Clinical Lecture

ON A CASE OF

CONCUSSION OF THE BRAIN,

DELIRIUM TREMENS, & EPILEPSY.

COMPLETE RECOVERY.

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GENTLEMEN,—The case that I have to call your attention to to-day is one of extreme interest. As has been said, "Good wine needs no bush," so may I say of this case, that it requires no introduction.

John W—, aged thirty-seven, omnibus conductor, admitted January 22nd, 1857, with concussion of the brain; habits intemperate, drinking beer and spirits throughout the whole day, but without getting positively drunk till the evening. When standing on the board at the back of the omnibus, which was in motion at the time, his strap gave way, and he fell with much force to the ground, striking the centre of the occiput. The blow must have been very severe. When admitted there was a swelling, about the size of an orange, at the seat of injury, from effusion under the scalp; but there was no fracture of the bone, or any evidence of fracture of the base of the skull; no bleeding from the ears, nose, or mouth. He was barely conscious, and could only be roused with difficulty so as to answer a simple question or two. His pulse was slow, small, and fluttering, and his skin cold. His pupils were not fixed, but answered to the stimulus of light.

The above description you will at once recognise as that of a case of simple, and not very severe, concussion of the brain. As there was no fracture, or evidence of compression, or other symptom indicating the necessity of operative interference, I was not sent for, and I did not see him until the next morning. It may perhaps appear to you strange, that with such a blow the skull was not fractured, and that no bloodvessel was ruptured by the jar. As you advance in professional experience and anatomical knowledge, you will find as a fact, that the skull is seldom fractured by a fall upon the head, unless the fall be from a great height, the vertex of the skull coming to the ground, and then fracture of the base will follow. But in other instances, the blow is almost invariably received by some of those buttresses—some of those strong points of the skull which Nature has provided to protect the brain from ordinary injuries. If a man is pitched off his horse on his head when hunting, his skull is seldom fractured, unless the head strike a stone, stake, or other projecting body. But if his horse kick him when down, then the brain case may be broken into.

The absence of extravasation of blood within the skull, either from laceration of the brain, or laceration of the bloodvessels of the meninges in this case is, I believe, to be attributed to the age of the patient, and his general plethora at the time. If he had been an old man in an anæmic condition, the probability is, that such a blow would inevitably have been followed by laceration of the brain, or some amount of extravasation. I say some amount of extravasation, because I have seen cases where there has been a mere smearing of blood over the surface of the brain. An extravasation not sufficient to produce compression, or the symptoms of compression, but sufficient to produce great irritation, and long-continued violent pain.

I have traced this morbid state in cases of apoplexy from disease, by its symptoms during life, until a post-mortem examination has revealed its positive condition.

I have lately had under my care a female servant, who was injured by a railway collision. She is fifty-three years of age, anæmic, and rather below par in every respect. At the time of the accident, the symptoms of concussion were very slight. Her general powers were much depressed; the pulse feeble, and consciousness disturbed, but not obliterated. She had received a severe contusion over the right eye and forehead; she did not at first complain much of her head, but wished to be left quiet. She felt very sick, and vomited at the time. On the following day there were still no serious symptoms, and I did not see her again until two or three days after the accident, when the

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pulse, which had been gradually getting up, was then from 100 to 120, and firm and throbbing. The countenance gradually became anxious. The treatment adopted, was a purgative in the first instance, and cold applications to the head, and then a saline mixture. After two or three days, as her head was easier, but her pulse feeble, and general powers depressed, we ventured to give a little ammonia, and a grain of steel; even this small quantity increased the pain in the head, and the following day we abandoned it. From this time the case was treated antiphlogistically with calomel to salivation, repeated leeches, and cold lotions and ice to the head as long as the unnatural heat continued, which it did for four or five weeks, accompanied with sleeplessness, want of appetite, entire inability to read or think, feeling only tolerably comfortable when quiet; more than once complaining of a loud report and noises in the head.

This poor woman ultimately recovered, but she was under treatment about two months. Her memory is still feeble; she cannot walk up-stairs without feeling giddy. She cannot read or write. If she walks out in the streets, she feels more or less lost; has some tremblings or weakness in the legs—some pricking feeling; pulse continues 90 to 100. Still sleepless—cannot get to sleep for hours, and one morning found herself sitting up in bed. She cannot therefore even now be considered perfectly well.

This case is a very peculiar one, and such as I have never seen except as the result of railway concussion. I do not, of course, mean to say that no other kind of violent collision might not produce the same result; I only mean that, in above thirty years' hospital experience, I do not remember a case exactly similar, but I have seen a corresponding train of symptoms follow concussion on a railway.

The peculiarity is the absence of severe symptoms of concussion, compression, or other signs of injury to the brain, at the time of the accident; the extreme, constant, and lasting heat of the head; the great, unintermittent, and unvarying pain of the head, unfollowed by the excitement which accompanies inflammation of the pia mater and hemispherical ganglion, or the eclipse of the faculties which serous effusion invariably, though gradually, produces. I believe that in this case there was slight hæmorrhage on the surface of the brain, just smearing it with blood. There was enough to act as a foreign body—as an irritant, but not enough to produce compression; and there was enough to have produced inflammation, effusion, and death, if our treatment had not been energetic and decided. Her general powers were feeble, so that over-depletion would have easily thrown her into a typhoid state, and less would have allowed inflammatory action to have ridden rampant over her brain. I never had the care of a case of injury to the brain in which, under God's providence, I had more reason to believe that careful surgical treatment was the means of saving life. I attended the case with Mr. Skelding, of Euston-square, and I am much indebted to him for the judicious and accurate manner in which he managed the case between the intervals of our consultations.

The case in the hospital which we have to consider to-day affords a striking contrast to this poor woman; for as certainly as leeches, calomel, &c., saved her life, so certainly would these remedial agents have hurled the omnibus conductor into the grave. We will now, then, continue the report:—

"Hair to be cut close, and a cold lotion to the head; an aperient draught to be taken immediately." If I had prescribed for this man on admission, I should have ordered a scruple of rhubarb and calomel, in preference to the aperient draught, for the latter merely acts on the large intestines, often producing only a watery evacuation, instead of stimulating the liver, and unloading the canal from the stomach to the anus.

"23rd.—On being put to bed yesterday evening, his pulse shortly afterwards became stronger, and he appeared to sleep soundly and quietly." In a case of concussion, never be afraid of your patient sleeping; the longer the better, if it is unaccompanied by stertor, or other symptoms of compression. You must look upon sleep in these cases, as in many others, as Nature's soft nurse. "This morning he answers questions rationally; he has vomited considerably, but his bowels have not yet acted; pulse 88, good power, not hard; tongue coated with a white, creamy fur; skin rather hot. Ordered by the house surgeon one drachm of sulphate of magnesia, in water, immediately, and repeat if necessary; head to be shaved, and ice applied.—Evening: He is restless, has jumped out of bed once or twice for no apparent reason, has not slept for the last twelve hours, is slightly delirious, and calls for beer; pulse intermittent."

"24th, Noon.—He has not had much sleep, very restless and irritable; bowels have acted freely. When questioned, he answers in a collected manner; he states that he is better, and feels less pain in the head. The next minute his conduct and manner are irrational; he wants to get out of bed and go home, and talks foolishly. Tongue moist and creamy, and pulse rapid."

I now saw him for the first time, and was of course called upon to decide whether he was suffering from that inflammation of the brain which is a frequent sequence to severe concussion, or from incipient delirium tremens. The decision was a most important one, as the two states required a diametrically opposite course of treatment. After carefully considering all his symptoms, I came to the conclusion that it was delirium ebriosorum, the delirium of drunkards, that which is usually known as delirium tremens; I say usually known as delirium tremens, because you will sometimes find that the delirium e potu is confounded with delirium ebriosorum. The distinction is an important one. In the latter, in the delirium ebriosorum, I believe that the brain is in an anæmic condition. It is occasioned by the sudden deprivation of its accustomed stimulus; it comes on when a drunkard leaves off drinking. The other—the delirium e potu—occurs during the full influence of alcoholic drinks. It is a result of over-stimulation to the brain, which, through its agency, is congested and inflamed. It is a rare disease compared with the delirium ebriosorum.

I will now endeavour to give you my reasons for this conclusion, though the shades of all cerebral diseases run so much one into the other that it is very difficult to paint in words the distinct characters which ought and will guide you at the bedside, if you make good use of your time in the wards when in London. The main points are these: that in delirium tremens—and you will understand that in employing that term I now mean to confine it to the anæmic, the atonic form—there is first the absence of any heat in the head. There is no test so certain of the existence or absence of inflammation of the brain and its meninges as unnatural heat of the head. You must first compare the heat of the brain-case or skull with other parts of the head and face, as the ears and nose, next with the hands, trunk, and extremities, of course making allowance for the difference between covered and uncovered parts. Also observe accurately whether both sides of the head are alike. We have on the opposite side of the ward a very interesting case of injury to the skull, which I shall refer to again very soon, in which there is a difference in the heat of the two sides of the head. Next, the tongue. In true inflammation of the brain, I believe that the tongue is always dry and furred, not moist and creamy. The pulse rapid, and irregular in frequency and force, not hard and regular as it is usually at the commencement of an inflammatory attack, or slow and labouring as it is in the latter stages of disease of the brain.

But the manner and mental condition of the patient is the most conclusive. In delirium tremens, the amount of mental aberration varies very much: one minute he will talk in a wild, excited, and silly manner, and the next he will answer quite rationally. It appears as if the brain recovered for a short time its normal condition under the excitement occasioned by seeing a fresh face by the bed-side. In a case of inflammation of the brain, there is no such cessation of symptoms; the mental excitement and aberration of intellect is continuous; the delirious wanderings may vary in intensity, but they are never absent.

In delirium tremens, as the name implies, there is always more or less tremor. It may be observed in the tongue, legs, eyeballs, and extremities. There is a busy way about the patient, if I may so express it; he is always thinking of his business, fancying he is at his work, talking to companions, &c. There is usually an entire freedom from pain in the head, which is a marked symptom in the early stages of inflammation of the brain.

Having, then, come to the conclusion, notwithstanding the severe blow on the head which my patient had received two days previously, notwithstanding the symptoms of concussion of the brain at the time of the accident, that I had to treat an anæmic, not an hyperæmic, condition of that organ, I ventured to prescribe one drachm of liquor of opium, immediately, to be repeated in six hours if he did not sleep. Tincture of opium, ten minims; aromatic spirit of ammonia, half a drachm; camphor mixture, one drachm,—every four hours. Porter, one pint. We will continue the report:—

"Evening.—Before, and for some short time after, taking the opium, he became more restless and impatient, frequently getting out of bed, &c. The delirium assumed a wandering character; he fancied he saw things in his bed, and that he

was busy in his accustomed employment. After about three hours, he fell into a sound sleep.

"25th.—He has slept soundly for several hours, answers in a rational and collected manner, and seems altogether better.—Eleven o'clock P.M.: Has had a fit of an epileptic character, with much foaming of the mouth, rigidity of the muscles, and clenching of the hands; after which he was bathed in a copious perspiration. His pulse was 84, irregular and intermittent; his tongue moist, but coated with a white creamy fur. He soon became conscious; but after being raised in bed, and having taken a powder of calomel and rhubarb which had been ordered in the morning, he had another epileptic seizure, with nearly the same symptoms, but with more grinding of the teeth and contraction of the pupils.

"26th.—Ten A.M.: Had another fit about half-past one; is now more composed. The irregular intermitting character of the pulse is much more marked after each fit, but no cardiac affection is perceptible by the stethoscope."

I saw him this day soon after one; he had a fit while I was by his bedside, and there was no mistake as to its true epileptic character.

Here, gentlemen, we had to combat with a fearful complication of his maladies. Epilepsy, that strange, mysterious disease! how little do we know of its proximate or ultimate cause, and consequently how empirical is our treatment of it! There is, however, one point in its pathology regarding which I have no doubt,—namely, that it is essentially a disease of debility, and that all bloodletting does harm. In thus decidedly stating this opinion, I ought, however, to observe that some physicians of great practical experience do not agree with me, and I have heard them relate cases in which they consider that local depletion has been attended with benefit in epilepsy. Of course there is no rule without an exception, and every man must use his judgment in the treatment of each individual case. I think it necessary to warn you against bloodletting in epilepsy, because, unless you approach a case of epilepsy with this impression regarding depletion, you would be tempted to employ it. At the time of an epileptic fit, and for some time after that, there is every indication of congestion of the brain, varying in intensity in different patients and in different attacks of the same patient; but symptoms of congestion of the brain are never absent altogether. If, therefore, you see a case immediately after the convulsive stage of the fit has passed off, you will be tempted to pull out your lancet and relieve the struggling and oppressed brain of the load which bears upon it; and with this little instrument you may relieve it for the time, but with the certainty—at least so my experience has taught me—of causing an earlier repetition of the fits, with increased severity.

I remember some years ago being tempted, from the signs which I have detailed to you, to use the lancet. My patient was a stout, strong-built, plethoric man, in other respects apparently in rude health; a man to whom you would have thought the abstraction of a little blood would be no loss, but a gain. It was not so: the bloodletting was followed by a rapid succession of attacks, such as he had not previously been liable to. This gentleman suffered from the disease for many years subsequently, but ultimately recovered, taking the oxide of silver; and he has remained well for the last ten years.

I must, however, warn you not to confound the convulsions which are caused by laceration of the brain with those of true epilepsy. If you have once watched a case of epilepsy, you are not likely to confuse the two, and therefore I say take every opportunity of watching this complaint that offers itself while you are about the hospital or elsewhere. The convulsions arising from lacerated brain are more like a continued disease than those of epilepsy. The spasmodic contractions of the muscles are not usually so violent, but more continuous; they are more like the flickering of summer lightning than the sudden discharge of one thunder cloud. In injury to the brain they are usually confined to the same part of the body—one arm or one leg on the same side of the body, or even one side of the face.

Between true epileptic fits, if they do not succeed each other very rapidly, the brain recovers itself, and the intellect appears natural. If, however, the convulsions arise from laceration of the brain, then the cloud never entirely passes off; consciousness throughout is more or less obliterated. Sometimes, it is true, the patient may be roused so as to answer some simple questions, even after extensive injury of the brain; but such exertions are evidently the result of great effort, and the mental obscurity immediately returns.

In laceration of the brain you will generally find the pupils of the eyes unequal; at first the pupil opposite the injury is

unnaturally contracted. It is smaller than the other; neither does it act so readily. As the disease of the brain advances, then the pupil dilates, till at last the iris becoming quite paralysed, the elastic ciliary ligament obtains the mastery, and the protecting curtain of the eye no longer obeys the nervous system. I do not mean to assert the pupils are never found unequally dilated in epilepsy during the attack, but it is not usual.

With these opinions regarding the atonic condition of the nervous system in epilepsy, I had no difficulty in continuing the same plan of treatment I had commenced for delirium tremens, adding to it that medicine from which I have seen more benefit accrue than any other in the treatment of epilepsy—namely, the oxide of silver.

We will now return to Mr. Sprakeling's report of the case:—

"26th.—Nine P.M.: From half-past twelve to the present time he has had twenty epileptic seizures; they have been much of the same nature and duration; the face becomes rather livid towards the end of each attack. There is no evidence of paralysis during a fit; he lies as if in a sound sleep. His face is flushed, but there is no particular heat of skin of the face or head. The pupils act on the stimulus of light, though sluggishly; pulse rather fuller, about 88, and compressible.

"27th.—Is conscious to-day when spoken to, but his answers are scarcely rational. He jumps out of bed occasionally, and talks a good deal; has had two fits during the day.

"28th.—Improving daily. When questioned he answers rationally at first, but afterwards he talks in a delirious, rambling manner about his occupation; his pulse is 68, small and weak. There is no heat of skin, though his face looks flushed; tongue sore, but not coated; bowels open. Ordered gin, six ounces in the twenty-four hours, and two pints of ale, this having been his usual drink; full diet, with mutton-chop. To repeat the mixture of ammonia and opium previously prescribed. Only one fit during this day.

"30th.—Answers questions more rationally; pulse soft and quiet; not unnatural heat of skin; bowels confined. Compound rhubarb pill every night.

"Feb. 6th.—Improving daily. States that he feels much better. Allowed to leave his bed. He answers questions correctly, but there is still the busy restless manner of the delirium ebriosorum that is not quite satisfactory; bowels regular; appetite good; pulse 84, small and weak.

"12th.—The same diet, stimulants, and medicine have been continued; his manner is more rational and collected. He wishes to leave the hospital, but I advised him to stay a little longer, and he consented.

"19th.—He has been gradually and steadily improving up to the present time. He has had no return of the epilepsy since the 28th of January. His conversation and manner are now quite rational. He states that he is entirely free from pain in his head. Under these circumstances I saw no reason to detain him longer in the hospital. He left it this day quite well. How long he will remain so depends upon himself. If he commences his old intemperate habits, he will very soon be ill again; but if not, I see no reason to apprehend a relapse."

I do not remember a more interesting case, practically, physiologically, and morally. It reminds one of the value of the injunction, "be temperate in all things."

ON THE PROGNOSIS IN APNŒA (OR ASPHYXIA).

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To the Editor of THE LANCET.

SIR,—The prognosis in Apnœa (or Asphyxia) depends upon three elements:

First, the physiological Constitution of the subject;

Secondly, the Stage of the Apnœa (or Asphyxia);

Thirdly, the Promptitude with which the chief remedies, Respiration, or Pronation and Rotation, are administered.

The physiological Constitution of the new-born Infant is that of low stimulus and of high irritability. The respiration is, in fact, the respiration, so to speak, of the fish-tribes, the placenta representing the branchiæ; and even of the lowest of these, the extent of surface of that placenta, compared with the magnitude of the animal, being considered,

But the duration of life in Apnœa is in the inverse proportion of the quantity of respiration; that is, the less the degree of respiration, the longer its suppression can be sustained without the extinction of life. The same hibernant animal lives a longer or a shorter time submerged under water, just according to the degree of hibernation, with its low respiration, in which it may be placed, and dies more promptly as that hibernation is exchanged for activity with its high respiration.

The degree of respiration is always linked with proportionate circulation—as effect is linked with its cause—or as supply is linked with demand. The quicker the circulation, the quicker the formation and elimination of carbonic acid or blood-poison, but the ordinary excitant of respiration, the degree of necessity for its elimination being in the same proportion. Hence the destructive tendency of the warm-bath, in the ordinary sense of this phrase, for I do not now speak of the sudden and momentary hot-bath, (which may prove an excitant of respiration,) but of the ordinary continued warm-bath, which, if it accomplish anything, augments the circulation, respiration being still in abeyance; with this augmented circulation, there is augmented formation of the blood-poison, carbonic acid, and this being retained, proves a "choke-damp," and, in a word, destroys life. Now the warm-bath, at the Royal Humane Society's Receiving-house, has been a warm-bath, and has usually been continued during twenty minutes.

But to return to the practical object of this paper, which will be found, as ever, to coincide with theory (so commonly and ignorantly decried),—the new-born infant is a creature of the lowest degree of respiration. Its life, and the hope of its restoration in Apnœa, is—the longest. I believe that, in almost every case of the Apnœa of the still-born, the success of the Ready Method will be complete. For the same reason, the application of this method should be the most persevering.

In regard to the stages of Apnœa (or Asphyxia,) I may observe that there are most distinctly four:

The first is that in which the breathing is not quite extinct; The second, that in which the respiration has ceased, but may be excited by those means which I have so distinctly pointed out on various occasions;

The third, that in which respiration has not only ceased, but is inexcitable, and in which therefore our hope of resuscitation is in imitating or inducing the respiratory movements,—that is, in Pronation and Semi-Rotation;

The fourth and last stage is that of true Asphyxia,—that in which not only all respiration, but all pulsation has ceased, and with it almost all hope, or, as Sir B. C. Brodie says, so emphatically, all hope entirely: "If that action of the heart by which the circulation is maintained should cease, as a consequence of the suspension of respiration, it can never be restored. This I positively assert, after having made it the subject of a very careful investigation."*

In the cases of the drowned or the strangulated, the patient may come under our notice in any one of these stages, or in any prior, posterior, or intermediate condition.

The course of this Apnœa or Asphyxia is extremely short: four or five minutes of complete submersion are supposed to be hopelessly fatal. In a given case, the hope is precisely commensurate with the promptitude with which this treatment is applied. Certainly the plan, or rules, recently proposed to the Royal Humane Society to be adopted before the Ready Method—that is, the time lost in these doings—would extinguish all chance, all hope, and therefore all fair and honest trial of that method; and I trust that that Society will, for its own honour and credit, reject all such insidious proposals.

The moment we see the drowned patient, we should observe, for a moment, whether there be respiration, and if so, wait and still observe carefully; if breathing continue, be careful of interfering, and constantly watching, direct the wet garments to be removed and the limbs to be rubbed, dried, and clothed as promptly as possible, everyone contributing some article of clothing.

But if the breathing has ceased; if there be real apnœa, then, without any delay of any kind, we should enforce, at once, the best measures, and those are already demonstrated to be—those of the Ready Method, unpostponed.

I regard the new Rules lately proposed to the Royal Humane Society as unfair towards the Ready Method, and as fatal to the patient. I believe it to be absolutely impossible that any asphyxiated patient should so survive the preliminary measures proposed in those Rules as to be subsequently recovered, or recoverable, by that method, or any method.

The prognosis, in cases of drowning, &c., is made up of three

* Lectures on Pathology and Surgery; 1846; p. 81.