

Chapter 78

Symptomatology of Chronic Tension-Type Headaches

Rigmor Jensen and Werner J. Becker

Except for its frequency, chronic tension-type headache (CTTH) is similar to frequent episodic tension-type headache (ETTH) in most of its clinical features. The International Classification of Headache Disorders (ICHD) II (21) distinguished between these two headache types mainly because of the differences in management rather than because of differences in the clinical features. However, it has recently been suggested that the chronic type may be due to a different pathophysiology (1,5,23), is associated with more severe pain and more accompanying symptoms, and is less influenced by daily hassles and stress than ETTH (31,45,55).

The headache syndromes with frequent headaches were the most controversial part of the ICHD-I. They have been much discussed and strong efforts have been made to improve the diagnostic criteria (6,16,41,53). The revised diagnostic criteria for CTHH as published in IHCD-II are shown in Table 78-1 (21).

These criteria are somewhat more specific than those in the ICHD-I (20). For example, whereas the length of headache suffered per day was not specified previously, it is now specified that the headache lasts hours or may be continuous. To make a diagnosis of CTTH, these headaches need be present only for a period of at least 3 months (not 6 months as specified in IHCD-I [20]). In the revised version, it is also specified that no more than one of photophobia, phonophobia, or mild nausea may be present (21). Moderate or severe nausea or vomiting precludes the diagnosis.

In the ICHD-II, CTTH is also described as a disorder evolving from ETTH (21). It is further specified that if the headache is continuous from the start or becomes continuous within 3 days of first onset, then headaches of this type should be coded to new daily persistent headache rather than to CTTH (see Chapter 103).

It must also be kept in mind when making a diagnosis that when medication overuse is present to a degree

that fulfills the amounts specified in the diagnostic criteria for medication overuse headache in Chapter 8 of the ICHD-II, a diagnosis of probable CTTH should be made. In addition, such a patient would also receive a diagnosis of probable medication overuse headache, and a definitive diagnosis would not be possible until medication overuse has ceased for 2 months. When this has occurred, if the patient no longer has headache more than or equal to 15 days per month, then the patient in retrospect had medication overuse headache. If the chronic headache persists despite stopping medication overuse, then the patient should be reclassified as CTTH.

The diagnostic criteria for **probable** CTTH therefore are identical to those for CTTH, except that criterion E reads “not attributed to another disorder but there is, or has been within the last 2 months, medication overuse fulfilling criterion B for any of these subforms of 8.2 Medication-overuse headache” (21).

CLINICAL PICTURE OF CHRONIC TENSION-TYPE HEADACHE

The typical patient with CTTH is a middle-aged female patient with a headache history for 10 to 20 years (6,24,49,51,54) and with a more or less continuous daily headache that has proven largely refractory to numerous treatment strategies and that is quite independent of daily activities (Fig. 78-1). The majority of patients have a history of an episodic headache disorder in their adolescence, either migraine or ETTH or both. Their headaches have then gradually increased in frequency over several years without any obvious explanation, and at the time of diagnosis have been chronic for several years (57). No specific associations to other diseases can be detected, although, as in other chronic pain disorders, depression and anxiety are frequently reported (19,33,40). Most of these patients

TABLE 78-1 Diagnostic Criteria for Chronic Tension-Type Headache

A. Headache occurring on ≥ 15 days per month on average for >3 months (≥ 180 days per year) and fulfilling criteria B through D
B. Headache lasts hours or may be continuous
C. Headache has at least two of the following characteristics: <ol style="list-style-type: none">1. Bilateral location2. Pressing/tightening (nonpulsating) quality3. Mild or moderate intensity4. Not aggravated by routine physical activity such as walking or climbing stairs
D. Both of the following: <ol style="list-style-type: none">1. No more than one of photophobia, phonophobia, or mild nausea2. Neither moderate or severe nausea nor vomiting
E. Not attributed to another disorder

have adapted to their chronic headache and have lost any hope of finding new effective therapeutic strategies. They are primarily seeking specialist consultation because of a change in their headache pattern or because of other neurologic complaints. These patients therefore represent a great clinical and therapeutic challenge.

A minimum headache frequency of at least 15 days per month during at least 3 months is required in the ICHD-II for a diagnosis of CTTH (21) (Table 78-1), but significant headache symptoms have usually been present for a much longer time when patients seek a specialist. The number of days with headache per month in CTTH is usually very high. The mean frequency in prospective diary studies was between 23 and 30 days per month (8,29). These studies support the clinical observation that if the headache frequency is above 15 days per month it very often becomes a daily or almost daily pain. On the other hand, it is important to emphasize that patients may overreport the frequency of their TTH during an initial clinical interview

as compared to the frequency recorded in a prospective headache diary (48). It is therefore recommended that a diagnostic headache diary be used in the diagnosis of both ETTH and CTTH.

The reported median age at onset is in the second decade (46,51), with a declining prevalence with increasing age in one study (46) and an increasing prevalence with increasing age in other more recent studies (51) (Lyngberg et al. 2004). The presumed evolution of CTTH from the episodic form is indirectly indicated by an older mean age in CTTH (>50 years) than in ETTH (51) (Fig. 78-1). (For further details see Chapter 67 on the epidemiology of TTH.)

Because CTTH is a condition defined purely by clinical diagnostic criteria and not by a specified pathology, its clinical features are constrained by these. For CTTH, negative diagnostic criteria specifying what is not present play an important role, in contrast to migraine, where positive symptoms play a more prominent role in the diagnostic criteria (21).

The sensitivity and specificity of the diagnostic criteria of CTTH are not fully elucidated. In an attempt to allow research on completely pure groups of TTH patients without any migrainous features, very strict diagnostic criteria have been defined in the ICHD-II appendix (21). In future genetic and pathophysiologic studies it may also be of major importance that coexisting TTH is identified in migraine patients and that completely pure groups of migraineurs and TTH patients are studied separately.

CHARACTER OF PAIN

Patients often describe their pain as “wearing a tight hat, wearing a tight band around the head, or bearing a heavy burden on the head” (22,34). This pressing pain quality

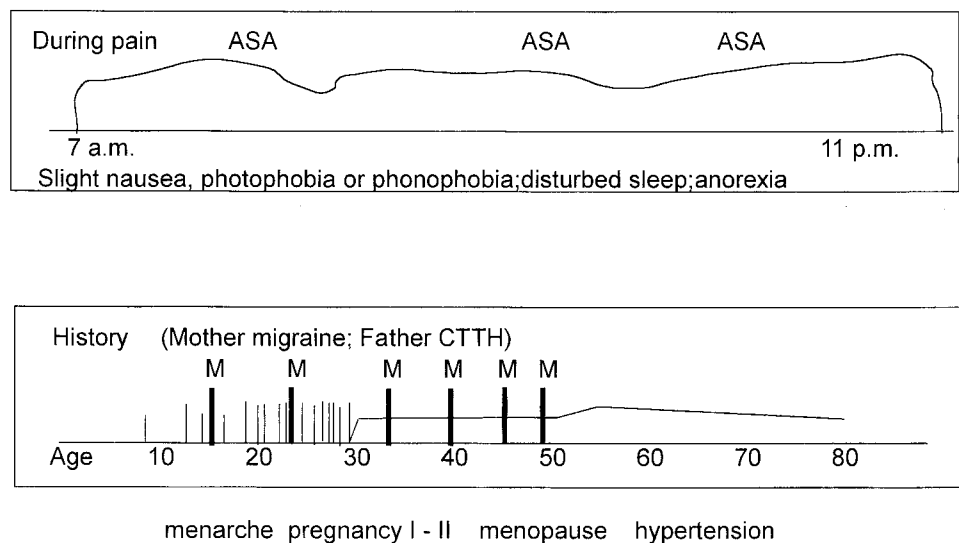


FIGURE 78-1. Illustration of the clinical characteristics of chronic tension-type headache (CTTH). The upper box illustrates the individual headache episode with more or less continuous pain during the day almost refractory to analgesics (ASA indicates acetylic salicylic acid) and daily activities. The lower box indicates a lifetime history and evolution of pain in the individual patient (M indicates coexisting migraine attacks).

was confirmed by 83% of CTTH sufferers in a general population study (47) and was present in 72 to 95% of patients with daily or almost daily TTH from specialized headache clinics (22,38).

LOCATION OF PAIN

The bilateral location of the pain is considered to be a frequent characteristic of TTH and is also a part of the IHCD-II diagnostic criteria (Table 78-1). However, the location of pain may vary considerably within and between patients (17). Rasmussen et al. (47) have reported that bilateral location was present in 88% of subjects with CTTH from the general population. Similarly, in a specialized headache clinic 98% of 100 consecutive patients reported bilateral location (54). Bilateral location was also reported by 79 to 85 % of CTTH patients from two European clinical studies (8,38). Anterior-posterior pain location has not been examined in recent studies but was reported as frontal, temporal, or frontotemporal in 66% of patients and was limited to the occipital region in 25% of the patients in older clinical studies (17,22,34).

SEVERITY OF PAIN

The pain features of CTTH are allowed a somewhat broader spectrum as compared to the other headache-associated symptoms. According to the IHCD-II criteria, the pain is usually mild or moderate in severity, and thus inhibits, but does not prohibit, daily activities (21). In the general population 16% of CTTH patients had mild, 78% moderate, and only 4% severe pain intensity (47). These results were in keeping with two clinical studies where the vast majority had moderate pain and only 7 to 11% reported severe pain (38,39). In contrast, in a German population study as many as 42% of subjects reported severe and 44% moderate pain intensity (18). Severe pain intensity is possible in CTTH because only two of the four pain criteria need to be filled to meet the diagnosis. In patients with chronic headache who do suffer severe pain from time to time, a diagnosis of migraine may be considered by the physician, but lack of sufficient associated symptoms of nausea, photophobia, or phonophobia may exclude this diagnosis. This may be particularly true for patients referred to specialty clinics, as these patients may suffer from both migraine and TTH and may have difficulty differentiating these two headache types. Consistent use of a headache diary is absolutely mandatory in these patients. Lack of aggravation by walking stairs or similar routine physical activity is a typical feature of CTTH. In the clinical situation, questioning about aggravation of pain by routine physical activity is one of the best criteria to distinguish between migraine and TTH and is more helpful than

unilaterality or throbbing pain quality (47). However, some patients with CTTH may in fact have their pain aggravated by physical activity but will still meet two of the other pain criteria. They may meet CTTH diagnostic criteria if they do not have sufficient associated symptoms to qualify for a migraine diagnosis. Manzoni et al. reported that routine physical activity provoked worsening of the pain in 33% of patients with CTTH, whereas physical activity had no effect or even caused improvement in 67% (38). These data are quite similar to the Danish population study, where 71% of patients with CTTH reported that physical activity was without any negative influence on headache intensity. In contrast, only 2% of the migraineurs reported a similar lack of negative influence of physical activity on their pain (47). In conclusion, although most individuals with CTTH have only mild to moderate interference with daily activities, they suffer from a more or less constant pain in almost all their waking hours. The social impact of this is considerable due to chronicity and the daily occurrence of an almost lifelong pain disorder.

ACCOMPANYING SYMPTOMS

From a diagnostic viewpoint, the presence or absence of accompanying symptoms is crucial. According to IHCD-II (21), neither moderate to severe nausea nor vomiting may be present. Patients may have no more than one of photophobia, phonophobia, or mild nausea. This represents a change from IHCD-I where, although vomiting was not allowed, patients with any degree of nausea could be given a diagnosis of CTTH. In population studies no TTH subjects had severe nausea and the present grading of accompanying symptoms was already suggested in 1991 (47). The definition of what constitutes mild or moderate nausea is of course open to interpretation, but the new diagnostic criteria might tend to place some patients in the category of migraine as opposed to TTH. In a clinical study by Langemark et al. (34), 32% of patients with CTTH reported either photophobia or phonophobia, whereas 68% never experienced such symptoms. In the general population, 58% of patients with CTTH or TTH had none of the associated symptoms, while 17% had photophobia or phonophobia and 25% had nausea but not photophobia or phonophobia (47). Different combinations of these symptoms, which exclude the International Headache Society (IHS) diagnosis of CTTH, appear quite often (5), and coexistence of both photophobia and phonophobia was the main reason for exclusion of 63% of the patients from the IHS diagnosis of CTTH in the large Italian study of patients with chronic headaches (38). Combinations with both nausea and photophobia, and phonophobia were only responsible for 14.8% of the exclusions, whereas most of the pain characteristics were fulfilled (38). To improve the distinction between migraine

and TTH, nausea is now graded into mild, moderate, or severe, whereas photophobia and phonophobia still are dichotomous (present or absent) (21). In some of the clinical studies of chronic daily headache it is unclear, however, whether coexisting migraine attacks or drug-induced headaches could be responsible for some of the reported accompanying symptoms, as patients were classified as having only one headache diagnosis (14,15,43). In the IHS classification patients are allowed to have more than one headache diagnosis, and clinic patients very frequently have two, three, or even more different headache types (5). Because a specific diagnosis is crucial for a specific treatment, identification of each of these headache disorders is important, and a diagnostic headache diary can be very helpful.

Relation to Migraine

It has been suggested that TTH and migraine share some common biology as they frequently coexist in severely affected patients (52). Obviously some clinical features are shared in the same way that migraine and cluster headache share some clinical features, but no headache specialist would claim that migraine and cluster headache are part of a continuum just because both headaches often are unilateral or respond to triptans.

The relationship between CTTH, medication-overuse headache, and patients with migraine who develop chronic daily headache is problematic, and more understanding of basic headache mechanisms is needed. It is clear that patients with intermittent migraine attacks may also have attacks of ETTH, although these may differ somewhat in drug responsiveness from ETTH attacks in nonmigraineurs (11,37). When a patient with migraine develops a chronic daily headache syndrome, migraine-associated symptoms of nausea, photophobia, and phonophobia may be too prominent to allow a diagnosis of CTTH. The new IHS diagnosis of chronic migraine may therefore be the best diagnosis for these patients, but in most clinical populations only very few patients, if any, actually fulfill the criteria for chronic migraine when detoxification for medication overuse has been successfully completed (36,57). With the ICHD-II, it is theoretically possible for patients to fulfill diagnostic criteria for both chronic migraine and CTTH, as each requires certain clinical features on 15 days per month. In this situation, it is recommended that other clinical features of the patient’s headache syndrome be taken into consideration to make a final diagnosis (21). A strong past history of intermittent episodes of TTH increasing in frequency would suggest a diagnosis of CTTH. The ICHD-II reinforced this by stating in the description of CTTH, which precedes the diagnostic criteria, that CTTH evolves from ETTH.

The interrelationships between migraine, CTTH, medication overuse, and headache clinical phenotype is well

illustrated by the study of Bahra et al. (3). In this study, some patients with a previous history of migraine were found to develop chronic daily headache when they overused analgesics to treat arthritis. Of the eight patients who fell into this category, three were felt to have clinical features consistent with chronic migraine and five were thought to have a CTTH clinical picture. Limmroth et al. (35) have likewise noted that many patients with migraine and medication overuse develop a chronic tension-type-like clinical phenotype. In any case, from a diagnostic point of view such patients now should be diagnosed as migraine with or without aura, probable medication-overuse headache, and probable chronic migraine until medication withdrawal for 2 months clarifies the diagnosis.

It is much more likely that the frequent co-occurrence of TTH and migraine may be coincidental although each of these headache types may influence the other in individuals with both headache types. Episodes of TTH are more pronounced and frequent, although not more prevalent, in subjects with coexisting migraine than in nonmigraineurs (44,45,55), and migraine may be a precipitating factor for TTH in genetically predisposed individuals and probably vice versa. Migraine is usually an all or none phenomenon that runs its course once it is activated, whether it is once a year or once a week, whereas TTH is a continuum where pain severity and general impact is closely related to frequency.

When groups of patients with CTTH and with chronic migraine were compared in an Italian study, chronic migraine patients had higher sensory and affective scores in the McGill pain questionnaire than patients with CTTH, independent of their pain intensity. These findings would be in keeping with the concept that CTTH and chronic migraine represent two different clinical entities (41).

In 1995, central sensitization was described to play a major role in CTTH (5,7) and later was demonstrated in migraine (12). As most CTTH patients start with ETTH 1 or 2 decades earlier, it is very likely that the process of central sensitization may play an important role in both migraine and TTH when headache frequency increases over time. The chronic head pain may be the result of repeated pain attacks over a period of years, with a phenotypic shift occurring after an initial presentation of typical migraine or typical TTH. This clinical evolution of pain over time has not been well characterized but is probably influenced by a very complex interplay of genetics, pharmacologic and nonpharmacologic treatment attempts, and psychosocial factors (7,25).

PHYSICAL EXAMINATION

A diagnosis of CTTH requires exclusion of **other** organic disorders. Therefore, a neurologic examination and a general physical examination, including evaluation of the

heart, lungs, eyes, ears, nose, and throat, is mandatory. Furthermore, the physical examination should also include manual palpation of the pericranial muscles and examination of the neck. If any significant findings in the history or in the examination are noted, further evaluation should be made by appropriate investigations, with specialist involvement as necessary. For further details see Chapter 79 on the differential diagnosis of TTH.

FINDINGS IN CHRONIC TENSION-TYPE HEADACHE

In epidemiologic and clinical studies, tenderness of pericranial muscles is the most common abnormal finding in CTTH sufferers (9,13,30,42) and a systematic examination of pericranial muscles is mandatory in CTTH patients also (see Chapter 77 for ETTH).

Subjects with CTTH were significantly more tender than subjects without any experience of headache, migraineurs, and subjects with ETTH; in subjects with TTH, tenderness increased significantly with increasing frequency and intensity of headache (30). It is still unknown whether the increased tenderness is a cause or an effect of the headache. During an acute episode of TTH the tenderness was increased by 24% as compared to the pain-free state (26,28). Even in the pain-free state, pericranial tenderness was markedly higher in subjects with TTH as compared to healthy controls, so the tenderness is not simply an effect of ongoing pain. In 1995 Bendtsen et al. (7) suggested that central sensitization was an important underlying pathophysiologic mechanism in CTTH. Indirect evidence for this hypothesis was their demonstration of a qualitatively changed response to mechanical stimuli in tender muscles in patients with CTTH. This finding suggested mediation of pain by low-threshold mechanosensitive afferents projecting to sensitized dorsal horn neurons (see Chapter 70). Thus, perception of pain is not a simple reflection of current afferent noxious input, but a dynamic process highly influenced by the effects of past experiences.

Mechanical and electrical pain thresholds are decreased in most studies of CTTH (7,10) in contrast to the episodic form, where a generally normal pain sensitivity is found (27). However, the mechanical pain thresholds are only slightly affected and large series of patients are needed to detect any statistical difference between groups. The use of pressure algometry plays no role in daily clinical practice.

The texture of pericranial, shoulder, and chewing muscles is often altered in TTH with tight tender bands or increased consistency. Such findings can be detected by manual palpation, and instrumental quantification by the so-called hardness meter also plays no role in daily clinical practice (2).

SUBDIVISIONS OF CHRONIC TENSION-TYPE HEADACHE

Like ETTH, CTTH is divided into CTTH with pericranial tenderness and without. The IHCD-II (21) clarifies that pericranial tenderness is best determined by manual palpation with the second and third finger using firm pressure and small rotatory movements over the muscles of the head and neck, including the muscles of mastication. The use of pressure algometry and electromyogram (EMG) recordings provides no additional information and therefore is no longer part of the classification. The IHS diagnostic criteria also indicate in the section on cervicogenic headache (11.2.1) that headache associated with cervical myofascial tender spots are to be coded in the appropriate TTH with pericranial tenderness category according to frequency of headache.

The relationship of myofascial trigger points to CTTH remains controversial, and a detailed discussion of the literature on myofascial pain syndromes is beyond the scope of this chapter (see Chapter 70). However, it is important that muscular factors as possible causative or contributing factors to CTTH be explored and that the advice of specialists knowledgeable in these syndromes is accessed for difficult cases. This is particularly true for patients who may have disorders of the muscles of mastication, temporal mandibular joint disorder, or neck muscle disorders. Pertinent here are recent research studies that have confirmed that individual nociceptive second-order neurons in the trigeminal nucleus caudalis receive inputs both from the supratentorial dura and from the cervical musculature and other cervical structures (4). Pain transmission from the head and neck are therefore closely linked. Nociceptive input from one of these areas can not only refer pain to the other, but can also greatly sensitize the nociceptive second-order sensory neurons to input from the other area. These findings likely explain the often observed clinical interplay between headache and neck muscle tenderness and pain (see Chapter 70).

CAUSATIVE FACTORS

In the IHCD-I a fourth digit code indicating the most likely causative factors was introduced, but due to lack of consistent use or scientific evidence this subdivision was eliminated in the IHCD-II (21). Originally the fourth digit codes were thought to be useful in identifying some of the clinical and psychologic features, as well as possible therapeutic approaches in patients with CTTH, but knowledge of the scientific basis for possible causative factors in CTTH is still limited.

The factors responsible for turning headache from an episodic into a chronic form are still not identified, and research in these factors is of utmost importance. Stress and

mental tension are the most frequently reported precipitating factors for ETTH. It is unlikely that they have any causative relation to the chronic subform because CTTH is widely independent of daily hassles and stress and a completely different underlying mechanism is likely. This needs to be defined through further research.

Analgesic abuse is the most important known factor, as it is involved in 30 to 50% of the cases from highly specialized clinics (32,35,56,57). These chronic headache patients with overuse of symptomatic headache medications may, in some cases, become completely headache free or revert to a pattern of episodic headache if these medications are discontinued (see Chapter 118). However, it is also important to stress that CTTH patients with medication overuse have a less favorable prognosis than those with migraine alone, as 73% of CTTH patients have a relapse in contrast to only 22% of migrainuers (32,50). This rather poor prognosis may suggest a permanent “lesion” in the pain system or more likely a lack of effective prophylactics in CTTH compared to migraine prophylactics (see Chapter 59). (For further details, see Chapter 115, Headache Associated With Chronic Use of Substances.)

In summary, CTTH is a clinical entity different from migraine, although it coexists with migraine in many patients. It is probably a multifactorial disorder with several concurrent pathophysiologic mechanisms. Central sensitization is likely of major importance. It is very important to identify and separate CTTH from chronic migraine and medication overuse because the clinical manifestation and especially the treatment strategy are completely different. CTTH deserves more focused attention from headache clinicians and researchers, as this costly and frequent form of chronic headache remains controversial and without effective treatment.

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P1: KWW/KKL	P2: KWW/HCN	QC: KWW/FLX	T1: KWW	
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