LONDON JOURNAL OF MEDICINE,

A MONTHLY

Record of the Medical Sciences.

SEPTEMBER 1850.—No. XXI.

ORIGINAL COMMUNICATIONS.

CLINICAL ILLUSTRATIONS OF DISEASES OF THE NERVOUS SYSTEM.

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NO. II. SOFTENING OF THE NERVOUS CENTRES.

IN a former communication,¹ I offered some general observations upon the subject of the Diseases of the Brain and Spinal Cord, and I illustrated my remarks with the detail of some cases, taken promiscuously from my notes, to shew the great difficulties which attend our investigations in this part of pathology. In the present paper, I intend to illustrate the subject of Softening of the Nervous Centres; and I regret to observe, that the obscurity which hangs over the affections of the cerebro-spinal axis generally, is more particularly noticeable in that peculiar form of disease, which the following cases and observations are intended to bring into view.

CASE I. SOFTENING OF THE BRAIN—CEREBRAL CONGESTION—APOPLECTIC CELL. M. T., ætat. 54, formerly a shoe-maker, of dissolute habits, but of rather cultivated mind, was seized on the 2nd of July, 1845, while an inmate of the Islington Workhouse, with a paralytic attack. For this complaint he was bled to $\frac{3}{4}$ xxx, and took purgative medicines; and by these, and other usual means, he partially recovered, but his intellect became almost obliterated, he passed his urine unconsciously, and became in consequence so offensive, that he was placed in a ward by himself. He remained bed-ridden from the above date until the morning of May 23, 1846, when he was again seized with an attack resembling apoplexy; the pulse was 180, full and strong, and he had stertorous breathing. There was paralysis of the left side. He was bled to $\frac{3}{4}$ xvj; and, during the bleeding, the stertorous breathing ceased, and did not subsequently return. At noon on the same day, he was still insensible; his pupils were fixed in a state between contraction

¹ LONDON JOURNAL OF MEDICINE, May 1850, p. 448.

and dilatation ; pulse 160, rather feeble ; bowels confined ; urine passed involuntarily. To take saline purgatives.

May 24. Bowels still confined ; tongue not examined, as he was unable to protrude it. To have two drops of croton oil immediately. He died on the 25th of May.

POST-MORTEM EXAMINATION FORTY-TWO HOURS AFTER DEATH. The body was covered with a rather thick layer of adipose tissue, and a considerable quantity of fat was found in most of the parts where it usually occurs. The skin was discoloured at the inferior part of the back, and a large bed-sore existed in that situation. The penis and scrotum exhibited an appearance of incipient gangrene.

Head. There was very little congestion about the scalp. The vessels of the dura mater were turgid with blood. The arachnoid membrane was slightly thickened and opaque ; a large quantity of serous fluid, tinged with blood, was found beneath it, and flowed copiously both from beneath the membranes of the brain, and from the theca vertebralis. A large quantity of fluid was also found in the lateral ventricles, and in the third ventricle. The vessels of the brain itself were not congested ; and the brain presented a tolerably healthy appearance, except in the parts about to be described. At the posterior part of the corpus callosum, immediately above the tubercula quadrigemina, there was a considerable amount of softening, the cerebral substance in that situation being of the consistence of thick cream, but of a white colour. In the anterior part of the right corpus striatum, there was a cavity of about the size of a hazel-nut, lined with a smooth membrane. On the left corpus striatum, there was a large, but not deep, excavation, of about the size of a half-crown, presenting a ragged appearance, and of a dark brown colour. The texture of this ulcerated portion was much softer than that of the surrounding tissue, from which it was not separated by any distinct line of demarcation.

Thorax and Abdomen. The viscera of these cavities were most carefully examined, but they exhibited no marks of disease ; the kidneys especially were remarkably healthy.

REMARKS. This was a case of chronic disease in a middle-aged person, confined altogether to the brain, and producing palsy, mental imbecility, involuntary discharge of urine, apoplectic seizures, and eventually death. The primary disease was probably a hyperæmic condition of the vessels of the brain ; and that there had been a distinct effusion of blood at one time, was proved by the existence, *in the right corpus striatum*, of a true apoplectic cell. The palsy, it will be seen, was in the left side. After this first attack, it would appear that, while the hyperæmic condition of the cerebral vessels remained, the structure of the organ itself broke down, and its functions became gradually extinguished, and that life was destroyed by an attack of congestion of the membranes. This is a peculiarly fatal form of disease, when the congested state of the vessels of the brain is associated with a softening of its structure, and no treatment is likely to be of much avail ; yet I cannot but maintain, that as the pulse was *full and strong*, and the breathing stertorous, the abstraction of blood was perfectly justifiable, as the symptoms positively indicated cerebral congestion, while the softening could be, during life, only a matter of conjecture.

CASE II. SOFTENING OF THE BRAIN—PNEUMONIA—DISEASE OF THE MITRAL VALVE. On the evening of November 16, 1841, I was sent for to attend Sarah T., ætat. 52, a tall, pale, sallow-looking woman, in the Islington Infirmary. When I arrived, I was informed that she had had a fit, and had been insensible about a quarter of an hour. When I saw her, however, she was in full possession of her mental faculties; but she spoke very indistinctly, in consequence of an accident she had met with several years before, and by which she lost, by exfoliation, large portions of the left upper jaw-bone and of the nasal bones. Her mouth, in consequence of the same accident, was habitually distorted. She had not been inclined to sleep previously to the attack, but, on the contrary, had suffered from the want of sleep. *She complained of total inability to move the left arm*; and when it was lifted by another person, as soon as the hold was relaxed, it fell down like an inanimate mass; but when the skin of the hand or arm of this side was pinched, *she immediately complained of the pain*. She was able to move the left leg as well as the right, and both legs seemed endowed with the usual amount of motory and sensitive power. The pupils presented no unnatural appearance, but were of the usual size and shape; she complained of great pain in the abdomen, with flatus and a disagreeable taste in the mouth; tongue moist; not much thirst; pulse rapid and irregular; bowels rather confined. The action of the heart was very irregular; a loud blowing murmur, heard chiefly at the apex, accompanied the first sound; there was no murmur in the neck. $\mathfrak{R}$ *Magnesiæ carbonatis gr. v; essentiæ menthæ piperitæ m. v; magnesiæ sulphatis 3ss; infusi sennæ 3j.* Fiat haustus quartâ quâque horâ sumendus.

Nov. 17. I examined her again very carefully this morning, in order to form, if possible, a correct diagnosis; but although the paralysis of the left arm gave me reason to suppose that some disease of the brain existed, the other symptoms were too vague and unsatisfactory to point out the precise nature of the cerebral lesion. The pupils were of their natural appearance; she had passed a sleepless night; *she was in full possession of her mental powers*. The left arm was still perfectly sensible, though it had entirely lost the power of motion; no paralysis existed in any other part. The patient complained of great pain in the abdomen and back, which she said was increased on pressure; but as this external sensibility was general over the whole body, it was considered to be neuralgic. She was directed to take, every four hours, a draught consisting of ten minims of tincture of opium, and one ounce of peppermint water.

Nov. 19. The symptoms are much the same, but she seems to be sinking; pulse very feeble, but the action of the heart remains strong, the murmur loud, and its movements irregular; tongue dry and furred; great thirst; head-ache, and occasional nocturnal delirium. She was ordered a glass of port wine daily, and the following draught to be taken every four hours: $\mathfrak{R}$ *Spiritus ammoniæ aromatici m. xx; spiritus lavandulæ compositi m. x; aquæ menthæ piperitæ 3j.* M.

Nov. 20. On a physical examination of the chest, which I cursorily made, I detected a crepitant rhonchus at the lower and posterior part of the right lung. There was no cough, dyspnoea, or expectoration; but the presence of pneumonia was clearly indicated by the physical

signs, and by them alone. The state of the pulse precluded the possibility of abstracting blood; and in consequence of the general depression of the vital powers, I considered it inexpedient to discontinue the administration of the wine and the stimulant mixture. But I ordered her to take immediately three grains of calomel, and half a grain of opium.

On the two following days, the symptoms remained essentially the same; the crepitant rhonchus continued, but, as at first, without any cough, expectoration, pain, or any other rational symptom of pneumonia, adding another instance to many observed and recorded, in which the only evidence of this formidable disease is to be derived from the physical signs, and proving the necessity, in all cases, of examining the condition of the lungs and heart, whether those organs *appear* to be affected or not. The calomel and opium were repeated, together with the other treatment above-mentioned, but without any amelioration of the symptoms. She gradually sank until November 23, when she expired, *having been in the full possession of her mental faculties for many hours before her death*, complaining of excessive tenderness of the abdomen and back, but never referring her complaint either to the head or the chest, which were the real seats of disease, and which were so considered by me during life, although the violent pain complained of in other parts was calculated to mislead.

POST-MORTEM EXAMINATION. *Head.* The skull-cap, skull, and dura mater presented no remarkable appearance. The vessels of the arachnoid membrane were very minutely injected; the membrane itself presented an opalescent appearance, owing to a quantity of thin, transparent serous fluid effused beneath it, which escaped in great abundance from the surface of the brain and spinal cord during the dissection. The substance of the *left* hemisphere was healthy, and of its natural consistence; the ventricle on the same side contained an unusual quantity of thin serous fluid. On examining the *right* hemisphere, a patch of softening was discovered in the anterior lobe, above the roof of the ventricle, and not extending to the surface of the brain; the softened part was two inches in length and one in breadth, and of a curved form; it had a dirty brown colour, and a ragged, ulcerated appearance. On inspecting the right ventricle, it was found that the corpus striatum of this side was softened, its surface presenting a ragged appearance, and being uncovered by the layer of membrane which lined the rest of the cavity. On tracing the diseased mass, it was found that the softening involved the whole of the right corpus striatum, and extended as far as the inferior surface of the brain. The whole of the softened part was of a pulpy consistence, and of a dirty ash-grey colour, the grey and white substances being apparently mixed up together in a confused mass.

Chest. The right lung was adherent to the parietes of the chest by strong bands: the left lung was not adherent. The heart, on a superficial view, appeared larger than usual. The right auricle and ventricle, the pulmonary artery, and the venæ cavæ, contained a large quantity of half-coagulated blood, together with large coagula of fibrine of a straw colour. The parietes of both ventricles were rather thick, and the columnæ carneæ, were increased in size. The tricuspid valve and the

semilunar valves of the aorta and pulmonary artery were healthy, but the mitral valve was diseased. The left auriculo-ventricular opening was very much contracted, so as scarcely to admit one finger, and the mitral valve was thickened and indurated so as to form a strong, narrow tube. The right lung was generally congested; and the posterior part of the inferior lobe was highly inflamed. The cut surface presented a dark red colour, and a large quantity of frothy fluid flowed from the incision. The substance, however, was not hepatized, but crepitated as usual, showing that pneumonia had not proceeded beyond the first stage.

Abdomen. The liver was congested; the kidneys somewhat enlarged; the intestines perfectly healthy.

REMARKS. In this curious case, there was extensive softening of the brain, without any remarkable symptoms during life. It will be observed that the disease occupied the *right* hemisphere; while, during life, the *left* arm was powerless. Before my first visit to her, she had had a fit, but I had no means of knowing the exact nature of the attack. The mental faculties were unimpaired almost throughout; there were no convulsions; no rigidity; no pain in the head; no vomiting; and the only symptoms which were caused by the cerebral lesion, appear to have been immobility of the left arm, and *pain in the abdomen and back*. Of the treatment, of course, little can be said; for with such a complication of diseases,—softening of the brain, disease of the mitral valve, and inflammation of the lung,—no plan could have been attended with the slightest success.

CASE III. SOFTENING OF THE BRAIN—MEDULLARY SARCOMA IN THE BRAIN—PHTHISIS—GRANULAR DISEASE OF KIDNEY. Harriet D., æt. 48, married, an inmate of the Islington Workhouse, first came under treatment in April 1848. She stated that her husband struck her a very violent blow on the head about two years ago: this blow, according to her statement, was near the vertex; it stunned her, and the wound bled profusely. She had had several children, and had suffered for the last eight years with prolapsus of the uterus. She had lately fallen away much, and had several times spit up blood in large quantities.

The appearance of this woman's face was very peculiar, owing to the great prominence of the eyes, which were large and globular, and appeared to be starting out of their sockets; the pupils were dilated, and the eyes altogether had a dull appearance as in amaurosis: the sight was impaired, but not lost. She stated herself that this affection of the eyes came on soon after the blow just mentioned. She suffered from excruciating pain in the head, so that she was compelled to scream out; and her cries were so loud as to disturb the other patients. She had also great pain in the chest, and superficial tenderness beneath the clavicles: she suffered from continual cough, and expectorated thick, hard sputa, which were sometimes stringy, gluey, and frothy, and occasionally streaked with blood. Appetite very bad, and constant retching after every attempt to take food. Bowels irregular, sometimes very much open, at other times confined. Urine rather scanty, fetid, albuminous. Cavernal respiration beneath each clavicle: sonorous, sibilant, and mucous rhonchi in all parts of the lungs. Action of the heart normal, and without morbid sound. The hair was

ordered to be cut close, and rags dipped in vinegar to be applied to the head. A blister was ordered for the chest, and the following medicine was ordered: *℞ Antimonii potassio-tartratis gr. ij. ; tincturæ hyoscyami ℥ij. ; liquoris ammoniæ acetatis, et misturæ camphoræ, āā ℥iij. M. Sumat cochlearia ij. magna quartis horis. ℞ Calomelanos, et pulveris ipecacuanhæ, āā gr. iij. Fiat pulvis ter in die sumendus.*

Under this treatment, the symptoms were a little relieved; the pains in the head became less constant; the sickness and retching were at first increased, but afterwards gradually subsided; she began to sleep better, and the bowels became more regular. The appetite also improved, and the chest symptoms were relieved.

May 20. The calomel was now discontinued, and the blue pill was ordered to be taken twice a day, in doses of five grains.

May 22. An eruption of purpura broke out over the body. To discontinue the other medicines, and to take the following draught every four hours: *℞ Liquoris potassæ, et vini colchici, āā m. xx ; aquæ menthæ piperitæ ℥j. M.* She continued this mixture for several days, and appeared to be improving.

May 29. She was seen at ten o'clock in the morning of this day, when she did not seem so well. The nurse went to bring her some medicine which was ordered; but before she obtained it, the patient suddenly turned black in the face, and died.

POST-MORTEM EXAMINATION FORTY-EIGHT HOURS AFTER DEATH. Head. Scalp and skull of the usual appearance. When the calvarium was removed, the vessels of the dura mater appeared congested, and the veins of the brain, seen through the membranes, were turgid with blood. The arachnoid membrane was not thickened. On proceeding to remove the brain in the usual manner, by dividing the nerves and vessels from before backwards, I found that the optic nerves were small and atrophied, but not softened, at the line of my incision, which was between the commissure and the optic foramina. After dividing the tentorium, and cutting through the medulla oblongata, and then drawing out the cerebral mass, I found that I had left in the middle fossa of the skull, on the right side, a large portion of cerebriform substance, which I feared at first was a portion of brain accidentally detached, although I felt sure that I had been very careful in removing it entire. I soon discovered, however, that it was a large soft tumour, distinctly presenting the characters of medullary sarcoma. This diseased mass was of about the size of a small orange, and it weighed two ounces and a half; it was adherent to the falx cerebri and tentorium; its external portion rested upon the temporal bone: and superiorly it was covered in by the middle and posterior lobes of the brain. The cerebral substance around this morbid growth was softened, and it was excavated so as to allow the growth of the tumour; so that, on looking at the inferior surface of the hemisphere (the brain being placed on a dish, with its base upwards), it was seen to be excavated into a cup-shaped depression, and, at the bottom of this depression, there was a communication into the lateral ventricle; the floor of which was therefore partly formed by the adventitious substance, which had taken the place of the proper cerebral structure. The right lobe of the cerebellum was smaller than the left, owing to the presence of the tumour; and, from the same

cause, the right thalamus opticus and the right corpus striatum were very much diminished in size: On examining the base of the brain anteriorly, it was found that the olfactory nerves were softened; the commissure of the optic nerves themselves was so soft, that they could not be traced round the crura cerebri. The portion of the brain above the optic commissure was also softened. The other portions of the organ were apparently healthy. The tumour was subsequently more particularly examined. It had a soft doughy fluctuating feel; and, upon microscopical investigation, it presented the usual nucleated and caudate cells peculiar to this form of carcinoma.

Chest. On both sides, there were recent adhesions, and about half a pint of fluid was contained in each pleura. The right lung was voluminous, dark-coloured, crepitating in some parts, emphysematous on the anterior edge. The upper portion was solidified by tuberculous deposition: one cavity as large as a walnut, and several smaller ones, were found near the apex. The left lung was rather small, with a cavity at the apex as large as an egg. The bronchial tubes of both lungs were intensely reddened, and filled with muco-purulent fluid. The heart was small and flabby; all the valves healthy.

Abdomen. The viscera of the abdomen were generally healthy. The left kidney was small and flabby. The proper coat peeled off easily, showing a dark, mottled, granular structure, the internal portion of the kidney exhibited abundant granular deposition. The right kidney was healthy.

REMARKS. In this case, it was evident, during life, that there was serious organic disease of the brain, from the peculiar appearance of the eyes, the impaired condition of vision, and the long-continued and violent pain in the head. I was prepared to find some lesion of the cerebral structure about the origin of the optic nerves; but there was nothing whatever which could lead me to suppose, that there was so large a tumour of medullary sarcoma; and I think the case curious and interesting, and one of no common occurrence. The treatment, of course, could be only palliative, but it seemed to be attended with a certain amount of relief to the more urgent symptoms.

CASE IV. SOFTENING OF THE BRAIN—HYPERTROPHY OF THE HEART—GRANULAR DISEASE OF THE KIDNEYS. J. R., æt. 62, an inmate of the Islington Workhouse, a married man, of middle size, but stout and with short neck; rather pale, but not presenting any cedematous appearance, said to have been of intemperate habits, was seen by me, April 22, 1850. His wife informed me that he had been out of health for some time; that he had complained of giddiness at various periods; she also said that he was unable or unwilling to speak; he was also observed to have an unmeaning smile upon his countenance. When I saw this man on the above date, he was brought to me by his wife, merely for the purpose of telling me that he and she were going out of the Islington Workhouse, and asking me whether I thought it would be safe for him to do so. He had a bewildered air, but was quite able to answer questions, which were put to him; but his appearance was dull and heavy. The head was rather hot, and he complained of great pain; the pupils were fixed between contraction and dilatation. Pulse 100, full and strong, tongue clean, bowels rather confined. There was

no paralysis, convulsion, nor spasm of any part of the body, although I made every inquiry of his wife concerning these points. My impression was, that he was on the point of having an apoplectic attack; and I therefore strongly urged his wife not to take him out of the workhouse, but to place him in the infirmary; but, in giving this advice, I had no means of knowing whether it would be followed. I recommended him to be bled to xxvj , which was done; and to take some saline purgative medicine, to be kept quiet, and his head to be kept cool; diet to be moderate.

April 23. Felt much better; head free from pain. He left the workhouse, against my advice, on the 29th of April. He was, however, brought in again on the 8th of May, as he had not improved since he went out.

May 9. He did not present any peculiar appearance, but his intellect seemed rather dull; he however answered questions quite rationally. He was not paralysed, and had no rigidity, nor convulsions in any part. *I was satisfied of this from my own observation; and although I frequently sought for and expected some of these symptoms, none made their appearance.* The head was quite cool and moist, tongue clean and tremulous. Pulse 80, weak, and occasionally intermittent. Bowels confined. Hair to be cut close, and a blister to be applied to the nape of the neck; some saline purgative medicine to be given. The urine was albuminous.

May 10. He tore off the blister, but it had risen previously. Pulse 80, feeble, but not intermittent. Tongue, when protruded, tremulous; bowels open. To have some saline medicine.

May 13. Had passed a restless night, frequently getting out of bed. A blister to be applied to each temple. To have some saline purgative in camphor mixture.

May 14. Rather more quiet; the blisters had risen.

May 15. Much in the same state.

May 17. 8 A.M. Was attacked with violent epistaxis of the left nostril, which was therefore plugged. He rapidly, and somewhat unexpectedly, sank, and died the next day, May 18.

POST-MORTEM EXAMINATION, SEVENTY-TWO HOURS AFTER DEATH. Body well formed, not emaciated; no œdema in any part.

Head. No particular appearance about the scalp and skull. Dura mater pale. The arachnoid membrane was generally pale; but there was some vascularity on the left side of the vertex. The surface of the brain was pale. The brain was removed entire; a small quantity of limpid fluid flowed from the theca vertebralis. The whole surface of the brain was carefully examined, and it was found that its arteries were generally diseased, their internal surface being lined with an atheromatous deposit, and the vessels generally having a feeling of hard, rigid tubes. The consistence of the surface of the brain was almost universally healthy, but at the inferior part of the middle lobe of the right hemisphere, there was a small opening which led into a jagged cavity of a very irregular shape, from which a small quantity of limpid fluid was poured out. This cavity, it may be mentioned, appeared to communicate with the lateral ventricle of the right side. The brain was now examined from above downwards, in order, if pos-

sible, to observe the exact relations of the cavity just described. The upper portion of the brain was removed on a level with the corpus callosum; here the substance was of the usual consistence, but, on examining the ventricles, it was found that the fornix, the optic thalami, the corpora striata, and the cerebral substance adjoining, were all in a softened state, and of about the consistence of clotted cream; but the colour was not changed even in the immediate vicinity of the jagged cavity. It was found impossible to trace the exact boundaries of the cavity above described, owing to the very soft condition of all the parts around it. A portion of the diseased cerebral mass was examined microscopically by Dr. Jenner, who discovered a great number of fat globules, and a diminished number of nerve-fibres. It should be mentioned, that there was no smell whatever from the brain, nor was there any disease of the bone in the vicinity of the softening.

Chest. The lungs presented no remarkable appearance. The heart appeared very large; and, upon examining the whole of its structure, it was found that the left ventricle was hypertrophied to a very great extent, the parietes being twice as thick as usual. The valves, however, were all healthy. The colour of the heart was quite natural, and its consistence quite firm.

Abdomen. The organs in the abdomen presented no remarkable appearance, with the exception of the kidneys. The *left kidney* was small, with a tuberculated appearance externally, owing to the presence of a number of cysts, containing a thick, yellowish, transparent, sisy matter. The investing membrane was removed readily, and the surface below presented a mottled appearance. The organ itself was very small; the cut surface was of a very dark colour, and was congested; and there seemed to be an atrophy of the cortical structure. The right kidney was not so much diseased as the left, but agreed generally with it in appearance.

REMARKS. In this very obscure case, there was softening of the brain, hypertrophy of the heart, and granular degeneration of the kidneys. The softened state of the brain was probably due to the rigid condition of the cerebral vessels, which prevented the organ from receiving a due supply of blood. The symptoms of softening of the brain were not at all marked; and although there was extensive disease of the kidneys, there were none of the ordinary symptoms indicating granular disease during life. At first, I imagined that the symptoms indicated a threatening attack of apoplexy; and I treated the case accordingly; but I subsequently entirely abandoned that idea, and I attributed the malady to some organic disease of the brain. It is very probable, that there existed during life a hyperæmic condition of the brain, for the symptoms at first decidedly indicated such a state; and the paleness of the brain after death is of course attributable to the copious hæmorrhage which took place on the day previous to his decease, and which was probably an effort of nature to relieve the congested organ.

CASE V. SOFTENING OF THE SPINAL CORD. Mr. J. T., æt. 59, a gentleman engaged in a considerable mercantile business, of strictly moral character, and perfectly sober and temperate in his habits, became

affected, about five years before my attendance upon him, with diminished power of voluntary motion in his lower extremities. At first he experienced only a slight difficulty in walking, but gradually this inability increased, and he was compelled to support himself upon a stick, and to lean upon another person. His movements were very irregular, owing to a want of control over the voluntary muscles; and at last he was obliged to leave off walking, and to confine himself to carriage exercise. He also suffered from occasional violent pains, shooting from his back to his abdomen, and sometimes from his feet upwards. He had consulted several medical men, among whom were some of the most eminent members of the profession; but he had not received any permanent relief from their advice. He had also resorted to homœopathy with as little success; and, by the recommendation of some of his medical attendants, he had repeatedly tried change of air, and had resided for some months in Jersey, with slight benefit.

I was first called in to attend him on the 6th of January, 1847, when I found his condition to be the following. He was sitting up, and, at the time of my visit, was free from pain or uneasiness; he however told me that he was unable to use his lower extremities, and could not walk up or down stairs without assistance. Although, however, he was deprived of voluntary motion, his legs were frequently convulsed by involuntary movements, over which he had no control whatever. He stated that he suffered very violent pains of a most excruciating character, coming on suddenly, and ceasing also suddenly. His digestive system was occasionally deranged, and he was subject to violent attacks of vomiting: but, in general, his appetite was very good, and he sat down with his family every day to dinner, of which he partook heartily: he also slept well, when free from the attacks of pain. His intellect was quite unaffected, and he never suffered from headache: his bowels were pretty regular: his urine was passed regularly, and was under the control of the will. He had the complete use of his upper extremities, and could write and feed himself with perfect ease. On examining the sensibility of the body, it was found that, below the last dorsal vertebra, pinching could be borne without any manifestation of pain, or indeed of sensation; but above that point, he was sensible of the impression. His tongue was quite clean: pulse 80, and moderate. The heart and lungs were examined by auscultation and percussion, but were found quite healthy: the liver, also, was of its usual size, and not tender upon pressure: all the other abdominal organs were quite sound. Among other remedial means which had been proposed, he had been recommended to apply a blister along the spine; but this had so aggravated the pain, that he was compelled to heal it up.

Under these circumstances, I became convinced that he was labouring under some organic disease of the spinal cord; and, as I believed it impossible to cure the malady, I adopted only a palliative treatment. I recommended him to ride out in an open carriage when the weather would allow, to use friction along the spine, and to have nutritious food, together with a moderate allowance of wine or weak brandy and water. I also recommended him to take, every morning, a pill, composed of two grains and a half of blue pill, and the same quantity of compound rhubarb pill.

Jan. 10. I was sent for in the morning to see the patient, as he was labouring under a paroxysm. I found him in bed crying aloud from pain, with his legs tossed about involuntarily and spasmodically: the pain in the abdomen was intense, but was relieved on pressure: he had also incessant vomiting: his tongue was clean, his pulse 80, and moderate. I ordered the following medicines: $\mathcal{R}$ *Acidi hydrocyanici diluti m. v; aquæ menthæ piperitæ ʒj.* *Fiat haustus urgente vomitu sumendus.* $\mathcal{R}$ *Liquoris opii sedativi m. xx; aquæ menthæ piperitæ ʒj.* *Fiat haustus secundis vel tertiis horis sumendus, donec dolores cessaverint.* By the adoption of this treatment, the vomiting was allayed and the pains were in some measure controlled; and, in about a week, the system became tranquillized, although the spasmodic pains still recurred at intervals.

When these paroxysmal symptoms had abated, I directed my attention to the general health, and recommended the sedative solution of opium to be given when the pains returned, and also pills to be taken at night, sometimes consisting of extract of hemlock, sometimes of extract of henbane. I also prescribed a pill to be taken an hour before dinner every day, consisting of two grains of disulphate of quinine and two of rhubarb; and although his bowels had been habitually costive for years, I yet found that by the use of this pill, which he continued for several months, they were kept moderately open, and his appetite was preserved, until within a few weeks of his decease. I would here observe, that an habitual use of purgative medicines appears to me to be the reverse of beneficial; for their continued administration tends to depress the system, thus weakening the peristaltic action of the intestines and continuing the morbid condition which they are given to correct: whereas, on the other hand, tonics, judiciously employed, invigorate the system, promote the processes of absorption, assimilation, and defæcation, and thus render the use of purgatives unnecessary. Such certainly was the case in the present instance; for this gentleman informed me that he was previously in the habit of taking strong purgative medicines every day for years; and although he frequently asked me to prescribe purgatives, I uniformly refused to do so, and the opposite plan, which I adopted, was attended with alleviation.

In about six weeks from this period, the patient, finding that the spinal symptoms were not removed, was induced to call in consultation with me, a gentleman who had devoted much of his time to the special study of spinal complaints, and who recommended the use of the prone couch, the occasional administration of croton oil, and the attention to the general health by the means already adopted. This plan was therefore followed for some months, with the exception of the use of the croton oil, the first doses of which caused such excessive disturbance of the system, that it was necessarily discontinued. In addition to this treatment, two issues were made with *potassa fusa*, one on each side of the lumbar vertebræ, which issues were kept open for upwards of two months, but without any benefit; indeed the patient sometimes imagined that they increased, or even originated, the violent spasmodic pains of which he still complained, and which shot from the back to the abdomen, and also proceeded from the lower extremities towards the trunk. I therefore allowed the issues to heal.

On the 11th of July, he was seized with erysipelas of the head and face, from which he recovered by the adoption of the usual remedies. After this attack, however, he became decidedly weaker; he was unable to leave his bed, although he still retained the use of his upper extremities, and the full possession of his intellectual faculties; his appetite also improved, but the spasmodic pains again become most violent and agonizing. Various narcotics were employed to allay these sufferings, but with only partial success. Battley's solution of opium, pills containing one grain of opium, and pills containing one-third of a grain of hydrochlorate of morphia were repeatedly given, and without producing either head-ache or costiveness, although he took sometimes as much as four grains of opium in one night.¹ Large bed-sores now appeared on the lumbar region and on both his hips, and he gradually sank from exhaustion, and died without pain on the 6th of October, 1847.

POST-MORTEM EXAMINATION OF THE SPINAL CORD, THIRTY-THREE HOURS AFTER DEATH; WEATHER COLD. The spinal canal was laid bare from the first cervical to about the third lumbar vertebra. The spinal cord, invested by its membranes, presented no unusual appearance, and was removed for farther examination. On opening the dura mater, and afterwards laying open the arachnoid coat and pia mater, a large part of the cord was found in a state of complete softening, the ramollissement being most remarkable from opposite the seventh cervical vertebra to the cauda equina, and presenting the appearance of a diffuent pulp, of about the consistence of thick cream. Between the seventh cervical vertebra and the foramen magnum, the cord was not so soft, and its consistence increased as it approached the brain.

REMARKS. The symptoms, exhibited by this case during life, agree very completely with those described as characteristic of softening of the spinal cord. Dr. Abercrombie, in his "Pathology of the Brain and Nervous System", relates five cases of this affection, but none of his cases are exactly similar to that now described. It will be observed that the softening commenced at about the seventh cervical vertebra, and extended to the cauda equina; hence the spasmodic pains of the abdomen and the vomiting, also the convulsive movements, the loss of voluntary motion, and the anæsthesia of the lower extremities: while the greater consistence of the upper part of the cord explained the fact, that the power over the upper extremities was retained till a very late period.

¹ The toleration of opium, under certain diseased conditions of the system, is quite extraordinary. In a case recently attended by myself, in consultation with my friend Dr. G. O. Rees, the patient, who was suffering from acute rheumatism, was ordered to take two grains of opium every four hours, and afterwards, one grain of hydrochlorate of morphia at intervals of six and eight hours; and although this system was followed, at intervals, for upwards of a fortnight, it did not produce the slightest ill effect. The patient was a young lady, and had never before taken opium.