have thus examined five cases of women for the purpose of diagnosis, and have found tumour in two, and have removed both without any further enlargement of the opening. These will be included in the series of cases appended, forty-two in number, which I desire to present as the sum total of my experience of digital exploration of the bladder, together with the results which have followed in each case.

[The lecturer then presented a brief epitome of the histories of all the cases, in a tabular form, on which he had performed digital exploration of the bladder; omitting, for consideration at the next lecture, the twenty cases of tumour. He continued:]

In carefully analysing the twenty-two cases which remain after subtracting the twenty cases of tumour, there appear to be four chief forms of vesical disease, in which the operation of opening the urethra to withdraw the urine altogether by an artificial route, and so suspend the functions both of the bladder and urethra for a time, may render good service.

The first class consists of those cases, not unfrequently met with, in which all the symptoms of chronic cystitis have existed for a long period, and in a severe degree, and which persist in spite of long-continued and appropriate treatment; while, at the same time, it is understood that the absence of material cause for the cystitis, such as stone, stricture, vesical incompetence, etc., has been ascertained. Examples are Cases 2, 24, and 31, of the series.

The second class of cases includes those examples of prostatic disease in which the bladder has to be emptied by the catheter many times in the twenty-four hours, and in which painful chronic cystitis is obviously aggravated, if not maintained, by the necessary process of relief. Examples are Cases 5 and 34.

The third class embraces those cases in which impacted calculus or adhering calculous matter may be suspected, or may be known to be present by sounding. Examples are Cases 3, 4, 7, 22, and 36.

In the fourth class I place those cases in which painful and very frequent micturition or bleeding, separately or combined, have long existed, without signs of cystitis, the urine being clear, free, or nearly so, from mucous or purulent deposit; the cause of these symptoms having baffled the most careful inquiry. On exploration being made, no organic change is discovered, no light is obtained on the diagnosis of the case, but the functions of the bladder and urethra are suspended for a week or so, and the patient gets perfectly well. Of this remarkable history there are no fewer than six examples in the series; of which three, viz., Cases No. 8, 14, and 35 perfectly recovered, besides three others in which great improvement took place, but not complete recovery, Nos. 17, 23, and 41. The result of operation undertaken in the circumstances described, as a last if not almost hopeless resource, has been very remarkable, and I do not at present pretend to explain the pathological condition in any one of them. Besides, there was one case, already referred to, in which adhesions between the mucous lining of the bladder were separated by the finger, Case No. 12; one case of division of the neck of the bladder, which was extremely tight and rigid, Case 41, which was greatly benefited; and one case of hæmaturia, in which the surface of the mucous membrane was studded with numerous minute villous papillæ; removed by scraping, followed by applications of caustic, No. 37, and in which, five months after operation, there has been no sign of return.

I cannot but hope that the results reported in these cases may lead to a further employment of this simple operation in cases of like obscurity, feeling sure that much valuable relief to suffering, as well as prolongation of life, may be attained by a judicious application of the proceeding.

BEQUESTS AND DONATIONS.—Mr. Robert Hunter, of Dalhousie Chesters, farmer, has bequeathed £8,000 to the Edinburgh Royal Infirmary. —Mr. Stoneham, of Ilfracombe, has bequeathed £1,000 to the Tyrrell Cottage Hospital. —The Rotunda Hospital, Dublin, has received £1,000 under the will of Mr. James Benjamin Hall. —The British Home for Incurables has received £1,000, and £68 interest thereon, under the will of Miss Martha Grant; £1,000 from "Miss M. H. F.," for the endowment of a bed in memory of a relative, and £250 from Major H. Thurlow and Captain Ernest H. Thurlow. —Mr. J. H. Andrew has given £500 to the Sheffield Public Hospital. —The Norfolk and Norwich Hospital has received £500 under the will of Miss Spencer. —The National Hospital for Consumption, at Ventnor, has received £500 under the will of Mr. Samuel Lancaster. —Messrs. Marshall and Snelgrove have given £210, and Miss Mary Doxat £100, to the Middlesex Hospital, in aid of the funds for the new buildings. —Mr. James Gingell, of Whitechapel and East Ham, hay-factor, bequeathed £100 each to the London Hospital, the Samaritan Hospital in connection therewith, the Eastern Dispensary, Leman Street, and the City of London Hospital for Diseases of the Chest.

CLINICAL REMARKS

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

By J. MAGEE FINNY, M.D. Univ. Dubl., F.K.Q.C.P.I.,
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(Concluded from page 1133.)

CASE II.—James C., aged 39, married, labourer in the country, was admitted under my care in the City of Dublin Hospital on May 5th, 1882. The patient, in the first instance, sought advice from my colleague, Dr. Fitzgibbon, the surgeon on duty, as his friends thought he was suffering from some tumour or abscess of his tongue, which interfered with his speech. Dr. Fitzgibbon, recognising the nature of the complaint, requested me to take charge of him.

Nine months previously, the patient's friends noticed a peculiar change in his speech, which gradually became so bad that they could not, without great difficulty, understand him. In January (1882), the patient noticed a weakness and loss of power in his hands, so that he was not able to dig and do other heavy field-work, but he continued to do light work, as driving horses and tending cattle, up to a couple of months before admission. His wife considered his present illness due to the fact of his having been engaged in working in a drain for some time last year, as while thus employed he had often to stand for hours in wet up to his body.

There was no history of his having had any previous illness, or syphilis. He had had six sisters and one brother, and, though the former were dead, he was not aware of their having had any affection like his.

On admission, the patient was a small man, fairly nourished, and, except in the regions affected by paralysis, presented nothing abnormal. His gait was unaffected, and he was able to walk well; but, when doing so, he kept his head bent forward, and turned his body when he wished to look to either side. This peculiarity seemed due, not to rigidity, but to weakness of the cervical muscles. His face presented a great contrast in its upper and lower halves; the former was bright and intelligent, and at times cheerful; the latter was vague, expressionless, and had a sad drawn look. The lips, which lay apart, were thinner than normal at the outer side, though thick in their middle, and the saliva ran in continuous streams from the sides of the mouth, unless constantly wiped away. There was also complete inability to whistle, smoke, spit, or to puff out his cheeks. On asking him to put out his tongue, he was unable to make its tip pass the front teeth. His efforts to comply with the request were very strange, and always the same, no matter how often he made the attempt. He would open the mouth very wide, and draw down the chin with his hand, receding his head at the same time, as if by this expedient the tongue would remain protruded. He could not raise the tip to the upper teeth, nor to the palate, and had very slight power in a lateral direction. It generally lay helpless in the bottom of the mouth. The organ was remarkably smooth in front from an atrophy of the papillæ, and was seemingly shortened, due probably to the inability to protrude it, and also from atrophy of its substance. It was raised in lumps in several parts, and particularly along the sides. This grooved and unequal appearance was also due to the atrophy of its substance. Fibrillary movements were plainly visible along its left side and near the tip. Its sensibility was unimpaired, and taste was normal. Speech was very indistinct, while the pitch of the voice was high and loud. Some few monosyllabic words he could make a fair attempt to pronounce, but any approach to a dissyllable or a sentence ended in a confused jargon. There was no aphasia, as he could correctly name each object shown him, and describe his symptoms sufficiently to make himself understood, partly by sounds which resembled words, and largely by gesticulation. In going through the letters of the alphabet, the letters E, K, N, P, and Z, seemed the most difficult to pronounce. As he was illiterate, his powers of reading and writing could not be tested. The power of mastication was not lost, but the food passed quickly, without almost any chewing, from presumably the inability of the tongue to roll it under the teeth. He drank but little at a time, and then did so by throwing the liquid well back, and gulping it down.

The palate, to all appearances, seemed unaffected, as, in touching

¹ Read before the Academy of Medicine in Ireland.

it with the point of a pencil, it responded to stimulation. Liquids and food also never returned through the nostrils. That it was involved, though to a slight degree, was manifested by his inability to sneeze or blow his nose, acts which do not depend in any way on the power of closing the lips. The lower facial muscles and the tongue responded feebly to faradism, and there was no reaction of degeneration. The mind seemed to be unaffected, though at times he was very desponding, and when amused he laughed immoderately.

On testing the general muscular power, it was evident that, in addition to the symptoms of progressive bulbar paralysis, for the relief of which he sought advice, his hands, upper extremities, and trunk were the seat of progressive muscular atrophy. The left hand was affected to a greater extent than the right, and exhibited the features of the "claw-hand." The dorsal interossei of each hand were atrophied, and, as well as the second and third left palmar, did not respond to faradism. The thenar and hypothenar eminences were also flattened; the abductor pollicis did not respond to electricity, while the opponens responded very feebly. The power of grasping was greatly impaired, the dynamometer registering 12k. to the right, and 5k. to the left, hand. The forearms were soft and flabby; the deltoids, and markedly the right one, were atrophied. The patient was unable to raise his right arm to the horizontal level, and without the aid of the left hand to place the right on the vertex. Fibrillary movements were seen in almost all the muscles, but were well marked in the deltoid, pectoralis major, triceps humeri, and flexor digitorum. Sensation was unaffected. With the exception of the deep cervical muscles which raise and turn the head, all of which were more or less involved as to function, and probably also as to size and structure, the muscles of the trunk and lower extremities were unaffected. There was no loss of power or co-ordination while walking, and the bladder and the rectum were healthy.

The patient remained in hospital for two months, and in some respects was much better than when admitted. He was able to use his right arm much better, and to raise it to the level of the shoulder. He was also less dejected, and was very anxious to try and work. The treatment consisted of nourishing diet; faradism and galvanism to the affected muscles; and chloride of barium, in half-grain doses, three times a day, combined with tincture of hyoscyamus.

REMARKS.—It is not my intention, nor, indeed, do I consider it profitable, to discuss the question of the origin of progressive muscular atrophy. The weight of evidence, at the hands of Charcot, Duchenne, and Joffroy abroad, and Lockhart Clarke and Ross at home, has convinced me that the "neuropathic theory" of Charcot is that which best explains the *rationale* of the disease; and that a similar primary central lesion, in the motor nuclei on the floor of the fourth ventricle, produces the paralysis and atrophy of the tongue, lips, pharynx, and larynx in progressive bulbar paralysis. The association of the two diseases is well exemplified in the foregoing cases. In both, the tongue was first affected. In Case I, eight months elapsed before the patient was aware of the presence of paralysis of the lower extremities; in Case II, four months. I say advisedly "before the patient was aware of the paralysis;" for it is more than probable that the progressive muscular atrophy had commenced its work long before the patient was made aware of it. It is a painless disease, most insidious in its approach, and fitful in its advances, involving separately several portions of a muscle, and not the whole; and it may not be until a very great portion of the muscle is invaded, or a group of muscles becomes atrophied, that the paralysis is recognised by the sufferer. This holds good for the muscles of coarser action, even more than for those of fine and delicate action. It is soon discovered in the fingers of a telegraphic or scrivener's clerk, or in those of a pianist, but very much later in the muscles of the trunk, arms, and lower extremities. I have no doubt in my own mind that, had they been looked for, fibrillary movements would have been discovered in the affected muscles of the trunk and extremities of these patients a very considerable time antecedent to the presence and date of their paralysis. As bearing on this point, I would refer to the case of the combined diseases under consideration which Charcot has detailed, in which he discerned the presence of these evidences of advancing amyotrophic paralysis in the pectorals, deltoids, and latissimus dorsi muscles, before the patient was aware that he was suffering from anything but the affection of speech.

We may therefore, I think, fairly assume that, if not synchronous in their occurrence, the interval which elapsed between the primary engagement of the nerve-centres, which gave rise to progressive bulbar paralysis and progressive muscular atrophy, was short.

Fibrillary movements of the tongue and lips are even more certain symptoms of the advancing bulbar disease than atrophy, for atrophy may not be an early sign. Paralysis may precede it by a very considerable interval, and even to the last the tongue may appear smooth

and of normal volume. This was made known by the case of Charcot referred to, in which, while it appeared unaffected by atrophy, the tongue was very far advanced in fatty degeneration. It seems to me that in all probability the condition of this organ in Stephen S. (Case I) was very much the same as in Charcot's case, for though the tongue appeared slightly atrophied, as compared with the organs of James C., (Case II) its functions as to speech and deglutition were very much more impaired; in fact, no words could be attempted by Stephen S., although he had the aid of the lips, an advantage which the other patient had not, and yet the latter was able to pronounce some monosyllables, although his tongue seemed more furrowed, hummocky, and shortened by atrophy.

These cases illustrate, alike in bulbar paralysis and in progressive muscular atrophy, the very unequal manner in which the same disease may attack different individuals, and a similar want of order by which it makes its advances to a fatal termination.

Case I, in eight months, was fast approaching that consummation; Case II, on the other hand, seemed to be in a stationary or even improved condition at the end of ten months, so far as the disease of the muscles of the extremities was concerned, while, with respect to those of speech and deglutition the disease seemed to be in abeyance.

The bulbar lesion in Case I had chiefly and most seriously involved the nuclei of the hypoglossal nerves, so as to interfere with their function in their distribution to the muscles attached to the hyoid bone, and it but slightly touched the facial; while in Case II the facial nerve seemed much involved, as well as those filaments of the ninth which move the tip and anterior part of the tongue. In neither were taste or sensation affected.

Further comment on these cases is unnecessary, beyond noting that they throw no light on the predisposing or exciting causes of progressive bulbar paralysis; and, although syphilis is accredited with producing the disease by some observers, it is not a factor in these cases. In truth, nothing is known as to its etiology, beyond the facts that it occurs twice as often in men as in women; and after 40 years of age. Heredity is acknowledged to be a strong predisponent of progressive muscular atrophy; yet, though the two diseases are but parts of the one lesion, it has not been proved to be a recognised factor in progressive bulbar paralysis.

ADDRESS ON COLLECTIVE INVESTIGATION.

By SIDNEY COUPLAND, M.D., F.R.C.P.,

Physician to the Middlesex Hospital.

ALLOW me, in the first place, to thank you, on behalf of the Collective Investigation Committee, for the invitation which has brought me here to speak of that Committee's work, before this important Branch. I very much regret that the secretary of the Committee, Dr. Herringham, should have been unable to have come himself, and that the duty should have devolved upon me; for my knowledge of the practical working of the scheme is very incomplete as compared with his, so that the most that I am able to tell is but a small portion of what might be said upon the subject. As a member of the Committee, and therefore desirous to see its work prosper, my words shall not be lacking in earnestness, although they may be deficient in scope.

In setting on foot this undertaking, the British Medical Association is making a great experiment, and it would be too much to expect that it should achieve full success at a bound. Particularly is this true of a plan that requires the co-operation of so large a number, many of whom may naturally ask whether the results to be obtained are worthy the efforts made to obtain them. Few, however, can question the fact that the idea of collective investigation is a worthy one. To bind together all the practitioners of this country for the common object of revealing the obscurities and mysteries of disease, is surely, in the abstract, a great conception. The British Medical Association, by its constitution, possesses within itself every means for realising such an idea in practice. Indeed, the scheme itself, when perfected, should act powerfully in maintaining that organic unity so much to be desired in a large association. It is interesting to notice that in Germany, where the lead of our Association has been followed in a movement for collective investigation, the initiative had to be taken by a Berlin medical society, and centres of inquiry had to be established in the chief towns. They have had to make their organisation; with us, the organisation is ready to hand. It is reasonable, then, to hope that, in our country, the movement will take deeper root than in Germany, and that, owing to our wider organisation, the inquiries may be of more importance and utility.

Delivered before the South-Western Branch.