommonly seen in otolaryngological practice, this condition is included in the current classification among neuralgias of central origin; it may be due to sinusitis, but can also be found in people with high deviations of the nasal septum, or in neuritic processes due to infection or intoxication (alcohol, tobacco, renal or hepatic dysfunction, diabetes); the pain is unilateral and involves the outer aspect of the nose, orbit, and frontal region; a characteristic feature is a fixed point of pain where the naso-lobar nerve emerges. Associated symptoms are unilateral vasomotor obstruction of the nasal fossae, sneezing, hydrorrhoea, conjunctival hyperaemia and cutaneous hyperaesthesia. It can be associated with keratitis, corneal ulcer and iridocyclitis.

Description:

A rare condition in which touching the outer aspect of one nostril causes a lancinating pain radiating to the medial frontal region.

Diagnostic criteria:

- A. Stabbing pain lasting seconds to hours in one side of the nose, radiating upwards to the medial frontal region and fulfilling criteria B and C.
- B. Pain is precipitated by touching the lateral aspect of the ipsilateral nostril.

- C. Pain is abolished by block or section of the nasociliary nerve, or by the application of cocaine to the nostril on the affected side.

13.6 Supraorbital neuralgia

This rare condition manifests as a paroxysmal pain localized to the area supplied by the supraorbital nerve.

13.7 Other terminal branch neuralgias

These include conditions involving (through trauma or entrapment) terminal branches of the trigeminal nerve for which there is not yet sufficient evidence for to characterize them as independent entities; in the comment, it is noted that *nummular headache* (coin-shaped headache), described in the Appendix (A13.7.1), may belong to this group.

13.8 Occipital neuralgia

Of interest to the otolaryngologist, a change from the old classification has been the elimination of Eagle's syndrome from this point and its relocation in point 13.19. Occipital neuralgia is a paroxysmal, jabbing pain in the distribution of the occipital nerves, sometimes accompanied by diminished sensation or dysaesthesia in the affected area. It is commonly associated with tenderness to pressure over the nerve concerned.

13.9 Neck-tongue syndrome

The sudden onset of pain in the occiput or upper neck associated with abnormal sensation in the same side of the tongue.

13.10 External compression headache

Mentioned because of its relative frequency in clinical otolaryngological practice, this headache results from prolonged stimulation of cutaneous nerves due to application of pressure, for example by a band around the head, a tight hat or goggles worn to protect the eyes during swimming.

13.11 Cold stimulus headache

Subjects with this form of headache, attributed to the external application of a cold stimulus, to the ingestion of cold substances or to the inhalation of cold air, can present to the otolaryngologist.

13.12 Constant pain caused by compression, irritation or distortion of cranial nerves or upper cervical roots by structural lesions

The lesions may be space-occupying lesions (e.g. tumours, aneurysms) or disorders in particular anatomic structures (e.g. osteomyelitis of cranial bones).

13.15 Head or facial pain attributed to Herpes zoster

This category comprises the two syndromes related to herpes zoster infection: *acute infection* (13.15.1) and *post-herpetic neuralgia* (13.15.2).

13.16 Tolosa-Hunt syndrome

Episodic orbital pain associated with palsies of the third, fourth and/or sixth cranial nerves, which usually resolves spontaneously, but tends to relapse and remit; of possible otolaryngological interest is the possible additional involvement of the trigeminal nerve (commonly the first division) or optic, facial or acoustic nerves. Sympathetic innervation of the pupil is occasionally involved.

13.18 Central causes of facial pain

Among the central causes of facial pain, it is essential for the otolaryngologist to be able to diagnose the following:

13.18.5 Burning mouth syndrome

Pain in the mouth present daily and persisting for most of the day of notable psychological impact, causing anxiety and depressive states.

13.19 Other cranial neuralgia or other centrally-mediated facial pain

The current classification of pain syndromes involving neural structures of the face and cranium include some nosological entities that are described but not yet sufficiently validated, such as *Sluder's sphenopalatine neuralgia*. Also called sphenopalatine ganglion syndrome (site of the pterygo-palatine fossa, behind the tail of the middle turbinate; centre of naso-sinus sensitivity and vasomotility); secondary to direct or reflex stimuli which act on the terminal part of the internal maxillary artery involving the sphenopalatine ganglion and its divisions; occasionally secondary to a sphenoidal sinusitis, to posterior ethmoiditis or trauma to the pterygo-palatine fossa; often it is not possible to establish its aetiology; predominantly affects women of middle-age; a dull, unilateral pain in the orbit, temple, face, nasal fossa, radiating to the retroauricular and nuchal area; associated phenomena: hydrops, nasal stenosis, conjunctival hyperaemia, flushing of the side of the face involved.

Vail's vidian neuralgia, grouped together with Sluder's neuralgia in point 13.19, remains to be validated.

Discussion

The work carried out by the consolidated international group, aided by the leading experts in the field of headache, is undoubtedly of high level. The ICHD-2 is the culmination of the work of a multidisciplinary team that started 30 years ago and which now provides a dynamic and clinically useful instrument, but has been arranged in such a way as to enable further changes to be made if new evidence is acquired.

Our criticisms of the current classification concern the relationships between vertigo and migraine and about Sluder's neuralgia, which our group is particularly interested in, not least because of the research that we have carried out and published on these conditions. Possible connections be-

tween vertigo and headache have been proposed by numerous authors⁵⁻⁹ from the earliest times; the first description of vertiginous disorders associated with headache seems to go back to Aretaeus of Cappadocia in 131 B.C. who, describing one of his patients with headache, reported that "the head be whirled round with dizziness, and the ears ring as from the sound of rivers rolling along with a great noise"¹⁰. According to the most accredited theories in the literature, the aetiopathogenesis of vertigo associated with headache is based on vascular, genetic, neurological and neuropeptide mechanisms, as well as on psychological factors¹¹⁻¹⁹. Unfortunately, neither the previous nor the current IHS classification provides a suitable collocation for migraine-related vertigo (or migrainous vertigo)²⁰⁻²⁷.

In the 1988 classification, vertigo was considered as a possible precursor of migraine, and the current classification (2004) also includes benign paroxysmal vertigo of childhood as a precursor of migraine, together with cyclical vomiting and abdominal migraine. Unfortunately, however, the role of migraine-associated vertigo, as a whole, has been neglected. It is our hope that in the near future there will be systematic classification of migraine-associated vertigo, in the context of which the vertigo can be considered a vestibular dysfunction accompanying the headache, or that it represents an alternative symptom, equivalent to cephalgic crisis, or is the first clinical manifestation of the migrainous state.

Another debatable point of the classification concerns cranio-facial pains, such as the already mentioned Sluder's neuralgia. Sluder's neuralgia, previously included in the 1988 classification among cluster headaches, in point 3.1, now included among the types of pain involving nerves of the head and face, but is described generically and without adequate validation²⁸.

There are considerable clinical and therapeutic similarities between Sluder's syndrome and cluster headache, as they may be two variants of the same clinical entity. The main distinguishing factors are the cluster time trend found only for cluster headaches and the area of the pain, which manifests more at the level of the nose in the case of Sluder's syndrome²⁹. In any case, with regards to Sluder's syndrome, we believe that it would be much more satisfactory and clearer to include this nosological entity, which is well distinct from an otolaryngological point of view, as a variant of cluster headache. In fact, sumatriptan, which is effective in the treatment of cluster headache, has given satisfactory results in patients with Sluder's syndrome, with outcomes equivalent to those obtained by applying Bonain's liquid (lidocaine, menthol, phenol) below and behind the tail of the middle turbinate.

Conclusions

Given our continuous updating, we are aware that a further revision of the latest classification is planned. Experts

in the field of headache, such as Olesen and Nappi, who contributed to the previous classifications, have recently expressed the hope of a revised classification, particular with regards to secondary headaches^{30 31}.

According to the current organizing headache committee, the new version of the classification will be published soon. It is our hope that this version will be revised and/or integrated in the light of the present considerations.

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