has been assumed to be viral in origin. Malignant transformation has also been described. Secondly, inflammatory polyps can be solitary or multiple. They are usually caused by some sort of irritation, such as an endobronchial foreign body, chronic bronchitis, or broncholithiasis. Thirdly, solitary papillomas of the endobronchial tree are rare neoplasms.[1-4] These solitary tumours are most commonly diagnosed in older patients in their fifties, are six times more common in men than women, and usually consist of squamous epithelium. Solitary papillomas can be seated on a large base, and have a raspberry or blackberry papillary structure. Presenting symptoms of all solitary papillomas reflect chronic airway obstruction and include productive cough, haemoptysis, wheezing, and dyspnoea, often leading to misdiagnosis as asthma or chronic bronchitis. If the tumour does not obstruct the bronchus, patients may carry on for months or even years before diagnosis.[5,6]

As summarised in Table I, the 8 available reports, including the current case, suggest that non-squamous papillomas occur most commonly in middle age (mean age 55 years, range 26 - 74 years) and in men.[2,5] They show a right-sided predominance, and patients are often smokers.[6,7] Squamous dysplasia or malignant transformation was reported in approximately one-third of squamous papillomas, but none of the available cases has demonstrated malignant transformation in non-squamous cell tumours.[5,7]

It has been reported that a papilloma of multilayered mixed epithelial type (ciliated or conciliated cuboidal) may sometimes be associated with an underlying monomorphic bronchial mucous gland adenoma. Papillary foci and squamous metaplasia were seen in several cases, but most of these were communicated respiratory columnar epithelium over the surface of the tumour.[7] Our case was supported by the literature because it was lined with columnar multilayered non-squamous epithelium and papillary mucous foci were also seen.

Surgical resection is necessary for squamous papillomas because of malignant potential, but conservative management of non-squamous papillomas, such as removal by means of bronchoscopy, seems suitable.[3,8]

In conclusion, a solitary bronchial papilloma lined with non-squamous epithelium may be associated with underlying bronchial mucous gland adenoma, show no malignant changes, and be removed completely by bronchoscopic biopsy.

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PERSONAL VIEW

THE MIGRAINE/TENSION-TYPE HEADACHE CONTINUUM

Elliot Shevel

The first concerted attempt to classify headaches resulted in their being classed under 15 main headings.[1] Primary headaches comprised the first three groups, namely 'vascular headache of the migraine type', 'muscle contraction headache', and 'combined headache: vascular and muscle contraction'. This distinction between vascular headaches on the one hand, and muscle contraction headache on the other, has been perpetuated in the International Headache Society (IHS) classification of headaches.[2] The first two categories in the IHS classification are entitled 'Migraine' (MI), and 'Tension-type headache' (TTH). The majority of patients suffering from primary headaches are classified under these two headings, or a combination thereof.

The original classification was arbitrarily based on the available 'experimental and clinical data, *together with reasonable inference*' [my italics],[1] and reflected, in the main, the accumulated clinical experience of a number of pre-eminent experts in the field of headache study and treatment. Although experimental data are mentioned, no reference is made as to what experimental data influenced the classification. There was then, and still is, a paucity of experimental data available to assist in making a clear distinction between different types of headache.[3] The aetiology and pathogenesis of primary headache was, and still is, poorly understood,[3,4] and the clinical diagnosis of primary headache type is still based on symptom patterns.[5]

SYMPTOMS COMMON TO MI AND TTH

The distinction between MI and TTH is not based on individual symptoms, but rather on the pattern of symptoms, as the two varieties of headache have many symptoms in common.[6,7]

The main criteria utilised in the IHS classification for the differentiation between MI and TTH are listed in Table I.

Elliot Shevel's qualifications include dentistry, maxillofacial and oral surgery, and medicine. This combination of disciplines fostered an interest in primary headache, and allowed a deeper insight into the underlying mechanisms thereof.

Table I. International Headache Society criteria for the differentiation between migraine and tension-type headache

Migraine	Tension-type headache
A. At least five attacks fulfilling criteria B, C and D	A. At least 10 previous headache episodes fulfilling criteria B, C and D
B. Headache attacks lasting 4 - 72 hours (untreated or unsuccessfully treated)	B. Headache lasting from 30 minutes to 7 days
C. Headache has at least two of the following characteristics: Unilateral location Pulsating quality Moderate or severe intensity (inhibits or prohibits daily activities) Aggravated by walking up stairs or similar routine physical activity	C. At least two of the following pain characteristics: Bilateral location Pressing/tightening (non-pulsating) quality Mild or moderate intensity (may inhibit, but does not prohibit activities) No aggravation by walking up stairs or similar routine physical activity
D. During the headache at least one of the following: Nausea and/or vomiting Photophobia and phonophobia	D. Both of the following: No nausea or vomiting (anorexia may occur) Photophobia and phonophobia are absent, or one but not the other is present

Number of attacks

The headache cannot be classified as MI unless there have been at least 5 attacks fulfilling criteria B, C and D under MI (Table I).[3] There have to have been at least 10 attacks fulfilling criteria B, C and D under TTH (Table I)[3] for the headache to be classified as TTH. Based on these numbers, a patient who has experienced fewer than 5 attacks cannot be classified as having MI or TTH. On the other hand, a patient who has experienced more than 9 attacks may have either MI or TTH. In point of fact, the majority of chronic headache sufferers experience many more than 10 attacks before they seek treatment.[4] Consequently, in the diagnosis of most headache sufferers, the distinction is superfluous.

Duration of attacks

I have been unable to find any evidence in the literature of a relationship between MI, TTH, and the duration of the headache.

Pain characteristics

Location. Unilateral pain is more commonly associated with MI, and bilateral pain with TTH.[3] Numerous studies have shown, however, that the frequency of unilateral as opposed to bilateral pain is similar in MI and TTH, and that the location of the pain is not a reliable criterion for distinguishing between MI and TTH.[9-11]

Pulsatile nature. Pulsating pain is usually associated with MI, and not with TTH. The IHS classification specifically excludes pulsatile pain as one of the characteristics of TTH. In one study[12] 40% of both MI and TTH sufferers experienced pulsating pain. This finding was confirmed by Olesen,[11] who found that only 47% of 750 MI sufferers had pulsating pain.

Intensity. Patients with more severe pain more frequently experience those symptoms commonly associated with MI, and MI symptoms became more frequent if the intensity of the pain became more severe. This phenomenon was, however, observed in both MI and TTH patients.[12,13,15,16]

Effect of physical activity on the pain. I have been unable to find any evidence in the literature of a relationship between MI, TTH, and the effect of physical activity on headache.

Associated symptoms

Nausea, vomiting, and visual disturbances. The frequency of occurrence of these symptoms is similar in MI and TTH, although they do occur more frequently as pain intensity increases.[12,13,15,16]

CHRONIC DAILY HEADACHE (CDH)

CDH is a disorder with features of both MI and TTH, and is commonly seen in headache centres. Problems have been encountered in the classification thereof, as the IHS classification does not make provision for this entity.[17-20] In one study,[20] 36% of a clinic-based sample of 410 headache patients could not be classified according to the IHS criteria because of the overlap of symptoms.

The overlap between MI and TTH is highlighted by the fact that CDH may start as MI and develop into CDH, or it may start as TTH and develop into CDH.[21,24,25]

This coexistence of MI and TTH does not support the existence of separate, distinct, primary headache entities.

EXPERIMENTAL DATA SUPPORTING CONTINUUM CONCEPT

There is a wealth of published evidence supporting the concept that MI and TTH are varying intensities of the same disorder:

(i) pericranial muscle tenderness — both MI and TTH are characterised by muscle tenderness during headaches;[11,17,28] *(ii)* frontalis electromyograph (EMG) activity — average frontalis EMG activity was higher in TTH patients than in controls, and higher in MI than in TTH patients;[12] *(iii)* neck EMG activity — both MI and TTH patients have higher neck EMG activity than controls, and neck tightness was the most frequent symptom of both MI and TTH;[12] *(iv)* biofeedback — biofeedback techniques such as frontalis EMG training and skin-temperature training were found to be equally effective in treating both MI and TTH;[12, 26,28] *(v)* platelet studies — platelet studies show similarities between MI and TTH;[20,21] *(vii)* vasomotor studies — vasomotor studies have shown that vascular changes are important in TTH as well as in MI,[20,22] in one article[20] the authors state that 'Vascular changes may yet prove to be of greater relevance to "tension headache" than the state of muscle contraction'; *(vii)* pulse velocities — superficial temporal pulse velocities have shown similar patterns for both MI and TTH groups; both groups have shown decreased pulse velocity in response to noise, while in the control group, pulse velocity increased;[12] *(viii)* personality differences — personality differences between those with MI and TTH have not been demonstrated consistently and seem to be of little importance;[28,34-36] *(ix)* symptom homogeneity — in five studies[6,12,13,15,37] it was found that patients classified as suffering from MI and TTH experienced the same symptoms, but that the MI patients had more symptoms of both MI and TTH than those with TTH; Featherstone[15] concluded that 'idiopathic headaches vary in symptom quantitation, and symptom quantitation does not show different headache entities'.

Conclusion

The arbitrary classification of MI and TTH as separate entities has been challenged by a number of authors.[11,16,37,38] On the other hand there is a great deal of experimental evidence[6,11-13,15, 27-37,39] indicating that MI and TTH probably form part of a continuum, and that they differ only in the severity of the symptoms experienced.

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