Editorial Commentary

Historical section

“What is all knowledge too but recorded experience and a product of history; of which, therefore reasoning and belief, no less than action and passion are essential materials?”

Thomas Carlyle

In this issue of the journal the editors have initiated an historical section. Hansreudi Isler presents a scholarly paper on cluster headache. Apparently, this case report is the earliest description of this disorder which satisfies the new diagnostic criteria of the IHS classification, an admirable example of the ancient and modern. There are many points of value in this work, even a therapeutic tip that could still be pursued. This paper, considered in the light of Carlyle’s wisdom, exemplifies why we believe our readers will consider a periodic step back into the history of headache a rewarding venture. In anticipation of this, we have asked Dr Isler to accept the formal editorship of the Historical Section for future issues. He is well known to many of you as a scholar in the Classics as well as Clinical Neurology, who has long provided contemporary headache science with historical perspective and insight. No-one in our specialty is better suited to take this editorship. I encourage our readers to submit papers of historical interest related to headache and associated disorders directly to Dr Isler at the Neurology Clinic, Zurich University Hospital, CH8091, Zurich, Switzerland. Please support him in making this a regular feature of Cephalalgia.

Spreading depression and CGRP

The experimental demonstration of spreading depression (SD) in animals, dating 50 years ago, has focussed attention on this phenomenon as one of the most intriguing possible pathogenetic factors in migraine since spreading oligemia was reported in migraine with aura patients in the early 1980s. As is known, SD is easily induced in animal cortex by chemical or mechanical stimulation, but it has never been observed in human although experimental data support that sumatriptan is effective tive by blocking trigeminal sensory fibers by activation of 5HT1 have tried to define the role of SD as either a primary or a secondary mechanism in the development of a migraine attack. In the paper by Piper et al. in this issue of Cephalalgia, the purpose was to study whether SD in cat cortex could activate trigeminal fibers, thus inducing calcitonin gene-related peptide (CGRP) release. No significant increase in CGRP plasma levels in the external jugular vein was seen after 10 or 60 min from SD induction. This finding is in keeping with the hypothesis that SD does not represent a primary event for migraine attacks. CGRP is known to be a good marker for activation of the trigeminovascular system, as demonstrated in several experimental animal models, such as stimulation of trigeminal calcium vascular structures (i.e. the superior sagittal sinus) or direct stimulation of rat trigeminal ganglion. The increase of the peptide in the external jugular vein reported during migraine attacks points out a primary role for a neurogenic mechanism in this condition. As the authors conclude, the fascinating hypothesis that SD may represent an activating factor for trigeminal fibers is not supported by their findings. It may be possible, therefore, that the electrical phenomenon of SD is not sufficient and that other factors should be sought as triggers for activation of the trigeminovascular system.

M Gabriella Buzzi

Sumatriptan and membrane potential

The pharmacological profile and the mechanism of action of sumatriptan in aborting migraine or cluster headache attacks has been the main focus in headache research since the drug has been synthesized and marketed. Sumatriptan has also provided hints for discussion of the main current hypotheses (i.e. vascular and neuronal) of migraine pathogenesis. Owing to its ability to constrict isolated blood vessels by activation of vascular 5HT1 receptors, the drug has been thought to abort migraine attacks via constriction of distended cephalic vessels, although experimental data support that sumatriptan is effective by blocking trigeminal sensory fibers by activation of 5HT1 receptors located on those fibers.

In this issue of Cephalalgia O’Shaughnessy et al., however, do not suggest the presence of these receptors in guinea-pig isolated trigeminal ganglion cells. In fact, sumatriptan did not change membrane potential when applied in the superfusion fluid, whereas other stimuli, such as KCl, GABA and 5HT, induced depolarization. These findings seem to rule out the role of trigeminal ganglion cell receptors in the mechanism of action of sumatriptan. As the authors cautiously state, however, the number of 5HT1 receptors on these cells may be insufficient for showing any effect of sumatriptan on membrane potential. Thus the field is open for further studies to clarify whether these receptors could be represented more markedly on nerve terminals in the dura mater vasculature. Also, this in vitro study offers a starting point for more sophisticated investigations of receptor localization in vivo, in order to show whether receptor activation could be changed in pathological conditions, such as migraine attacks, and further modified by sumatriptan administration.

M Gabriella Buzzi

Exteroceptive suppression

After J. Schoenen et al. in 1987 first reported shortened late exteroceptive suppression periods