CLINICAL NOTES ON CASES OF BERIBERI.

By J. O. Affleck, M.D., Physician to the Royal Infirmary, Edinburgh.

(Plate II.)

It has occurred to me within the last five years to have had under treatment in the Edinburgh Royal Infirmary six cases of beriberi. All the patients had acquired the disease abroad. It might, perhaps, be interesting to relate a few particulars respecting the first three cases before referring to the second three, which came under notice more recently, and which more particularly form the subject of this paper.

Case 1.—The first case, which came under my observation in January 1895, was in the person of a sailor, aged 26, who was sent to me as probably suffering from malarial poisoning, the patient having just returned from Brazil. At the first glance I observed that, whether malaria were present or not, there was something quite unusual in the patient’s walk. His gait was feeble, and it was quite evident that a degree of paresis of the lower limbs existed.

The patient stated that he was taken ill at Pernambuco, and had been for nearly a month in a hospital there. His chief symptoms were faintness, slight fever, headache, loss of appetite, constipation, oedema of the feet and calves of the legs, with some loss of sensibility below the knees. What he felt most, however, was the rapidly increasing weakness of the legs, which rendered walking almost impossible. Subsequently his forearms became affected, the hand-grasp was weak, and he lost the power of extending the thumb. He also suffered from palpitation of the heart, particularly on exertion. On being discharged from the hospital to return to Europe, he was so weak that he had to be almost carried on board the vessel, but he improved much during the voyage home, and on arriving in Edinburgh felt nearly well, saving for the weakness of his limbs.

On examination, the patient was found to be suffering from well-marked peripheral neuritis, affecting both lower extremities. The gait was of the “steppage” type, modified somewhat by the swinging walk of the sailor.

I should probably have had some difficulty in diagnosing this case (having never before seen an example of the disease), but for a fortunate circumstance. There happened to be present when I was examining the patient two medical friends from China, both of whom remarked, “This is very like a case of beriberi.” The patient standing by at once replied, “That was the name given to my trouble by the doctor in the hospital in South America.” The full investigation of the symptoms went to show that the patient

1 The details of this case are given at length in the Edinburgh Hospital Reports, vol. iii.

3—Ed. Med. 541—New Ser.—Vol. VII.—I.
had suffered from a typical attack of beriberi, and this view was confirmed by several other friends experienced in this disease, to whom I had the opportunity of showing the case.

After a lengthened stay in the Infirmary, the patient left sufficiently well to resume his occupation at sea. He has since repeatedly returned to report himself when home from a voyage, and beyond the almost complete absence of knee-jerks, no trace of his former ailment remains.

**Case 2.**—The second case, admitted into the Royal Infirmary in July 1897, was in a little boy, C. F. G., æt. 5, who had been brought home from Queensland by his mother, suffering from beriberi, which, she stated, was a common disease in the district where she resided, especially among the Chinese, but which also occurred occasionally among Europeans. She also stated that recently she had lost a child from this disease, and that, the symptoms beginning to show themselves in this boy, she was advised to take him home to Scotland. The account of his illness, as given by the child’s mother, indicated that the disease had shown itself by recurring attacks of pains in the limbs, with weakness in walking, and some oedema; and further, that severe gastric disturbance was present during the continuance of the symptoms, which generally lasted for several weeks at a time. The last attack occurred during the voyage home, but had greatly passed away before his arrival in this country.

On examination, the child showed marked weakness of both lower extremities, and the “steppage” gait was typically displayed. There was diminished sensibility to touch, heat, pain, etc., in the legs; the plantar reflexes were diminished, the knee-jerks absent, and the muscles somewhat atrophied. After a stay of about two months, during which the treatment consisted of massage to the limbs and general tonics, the patient left the Infirmary much better. He remained in Scotland for over a year, and was frequently brought to be examined. The gait gradually assumed a normal character, and all other traces of the disease disappeared. He was ultimately taken back to Queensland, but to another locality.

**Case 3.**—The third case, sent to me in February 1898 by my friend Dr. Leslie Mackenzie, medical officer of health for Leith, was in a Chinese man who had come from Singapore as fireman in a Leith vessel. The ship left a port in China with a Chinese crew, several of whom had to be landed at Singapore suffering from beriberi. The patient was shipped there as a new hand, but in the course of the voyage he also began to exhibit the symptoms of beriberi, and had been unable to work during a considerable part of the passage home. He became, according to the account given by the captain, dull and lethargic, had pain and marked swelling in both legs, and for a time lay in his bunk. When he got up there was evidently difficulty in walking. The swelling disappeared a few days before he reached Leith.

On examination, the chief symptoms were found to be pains in the legs, increased on pressure, some muscular wasting, and absence of the knee-jerks. The gait was feeble, but had not the “steppage” character so often seen in this disease. The patient remained in the Infirmary for
Lungs and heart from case of persistent arterial duct showing it uniting the aorta and pulmonary artery
about seven weeks, his stay having been prolonged owing to inflammations of one eye requiring special treatment; but on leaving to return to China all symptoms of beriberi had disappeared.

For the next three cases I was again indebted to Dr. Leslie Mackenzie. The patients were three of a ship's crew who had come into Leith from Mobile, Alabama. They were foreigners, two being Finns and the third a Swede. Only one of them could speak English, and that very imperfectly, so that the information obtained from them was less complete than it might otherwise have been.

Case 4.—Rudolph G., aet. 19, from Finland, was admitted into the Royal Infirmary on 12th September 1899, suffering from swelling of the feet and legs and weakness in walking. He has been ill for about three weeks. He had hitherto been quite healthy, and had lived a peasant's life until a year ago, when he went to sea. Early in summer he sailed from Liverpool in a Norwegian barque of 1600 tons for Mobile, with a cargo of salt. The ship remained there six or seven weeks, during which time he lived on board, and fed on fresh meat, and on fish which the crew caught in the harbour. On the return voyage the food consisted of salt meat, lentils, rice, etc., and was badly cooked. About five weeks after sailing, he began to suffer from weakness of the legs, and could hardly go aloft. His feet began to swell, and he had much pain in the precordial region. This condition became worse during the next fortnight, but just before reaching Leith he began to improve. He stated that most of the crew suffered from the same symptoms, some more and some less severely, and that one man died. The forecastle was very small, ill-ventilated, and over-crowded. On examination, the patient is seen to be a well-developed young man, but his legs are thin. Edema to a slight extent is present on the dorsum and outer side of each foot, and down the front of both legs. There is a slight pleural effusion to be made out posteriorly at the base of the left lung. Otherwise nothing abnormal is detectable, excepting in the nervous system, a special examination of which was made as follows:

Sensory functions.—There is no pain or abnormal sensation of any kind complained of. Cutaneous sensibility to touch is normal, except on the skin over the calves, where there is slight delay. As regards temperature sensibility, hot and cold test-tubes are felt at once on application over any part of the surface, with the exception of the calves of the legs, where there is a delay of two to four seconds in recognising the touch of the tube, and of two seconds more in recognising the temperature; and also over both great toes, where there is considerable delay, and where "hot" is persistently called "cold." Electrical sensibility is much diminished. Pain is elicited on pressing between the heads of the gastrocnemii. The special senses are normal.

Motor functions.—The patient complains of weakness in his legs. He is unable to squat on his haunches and rise again without assistance, and he has difficulty in standing on tiptoe. His gait is not peculiar, except that it is slightly dragging. Dorsiflexion is lost in the
great toes of both feet; plantar flexion is normal. The muscles of both arms and legs are rather poor and flabby. The dynamometer registers 85 for the right hand, and 90 for the left.

Electrical reactions.—Faradic: The hands, arms, legs, and thighs react normally to a moderate current. A strong current is needed to contract the extensors of the feet and toes, and a still stronger for the tibialis anticus. The calf muscles react to a moderate current.

Galvanic:

| Thigh muscles | ACC > KCC on both sides. |
|---------------|--------------------------|
| Leg front     | ACC > KCC                |
| Soleus        | ACC > KCC                |
| Gastrocnemius | ACC > KCC                |

Reflex functions.—Plantar reflex is absent, as is also the knee-jerk. Co-ordination seems unimpaired. The visceral functions, as well as the cerebral and mental, are normal.

The diagnosis of beriberi was made. The treatment included rest, the employment of sodium bromide and nux vomica, and a generous diet. He gained strength daily, and, on his leaving the Infirmary on 9th October, the report states that the sensory abnormalities are now gone, and that slight knee-jerks are elicited.

Case 5.—Carl T., a Finn, age 19, was admitted at the same time as Case 4, suffering from precisely the same symptoms. The patient, a tall, strongly-built young man, complained of great weakness in walking. There was found to be considerable oedema of the feet and legs, also, to a less extent, of the thighs and abdomen. There was also a small amount of oedema of the base of the left lung. Beyond this there were no symptoms excepting those pertaining to the nervous system, of which the following were shortly the chief:—Cutaneous sensibility is lost in both legs over an area extending from the ankle-joints below to the tubercles of the tibiae above, and extending round to over the inner head of the gastrocnemius of the right side and the outer head on the left. There is also a large area of cutaneous anaesthesia on the lower part of the abdomen between the umbilicus and pubes. The temperature sense is slightly delayed over the anaesthetic areas referred to. The muscles of the calf are tender to pressure. Motor functions: the chief change is in the gait, which is decidedly shuffling.

Electrical reactions.—A strong Faradic current has to be used before any response is obtained in the lower extremities.

The galvanic current gives the following:—

| Thigh | ACC > KCC |
|-------|-----------|
| Leg   | ACC > KCC |

The plantar reflexes are absent, and the knee-jerks likewise. The patient was treated in the manner referred to in Case 4, and he too speedily recovered from the swelling of the limbs, and gained strength. By the time he left (9th October) he could walk quite normally, and his sensory abnormalities had well-nigh disappeared.

Case 6.—Martin M., a Swede, age 67, was admitted at the same time as the two last cases, and the history was the same. The patient seemed to have begun to suffer from his present symptoms very early in
the voyage, and on his admission appeared much the worse of the three, especially as regards the weakness of the limbs, for he could scarcely walk. On examination, there is seen to be considerable tumidity of the abdomen and scrotum, and both limbs are much swollen, especially the feet, ankles, and knees. There is some dulness at the bases of both lungs posteriorly, and the breathing is accompanied by coarse moist rales all over, excepting at the bases, where the respiratory sounds are much diminished. A slight systolic murmur is heard at the cardiac apex. The symptoms pertaining to the nervous system were almost identical with those of Case 2, but in a somewhat more aggravated degree. The treatment was the same as in the other cases, but the patient’s progress to recovery was much slower. On the subsidence of the swelling of the limbs the muscles were found to be wasted. The patient left for home on the 9th October considerably improved, but still very weak.

The following points are worthy of note in the six cases above narrated:

1. That with the exception of one—the child—they all occurred in seafaring men; and in every case they had come from tropical or subtropical regions.

2. That each case presented the characteristic features of a peripheral neuritis, and, in addition, most of them had more or less oedema of the legs. It is true that the symptoms in each case had passed the acute stage before the patients were admitted into the Infirmary. Nevertheless there still remained sufficient evidences of the more salient features of the disease as, taken along with the history, to leave in little doubt the diagnosis of beriberi.

3. That in the first case of all, J. D., the disease was probably acquired in one of the unhealthy ports in Brazil, where it appears to be endemic. In the case of the Chinaman, it was probably communicated to him by infection in the vessel in which he sailed, several members of the crew having suffered from beriberi before reaching the port in which he was shipped. As regards the three last cases, there can be almost no doubt that they were acquired in the vessel, which again had probably become infected during a long stay in port at Mobile.

4. That the case of the child presents some anomalous features. The history, however, was imperfect. It would seem that there were recurring attacks of an illness characterised by vomiting, a widespread paresis affecting both legs and arms, along with some oedema. When the patient was admitted into the Infirmary, the acuter symptoms had passed away, and all that remained was evidence of a peripheral neuritis specially marked in the lower limbs and giving rise to the “steppage” gait, as well as to various sensory abnormalities. There was nothing indicative of disease in the brain or spinal cord.

5. That all the patients improved rapidly by very simple
treatment, and that the more prominent of the symptoms had disappeared before they left the Infirmary.

It should be added that in the last three cases bacteriological examination of the blood was made by Dr. Welsh, pathologist to the Royal Infirmary, with an entirely negative result. This is not surprising, since it is generally admitted that the organisms which have been described disappear very soon after the patient is removed from the locality of the infection.

ACUTE INFANTILE INTUSSUSCEPTION, WITH SPECIAL REFERENCE TO TREATMENT BY PRIMARY LAPAROTOMY.

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Of all the causes of acute intestinal obstruction in children under the age of 10 years, intussusception is the most frequent, occurring in about 53 per cent. of these cases. Acute intussusception, too, is by no means uncommon, and the mortality from it is great—70 per cent. of all cases; therefore it is of the first importance for every practitioner and surgeon to be fully acquainted with the symptoms, especially those which appear early, and to have the best information obtainable as to the treatment by which the greatest chance of recovery may be anticipated.

Although I cannot hope to say much that is original on the subject, I make no apology for approaching it, and expressing my opinion—founded on recent experience—in the hope that I may be able to amplify the scanty information to be found in every text-book regarding the symptoms, and perchance induce one or two to forsake much in the way of treatment that is found therein, if only for the reason that such treatment has not justified its existence alongside of the more modern methods. It is a subject which, in my opinion, has been sadly neglected—the teaching upon it has been stereotyped; and I am sure that at their "final," nine out of ten men, when asked a question as to prognosis in these cases, would say, "Invariably fatal." So it has been until the last year or two, and I venture to predict that in a few years the right answer will be, "Invariably cured by operation."

Like others, failure taught me more than success, and I hope to have the fortitude to lay special stress on any errors of judgment I may have committed, for the profit of those who have nothing to blame themselves for.

I do not wish to dwell longer on the pathological condition found in acute intussusception, than to say that it is a process of telescoping of the bowel into itself, and that this may occur in