SUPRARENAL GLAND EXTRACT IN CARDIAC
DYSPNOEA AND CARDIAC DROPSY.

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THE practitioner often has to deal with failure of compensation in cardiac cases. Digitalis, strophanthus, convallaria, caffeine—all are useful in their turn; but sometimes one and all may fail us. There is no doubt that strychnine hypodermically is an invaluable remedy in failure of cardiac compensation; that the nitrites are of great service in some cases; that atropine subcutaneously relieves the dyspnoea of others; that potassium iodide is not to be despised as a heart tonic, and that the Nauheim bath treatment, judiciously applied and carefully supervised, does wonders in the early stages of compensation failure.

But there is another remedy which can be relied on in some cases. This is suprarenal gland—the solution of the extract of the gland, used hypodermically or by intravenous injection, or the gland substance, given by the mouth in tablet form.

I have had under my care several cardiac cases in which dyspnoea and dropsy were prominent symptoms, and in which suprarenal gland was administered. I propose here to give a report from my notes on two of these cases only. In the others the action of the remedy in combating the symptoms was maintained. In all, more or less severe dyspnoea was relieved, sometimes by the hypodermic injection of from 5 or 10 to 15 minims of the 1 in 1,000 adrenalin solution (Parke, Davis and Co.), at other times by a 5-grain tablet of the suprarenal gland substance administered by the mouth. When the dyspnoea was not very severe, the dose of adrenalin solution injected hypodermically was from 5 to 10 minims (1 in 1,000 solution), and the 5-grain tablet of the gland substance was halved for each dose by the mouth. In general practice one cannot always make provision for the amount of urine passed by the patient in twenty-four hours to be accurately measured. But where I succeeded in making such provision while my patients were under treatment by hypodermic injections of adrenalin or by the tablets of suprarenal gland substance administered by the mouth, I almost invariably found the quantity of urine increased and the dropsy at least temporarily diminished by the treatment. Sometimes the apparent effect of the remedy in this respect was marked and striking.

The following are notes of the two cases referred to—the one taken as typical of the graver form of disease, that in which the valvular lesion is accompanied by general arterial sclerosis; the other, a milder and uncomplicated case of morbus cordis.

CASE I.

On January 14th, 1905, a railway engine driver, aged 51, applied, with a history of injury to the left arm, supposed to have been caused by a strain while at his work when dragging a heavy weight. A little while afterwards he had felt, first, pain in the left arm, then a sensation of numbness in the arm.

There were no bruises or swelling; the power of grip of the left hand was considerably less than that of the right; the mouth was drawn slightly to one side; the temporal and radial arteries were tortuous and could be rolled under the examining finger; there was a well-marked double aortic bruit.

After some weeks of absolute rest, with an ice-cap to the head during part of the first forty-eight hours, and with the application of warm Droitwich packs to the left arm afterwards, the pain disappeared from the arm, the grasping power of the left hand became almost equal to that of the right, and the mouth was not so noticeably drawn to one side. After a couple of weeks' more rest, the facial muscles appeared to have completely recovered their equilibrium.

When the patient began to go about again he complained occasionally of giddiness and some difficulty of breathing. After twelve artificial Nauheim baths (temperature 100° F., reduced to 98° F.)—at first two and afterwards three a week, given shortly before bedtime—he felt so much better that he wanted to go back to his work.

In June, 1905, he could no longer be persuaded to continue treatment, and returned to his duties on the railway. I did not see him again before October of the same year, when, the dizziness and dyspnoea having returned and become very troublesome, the Nauheim baths were used again. At first they again acted beneficially, reducing the increased pulse-rate and relieving the dyspnoea as well as the giddiness. But after about half a dozen baths the patient no longer gave himself the necessary amount of rest; he went out of doors when it was

cold weather and over-exerted himself in walking. In place of slowing the pulse-rate, the baths were now found to increase it. I then discontinued them, and during the greater part of October and November tried in turn digitalis, strophanthus, and potassium iodide, with aromatic spirit of ammonia and belladonna tincture; these remedies, as well as the nitrites and trinitrin, failed to give any relief from the troublesome dyspnoea, which was almost constantly present, but which the patient found most trying and irksome at night. Strychnine and atropin in hypodermic injections at bedtime gave some relief. In December dropsical swelling made its appearance, first at the ankles, then higher up the legs, then in the scrotum and abdomen.

On December 15th, at night, extreme dyspnoea called urgently for relief, and I injected 15 minims of adrenalin solution (1 in 1,000) subcutaneously. The quantity of urine passed during the previous twenty-four hours had been barely 6 oz. There was almost immediate relief from the dyspnoea, and that night the patient slept more than five hours consecutively. Early next morning, finding that the dyspnoea was returning, I again had recourse to adrenalin subcutaneously; it was repeated in the afternoon and again at night. When, at the end of twenty-four hours, the quantity of urine voided since the previous evening was measured, I found an increase from 6 oz. to 24 oz. During the following five days I continued the adrenalin treatment, and also put the patient on a saltless diet, tarragon vinegar and celery with tomato being given as relishes with food, in place of salt.

The following table, taken from my notes, shows the increase in the urine (measured at 10 p.m. each day) during the six days of treatment:

December 16th, urine measured	...	...	...	26 oz.
December 17th, " "	...	...	...	37 "
December 18th, " "	...	...	...	49 "
December 19th, " "	...	...	...	51 "
December 20th, " "	...	...	...	111 "
December 21st, " "	...	...	...	125 "

When the patient was seen on the morning of December 22nd it was found that he had had a very good night, having slept for more than nine hours almost continuously, and without any difficulty of breathing. He was able to get up and go about the house before going out of doors again in a bath-chair.

In the following year, when he had a relapse, the adrenalin treatment again relieved the dyspnoea and increased the quantity of urine (measured at 5 a.m. each day) for each twenty-four hours, as the following table taken from my notes shows.

On January 5th, 1906, the urine measured 18 oz. Adrenalin given subcutaneously three times, and continued during the following days (without saltless diet).

January 6th, urine measured	...	...	...	20 oz.
January 7th, " "	...	...	...	43 "
January 8th, " "	...	...	...	116 "
January 9th, " "	...	...	...	102 "

There was again a temporary rally; but towards the end of January there was another severe attack of dyspnoea, with increased dropsical swelling. On February 5th, and again on March 10th, paracentesis abdominis gave some relief, but the symptoms of failure of compensation could no longer be checked after this.

CASE II.

While this case was under treatment I was, on February 14th, 1906, called to see a lady with dyspnoea and commencing ascites. There was in this case a loud mitral, systolic bruit, with failure of compensation showing itself by bronchial catarrh, as well as dyspnoea and swelling of the legs. There was also some swelling of the face. The urine contained albumen. On February 14th I injected hypodermically 10 minims of adrenalin solution (1 in 1,000). This was repeated in the evening, and the patient, who had had no sleep whatever during the previous night, slept for three or four hours. The quantity of urine measured for the twenty-four hours ending at 9 a.m. on February 15th was 29 oz. As the patient could not be brought to restrict herself to either the salt-free diet or to an exclusively milk diet, ordinary diet was continued, and two hypodermic injections of adrenalin (1 in 1,000) were given daily (7 to 10 minims each dose).

Table showing Quantity of Urine Passed Day by Day (measured at 9 a.m.) while under this Treatment.

February 15th, urine measured	...	...	...	29 oz.
February 16th, " "	...	...	...	37 "
February 17th, " "	...	...	...	49 "
February 18th, " "	...	...	...	76 "
February 19th, " "	...	...	...	74 "
February 20th, " "	...	...	...	89 "
February 21st, " "	...	...	...	93 "

After February 21st only one injection of adrenalin was given in the evening, and during the day one tablet of suprarenal gland substance (5 grains). This treatment was continued for four days. On February 25th all dropsical swelling had disappeared from the legs and from the face; there was no longer any albumen in the urine, the quantity of which (measured for 24 hours) was found to be nearly 90 oz. There was no longer any dyspnoea; the patient ate and slept well. She resumed her ordinary house duties.