Occasional piece

Sir Percivall Pott—the first sports neurologist?

“A young man playing at cudgels in Moorfields received a stroke on his forehead; it did not seem to himself to be a particular severe one, but as it produced blood it was deemed by the laws of the game to be a broken head, and he was obliged to yield to his antagonist . . . as it gave him no trouble, he took no notice of it and was for several nights afterward engaged in the same diversion which followed his daily labour . . . on the ninth day from that on which he received the blow, he thought that his forehead was somewhat swollen and felt tender to touch . . . the swelling and pain increased and he found himself much out of order . . . an incision was made into the tumour . . . a circular piece of the scalp was removed which discovered a fracture . . . a trephine was passed into the fracture line and the bone was removed . . . the dura mater was found discoloured and beginning to have matter on its surface . . . he was let blood . . . until his pulse failed . . . by proper care he was brought to himself . . . it is very clear that unless the cranium had been perforated he must have perished” (Case XVIII)¹

This case report, published in 1768 by Percivall Pott, represents the first example in the medical literature of sports neurology. Now popularised by current day neurologists and neurosurgeons such as Jordan and Cantu, sports neurology has slowly evolved into a distinct subspecialty of neurology.^{2–6}

The case report described above also illustrates a number of other features. It is the first demonstration of the “blood rule” in action and serves to graphically illustrate the perilous nature of head injuries in that era.

Background

Sir Percivall Pott FRS (1714–1788) was born on 6 January 1714 in a house in Threadneedle Street, on a site where the Bank of England now stands. His father, Percivall Pott (1681–1714), was a notary and scrivener. At the age of 15, Percivall Pott was apprenticed to Edward Nourse, assistant surgeon at St Bartholomew's Hospital. At the end of his apprenticeship, Pott presented himself before the Court of Examiners of the Company of Barber Surgeons in order to prove himself qualified to practise. Despite arriving late for the examination (as recorded in detail in the minutes of the Court on 17 September 1736), he nevertheless passed the most rigorous examination and was awarded the Grand Diploma.

Figure 1 Sir Percivall Pott.

Pott began to practice in Fenchurch Street, where he lived with his mother and stepsister. His practise flourished and he moved to Bow Street after three years. In 1745, he was appointed assistant surgeon at St Bartholomew's Hospital. In the same year, the Surgeons separated from the Barbers and formed their own Company in which Pott took an active part. In 1749, he was appointed surgeon to the hospital and in 1753 he was elected Master of Anatomy at Surgeons Hall (along with William Hunter, with whom he later had a vitriolic paper war over his observation and naming of the “hernia congenita”). In 1756, while convalescing from a severe ankle fracture after a fall from a horse, he wrote his first book *Treatise on ruptures*. His influence spread, and in 1765 he was elected Master of the Company of Surgeons (fig 1). In 1777, he moved to Hanover Square and enjoyed one of the most lucrative and fashionable surgical practices in London. Among his patients were Samuel Johnson, David Garrick, and Thomas Gainsborough. He received many honours during his lifetime including the election to the Fellowship of the Royal Society in 1765 and the Honorary Diploma of the Royal College of Surgeons of Edinburgh in 1786 (the first such diploma to be granted). He died from a “chill” on 11 December 1788.

Writings on head injury

Percivall Pott's book *Observations on the nature and consequences of wounds and contusions of the*

Figure 2 Frontispiece from the 1768 edition.

head, fractures of the skull, concussion of the brain etc was first published in 1760 by C Hitch and L Hawes of London.

In 1768, the book was considerably rewritten and titled *Observations on the nature and consequences of those injuries to which the head is liable from external violence* and published by L Hawes, W Clark, and R Collins of Paternoster Row in London (fig 2). The latter book went through three subsequent editions. Pott was the first to appreciate that the symptoms arising from a head injury are not due to the fractured skull but to injury of the brain. He also disproved the idea that extradural or subdural blood collections would inevitably become pus. This widely held concept was used to justify the enthusiastic use of trephination in many cases of head injury, even in simple concussion.¹⁷ There was, however, a great deal of difference in management strategies on this subject. The conservative school of thought was led by O'Halloran, Dease, Richter, and later Dessault.⁸⁻¹¹ Apart from proscribing trephination, these authors often recommended a popular remedy of the time called Dover's powder. This medicament dates from the mid-17th century and was named after Thomas Dover, a pirate and member of the Royal College of Physicians.¹² O'Halloran⁸ said

of Dover's powder "... I would warmly recommend medicines of this kind and particularly Dover's powder. Indeed I am so fond of it, that as it is seldom known or prescribed in shops; I have always a quantity of it by me, ready prepared. This medicine, which is called Dover's sweating powder, has for its basis opium, ipecacuanha and is a powerful diaphoretic..." When inflammation or infection supervened, then bloodletting, purging, or narcotic administration were recommended. Not surprisingly, in these cases the outlook was usually grim.¹³

Pott's views on the management of head injury were published in his monograph on head injuries, which closely details his personal experience of 43 cases of head injury and their outcome, which was almost invariably fatal.¹

These 43 cases had the following causes: industrial accidents, such as a fall from scaffolding, 11; road accidents, such as falls from coaches, 12; assault—for example, being beaten by "drunken sailors", nine; sport (see below), four; miscellaneous—for example, a pupil being struck on the head with a stick by his tutor, seven.

Other sport related cases¹

The sports involved were cudgels, which involved being beaten with quarterstaves (one case), quoits (one case), and cricket (two cases). This emphasises that, since the time of Hippocrates, most closed head injuries have been a result of low velocity impacts. It is not surprising therefore that the traditional view of concussion or commotion involved a low velocity impact causing temporary symptoms with no evidence of structural brain injury.

CASE II

"A young fellow was playing at quoits, was struck down by the perpendicular fall of one of them on his head. It made a large wound that did not denude the skull and was brought together by a stitch made by somebody at hand... the man though stunned at first by the blow, having vomited plentifully was soon well and the next day went to his work as a farrier... On the sixth day, he complained of being chilly and faint... was unable to stoop to shoe a horse on account of the pain in his head... he was let blood and took some medicines but at the end of three days being worse and incapable of bearing the expense of remaining at home was brought to St Bartholomew's Hospital. On the tenth day from the day of wounding I examined him. He had a considerable degree of fever and complained of great pain and tightness over his head... The wound was explored and a probe could be passed and could feel the cranium... The pericranium was sloughy and the bone was much altered in colour. I removed the whole separated part... From the symptoms and signs I prognosticated no good... On the next day his fever was higher and he had a rigour... I trephined close to the sagittal suture and a considerable quantity of matter discharged which lay on the surface of the dura

mater . . . soon after this he improved and became more rational . . . in the evening his pain returned and he had a rigour that held him above an hour . . . soon afterward he expired. Upon removing the upper part of the skull, a large quantity of matter was found under the parietal bones”

CASE VI

“A lad about 12 years old, standing by a man who was playing at cricket, received a blow from the bat on his forehead. The boy became senseless . . . and was brought to the hospital. He recovered his senses before he got thither but the part that received the stroke was much swollen. When I saw him the next morning he had no complaint . . . On the ninth day he was discharged . . . on the fourteenth (day) he returned . . . complaining of lassitude, giddiness and headache . . . despite treatment he remained much the same for three or four days . . . on the seventeenth day he had a rigour after which the pain in his head was much more severe . . . I applied the trephine and gave discharge to matter which had formed between the dura mater and the bone . . . after a week, the suppuration lessened . . . and he got well”

CASE XLI

“A child about nine years old received a blow from a cricket bat on the upper part of his forehead, which brought him to the ground, and deprived him of sense . . . I found him with a considerable tumour on his forehead...I would have removed immediately part of the scalp but a dabbler in surgery who was a relation, undertook to cure him by an application . . . on the third day I was sent for again and found him nearly in the same state as I had left him . . . I divided the scalp and found the fracture with depression . . . by means of a trephine and an elevator the depressed part was raised and the dura mater found to be in a good state with no apparent extravasation . . . nothing more was done at that time . . . the boy gradually recovered his senses and in due time got well”

Conclusion

Pott's writings, although resulting in considerable professional acrimony, were extensive and included the now famous eponymic descriptions of spinal cord compression due to tuberculous of the spine, ankle fracture (based on

the account of his own injury in 1756), and “puffy” tumour of the skull. Despite the criticism, Pott's publications exerted great influence on surgical practice. This was in part because he wrote clearly and from his own experience.

As a pioneer in sports medicine, his endeavours in accurate recording of cases of his experience remain as important today as 300 years ago. In the field of surgery, however, he remains an imposing historical figure. Perhaps the best epithet of Sir Percivall Pott, attributed to Sir D'Arcy Power, should serve as a vade mecum to us all, when he wrote about Pott that: “he straightened out and made plain the paths so that his followers walked along them more easily and were able to go further”¹⁴

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Expression of concern about content of which Dr Paul McCrory is a single author

This paper is authored by Dr Paul McCrory. During 2021 and 2022 there was an investigation by BJSM and BMJ which found that some of his work was the product of publication misconduct. Such misconduct includes plagiarism, duplicate publication, misquotation and misrepresentation in publications in respect of which he was listed as the sole author.¹ We are placing a notice to readers on all content in relation to which he is identified as the sole author to alert them to the conclusions of our investigation.

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