

## History Article

## Neurological Contributions of Caleb Hillier Parry

Caleb Hillier Parry (1755-1822) was a schoolfellow of Edward Jenner during the latter's education in Cirencester between 1758 and 1761. The friendship established during these years was to be lifelong. Parry was the original dedicatee of Jenner's seminal 1798 pamphlet describing smallpox vaccination, and Parry returned the compliment in his book on rabies and tetanus published in 1814.

After qualifying in Edinburgh, Parry set up in practice in Bath in 1779, which was to be his home for the rest of his life. He was the first president of the short-lived "Gloucestershire Medical Society" (1788-1793), meeting at the Fleece Inn in Rodborough near Stroud, of which Jenner was also a member. Like Jenner, Parry was an observant clinician, and an experimentalist, and they also shared interests in other aspects of natural history, including geology.<sup>1,2</sup>

With the benefit of hindsight, Parry's most significant clinical contribution was probably his 1799 book on angina, the first devoted to the subject, in which he drew on Jenner's (unpublished) work showing that the symptom was associated with "malorganisation" of the coronary arteries. Parry also encountered cases of exophthalmic goitre, the first in 1786, some fifty years before the account of Graves (1835) which achieved eponymous fame for the latter. However, Sir William Osler acknowledged Parry's priority, and "Parry's disease" has found favour in some quarters. These works have attracted attention in journals devoted to cardiology and endocrinology, respectively.<sup>3,4</sup>

Parry believed his most important contribution was his theory of "determination of the blood", in essence that flow of blood, usually excessive, contributed to organ dysfunction. He thought this was particularly applicable to diseases of the nervous system. Although this theory is now of historical interest only, Parry did make various contributions of value to neurological practice. Long sections of two of his major works were devoted to the nervous system.<sup>5,6</sup> I am not aware of previous articles on Parry in journals devoted specifically to neurology (Jenner too had neurological interests').

### 1. Carotid artery compression for seizures

Parry's studies of carotid artery compression date from the late 1780s. In addition to the observation (1799) that carotid compression slowed the heart beat, a manoeuvre still used in clinical practice for the emergency treatment of some tachyarrhythmias, he also reported the use of carotid compression to treat episodes of loss of consciousness. Motivated by his theory that nervous system disease resulted from excessive blood flow to the brain ("determination"), he reported improvement in a young woman with bizarre episodes of convulsive movements and impairment of consciousness (in retrospect it is possible that these were induced by hyperventilation) following carotid compression, although the effects were only transient.<sup>8</sup>

Other cases with features more suggestive of partial-onset epileptic seizures were also reported to be controlled by carotid compression.<sup>8,9</sup> This is of possible interest in light of current investigations of implantable vagal stimulators for the control of refractory seizures, although Parry specifically denied that his technique of carotid compression produced pressure on the vagus.<sup>10</sup>

Parry also had other suggestions for how to deal with "fits". Consulted by a carpenter about his 15 or 16 year-old daughter who was having fits, Parry reports that:

"... he and his wife had made it a rule never to contradict her, but uniformly indulged her in every wish ... I urged this man to change his method of proceeding and, instead of this absurd indulgence, to give her a good shaking, or else throw a bason [*sic*] of cold water in her face, immediately on the approach of the next fit."

In the event, the carpenter could not bring himself to follow these recommendations, but apparently spoke sharply to his daughter instead, and the fits ceased.<sup>11</sup>

### 2. Headache

Parry gives a clear description of his own migraine without headache (or migraine equivalent)

"After violent fatigue, more especially when accompanied with fasting eight or ten hours, ... I have frequently experienced a sudden failure of sight. The general sight did not appear affected; but when I looked at any particular object, it seemed as if something brown, and more or less opaque [*sic*], was interposed between my eyes and it, so that I saw it indistinctly or sometimes not at all. Most generally it seemed to be exactly in the middle of the object, while what my sight comprehended all round it, was as distinct and clear as usual; in consequence of which, if I wished to see any thing, I was obliged to look on one side ... After it had continued a few minutes, the upper or lower edge ... appeared bounded by an edging of light of a zig-zag shape, and coruscating nearly at right angles to its length ... they would remain for twenty minutes sometimes to half an hour ... They were in me never followed by headach [*sic*] .."<sup>12</sup>

Parry also presents cases which are suggestive of migraine exacerbation during holiday periods,<sup>13</sup> and of migrainous stroke.<sup>14</sup>

The young woman with bizarre convulsive episodes (see above) also had "fits of delirium ... preceded by a sense of fullness and throbbing pain in the head, accompanied with a great degree of heat and flushing about the head (what the common people in this country call opening and shutting) and neck", and also "an unusual sensibility with regard to light and sound". Carotid compression, as well as helping the seizures, also "nearly or totally removes the hemicrania of the side on which the compression is made; the headach [*sic, passim*] which is called nervous; that also which is intituled bilious, ..." restoring the patient to "perfect use of her senses and powers of rea-



Andrew Larner is the editor of our Book Review Section. He is a consultant neurologist at the Walton Centre for Neurology and Neurosurgery in Liverpool, with a particular interest in dementia and cognitive disorders. He is also an honorary apothecaries' lecturer in the history of medicine at the University of Liverpool.



Caleb Hillier Parry (1755-1822)

soning. At the same time the headache, and the undue sensibility with regard to light and sound, which had always taken place in the intervals of the paroxysms, were altogether wanting, and the patient declared that in every respect she was free from complaint". Moreover, whereas the beneficial effect on the seizures was brief, "I have, however, seen some instances in which the nervous and bilious headaches have been for a considerable time, and even permanently, relieved".<sup>15</sup> Modern accounts of the efficacy of carotid or superficial temporal artery compression in migraine have appeared.<sup>16</sup>

It was suggested by Kelly in 1948 that Parry's 1792 paper<sup>8</sup> contained a description of the condition known as "histaminic cephalgia",<sup>17</sup> which itself would now be included under the rubric of cluster headache<sup>18</sup> or perhaps trigeminal autonomic cephalgia.<sup>19</sup> However, the case contains no mention of unilaterality, pacing behaviour, nocturnal attacks, miosis, ptosis, conjunctival injection, lacrimation or nasal congestion, so it seems that the case for Parry describing cluster headache is not established. However, another patient, Mrs R., had "nervous headach [sic] over the forehead, eyes, and occiput ... accompanied with fulness [sic] and stuffing of the nose like a cold, coming and going off in a short time".<sup>20</sup>

### 3. Facial hemiatrophy

"... Miss F, aged twenty-eight, ... thirteen or fourteen years ago, when at school, was rather suddenly seized with some degree of hemiplegia of the left side ... from the period of the attack the left side of the face began to grow more thin than the right, and the eye to become less prominent, and therefore to appearance smaller ... from the same period, her hair on the upper part of the left side of her head, which was before of a dark brown colour, began to grow white ... when she protrudes her tongue it turns to the left."<sup>21</sup>

This is from Parry's account of hemifacial atrophy, still sometimes known as Parry-Romberg syndrome (the German's account appeared some years later, 1846). The condition is still seen occasionally by neurologists, sometimes associated with ipsilateral brain atrophy, vascular malformations, and partial-onset seizures, as well as various ophthalmological and dermatological features. There are probably various causes.<sup>22</sup>

### 4. Miscellaneous

Other neurological conditions which may be encountered in Parry's writings include:

- Visual hallucinations on alcohol withdrawal;
- Dropped hands from lead poisoning, in painters and plumbers (but never cider drinkers!);
- Tic douloureux;
- Wry neck, "suspended by attention to other objects".

He also writes (in 1815) of "shaking palsy", in which the "head and limbs shake, more especially on any muscular exertion", a description perhaps more suggestive of essential tremor than Parkinson's disease.

It is reassuring to find that, like some of his neurological successors, Parry sometimes struggled with clinical-anatomical correlation: a description of right facial weakness with involvement of taste, suggestive of a Bell's palsy, is ascribed to "affection of the second and third branches of the Trigemini". As there was no difficulty moving the eyeball "it follows that the first (ophthalmic) branch was

unaffected!"<sup>23</sup>

Parry's medical practice was effectively ended in 1816, at the age of 61 years, by a stroke which resulted in aphasia and right hemiparesis (presumably a left middle cerebral artery territory event). Jenner reported, "He looked at me earnestly for some time, then grasped my hand and by piteous moans and sighs expressed how strongly he felt his situation", perhaps in part from his clinical familiarity with right hemiplegia.<sup>24</sup> Communication remained difficult for the rest of his life but his two unmarried daughters who helped to care for him were able to interpret, and hence he was able to dictate reminiscences which they wrote down. It is also recorded that he was able to correct with his left hand a manuscript written by his son, Edward (noted for his exploration of the Arctic), an achievement perhaps reminiscent of the scientist Ernst Mach who learned to type with his left hand after a left hemisphere stroke.<sup>25</sup>

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Correspondence to:  
AJ Larner  
Walton Centre for Neurology  
and Neurosurgery  
Lower Lane, Fazakerley  
Liverpool L9 7LJ  
U.K.  
E.mail.  
a.larner@thewaltoncentre.nhs.uk