EDINBURGH UNIVERSITY.

CLINICAL LECTURES IN MEDICINE

BY

DRS. ALISON and GRAHAM.

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INTERESTING CASE OF DISEASE OF THE SPINAL CHORD.

PETER ELDER, ætat. 36, was admitted about a fortnight since, with evident disease of the dorsal vertebræ and spinal chord; there was an angular projection of the spinous process of the third dorsal vertebra, and the integuments about it were tender to the touch; the power of voluntary motion in the lower extremities was totally lost, and sensation of the integuments was considerably, though not entirely, destroyed. The urine and feces were passed involuntarily, but the former flowed in small, interrupted quantities, and not in the usual dribbling manner; it exhaled also an ammoniacal odour, and was thickened by flakes and particles ofropy mucus. He complained also of dyspnoea, and a choking sensation, produced, as, in fact, the patient himself correctly imagined, by the accumulation of viscid matter in the air cells and passages; he occasionally coughed, and expectorated a little; his breathing was hurried, short, and assisted by the sterno, mastoid, trapezius, and scaleni muscles. The pulse was weak and quick; tongue foul; bowels irregular; his cheeks were occasionally partially flushed, and now and then covered with a cold diaphoresis, which extended over the neck and arms, but left the paralysed parts entirely dry. The patient stated, that about twelve months ago he was attacked with pain along the spinal canal, after a course of mercury, which, Dr. Alison observed, might, perhaps, be considered as the predisposing cause of the disease; since then, the power of moving the lower extremities gradually declined, and, eight days before admission, was totally gone. The thoracic and urinary symptoms had arisen by degrees, and increased in severity for the last three months.

With respect to the probable event of the case, and the necessary practice, Dr. Alison said it was obvious, from the protrusion of the spinous process, the tenderness of the adjoining parts, and the pain produced by motion, that the paralysis was connected with disease, perhaps caries, at that part of the vertebræ; now it is well known that cases of diseased vertebræ occur in which anchylosis supervenes, and the patient eventually recovers; this anchylosis too,

often takes place to a very great extent, as is exemplified by a preparation in the University museum, in which five vertebræ have become so solidified, that they can only be distinguished by the tips of the spinous processes; great disease of the vertebræ, it is true, is not a cause of paraplegia, but, on the other hand, it is equally certain that recovery in cases of complete paraplegia is extremely rare. As far as regards the treatment, in the favourable cases which are met with, the change can seldom be attributed, with confidence, to any plan of practice whatever; generally speaking, counter-irritation in the different forms of blister, issue, and moxa, is the most effectual, with venesection and purgatives, as the general features of each particular case may require. In this instance blood had been taken locally, by leeches, several times; issues had also been employed, from which the peas had been removed for some time before his death, on account of the great pain which they occasioned; laxatives, etc., were employed as they were required, but no benefit was experienced, and a large slough having taken place over the sacrum, he speedily sank.

Dissection.—The spinous process of the third dorsal vertebra was loose, and the body of that bone, and the heads of the ribs, were carious and overspread with foetid pus; the body of the vertebra too was loosened by ulceration, from its connexions; the dura mater, on the posterior side, was covered with lymph, and the corresponding part of the chord was redder than natural, free from any deposition of adventitious matter, or infiltration of pus, but in that state of softening denominated by the French the *ramollissement rouge*. In these was first noticed a spot of effused lymph on the pleura costalis corresponding to the diseased ribs, from which a minute opening led into the cavity of that membrane; but Dr. Alison considered that, probably, this aperture was formed during the dissection. The lower part of the left lung was condensed, and the bronchiæ considerably enlarged. The urinary bladder was much thickened, and contracted, but no traces existed of disease of the urethra, or prostate gland.

With respect to these symptoms and appearances, Dr. Alison observed, the affection of the lungs, and the state of the respiration, during life afforded a subject of considerable interest; there was no doubt but that the ordinary causes which induce pulmonary disease, whether predisposing or exciting, might have operated here; but the morbid changes so strongly resembled those produced by the section of the eighth pair of nerves, that he was inclined to believe that the irritation of the roots of the dorsal nerves corresponding with, and below the diseased portion of the spinal chord, and

which inosculate freely with the sympathetic, might have had a considerable influence on the inflammation which occurred in the bronchial lining, and was thence, perhaps, propagated to the parenchymatous structure. During the progress of the disease a considerable source of embarrassment in the observation of the pectoral symptoms, was the difficulty of coughing, resulting from the paralysis of the abdominal muscles, in consequence of which, forced expiration was impossible; the patient retained the power of motion of the diaphragm, the seat of the disease being superior to the origin of the phrenic nerve, and whenever he coughed the act seemed to be performed in this manner; mucus collected in the air passages, which he was totally unable to expel by a voluntary act, and at length involuntary motion took place in the *paralysed abdominal muscles*, in consequence of the irritation so produced; the shoulders were fixed by the trapezius, and instinctively, as it were, compressing the abdomen with his hands, the sputum was expelled with the assistance of the voluntary muscles, over which he retained command. A similar occurrence, namely, the involuntary contraction of paralysed muscles, is often seen under various circumstances. A patient of Dr. Alison, affected with hemiplegia, used to stretch the paralysed arm while he yawned, and in another case, the same was observed with respect to the muscles which elevate the lower jaw. In this case too, there was an opportunity of observing how Magendie has erred in denying to the intercostal muscles the power of elevating the ribs; they were necessarily paralysed here, and the ribs remained motionless since the disease was established. Dr. Alison concluded his present remarks by comparing the case at considerable length with a similar instance related by Mr. Bell, which illustrated and corroborated the views he had advanced.

On the following Monday Dr. Alison again referred to this case, when he also sent round the bladder for inspection, and called the attention of the class to its thickened and contracted state, the parietes being more than half an inch thick; its mucous membrane was corrugated, and the inflammation extended along the ureters to the pelvis of the kidney, as is seen in cases of old stricture and diseased prostate; but here, as was before remarked, the urethra and prostate glands, were entirely free from morbid alteration; this thickness he had no doubt, resulted from the irritation of the inflamed mucous membrane, which continually producing contractions in the muscular coat, induce hypertrophy of its fibres, in a manner analogous to the thickening of the heart from disease of its inner membrane,

or of the intestines from a similar cause. Again; this irritation of the mucous coat of the bladder was only to be explained on one of two suppositions; either the disorganisation of the spinal chord acted on the bladder in the same manner as the section of the eighth pair on the lungs, or the irritation on the eye; or it was excited by the acromony of the urine, which gave out ammonia largely as soon as it left the bladder. Whether the urine was thus secreted, or the ammoniacal odour was exhaled in consequence of decomposition of the mucus in the bladder, it was extremely difficult to say, however this might be, Dr. Alison was inclined to attribute the inflammation and thickening rather to the influence of the nervous agency than to the irritation of the urine. With respect to the comparatively small amount of nervous disorganisation which produced such urgent consequences here, it afforded a striking contrast to what happened in the case of Tyndal (page 595), a case in which extensive destruction, or, at least, compression of the brain and cerebellum, took place, and paralysis was produced. Such examples strongly point out the superior importance of the spinal chord to either the brain or cerebellum, and they also afford a proof of the facility with which disease, to a trifling extent, may be overlooked in dissection; here, for instance, but for the external protrusion of the spinous process, it is more than probable the disease of the chord would not have been detected. While on this subject, Dr. Alison said, it was right for him to observe, that cases not unfrequently are met with in which great disease of the spinal chord exists without any very urgent symptoms. Velpeau has given cases of this kind in the *Archives Medicales*; and in the last volume of the *Medico-Chirurgical Transactions* of this city, there is a paper on the subject by Dr. Malison, who describes an instance of extensive disease of the chord, in which no loss of motion of the lower extremities occurred till within a few hours before death. Dr. Alison had seen this case with Dr. Malison, and he apprehended, that the only explanation which could be offered of this fact was, that some of the nervous fibrils remained uninjured by the surrounding disease.

ERYSIPELAS OF THE FACE AND HEAD.

James Grant, ætat. 45, admitted 9th Jan. with well-marked erysipelas of the face and head, of five days' standing. The disease had already proceeded to vesication, and, consequently, in Willan and Bateman's phraseology, came properly under the name of erysipelas, as distinguished from erythema, in which no bullæ are formed; the difference, however, is merely in degree, as both

are absolutely one and the same affection. In this case the scalp had become slightly involved; a great deal of pyrexia was present, without headach or delirium; the pulse was 120, and full; the bowels nearly natural; tongue furred and yellowish; complaint attributed to exposure to cold. He was bled to 123, and punctures were directed behind the ears. Since admission, the inflammation has not extended farther over the face, but it has slightly increased on the neck; the pulse has fallen to 90, and no symptom has occurred indicative of cerebral affection. Under all these circumstances, Dr. Alison considered a favourable issue to the case as almost certain. As to the punctures, they are of less consequence in erysipelas of the face than of the limbs, as the evil consequences which they are intended to avert or remedy, namely, the occurrence of suppuration, or gangrene, is very rarely met with in this situation; the main danger results, usually, from either of two causes—the supervision of internal cephalic inflammation, delirium, &c., or the typhoid debility which sometimes accompanies this disease.

SEVERE CASE OF TYPHUS GRAVIOR.

The third patient was W. Meikison, ætat. 19, admitted 10th January, exhibiting the worst instance of fever seen since the commencement of the session; the only other which approached it in severity was of a much more favourable kind, and improved, considerably, under the treatment employed.

In consequence of the great depression and debility of the patient himself, and the non-attendance of his friends, but an obscure and very unsatisfactory history of his illness could be obtained. The symptoms, however, as they presented themselves, constituted a case of typhus gravior; there was extreme debility; the pulse 120, feeble, and exceedingly compressible, especially in the left wrist; there was little or no heat of skin, except about the breast, and wherever the body was exposed to the air, it rapidly lost all sensible warmth; the tongue was very dry, and there were all the indications which formerly were supposed to result from putrescency of the fluids (or, as it is now considered, a diminished tendency to coagulation in the blood), namely, blotches of a rind-brown colour, and an extensive eruption of petechiæ. These latter, Dr. Alison observed, it was well known might be imitated by flea-bites, but the regular form of the flea-bite, and the effect of pressure on it, as described in Willan and Bateman's *Erysipelas*, sufficiently distinguished both appearances. There were copious fluid, dark-coloured stools, of intolerably foetid odour.

The nervous symptoms characteristic of typhus gravior were also present, such as great drowsiness, mixed with delirium of the low muttering kind, subsultus, and flaccitation. The precise time these symptoms were present, for the reasons above stated, he, Dr. Alison, could not ascertain, but he had been informed that the patient's mother died of the same description of fever a few days since.

From this statement, and from the last circumstance mentioned, Dr. Alison said, it might, at first, be inferred, that this fever was from the very onset of peculiar malignity, but on further investigation, it is probable we should find such an opinion to have been erroneous. There was no doubt that the epidemics of different seasons varied much in their severity, but in this instance it was probable that the situation of the patient's house, hot regimen, or foul air, might have aggravated the symptoms of a fever which, under other circumstances, might have run a different and more favourable course. On this point he had to state, with respect to the comparative amount of mortality by fever in the hospital, and in the houses of the patients, that from abundant opportunities of observation, he had reason to conclude, that though, generally, more typhoid in the latter situations, yet it was by no means more fatal than in the hospital cases. This fact, Dr. Alison had no doubt, was to be mainly attributed to the frequency of inflammatory complaints which supervened, in the hospital, to the cause of the original disease.

This patient also complained of some headach; his eyes were suffused, and as the state of his bowels had not been ascertained, immediately after admission a purgative draught was given and his head was shaved. During the night there were several stools of the description already mentioned, and next morning Dr. Alison considered it necessary to employ laudanum and astringents. In other respects, from the first moment he saw the case, he knew it was one in which stimuli alone could with safety be employed. He remembered a case which occurred in the same ward about three years before, marked with almost precisely the same symptoms, especially by the alarming depression of the circulating powers, and in which a favourable termination of the case was procured by stimulating treatment. Wine, brandy, and carbonate of ammonia, were therefore ordered for this patient, but to-day there was no perceptible improvement, and Dr. Alison could not hold out the least hopes of recovery.

At the conclusion of the lecture on the 14th inst., Dr. Alison informed the class, that this case had terminated fatally, the patient having been, in all, forty hours in the

house ; since then, Dr. Alison had learned more of the history of his case, and, indeed, quite sufficient to convince him that Meikison had been removed from his own habitation at too late a period of the disease. He was certain also, that his chances of recovery would have been considerably greater had he been allowed to remain at home. He had already repeatedly discussed this point, and therefore considered it unnecessary to return to it again. In all he had been ten days ill before removal. Some days before he fell sick, his mother died of fever ; one of his brothers is at present ill, and his father is lately convalescent from the same disease. The father's case, in particular, was strongly illustrative of the contagious nature of the form of fever under which they laboured. He, the father, had been absent from Edinburgh, and at Berwick was seized with rigours, heat, and sweatings, which terminated in a fever of a moderate character. As soon as he became convalescent, he set out on his return to Edinburgh, and fevered at Haddington again. Having recovered there, he returned home in the same clothes he had worn during the several recoveries, and in a very short time after his arrival his family fell sick, in the order just mentioned. Here then, as far as one case could strengthen an opinion (although it might not warrant a positive conclusion), we had striking evidence in corroboration of the idea, that fever, under certain circumstances, could be propagated by human contagion, either by the agency of the effluvia, which doubtless arises from the bodies of persons recently convalescent from that disease, or is imparted from their persons to clothes, or other fomites (as they have been termed), of different descriptions.

In all observations on this disease, Dr. Alison proceeded, it would be found of eminent importance to distinguish between general and peculiar fevers ; for example, such as threaten death by affections of the head or chest, and in the way of asphyxia or coma, and such as prove fatal by general debility, unconnected with either of these causes. All the cases as yet seen in this course were to be arranged under the latter division, but Meikison's rather belonged to the first, from the decided symptoms of head affection seen in the progress of his disease ; the headach had been already mentioned, and the night before his death the pupils were obviously contracted ; he also suffered under a nervous symptom, indicative of the utmost danger, namely, difficult deglutition ; from this he, Dr. Alison, had very rarely seen an instance of recovery. It was, however, to be borne in mind, that in decided head cases of fever, death usually supervened in the way of coma, the pulse continuing firm up to the latest moment, and in

a few cases, even, being found to beat for some time after all other appearances of life had departed, the skin also continuing warm for the same length of time. In an earlier period of such examples, while the pulse continued firm, there was hope that the stupor might be recovered from, but in the instance now before us, although the head was implicated, still the chief danger was to be apprehended from the great feebleness and derangement of the circulation, as indicated by the weak and extremely compressible pulse, and the symptoms of a dissolved state of the blood itself. Dr. Alison here recapitulated the leading features of the case as we described them in the last paper, and in alluding to the difference of the pulse in both arms said, that he had often known, as in this man's case, the pulse assume a fuller character in the side of which the patient lay ; resulting, he had no doubt, from the operation of gravitation on the blood in a weakened state of its containing vessels, in the same manner as congestion is found in the lower parts of the lungs after death. Some stupor had supervened, he added, towards the fatal termination of this case, but in no wise bordering upon coma ; besides, the rapid cooling of the skin (stated in last report) constituted an additional and powerful reason for supposing that this stupor was not the cause of death, as in true coma the body remains warm up to the very close of life.

With reference, therefore, to the appearances which might, perhaps, present themselves on dissection here, even should effusion be found on the brain or in its cavities he would not be disposed to consider such as the sole cause of death. Attempts have been made to establish effusion as a general appearance in fever cases, accompanied by cerebral symptoms ; he had no doubt but it was occasionally met with, but statements concerning it should be received with caution at least while there was an arbitrary power of determining what was morbid effusion in these situations, and what was merely the result of natural exhalation, perfectly compatible with healthy action. For his own part, he always adopted the rules prescribed by Andral, and only considered effusion the result of disease, when, superficially, the arachnoid membrane is seen lightly stretched over the convolutions, or distinctly elevated between them, or, internally, when the foramina are elevated, and the foramen magnum is distinctly open. Now these appearances were not found in the present example.

A few further observations made by Dr. Alison on this case, will be found in the next Number.