If you are keen to read a thorough, informative, original, and in places contemplative story of headaches through the ages, this new book is for you. Any new expedition through the history of headaches is faced with a path well trodden. To find original signposts and novel discoveries is difficult; and to write with both enthusiasm and authority in order to convey fresh material and interest is indeed no easy task. Mervyn Eadie has an enviable published record and reputation for his work over many years concerned with epilepsy, pharmacology, headaches and neurological history. His reasons for attempting this brave venture are that there might be a place for a longer account of the history of knowledge of human headache, especially its more scientific aspects, which takes a particular interest in the ways the symptom has been understood and that understanding translated into attempts to benefit headache sufferers.

In 10 chapters, he first reviews and comments perceptively on the notions and descriptions of headaches, starting with classification, theories about the site of origin of headache, culminating in an appraisal of headaches prior to 1800. The account is rightly confined to primary headaches. The paths he then selects for this work are those traversing migraine, its clinical features, mechanisms and treatment, tension headaches and the expanding field of the trigeminal autonomic cephalgias and the various cranial neuralgias. The book ends with a final chapter: ‘Some thoughts from the history of headache.’ The text contains well-selected references, illustrations and an extensive index.

Eadie emphasizes the ways in which headaches have been understood through time, trying to relate the understandings to the patterns of thought through which Western Medicine, but not headache in non-Western cultures, has evolved. As he points out, the patterns and concepts of cause and treatment are substantially different in Chinese cultures for example, to an extent that causes him to avoid impossible comparisons.

It is of interest that the earliest writers, Hippocrates, Pliny the Elder and Celsus failed to differentiate different types of headache: not until the 2nd century AD did Aretaeus and a little later, Galen, attempt a classification ['cephalgia', 'cephalea' and 'heterocrania' (later 'hemicrania')]. Sydenham, centuries later added a fourth class, named 'clavus', a racking localized 'pain accompanied by the vomiting-up of green matter like rancid bile'. This classification persisted with many minor variations propounded by a host of distinguished French and British physicians until the late 19th century and more formally the American Neurological Association Headache Classification Committee report of 1962 and its subsequent unwieldy, and often impracticable amendments.

Eadie explains why he has chosen to emphasize the medical as opposed to the sociological or psychological approach to headaches. He has plainly planned his route with care, considering whether to relate events in the past to medical knowledge at that time, or to try to interpret the past in relation to modern concepts. It is the latter choice he has used here, but he has also fully acknowledged historical concepts and events as they were understood. Conscious of the difficulties in always obtaining original texts, the material quoted is almost always originally written in English or subsequently translated into English.

Early nosology and nomenclature

The author takes the view that ‘hemicrania’ and migraine in the literature do not necessarily refer to the same entity. The idea of migraine as a distinct entity only began to emerge in the medical, as distinct from the lay literature in the late 18th century when the older cephalalgia, 'cephalaea' and 'hemicrania' began to disappear in the wake of the attempt to classify all disorders on the basis of their structural pathologies. Galen had taught that the meninges, pericranium and blood vessels were possible seats of headache. His headache of internal origin extended into the eye sockets...
while his headache of external origin (extracranial, e.g. temporalis muscles) did not. Galen makes no mention of the brain itself as a source of head pain.

Because of the poor correlation between the old and the modern headache types, until the end of the 18th century the history of headache is dealt with as a whole, largely regardless of headache category. The reader is treated in Chapter 3 to a detailed essay, rich in original quotations and translations of the ancient Egyptian and Greek accounts and the medieval Arabian doctors, about symptoms, suspected mechanisms and remedies. Then follows a critical full appraisal of the work of Thomas Willis, his contemporaries and successors, ending with the crucial contribution of Samuel Tissot, which distinguished migraine from other cephalgias.

We learn that after Galen, little progress and virtually no scientific experiments were made, so that Charles LePois in 1618, repeating Jean Fernel’s view, still considered that headache arose from the membranes of the head when vapours or humors dis tended them. Willis’s De Anima Brutorum (1672) invoked the nerves as a possible mechanism; similarly, Haller (1675) performed experiments showing a tissue’s sensibility being proportionate to the richness of its innervation, in keeping with Willis’s concepts. Robert Whytt, Boisssier De Sauvages and Fordyce in the 18th century inculcated the pericranium, temporalis muscles and meninges, and Heberden, the brain itself. The next century saw ideas of the perivascular nerves and the blood vessels as the prime seats of headache. But Eadie shows how insubstantial were such assertions, noting Gowers’s comment in his Manual (1888) that ‘we know almost nothing of the structures in which the pain of headache is felt or the mechanism of its production’. The major changes of the 20th century were the rival notions of Harold Wolff’s vascular theories based on many meticulous experiments, and the neural theories founded on Leão’s ‘spreading depression’ in animal brains.

**Aura**

The migraine visual aura, first highlighted by Pierre-Adolph Piorry in 1831, has figured prominently in both descriptive and analytical portrayals of migraine through the centuries. The author provides a detailed account of these, but of especial worth are his citations of the personal accounts of auras from many writings, ancient and recent, down to the well-known descriptions of both George and Hubert Airy. The significance of the aura has always been under-rated, since it is the first indication of the evolving physiological disturbance of the attacks. Hughlings Jackson similarly stressed the vital clues lent by the epileptic auras, which as in migraine constitute an essential component of the attack, not a preceding epiphenomenon. These were well discussed by both Edward Liveing in *On Megrim, Sick-Headache and Some Allied Disorders* (1873), which proposed the ‘nerve storm’ as the prime mechanism, and by Sir Samuel Wilks and Peter Wallwork Latham, proponents of the vascular mechanism—long before Harold Wolff. Again we read, it was Gowers who distilled the conflicting concepts and said: ‘Migraine is an affection characterised by paroxysmal nervous disturbance of which headache is the most constant element.’ Eadie comments that this account largely completed the process of making the English speaking medical profession of the 19th century aware of the clinical pattern and behaviour of the disorder, a little over a century after Tissot had begun the process.

The late 19th century saw the emergence of descriptions of the various migrainous variants and complicated forms or migraine accompagnée: ophthalmoplegic, hemiplegic, basilar and vertiginous migraine, Féré’s ‘état de mal migrainue’, and also the rare persisting neurological deficits.

**Clinical features**

Revealing insights are shown in the presentation of clinical features as recounted through the ages. A long list of famous migraineurs and of their affliction is illuminated by their correspondence, much unrecognized in present day medical accounts. Not least amongst these are the letters of John Churchill, first Duke of Marlborough (1650–1721), one of the great military commanders of British history that relate his periodic violent headaches, but no description of a distinct aura.

With authority, Eadie describes the clinical features and auras of migraine and their perception, as related by Willis, Le Pois, Jakob Wepfer (in *Observationes medico-practicae de affectibus capitis internis et externis*), and other figures famed in the migraine world, but he concludes that it was Samuel Auguste André David Tissot (1728–97) of Lausanne, in his *Traité des nerfs* (1778–80), who was largely responsible for the recognition of migraine as a clinical entity. The essence of Tissot’s description is helpfully detailed. Subsequent writings are well summarized, perhaps culminating in the unsurpassed 19-page description of Gowers in his Manual (1888):

>Migraine is an affection characterised by paroxysmal nervous disturbance of which headache is the most constant element. The pain is seldom absent and may exist alone, but it is commonly accompanied by nausea and vomiting, and is often preceded by some sensory disturbance, especially by some disorder of the sense of sight. The symptoms are frequently one sided....

Studies in the 20th century added finer points about patients’ descriptions of the qualities of head pain, clarified the characteristic photo- and phonophobia, and elaborated the various forms of complicated migraine and their significance. Neither persisting defects after an attack nor the controversial chronic migraine or status migrainosus escape notice; all are described and illustrated by historical citations of interesting examples. Although the neural theory and related Leão’s spreading depression were gradually established, and the molecular genetic aberrations of familial hemiplegic migraine emerged, there was little new to help the patient until the discoveries of methysergide and the triptans.

**Mechanisms and treatments**

Many of the ideas and theories of migraine mechanisms are outlined, but Chapter 5 expands on pathophysiology, conceding that
a comprehensive interpretation of migraine pathogenesis remained elusive. The disclosure of accounts of headache, which have not attracted general notice, is an invaluable characteristic of this book. For example, we learn that William Harvey (1578–1657) incidentally recorded that ‘Because of these [gastric] nerves there is great sympathy between the stomach and the brain and vice versa, wherefore if the brain be injured vomitting and migraine ensue…’ Later, John Fothergill and Samuel Tissot similarly apportioned blame to gastric or dietary disturbances. Louis Florentin Calmeil (who gave one of the earliest theses of General Paralysis of the Insane) suggested in 1839 that the neural disturbance of migraine spread to the nerves of the stomach, rather than vice versa, and considered the visual aura of migraine was of cerebral origin. Following the speculations of Jules Pelletan (1832), there existed the belief of ‘sympathy’ between the stomach and the brain, which was mediated via nerve connections—unspecified.

Mollendorf and Latham’s 19th century vascular hypothesis was anticipated by Caleb Hillier Parry of Bristol in 1789, who shrewdly observed that unilateral carotid compression on the headache-affected side temporarily relieved hemicrania and bilious headache. Fragmentary ideas of a neural basis were revealed in the 17th and 18th century writings of Piorry, Willis, Wepfer and Whytt, and in Romberg’s Manual (1853), in Symonds’ Gulstonian lectures (1858), and in Elizabeth Garrett Anderson’s doctoral thesis of 1870. Migraine was thereby regarded as a neuralgia of trigeminal nerve branches. A prescient notion linking both neural and vascular mechanisms was mooted by Robert Whytt (1768) of Edinburgh, who stated that headache arose from the nerves of the forepart of the head, which were activated by changes in the diameter of the local blood vessels. Du Bois Reymond, the Berlin physiologist, describing minute observations made during his own attacks introduced the notion of autonomic pathophysiology. Pain was due to tetanus of the muscle coat of the arteries present in his head; thus, his migraine resulted from an overaction of the spinal sympathetic ganglia, which caused arterial contraction. Brown Séquard was quick to counter this, arguing that the evidence favoured sympathetic paralysis. In the best 19th-century text concerning headaches: On Megrim or Sick Headache (1873), Edward Liveing even-handedly related all the disputed mechanisms, favouring his own ‘nerve storm’, which was broadly in keeping with Hughlings Jackson’s concepts. Polemics were rife at this time, indeed as Eadie comments, their place in classification is still uncertain.

Several other concepts were to emerge, including psychogenic, allergies, toxins, pituitary or brain swelling. Harold Wolff (1898–1962), of New York, and several colleagues conducted meticulous experiments that yielded the conclusion that the aura arose from cerebral vasoconstriction that was succeeded by a phase of extracranial vessel dilatation that in turn caused the head pain. However, the role played by factors that triggered attacks and the common unilateral distribution were unexplained. Nor did the later advances of serotonin theory and altered platelet function produce a complete explanation. Wolff’s papers and his book Headache and other Head Pain (1948) were influential and were a landmark in the systematic use of experimental methods in the study of headache mechanisms.

More recent advances within the experience of many current neurologists are reiterated, perhaps unnecessarily in a historical survey. Genetic analyses and cerebral blood flow studies added to our knowledge, the latter correlating with spreading depression. Moskowitz, Goadsby and others formulated an intriguing trigemino-vascular reflex hypothesis, described by Eadie; but which external factors initiated or triggered this postulated reflex was never clarified, nor was the laterality of the aura or headache in many cases explained.

In Chapter 6 the reader is presented with an exhaustive catalogue and descriptions of the many treatments given to headache sufferers through the centuries. As is well known, most were primitive and all empirical, making use of existing analgesics, sedatives and rest as well as many now strange therapies such as arteriorotomy, bleeding, catharcitics, emetics, camomile, quinine and belladonna. Detailed appraisals of ergotamine, aspirin, non-steroidal anti-inflammatories are given, as well as more modern remedies, many of similarly limited value, and more recently methysergide, the triptans and non-pharmacological treatments. The text provides clear accounts of these remedies, their perceived rationale and helpful notes on their advocates.

Trigeminal autonomic cephalalgias

A chapter is devoted to the trigeminal autonomic cephalalgias, a term introduced by Goadsby and Lipton in 1997. Despite the historical title of the book, the author allows these modern developments having stated from the outset an arbitrary endpoint in the year 2000. He instructs us: ‘If these several conditions, had been recognised in earlier times, they would have almost certainly been included in the ancient category of hemicrania.’ Comprehensive interpretations of cluster headache and its many related syndromes are amply described; but the attention of the reader who is primarily concerned with medical history may falter in accounts of disorders and treatments of recent recognition. Indeed as Eadie comments, their place in classification is still uncertain, and the reviewer is equally uncertain whether some of them merit the term ‘entities’. However, the roots of cluster headache and variants in earlier tracts are certainly fascinating and well presented.

Tension headaches

It may seem rather surprising that relatively little has been published concerning the history of tension-type headache, undoubtedly the most frequent headache. Varieties of nodular, rheumatic or gouty headaches had been described in the 19th century, but the similarity to presently understood tension headaches is less than convincing. Eadie proves the truth of this assertion, showing that in its present clinical conception it first appeared in the late 1940s. Leslie and Dunsworth (1947) wrote: ‘The simple psychoneurotic headache is typically a “tension headache”, and may be explained on the basis of hypertonic musculature of the scalp, particularly the temporals.’ Similarly, Friedman and von Storch (1953) limited it to headache occurring in relation to constant or
periodic emotional conflicts, which produced changes in the calibre of the cranial vessels and concomitant spasm of the skeletal muscles of the head and neck. The various notions of tension type headache and its supposed mechanisms are fully explored here, but many uncertainties remain and we still know little of the pathogenesis.

Cranial neuralgias

The final descriptive section considers the cranial neuralgias, based mainly on the stories behind trigeminal neuralgia, or tic douloureux as it was called (but we find no mention of post-herpetic neuralgia or atypical facial pain). By the early 1800s, it became evident that some instances were caused by local pathology adjacent to the trigeminus but in other cases no such pathology was found, i.e. idiopathic tic douloureux. We are treated to a much more detailed quotation than is usual about John Locke’s (1632–1704) famous patient the Countess of Northumberland who was afflicted from the early age of 30. Eadie summarizes mid-18th-century histories provided by Wepfer, Nicolas André, and perhaps most importantly the wonderful Quaker physician, botanist and philanthropist John Fothergill (1733), and many subsequent writers. Vignettes of the authors’ lives and their theories of causation and remedies are lucidly described, perhaps causing us to reflect on how difficult it was for physicians to proffer sound diagnoses and rational treatments in their time. The author moves from early traumatic interventions to 20th century attempts at surgery of the branches, root and Gasserian ganglion injections, rightly detailing the works of Wilfred Harris. He takes us through the various experts’ techniques and theories to a modern view of trigeminal nerve root demyelination caused by compression by an overlying artery or vein. He recounts a similar picture of glossopharyngeal neuralgia, first probably delineated in 1910, but more adequately portrayed by Wilfred Harris in 1921.

Conclusion

Throughout the text, ideas and comments commendably simplify a bewildering range of facts and speculations. In the final chapter Mervyn Eadie adopts a reflective mood, discussing the ways that ancient descriptions and consequent knowledge have evolved. He traces a path in which someone has collected observations of a disorder, then identified their common features that have allowed the demarcation of a hitherto unrecognized headache entity. Once this new entity has been accepted, and its diagnostic criteria agreed, knowledge moves forward in developing an understanding of the new disorder and in finding treatments. This may then allow a backward glance aimed at finding older instances of the recently recognized disorder in the earlier literature.

Of many books and essays devoted to the history of migraine, this in my opinion yields the best and most assiduous compilation and criticism, quoting many investigators of headache whose work has been unrecognized or neglected. It is a delight to browse and learn from this elegant, well-written text. The extension of the material to the year 2000 means that some sections stray beyond the respectable boundaries of history, but any cut-off date is arbitrary, and more recent ideas have the advantage of putting into perspective the findings of earlier times.

This work is destined to be a classic.

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