The question whether liver-abscess be single or multiple is always difficult, and, I fear, one about which it is often impossible at first to form an exact diagnosis, and until puncture has been resorted to. Generally, the evacuation of pus is followed by an immediate fall of temperature, which remains at or near the normal standard, provided the discharge be free and the pus protected from decomposition. A rise in the temperature, or its remaining high with recurrence of pain and sweating, give cause for apprehension either that a fresh abscess is forming, or that decomposition of the discharge is taking place. In either case, you must keep a strict watch on the symptoms, and interfere as early as possible to give exit to newly formed pus, or to remove decomposing discharge from the cavity of the abscess. If the symptoms of suppuration continue, although no physical sign may betray the presence of pus, explore the liver freely with the aspirating needle. I have frequently given exit to fresh collections of pus which have formed under or near the site of the first abscess. As the wound heals, the diet may be increased, but you must protect your patient from all excesses or errors in food.

There are one or two points which you will do well to bear in mind, such as, when operating, the amount of liver-substance you may have to cut through before you reach the pus; this may cause considerable hæmorrhage, but it will generally soon cease. As you wish to avoid loss of blood as much as possible, it is well in these cases to use a cannula sufficiently large to allow the free exit of pus, and leave it in the wound for a few days, substituting for it, after that period, a larger flexible tube, and making a larger opening if necessary.

The pus is often thick, and contains flakes of lymph which may block the tube, and render it necessary to clear it out. Remember that the drainage-tube should not be allowed to press against the wall of the contracting cavity, and that it will require shortening as the wound gradually closes; also the imperative necessity for having free discharge and of keeping it sweet, to which end you must be most scrupulous in attending minutely to the strictest antiseptic precautions. When you are in doubt as to the probable formation of more pus (another abscess), use the exploring aspirating needle; there is no danger in this, if done with due care and precaution, either below or between the ribs.

Should you find another abscess, if possible give exit to its contents by making a free opening. It is very desirable not to delay in these matters. My belief is, that earlier interference would in many cases have saved life and diminished suffering.

In any case a liver-abscess is a most serious affair, and the result is uncertain; but, by observing and acting on the principles and practice inculcated, you may hope to meet with a considerable amount of success.

Never allow a liver-abscess to point and cause gangrene of the abdominal wall from pressure, and consequent inevitable death by exhaustion, in such cases where a simple incision would, in all probability, have relieved suffering, and might have saved life.

NOTE.—The patient who was the subject of this lecture was doing well in all respects on June 2nd, 1884.

BEQUESTS AND DONATIONS.—The Royal Free Hospital has received £1,000, and the National Hospital for Consumption at Ventno £600, under the will of Mrs. Esther Bunning.—Mr. George William Nugent, of Cambridge House, Maida Vale, has bequeathed £200 each to the Seamen's Hospital, Greenwich, the London Hospital, St. Mark's Hospital for Fistula, etc., the Royal Free Hospital, the Metropolitan Free Hospital, the Western General Dispensary, St. Mary's Hospital, the Hospital for Sick Children, the Female Lock Hospital and Asylum, the Middlesex Hospital, University College Hospital, and the Convalescent Hospital, Stone, Staffordshire.—Miss Mary Davidson Blair, of Forbes Road, Greenhill, Edinburgh, has bequeathed £100 to the Society for the Relief of the Destitute Sick, Edinburgh, £50 to the Smyrna Medical Mission, and £50 to the Longmore Hospital for Incurables.—The Lincoln County Hospital has received £200 under the will of Mr. T. Garfit, of Boston, and £50 under that of Miss Anne Torr, of Grimsby.—Mr. William John Campbell Allen, of Fannoran, Carrickfergus, has bequeathed £100 to the Royal Hospital, Belfast.—The Grocers' Company have given £100 to the Royal Medical Benevolent College.—The Hon. Mrs. Robert Bruce has given £50 to the Charing Cross Hospital, and £50, additional, to the Middlesex Hospital.—The Royal Hospital for Diseases of the Chest has received £43 10s. from Captain Wiltshire, being the proceeds of a concert at Myddelton Hall, Islington, on April 30th.

CLINICAL REMARKS

ON CASES ILLUSTRATING THE ESSENTIAL IDENTITY OF PROGRESSIVE MUSCULAR ATROPHY AND PROGRESSIVE BULBAR PARALYSIS.¹

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CASES of primary labio-glosso-laryngeal paralysis are of sufficient rarity to secure for the recital of their clinical features some interest; for, although bulbar symptoms are not very uncommonly present at the termination of various systemic cerebral and spinal diseases, examples of primary bulbar paralysis are not frequently met with in the experience of physicians in general practice; and it would seem, indeed, to be among the rarer features of nerve-paresis witnessed by those whose opportunities of studying neurotic lesions are extensive, if we may judge from the fact that Erb, when writing the article bearing directly on this subject (Ziemssen's *Cyclopædia of Medicine*), refers to but nine cases of which he had accurate notes, and Hammond states that he had met with but six.

With the exception of the two individuals, the record of whose state I am about to submit to the Academy, and of a third case which I saw when a senior student, but which, I confess, I failed at the time to recognise, I have not met with any other instances in my own practice, nor seen any in the wards of the hospital under any of my colleagues.

Apart from the intrinsic interest attaching to the pathological lesion of the medulla to which is due the disease termed labio-glosso-laryngeal paralysis, or, as Kussmaul, with special reference thereto, called it, "progressive bulbo-nuclear paralysis," I look upon these cases, the subject of this communication, as illustrating, in a marked way, the intimate relations which exist between it and progressive muscular atrophy.

Each of these diseases is to be met with separately. Although chronic progressive bulbar paralysis does occur alone, as a typical disease, unaccompanied by any general amyotrophic changes of the trunk and extremities—as, of Erb's nine cases, six were limited to paralysis of the lips, tongue, and larynx—yet it is proved to be one of the most frequent complications of progressive muscular atrophy. A striking example of this has been recently published by Dr. W. Fox (*BRITISH MEDICAL JOURNAL*, 1881, vol. i, p. 82). It is fairly formulated by Eulenburg (Ziemssen's *Cyclopædia of Medicine*, vol. xiv, p. 132). "One cause of death in progressive muscular atrophy is so frequent, and is clinically so nearly allied to progressive muscular atrophy, that it must be considered not as an accidental complication, but as a combined disease arising from the same or similar pathogenic causes. This is progressive bulbar paralysis. It may form a cause of death, either by producing a gradual palsy of the muscles of swallowing and of the larynx, or, when it occurs in an apoplectic form, with immediate palsy of the respiratory centres."

In like manner, in cases of primary bulbar paralysis, one of the commonest complications is that of progressive muscular atrophy. Hence the question presses as to the relative position these two lesions bear to one another. Is the fact of their being both present in an individual to be attributed to chance coincidence? Is one sequential on the other? Or are the two groups of symptoms but evidences of the same disease affecting different but allied parts of the cerebro-spinal centres—branches of the same tree which, though springing from different parts of the parent stem, produce similar fruits?

When glosso-laryngeal disease was for the first time systematically demonstrated by Duchenne in 1861, although it had been recognised twenty years previously by Trouseau, the close relation it bore to progressive muscular atrophy was thoroughly admitted by this accurate observer.

Duchenne considered, however, the two lesions to be quite distinct, the one from the other, and laid down the characteristic feature of progressive bulbar paralysis to be "paralysis without atrophy," in contrast to that of progressive muscular atrophy, which was "atrophy without paralysis." For several years subsequently this view of Duchenne's was generally adopted, and even in the present time it appears to have its adherents, among whom Hammond and Friedreich may be numbered.

¹ Read before the Academy of Medicine in Ireland.

Accumulated instances of the two diseases being both present in the same individual—their occurrence being either synchronous, or subsequent in time, the one on the other—and the weight of evidence based on the great similarity of their clinical features, forced the conviction on the minds of physicians that this coincidence, this similarity, must be due to the one and the same lesion of the nerve-centres. Pathological anatomy had revealed that the primary or essential lesion constant to progressive muscular atrophy—as first demonstrated, I believe, by Lockhart Clarke and Charcot—consisted in degenerative changes in the multipolar ganglion-cells of the anterior cornua of the grey matter of the spinal cord; while that of labio-glosso-laryngeal paralysis was a like degeneration of the similar cells in the grey nuclei on the floor of the fourth ventricle. Then Charcot described a case of progressive bulbar paralysis, complicated with progressive muscular atrophy, in which these two lesions were demonstrated to be present; and, recently, Fox has contributed another, already referred to, beginning in muscular atrophy and ending in bulbar paralysis, in which the pathological changes peculiar to each were found present together. Lastly, the link which knits these diseases in intimate relationship was further forged by the analogy which physiological anatomy showed to exist between the grey motor nuclei of the medulla and the anterior grey cornua of the cord, and these parts are but continuations one of the other.

Our knowledge, by the additional light now shed on these lesions, may therefore be summarised in the words of Erb (*Ziemssen's Cyclop. of Medicine*, vol. xiii): "Accordingly," he says, "we may assume that, in both diseases, the pathological processes are either essentially identical, or at least very closely related; and that it depends upon their localisation chiefly whether the result is muscular atrophy or bulbar paralysis; and that, consequently, the two diseases may combine frequently and in every proportion;" and that the amyotrophic results are the same in mode of production, though they differ in situation.

As a contribution to the clinical literature of the disease, and as an illustration, not a proof, of the pathogenetic identity of these two affections, I beg to adduce the following instances, which came under my notice while I was physician to the City of Dublin Hospital in 1882.

CASE I.—Stephen S., a farmer, aged 50, was admitted into the City of Dublin Hospital on March 7th, 1882, under my care. He was married, and had had fourteen children, the youngest being three months old. He had always been a healthy man, and of temperate habits. He had never had rheumatic fever or syphilis, nor did he receive any injury to his head, and there was no history of any hereditary nervous disease. About August 1881, he first complained of a giddiness, of numbness of his tongue, and of difficulty in speaking. These latter symptoms had ever since steadily increased, and the pronunciation of most words had become an impossibility; while difficulty in swallowing had still added to his troubles. About six weeks before admission, he felt a tingling sensation in both arms and legs, "just as if they were asleep;" and, shortly afterwards, he noticed that he could not walk as well or as far as previously, that he was more easily tired, and that his arms became weaker. Soon afterwards, he experienced a pain in the top of his head, which, while it had never been severe, has lasted ever since. At this time, he noticed he was becoming deaf, especially in his right ear. He never had felt arthritic or lightning pains in his legs.

On admission, the patient was a tall well made man, looking younger than his age, and, at first sight, did not present the evidences of paralysis of the lips, which are so characteristic in advanced cases of progressive bulbar paralysis. He could close his lips; but he could not keep them closed, nor purse them together, and he was constantly wiping away the saliva which dribbled from between them. He could not whistle, or blow, or spit; and his mouth was usually open, its angles depressed, and giving a somewhat sad expression to the lower part of the face; while his eyes and upper part exhibited animation, and, on very slight provocation, great merriment. He was very emotional, and readily laughed; the upper part of his face and the upper lip being contorted, while the lower lip hung motionless and somewhat away from the gums.

When spoken to, he was unable to speak—that is, to use any words beyond "aye" and "no;" while his intelligence was unimpaired both as to understanding what had been said and in attempting by signs to convey his ideas; but he used no words, an indescribable jargon of grunts and repetitions of "ah," "ah," taking their place. It was found that he could imitate the sounds of the vowels very fairly; that the labials were not undistinguishable; but all efforts at the dentals or linguals utterly failed. Thus, while o, u, m, p, b, f, which depend upon the perfect action of the orbicularis, could be fairly executed, s, x, r, g, which required the free movement of the tongue, were im-

possible. The tongue could be protruded a very little way beyond the teeth; but it could not be raised to the palate, not to touch the upper teeth. Common sensation was unaffected either in lips or in tongue, nor was the special sense of taste impaired. The tongue appeared slightly atrophied, and, as it lay in the mouth, was observed to be very tremulous, fibrillary movements running slowly along various portions in irregular sequence. No note was made of its appearance with respect to its epithelial covering or its papillae; so that, presumably, there was nothing very abnormal to be remarked. Owing to the paralysis of this organ, mastication and deglutition were very difficult. When eating, the patient took very small morsels; and he rolled them about his mouth for a considerable time, while particles escaped from the lips; and with his fingers he dislodged the food between his cheeks and gums, and pushed it well back in the mouth. He drank very cautiously, taking very small sips. Once the food entered the pharynx, it passed down without any regurgitation of liquids or solids through the nares; but, unless great care were taken, it was likely to produce fits of coughing from its entering the larynx; and this applied more especially to fluids. The uvula and soft palate seemed unaffected; they responded to excitation of touch, and there was an absence of nasal voice. The patient's sight was normal, and the pupils responded to both accommodation and light. The hearing in the right ear was slightly impaired, as compared with the left.

The physiognomy of the case was thus typical of glosso-labio-laryngeal disease, the chief manifestations being referable to paralysis of the tongue, alike in its intrinsic muscles and its deep attachments to the hyoid bone.

Examination of the trunk and extremities revealed well marked amyotrophic changes, such as are found in progressive muscular atrophy. On stripping the patient to his waist, fibrillary movements were seen in almost every muscle connecting the upper extremities to the trunk, in particular the pectorals; while the deltoid, triceps, and biceps, and all the muscles of the forearms, in like manner, exhibited the same symptom. There was slight "winging" of the right scapula, while all the muscles more or less showed loss of substance, and were soft and flabby. The flexors of the carpus and fingers and the thenar eminence of the right arm were more wasted than those of the left. By measurement, the right forearm was smaller in circumference than the left, although the patient was a right-handed man, and the dynamometer registered but 24 k. with the right, against 30 k. with the left hand. The muscles of the legs were much less visibly wasted, but their motor weakness was recognised by the stiff heavy way in which the patient walked, and the slow, awkward, and uncertain manner in which he raised his feet to any given height. Patellar reflex was not abolished, and each leg responded equally, while ankle-clonus was slightly marked in the left leg, absent in the right. There was no paresis of the bladder or rectum. All the muscles of the affected limbs responded to the electrical stimulus, but the faradic excitability of some was much impaired, a very strong current being needed to throw them into action. He was unable to write his own name, saying, before he had half written, he was too tired to write more. The letters and syllables he wrote were correctly spelled and written. There was no evidence of disease of the heart, lungs, or kidneys. It was noticed that there was great sensitiveness to the changes of temperature, and that he was worse in swallowing on a cold day with east wind.

The patient remained under observation for more than a month, but his condition was rapidly deteriorating; and on March 23rd his powers of swallowing had become so feeble, that suffocative symptoms were constantly imminent while taking solids or liquids; and he had to be slapped on the back to dislodge the particles. He became also much thinner and weaker, in spite of tonics and generous diet, and no improvement took place in his powers of speech. At his own request, he returned to his home in the county Kilkenny.

Of the subsequent history of this case, I regret to say that I am ignorant, although I endeavoured to obtain the information by writing two or three times to the medical man under whose care he was before coming to hospital; but there is little doubt that he succumbed to the accidents of the disease before many weeks had elapsed.

[To be continued.]

AMBULANCE LECTURES.—Dr. Frederick Pearse has been presented with a testimonial, in the form of some volumes of books, as a mark of appreciation of the ambulance lectures given by him at Haslemere during the past month. The lectures were well attended.

LADY SCIENTISTS.—It is a sign of the times, says the *Athenæum*, that a paper by a young lady, "On the Blastopore of the Newt," was read at the last meeting of the Royal Society, the writer being herself present.