A CASE OF ACUTE ALBUMINURIA (ACUTE RENAL CONGESTION) WITH URÆMIA; RECOVERY.

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WITH TWO SIMILAR CASES AND COMMENTS

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ON Jan. 28th, 1900, I was called to see a man, aged 36 years, who was suffering from insomnia, dyspnoea, and acute headache. As to his family history, his father had died from Bright's disease at the age of 57 years; other members of his family were living and were in good health. The previous history of the patient showed that he had had no serious illness. During the last nine years he had been sole manager of a large business entailing much and constant mental strain; and coupled with this was the fact that for the whole of this period he had never had a reasonable holiday. Three weeks before I saw him he had what he thought was influenza (for which he had no medical advice) and he had not since recovered his usual health. The patient was naturally a man of strong physique and he thought nothing of taking a 50-mile walk at a stretch for "exercise." On Jan. 28th he complained of intense headache, inability to sleep, and a choking sensation in his throat. The respirations were 24, with constant coughing, straining, and retching. His face, neck, hands, and wrists were puffy. There was no ascites or oedema of the legs or of the body. The pulse was 84 and small and the arteries were soft and compressible. The lungs were clear; there were no adventitious sounds and no cardiac lesion. The urine was smoky, blood and casts were present, and about one-third of albumin was apparent on boiling it. The patient was ordered bed, warmth, woollen garments, and a milk diet, and a mixture containing tincture of digitalis, spirit of nitrous ether, and solution of citrate of ammonia, was prescribed. On the 29th he had had a sleepless night. All his symptoms were intensified. The quantity of urine had amounted in 24 hours to 20 ounces. More blood and one-half of albumin were present. The bowels opened freely with compound powder of jalap. One-tenth of a grain of pilocarpin was injected. The skin was very dry. On the 30th the patient had had another restless night in spite of the repeated administration of eight grains of sulphonal. The dyspnoea and retching were very distressing, more especially so at night, but were temporarily and slightly relieved by drop doses of nitroglycerine. The urine was diminished in quantity and was solid with albumin on boiling. The patient's condition was steadily growing worse in spite of counter-irritation and dry cupping over the kidneys and the injection of pilocarpin (up to one-third of a grain) three times a day, the skin remaining dry and emitting a strongly urinous odour. On Feb. 1st only 11 ounces of urine were passed in the 24 hours. At no time had the temperature risen above 99·4° F. On the 2nd I was called at 3 A.M. and found the patient semi-conscious, fighting for breath as though choking, retching and straining, and throwing himself about the bed, calling out constantly from the agonising pain in his head. The respirations varied between 45 and 55 and the pulse was 112, small, and irregular. I performed venesection and removed 20 ounces of blood; this moderated the pain in the head and relieved the general condition perceptibly. I telegraphed to Dr. Samuel West, asking him to see the patient. At 8 A.M., while preparing the patient for a vapour-bath, he was suddenly seized with a violent uræmic fit which lasted about 15 minutes and left him in a semi-comatose condition. At 10 A.M. Dr. West saw him with me and at that time the patient had reverted to very much the same condition as that in which he had been before the fit. The same treatment was continued with increased doses of diaphoretics and with dry cupping, vapour baths, and pilocarpin as before. A diet of milk and raw meat juice was ordered. There was free purging. By the evening the patient seemed easier and by midnight, some oxygen, at Dr. West's suggestion, having been procured, the gas was administered for 20 minutes at a time every two hours. The good effect of the oxygen was

most marked, the dyspnoea being relieved, the patient being quieted, and sleep being procured. On the morning of the 3rd there was a decided improvement though there was still grave cause for anxiety. The same treatment was continued and from this time steady improvement resulted. There were no more convulsions, the skin began to act freely, and the kidneys recovered their functions. On the 4th 24 ounces of urine were passed with less blood and albumin present. Each day more urine was secreted, till from the 10th to the 15th the daily average amount was 76 ounces, the partial suppression giving place to over-secretion. There were no hindrances to recovery. Pilocarpin was discontinued on Feb. 8th, vapour baths on the 9th, and oxygen (the frequency and length of time of administration of which were gradually diminished) on the 12th. The inhalations were continued for some days after all dyspnoea had disappeared, for the reason that the gas seemed to act as an antidote to the toxins in the blood and to do good in purifying the system long after its use was indicated simply to relieve dyspnoea. By the 22nd all albumin had disappeared from the patient's urine and there has been no trace of it since. After five weeks' holiday the patient returned to his ordinary occupation and ordinary habits and has since been perfectly well.

The interest of the case lies in the rarity of the kind of attack and in the still greater rarity of recovery from it. The acute renal congestion was not an intercurrent attack in the course of chronic renal disease. There were, and are, no signs or symptoms of granular kidney, no cardiac hypertrophy, and no changes in the retinal or other arteries. Beyond the supposed attack of influenza three weeks before there were no indications of its being a sequela or complication of any other disease, and the cause of it is veiled in obscurity. At the time of the uræmic convulsions the patient's condition was most grave and Dr. West agreed with me in thinking it to be almost desperate. The patient's recovery must be attributed primarily to his own vigorous constitution, and I consider the most potent factors in the treatment were: (1) the free venesection at the critical moment; and (2) the subsequent administration of oxygen, which latter was most efficacious in cleansing the blood from the toxins the presence of which was the exciting cause of all the grave and distressing symptoms.

NOTE BY DR. WEST.

This case is an extremely interesting one. The attack described above was very severe and the patient passed very rapidly into a uræmic state. When I saw him (a few hours after the convulsive attack) he was in a condition of great restlessness and excitability, hardly lying still for a second, rolling from side to side, throwing the clothes off, complaining constantly of headache, and occasionally twitching. With all that his mind was clear. This excitability was greatly relieved by the inhalation of oxygen. It is very remarkable that this patient lived, and still more remarkable that he should now be perfectly well and without a trace of albumin in the urine.

Strange to say, about the same time I saw two similar cases in consultation, the patient in one of which died, while the other made complete recovery. I saw the patient who died in consultation with Dr. Clemow who has furnished me with the following notes: "A gentleman, 41 years of age, who had been ailing for a few months, but without any definite symptoms, was attacked with influenza, which left him still weaker. Three weeks after this attack he was seized quite suddenly with severe headache and lumbar pain. The temperature was raised for a day or two, reaching at its maximum 103° F. Three days later he passed very little urine and on examination it was found to be nearly solid with albumin and to contain much blood and many casts. There was no oedema of the ankles or buttocks or any puffiness of the face, and none developed. About the same time he had a good deal of muco-purulent discharge from the nose, but there was no evidence of diphtheria. He was treated in the usual way for acute albuminuria."

I saw him after he had been one week ill. At that time he was in a similar condition to that described in the first case, being very restless, unable to sleep, with constant headache, occasional sickness, and a good deal of subjective dyspnoea for which no cause was evident. Hiccough set in and became severe. It added greatly to his misery and kept him from getting even snatches of sleep. The urine was reduced to four or five ounces only a day. Various methods of treatment were adopted but no relief was given, and the patient

died a few days later, after about 14 days of illness, having at the last had a few slight fits.

The two cases described were the exact counterparts of one another, though one died and the other recovered. Both, strange to say, had had attacks of influenza two or three weeks previously and they had not taken sufficient care of themselves afterwards. I cannot assert that influenza had anything to do with the attack in either case, but the association is worth noting.

The third case I saw in consultation with Dr. Coates and Dr. Webb. It was that of a man, aged about 60 years, who had been much overworked for many months. His first symptom was sudden headache and general illness, for which no cause was obvious. Routine examination of the urine—for no special symptoms suggested renal mischief—showed the urine to be nearly solid with albumin. The night of the attack he slept hardly at all; he was constantly muttering and wandering, was very restless, and was suffering intensely with general headache. He was treated on general principles. This condition lasted for three or four days and then improvement set in, both in the symptoms and in the state of the urine, and by the end of the week all albumin had disappeared from the urine and, except for debility, the patient was convalescent.

It is a remarkable experience that three cases of this kind should come under my observation in about as many weeks, for they must be extremely rare. They were all instances of most acute albuminuria, with blood, casts, and great diminution in the amount of urine, in the fatal case amounting almost to suppression (there were from four to five ounces only in the 24 hours), and in the two cases of recovery amounting to from 10 ounces to 15 ounces. These patients all passed at once into a condition of acute renal toxæmia, but not that form in which fits are predominant. The prognosis in all seemed desperate, yet when once improvement commenced it was very rapid and recovery became complete. The group of cases most resembling these is that in which acute albuminuria develops in the course of specific fevers—for instance, in scarlet fever; but there was nothing of the kind in these cases, unless the influenza of a few weeks previously is to be held responsible. Moreover, cases of such severity following specific fevers are almost invariably fatal.

A CASE OF ANTHRAX.

By EDWARD F. M. NEAVE, M.B., CH.B. EDIN.

ANTHRAX is such a very fatal disease that any point, however small, bearing on its etiology should be put on record. Though primarily a disease of cattle men are often affected by anthrax, due to accidental inoculation of the virus. In this country the disease occurs in two chief forms, the external or malignant pustule and the internal, of which there are two varieties, the pulmonary and intestinal. Most of the cases of malignant pustule in this country have come under observation at Guy's Hospital, probably owing to its vicinity to the great leather manufactories and tan-yards at Bermondsey and Rotherhithe.

The late Mr. Davies-Colley, to whom we owe a great deal for our present knowledge of the external form of anthrax, says¹ that most of the cases that came under his care at Guy's Hospital exhibited the external lesion or malignant pustule, infection thus occurring through the skin. At Bradford, on the other hand (where the disease goes under the synonym of wool-sorter's disease), it seems that infection takes place through the lungs, most of the cases exhibiting an asthenic form of pneumonia. Outside these two great centres the disease (in man) is not common, but amongst animals epidemics occur now and again in different parts of the country. Anthrax usually attacks animals by way of the intestines, the food being infected by foreign fodder, litter, and manures, or the animals may be infected by feeding on pastures in which the germs have been preserved. The outbreaks on certain farms which occur now and again may be explained by the fact that the spores can live in the earth for an indefinite time.

Malignant pustule usually occurs in men who come into contact with the hides or fleeces of diseased animals or with the diseased animals themselves, the poison gaining entrance through a wound or an abrasion of the

skin. Thus we find that butchers, shepherds, and knackers are very liable to be inoculated with the virus of anthrax. In all such cases the infection is, as a rule, easily traced, but there are certain isolated cases which sometimes occur where the infection cannot be easily traced. The following is a case in point. I shall first give the notes of the case and then discuss the interesting features in detail.

The patient was a middle-sized, muscular man, aged 50 years. He came to me on May 6th, 1900, complaining of an itchiness on the left side of the chest. He said that on the previous day he had felt the left side of his chest itchy and had been scratching it. At that time he noticed what he thought was a pimple above the left nipple. Since then the pimple had been growing larger and the skin around had become swollen and inflamed-looking. Otherwise he said that he felt quite well. On examination, on the left side of the chest, two inches above the nipple, there was a ring of small vesicles with a slightly depressed centre. The ring was of about the size of a threepenny-piece. Beyond the ring of vesicles there were slight swelling and redness of the skin. No enlarged glands could be felt in the axilla. The pulse and the temperature were normal. On the 7th the patient seemed to be fairly well, although the vesicles were larger and the surrounding skin was more swollen, redder, and cedematous. He was going about, but he said he did not feel quite able for his work.

When I saw him on the following day (the 8th) I learned that he had had slight rigors and had suffered from slight sickness and vomiting during the night. The vesicles were still larger and had become confluent, forming a large vesicular ring in the centre of which there was a small dark brown eschar of about the size of a pin-head. Round about there were great swelling, induration and cedema. The skin was dark-coloured, being almost black in patches, and the spreading edge of inflammation was irregular. Owing to the swelling and induration no enlarged glands could be felt in the axilla. The spleen was slightly enlarged. The breathing was regular and was 20 per minute. There was no cough. The pulse was 100, regular, and of good quality. The temperature was 99.4° F. On the whole the patient's general condition was fairly good. On the following night he slept fairly well, but next morning he was much weaker and was suffering from dyspnoea and cyanosis. The dyspnoea and cyanosis increased very rapidly and the patient died the same evening (the 9th), his mental faculties remaining clear to the end.

Through the kindness of Dr. McLagan Wedderburn, the medical officer of health of the county, the serum in the vesicles (obtained just after death) was examined bacteriologically and was found to contain large numbers of the anthrax bacilli (*bacillus anthracis*). Pure cultures were obtained on agar-agar and a guinea-pig inoculated with the serum died with symptoms of anthrax. The following are the interesting features of the case.

1. *The source of infection.*—On inquiry it appeared that there were no suffering animals on the farm or in the neighbourhood, nor was there anthrax amongst animals in the county at this time. As regards the man's work he had been engaged for the fortnight previously to his illness in sowing different kinds of grain along with artificial manure in the form of bone dust. The question is, therefore, Did infection occur from the grain or from the bone dust? The grain that the patient had been sowing three or four days previously to the beginning of his illness was grown on his own farm, and as no case of anthrax has been known to have occurred for a number of years in the neighbourhood, and as the period of incubation of malignant pustule is said to be from two to three days, I think we may put aside the grain as the source of infection. Bone dust, on the other hand, is known as a source of infection of anthrax. A sample of the bone dust which the man had been handling was examined bacteriologically but with a negative result. Notwithstanding this failure to cultivate the organism from the bone dust I am still of the opinion that the bone dust was the source of infection and that the patient had inoculated himself, his hands conveying the infection. This seems the more likely from the fact that the patient had been in the habit of putting his hand underneath his shirt and scratching his breast. On inquiry it appears that the bones from which the bone dust is prepared are imported from abroad. Greenfield² says that animals may occasionally

¹ Transactions of the Royal Medical and Chirurgical Society, 1882.

² Quain's Dictionary of Medicine.