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Worcester Infirmary.

FACTS ILLUSTRATIVE OF CEREBRAL PATHOLOGY.

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THE controlling influence of the brain over all the corporeal functions is so great, that the investigation of the alteration of structure of this organ by disease is of the first importance. It is a trite remark, that the digestion of the food is intimately connected with the nervous system; and the experiments that have been made by Dr. Wilson Philip, Magendie, Brodie, and many others, on the vagus nerve, have demonstrated beyond contradiction that the influence conveyed by this nerve to the stomach is absolutely necessary to the right performance of its functions. On the other hand, it is equally certain, that by a reflex action the stomach often exercises an extraordinary influence on the functions of the brain.

CASE I. As an example of this, I may relate the instance, which happened to myself, of a girl, of twelve years of age, who was in perfect health, but who, after eating a large quantity of chestnuts, which remained undigested in her stomach for two days, was at the end of that time seized with severe pain in the head. She soon afterwards became comatose, with dilated pupils and insensibility to light. I directed active doses of calomel and extract of colocynth, which purged her briskly; and I applied a blister between the shoulders, the effect of which was, that in the course of a week she so far recovered as to be able to walk. For some time the whole of the left side was paralytic, but she gradually and completely recovered by continuing the use of purgatives, friction to the weakened limbs, and repeated blisters.

CASE II. Another example I may relate, much more chronic in its character. A young woman, aged 23, a patient of the Worcester Infirmary, was under my care for peritonitis, which degenerated into a chronic form of disease, and slow inflammation in the cavity of the abdomen, for many months, producing a train of nervous symptoms which often attend such a long continued disease of the digestive organs. About five months from the attack, she began to lose the use of her legs, and dragged them in walking. On examination of the spine, there was no obvious disease; but she complained of pain in the course of the vertebræ, and in the back of the arch. A long course of treatment was necessary; but she ultimately recovered completely by a repetition of blisters between the shoulders, and by an alterative and tonic plan of treatment.

CASE III. Circumstances, on one occasion, gave me an opportunity of following to its termination a case which was very analogous to the two foregoing. A man, aged 50, was for several years an out-patient in the Worcester Infirmary. He was frequently subject to giddiness, vomiting, and purging; and ultimately he became paralytic, and died.

On examination of the body after death, I found an ulcer of considerable size in the cardiac end of the stomach; and in the head there was serous effusion between the membranes of the brain, and the tunica arachnoidea was much thickened.

Facts of this kind are, no doubt, of frequent occurrence, and have been observed by many pathologists. I shall not, therefore, dwell longer on this view of disordered nervous function, but rather conversely cite some examples where disease originating in the cerebral mass has exercised a powerful influence, by evoking various obscure and even fatal results, more especially referrible to the stomach.

CASE IV. B. B., a day labourer, aged 26, was admitted into the Worcester Infirmary, under my care, November 13th, 1830. He was affected with pain over the whole of the head, and complained much of his eyes, the pupils of which were much dilated, and the iris was insensible to light. He had a vacant look, and was drowsy, but perfectly sensible. He had slight tenderness and pain in the epigastrium, and frequently vomited.

His history of himself was not very clear; but he said that he had for some time suffered severe headache, nausea, and vomiting.

The head was shaved; leeches and blisters were applied to the head; and he took calomel and purgatives. A caustic issue was also applied to the top of the head. The remedies had no effect in removing the symptoms, and he was on that account removed from the Infirmary by his friends on the 13th of December. In about ten days afterwards he died. Before the fatal event occurred, he became insensible, and had subsultus tendinum: finally, convulsions and perfect blindness came on.

On examination after death, when the calvarium was removed, the dura mater was found vascular, and there was thickening of the arachnoid, and a considerable quantity of serous effusion between it and the pia mater. On slicing the cerebrum, the anterior lobe of the right hemisphere was found very much diseased, and a considerable portion of the medullary matter was converted into a yellow gelatinous substance. The right thalamus and the corpus striatum were softened. The corpus callosum was healthy. There were about three ounces of fluid in the lateral ventricles, and there was smeared over them a gelatinous matter. The cerebellum was healthy. The thoracic and abdominal organs were healthy.

One cannot help arriving at the conclusion, in this case, that the nausea and vomiting, which commenced at an early period of the illness, were produced by the serious disease which had commenced in the right cerebral hemisphere; and yet the vomiting was so urgent that it would almost inevitably lead to the conclusion that there was some primary disease in the assimilative organs. Although he became nearly blind, there was no failure of memory, no loss of any of the intellectual powers, until, by the onward progress of disease of the brain, serous effusion took place into the ventricles.

CASE V. I wish now to invite attention to a fact somewhat analogous to the former, in which the origin of all the distressing and intractable sufferings was situated in one of the cerebral hemispheres. The disease could not here be traced to any assignable cause, but appears to have been of a tuberculous character, and arising from some scrofulous taint; but the symptoms evidently arose from the disturbance of the functions of the cerebral hemispheres; and those of the vagus nerve were also much implicated.

H. S., aged 16 years, a printer and stationer; tall for his age; sallow complexion; dark hair and eyes; fingers long and thin; frame not stout, but rather thin and wiry; has always had very good health from a child; was capable of enduring great fatigue. Had been treated in February for inflamed lungs, by Mr. Appleton of Evesham. At the

time of this attack he was sleeping in a room, the walls of which were damp, his bed being placed between the window and door of the room. He recovered from this attack, but a short time afterwards symptoms of some lesion about the brain came on, such as heaviness, lassitude, headache. The medical man then treated him with tonics, considering these as signs of debility; but on Saturday, the 5th of May, while at breakfast, suddenly his left hand became convulsed, accompanied by a tickling sensation up his left leg and arm, which he says compelled him to laugh. These symptoms then passed off for a day, when he found that he had lost power in his left leg, which dragged after him when walking. This symptom remained more or less, evidently accompanied with headache and dullness of the intellect; but being a lad of unusual powers of endurance, he continued his business, though somewhat more was entrusted to his care. On the Saturday following (May 12th), Mr. Appleton saw him, and ordered leeches to the neck, which were repeated the following day.

May 14th. Removed to Worcester.

May 15th. When I saw him, he had heavy expression of countenance; face rather flushed; eyes suffused; pupils dilated; tongue much furred, brownish; great heat of scalp and surface generally; pulse 100, rather hard; urine high coloured; bowels confined; headache, pain shooting horizontally round the head; pain also in region of cerebellum, and also down the spinal column, greater in the lumbar region; on percussion down the spinal column, considerable pain was felt; on stooping forward, some pain was felt down the cord.

Leeches and blisters were applied to the back of the neck, and a grain of calomel, with sulphate of magnesia, were given every four hours.

May 16th. Head much relieved; pupils less dilated; feels better; less heat; pulse 80; bowels open; urine thick;

Calomel continued, with the mixture.

May 17th. Still better; pulse coming down (76): feels no pain in the head; soreness of spine less; limbs more lively, but still somewhat numbed; is purged freely.

Magnesiæ sulphas omitted; calomel continued.

May 18th. Improving still; pulse steady; softer (76); skin moist; head cooler; urine sedimentous, thick; evacuations dull brown colour, watery, not passed involuntarily; no pain in the head; pupils less dilated.

Calomel continued, with mixture; lotion to head.

May 19th. Symptoms somewhat increased in severity; manner hurried; does not see so clearly; diplopia; pulse (76); pupils dilated rather more; two stools; senses perfectly collected, and recollects well; complains of pain in lumbar region, with tenderness; but the leg is more lively and controlled better by the will.

Calomel increased to gr. 1½ every three hours, with the mixture.

Emplastrum lyttæ ad regionem lumborum; lotion to head as usual.

9 P.M. Much the same; bowels have been moved; pupils dilated; tongue furred and dark coloured; skin hot and dry; but pulse remains at 80; diplopia occasionally; head not hotter.

Calomel increased to gr. ij every two hours; mixture continued; lotion applied.

May 20th. Slept but little in the night; but done so for some time in the previous day; complains of no pain; pupils dilated; diplopia occasionally; manner somewhat more excited, but head not hotter; has had a stool in the night dull, brown in colour; blister rising; limbs more lively.

Calomel continued.

3 P.M. A sudden accession of symptoms; manner more excited; speech affected; cannot articulate some words at all, especially those beginning with a w, or th; misapplies words also, and inverts others; some screwing of the mouth when attempting to speak; but continues sensible, and answers questions put to him; has no pain: mouth unaffected; tongue furred and also moist.

Head shaved. Hirudines xxiv Scalp. app. Empl. lyttæ magn. nuchæ. Calomel continued.

May 21st. 1 A.M. Manner very irritable; complains of being annoyed by the leeches; wishes to remain still.

9 A.M. Countenance anxious; expresses debility; speech still affected; pupil dilated; head still hot; scalp has bled freely; pulse weak, rather thready; understands readily; tongue furred and dark, moist; mouth not tender; feet cold; urine discharged involuntarily; not so the fæces.

Ice to head.

B. Hyd. sub. gr. x

Pulv. trag., M.

Ft. pulv. secundâ quâque horâ sumendus.

Mitte vj.

Ung. hyd. fortius reg. ing. et vesicæ applic.

9 P.M. Somewhat revived; countenance more natural; pupils still dilated; speech better; intellect unaffected; sight dim, and hearing dull; head cooler; feet and surface generally warm; pulse fuller. Stools grass green, but mouth unaffected. During the day the face was convulsed; mouth screwed, and the orbicularis of left eye contracting, at times, with squinting, if an attempt were made to look at one object steadily; sight very indistinct; hearing also dull; with wandering occasionally. The limbs were convulsed at times, while a constant tremor of them remained, and occasional twitching of the tendons at the wrist, with a disposition to grasp anything placed in the hand.

Rep. pulv. vj.

Ice continued.

May 22nd. 8 A.M. Symptoms much the same; pulse perhaps rather more thready; head cooler; tongue dark and furred; moist; stools green; urine pale and plentiful; not passed involuntarily; senses collected; pupils dilated; speech better.

Medicine continued.

10 A.M. Much worse; eyes rolling; pupils dilated; countenance hippocratic; mouth open; face and extremities cold; great twitching of muscles; pulse scarcely perceptible; muttering occasionally; quite insensible; power to swallow remaining; breathing short and shallow; collapse.

Emplastrum lyttæ regioni dorsali applic.

Hot water applied to feet.

2 P.M. Much revived; extremities warm; senses collected; asks for food; countenance more natural; pupils still dilated; pulse fuller; breathes more quickly.

9 P.M. Considerable accession of heat with febrile symptoms; very dry surface; manner excited; tongue dry and dark; thirst; pupil dilated; head very hot; pulse 120; rather full; stools green; senses collected.

Mist. effervescens.

Rep. hyd. subchlorid.

Lotion to head; ointment continued.

May 23rd. Symptoms much relaxed; surface cooler with perspiration; pulse lower (100), and rather fuller; tongue moist, dark; head cooler; pupil still dilated; senses collected; gums looking silvery, slightly tender; stools green; passing much urine, rather pale in colour and clear; blister discharging.

Calomel continued.

9 P.M. Pulse 105; pupil less dilated; contracts before the candle; head very hot; but senses entire; muscular system quiet; some nausea.

Calomel continued.

Effervescing mixture also; lotion to head.

Ointment to blistered surfaces.

May 24th. Passed an indifferent night; some slight convulsions; remains comatose until roused, which is done with some difficulty, he being a little deaf; face expresses debility; mouth slightly twisted; pupils not so much dilated, obedient to light; tongue dark and moist; two stools during the night; some nausea; respiration easy and natural; pulse 76; moderately full; flushing of face occasionally; disrelish for food; mouth a little tender; gums looking spongy.

Calomel suspended. 3iv and grs. lvij of calomel have now been taken.

Repeat effervescent mixture; ointment still applied; lotion to head.

2 P.M. Wine, jelly, broth, ordered. Continues better; senses entire.

5 P.M. Sudden convulsive attack, with congestion of face and hands; great labouring of the heart; respiration much oppressed; quite insensible; strabismus; pupil dilated much; and mouth distorted slightly. Fæces passed involuntary; pulse quick, 110.

R. Sp. ammon. arom. 3j,
Mist. camph. ʒiiss. M.

Fiat haustus statim sumendus.

6 P.M. Revived somewhat; respiration easier; pupil still dilated; no squinting.

Empl. lyttæ magnum cap. applic.
Repet. ung. hyd.

Midnight. Remains much the same; still nausea; pupils much dilated; manner rather hurried; surface warm; pulse 120.

May 25th, 10 A.M. Passed a tranquil night; no convulsions; one stool during the night, green; urine not involuntary; complains of pain in head. His manner is peculiar, showing an anxiety to do everything required immediately, and even to anticipate our wishes: holds out his hand before asked; puts his tongue out a second time without being requested; says he is very well. Pupil dilated; tongue dark, moist; gums tender; vomiting passed off; blister rising; pulse 110.

Repet. pulv. hyd. sub. l.
Ung. hyd. applic. ut antea.

8 P.M. Senses very sluggish; pupils much dilated; surface warm; pulse 110, rather thready; no urine passed; no evacuation of fæces; respiration rather heavy; picking at bedclothes, sawing of the hands; sight appears affected.

May 26th, 11 A.M. Remained tranquil during the night; is now in a state of torpor, taking no notice; unable to speak; pupil dilated; eye looks duller; occasionally the arms are moved convulsively; pulse 130, rather thready; no evacuation of fæces or urine; swallowing becoming difficult.

9 P.M. Remains much the same; complete state of torpor; opens his eyes when spoken to loudly; not quite incapable of speech and deglutition; face flushed; pulse 140, thready; respiration easy; skin moist; heart beating violently, and very visibly.

May 27th. Died at 6 A.M. after considerable convulsive efforts.

POST MORTEM APPEARANCES, thirty-three hours after death. Atmosphere moist and warm—rainy.

Head. Brain and membranes not more congested than natural; sinuses full; effusion of serum between the arachnoid and dura mater about 3j; also fluid continuing down the cord to considerable amount; injected appearance of the arachnoid where passing off to the nerves; dura mater adherent for a small extent (about the size of a sixpence) by means of semiorganised lymph; some lymph in small quantity effused under the arachnoid. On dividing the hemispheres, their substance was found firm, and not unusually congested. In the right hemisphere, at the anterior lobe, was a small tumour of tubercular matter, hard, and surrounded by highly organised cerebral substance. It was more in the grey matter than the medullary, situated about two inches from the anterior surface of the anterior lobe, in the convolutions of the great fissure, about half an inch from the anterior extremity of the corpus callosum, and immediately above that body. In the part of the hemisphere sometimes called the "labia cerebri" it contained yellowish tubercular matter, hard. The lateral ventricles, as well as the third and fourth, were filled with serum (about two or three ounces). The fornix and its two posterior pillars were found softened very much. The plexus choroides was rather less vascular than usual, and had a marked appearance. The thalami were firm and healthy. The corpora striata were also healthy. Cerebellum and medulla oblongata healthy as regards their substance.

Spinal Cord. Effusion to a considerable extent between the membranes at the upper part of the cord.

Thorax. Lungs healthy; but serous surfaces adherent for some extent on the right and left lung.

Pericardium. Completely adherent to the heart, the two contiguous serous surfaces being quite inseparable; also tubercular deposit, and numerous small granules of the size of mustard seeds, beneath the serous membrane in the substance of the heart, as well as the subserous cellular tissue. Otherwise, the heart was healthy; no ossific deposit.

Abdomen. Viscera healthy generally, although the liver (its right lobe) was found adherent by its serous covering; also the same kind of deposit was found in the subserous cellular tissue, although the substance of the organ was healthy and entire. The same tubercular (?) deposit was seen over the greater part of the peritonæum. The mesenteric glands somewhat enlarged.

CASE VI. For the report of the following case, I am indebted to Mr. Clarke, the intelligent house-surgeon of the Worcester Infirmary. It well illustrates the effect of a fall upon the head, which at the time produced concussion and insensibility, and ultimately, after causing a train of intractable symptoms, at the end of two years caused death, owing to extensive disease being produced in the membranes of the brain, and in the right hemisphere.

"Wm. Price, aged 48 years, a shoemaker, living at Whilbourne, was first admitted into the Worcester Infirmary December 31st, 1853, under the care of Sir C. Hastings, suffering under a form of partial paralysis. The lower limbs were those chiefly affected; but he was able to walk, although unsteadily. It appeared that, about three or four months previously, he was picking fruit, and fell from the tree. He was found insensible, and was quite unable, when he recovered sensation, to account in any way for the accident; his friends thinking that he fell from the tree in a fit; others, that the branch on which he was standing broke, and that this caused the fall. He was treated on this occasion by cupping, blistering, and cathartics; and was made an out-patient Feb. 18th, 1854.

"He was re-admitted June 3rd, 1854, complaining of increased loss of power in the limbs, with considerable headache and dimness of vision, especially with the left eye. He has no recollection of the accident, though on other points his memory is not deficient. The pupils of both eyes are sluggish, but there is no appearance of any opacity in the lens or elsewhere; the eye has a vacant expression, and, in short, is in a state of incipient amaurosis. He was actively treated with blisters, setons, and finally the sagittal issue, cathartics, and mercurials, but with at best only temporary and uncertain relief; and was ultimately discharged,

September 23rd, 1864, with an unfavourable prognosis of the result.

"Nearly a year afterwards, and about two years after the fall, he again presented himself. He was now (Sept. 1st, 1865) quite blind; his gait was tottering, and required the aid of his wife to support him; he had grown fat, and still complained of his head. He now said that he had a distinct recollection of the accident; that he was reaching forward, and put his foot on a bough, which gave way, and he fell to the ground.

"On the 14th he became apoplectic, and died the following morning.

"*Post mortem*, September 17th. The scapula was vascular; the skull of normal thickness, and not more adherent than usual to the dura mater. On removing this membrane, it was found adherent to a somewhat elevated spot of a dark red colour, on the posterior lobe of the right cerebral hemisphere. It was directed off this with a stroke or two of the scalpel, and the brain was then removed. On placing it on the table, the dark red mass, about the size of an egg, rolled by its own weight from a cavity in the brain lined by a thin shining membrane, as was also the cerebral surface of the tumour. The lateral ventricle of this side was much encroached upon by the tumour; and optic thalamus and adjacent parts were softened. There was not more than the usual fluid in the ventricles; nor was the brain to all appearance further diseased, although the mere presence of such a mass must have interfered with the functional activity of all the adjacent parts. On section, the tumour had a reddish granular appearance, somewhat like the spleen; and, under the microscope, the aspect was not decisive of its character. There were many blood-globules, and some fibres, arranged in a peculiar concentric manner, mixed with cells."

In reflecting on this case, one has to contemplate the lesion of structure produced in one of the cerebral hemispheres by a fall; the effect of which seems to have fallen first upon a portion of the dura mater, and the arachnoid membrane. Subsequently, a morbid growth seems to have extended, and embedded itself in the cerebral substance, which was followed by disease and softening of the central parts of the cerebrum. The most striking symptoms were, loss of sight, and great impairment of the locomotive powers, but no hemiplegic oppression, and the intellectual powers were unimpaired.

I may conclude by observing, that I consider these cases worthy of record, as they are full of interest to the practical physician, who is frequently called upon to investigate the obscure symptoms which arise from disease of the cerebral hemispheres. The psychologist may also study them, as they evince how greatly the cerebral mass may suffer from disease, without the intellectual or moral faculties being disordered.

Leeds General Infirmary.

CASES OF POPLITEAL ANEURISM.

Under the care of Mr. THOMAS P. TEALE.

[Reported by Mr. William Garlick.]

THERE have lately been, at the same time, in the Leeds Infirmary, three cases of popliteal aneurism; and it is remarkable that the subjects of these cases were all militiamen.

CASE I. *Popliteal Aneurism; Temporary Improvement under Compression; Ligature of Femoral; Pyæmia; Death.* John Keighley, aged 34, a militia-man, was admitted May 11th, 1855, on account of a swelling in the right ham. Six weeks before admission, he felt a small tumour in the popliteal region, which gradually increased in size. At first it was soft, and could be diminished by pressure; but afterwards it became harder and more solid. The tumour pulsated distinctly, and was the seat of a well marked bruit. As the tumour at the time of his admission had been for a few days growing harder and more solid, a hope was enter-

tained that spontaneous cure might be proceeding. He was therefore directed to remain in bed, without any special treatment, for a short time. During the first few days, the tumour decreased in size, and became harder, and the pulsation considerably diminished. On the 24th of May, the tumour suddenly became much larger, more superficial, and obviously fluctuating near the surface; but harder, and strongly pulsating in its deeper seated portion. Mr. Teale attributed this change to the aneurism having become diffused from rupture of the sac. May 26th. Treatment by compression commenced this day. Mr. Teale directed Signorini's tourniquet to be applied over the femoral artery with moderate tightness, and to be left off at nights. 29th. Pressure has been employed from eight to ten hours daily. Circumference of knee the same. The pains in the leg and foot relieved when the artery is compressed. 30th. He has passed a good night, but has had rigors this morning. June 1st. Pulsation has nearly ceased. Much pain in the leg during the night. Pressure for nine hours; the hoop-tourniquet to be substituted for Signorini's. 2nd. He feels well; has had a good night; less pain. No change in size of the tumour; very little pulsation. 5th. Has continued well and cheerful. Scarcely any pulsation; but bruit is still audible. The pressure has been continued about ten hours daily. 8th. Form of knee more natural; slight diminution in its size; very faint pulsation. 12th. He is more comfortable. Form of knee and ham improving; fluctuation distinct near the surface of the ham. 13th. During the night there was a sudden increase of size of the tumour, and the pulsation in its deeper part was greater. He was very uneasy and restless. Compression to be discontinued. 15th. No pulsation perceptible; but there is a slight bruit. He passed an easier night. 21st. He has not been so well lately; a bruit is still perceptible; the tumour is not reduced in size. In these circumstances, at the urgent request of the patient, Mr. Teale placed a ligature on the superficial femoral artery. 26th. Tumour decidedly less; no pulsation nor bruit; fluctuation in the superficial part of the swelling; leg less œdematous. July 6th. Ligature removed. 14th. He is going on well. Tumour much less; but its superficial part is red, prominent, and fluctuating. 28th. Has had a rigor. 31st. Frequent rigors. Aug. 1st. Rigors continue; fluctuating tumour smaller. 15th. He is very feeble. 17th. He feels very ill, and is much exhausted. 18th. Died this morning.

On examination after death, the femoral artery, at the seat of operation, was firmly sealed with fibrin, both above and below. A large abscess, containing clotted blood, occupied the ham. The pressure of the aneurism had caused superficial absorption of the head of the tibia and fibula; the femoral vein, from the ham upwards to the common iliac, was filled with clotted blood, fibrin, and pus; there was a large abscess in the right iliac fossa; and numerous purulent deposits in the lungs.

CASE II. *Popliteal Aneurism; Treatment by Compression; Cure.* William Henry Whitehead, aged 34, militia-man, was admitted into the Leeds Infirmary July 27th, 1855. For a month he had felt pains in the left leg, which he supposed to be owing to rheumatism; and at the same time he perceived a swelling in the ham. At first it was small, but it gradually increased in size, and pulsated strongly. On his admission, the tumour showed the ordinary signs of aneurism. Mr. Teale directed pressure to be made over the femoral artery during the daytime, by means of Signorini's tourniquet. The pressure to be discontinued at night. 31st. Pulsation much diminished. Aug. 1st. Pulsation less; tumour more consolidated, but of nearly the same size. 3rd. Scarcely any pulsation. 14th. For a few days the pressure has been discontinued, as the pulsation had ceased. To-day there is a slight throbbing. The tumour is much reduced in size, and feels solid. The collateral arteries are felt enlarged. Pressure to be resumed. 15th. He feels well. No pulsation; very slight bruit. 17th. No pulsation; no bruit. Pressure to be discontinued. 24th. Tumour diminishing in size; movement of the knee improved. Sept. 26th. Discharged cured.