son tells me that the patient has made an excellent recovery. Only once since the beginning of July has there been a return of the very rapid action of the heart, and on that occasion it only lasted two or three hours instead of the three or four days as previously. His pulse at present is never higher than 80 in the minute. For the last few weeks he has been taking arsenic and digitalis.

From being an anxious-looking, irritable, and nervous man, unable to follow his employment, he has become calm and more self-possessed, and is now able to carry on his employment, not so much in the outdoor department as in looking after the financial concerns of the business. The only unpleasant symptom which has been left is something akin to agoraphobia. In coming into Newcastle by road or rail he has to cross the High Level Bridge which spans the river Tyne, and whether he is in the train or on the roadway he always experiences, when on this bridge, unpleasant sensations originating at "the pit of the stomach as if a void had been suddenly created." This is so apt to be followed by increased rapidity of the heart that knowledge of this fact prevents him making the journey into Newcastle as frequently as he would.

The subject of tachycardia has attracted considerable attention since Dr. Samuel West and Dr. Sansom have written upon it, and latterly our interest in it has been revived by the remarks made by Sir Dyce Duckworth in the discussion which he opened at the Birmingham meeting of the British Medical Association on Functional Disorders of the Heart. In the absence of a rheumatic history, the origin of the disorder in our patient must be sought for in some condition of the central nervous system induced by the fright and shock, although the pericardial grating, the mitral systolic murmur, and enlargement of the heart—in the absence of any pronounced vascular lesion, such as aneurysm—must not be lost sight of. The immediate effect noticed when gentle pressure was applied to the pneumogastric nerves in the neck, and the good result which followed electrical stimulation, point in the main to a central cause suspending the inhibitory action of these nerves upon the heart, or to increased activity of the accelerating branches of the sympathetic.

ON CYCLICAL OR INTERMITTENT ALBUMINURIA.¹

By W. P. HERRINGHAM, M.D., F.R.C.P.,

Physician to the West London Hospital and to the Paddington Green Children's Hospital.

A LECTURE of Dr. Goodhart's, published in the *BRITISH MEDICAL JOURNAL*, contained a request that more cases of this form of albuminuria should be published; and, since they are not often seen under conditions which allow thorough examination, I think it worth while to report the following case.

B. B., aged 13, was admitted under me at the West London Hospital, on January 6th, 1890, and discharged on April 23rd. He was a thin, pale boy, with a feeble circulation and a soft pulse; weighing 4 stone 3 lbs., and varying during his stay one or two pounds above this. He had a slight systolic murmur at the apex, and while in the hospital underwent an attack of subacute rheumatism. He was brought to me because every meal produced almost immediately abdominal pain, and a desire to go to stool. This was cured during his stay, and I only mention it particularly because we took some pains, in view of the albuminuria, to be quite certain that the pain was not that of renal colic. We found that the urine was intermittently albuminous. It was examined 91 times while he was an in-patient; 33 times it contained albumen, 55 times it held none, and three specimens were doubtful. The conditions were varied that we might discover the cause of the albuminuria.

First as to position, since that appeared the most important agent. Urine passed while in bed was examined 34 times. Albumen was found thrice only. There was but a faint trace each time, and all three specimens were taken during the

first week of his stay. Urine passed while he was up and about the ward was examined 50 times. It contained albumen 29 times, in 3 the reaction was doubtful, and 18 times there was none. I spoke of the case to my friend, Dr. Haig, who reminded me of Semmola's theories, and suggested that when the boy was up he would get chilled, and that the cold, by contracting the vessels of the skin and altering the metabolism which goes on in these, might produce some form of albumen more diffusible than ordinary. In order to test this I ordered him to lie on a sofa in the ward instead of walking about, and I found that he, indeed, became thoroughly chilled while lying still, but that the urine never contained a trace of albumen though the experiment was repeated on five different days. Wondering, then, whether the actual weight of the blood when he was erect could produce venous stagnation, I thrice sat him upright in a chair for several hours, since in this position there is the same weight of blood above the kidneys as is carried when one is walking about. The urine once contained albumen and twice gave no reaction, but all three experiments were performed during a period when, as I shall relate, the albuminuria had almost ceased, so that the negative results are probably of less importance than might appear at first sight. On the last of these three days, March 4th, I made him, after sitting all the forenoon in a chair, perform violent exercise with the arms, thinking that the excitement of the heart and consequent increase of arterial pressure, might be found to produce albuminuria; the urine, however, remained quite normal.

The amount of albumen varied considerably on different days, without any obvious reason, and at different times on the same day. On nine separate days we examined every specimen passed, and found that the heaviest precipitate was in the middle of the day before dinner. It faded towards the evening to a faint trace or none. It took two or three hours after he had risen to reach its maximum. One day I kept him on the sofa till after dinner. He dined at 1 p.m. and began walking about at 2 p.m. Urine passed at 2.45 p.m. contained no albumen, but that passed at 4.0 p.m. gave the reaction.

Since the period of maximum albuminuria concurred, when his habits were those of ordinary life, with the time at which the greatest relative amount of uric acid is passed, and since Dr. Haig's recent papers had made a deep impression upon me, I determined to test the relations of uric acid, of urea, and of the acidity of urine to the albuminuria.

TABLE II.

Date.	Quantity.	Acidity Equivalent in Grains of Oxalic Acid.	Amount of Uric Acid.	Amount of Urea.	Uric Acid Urea.	Albumen.	Position.	Diet.
Feb. 1	Ozs.	Grains.						
" 2	30	17.6	5.599	320.85	$\frac{1}{4}$	Absent	In bed	Meat.
" 3	34	24.8	8.461	371.33	$\frac{1}{4}$	Present	Up	"
" 3	36	17.6	7.531	393.38	$\frac{1}{4}$	Absent	On sofa	"
April 3	25 $\frac{1}{2}$	46.0	5.053	339.75	$\frac{1}{4}$	Present	Up	Fish.
" 5	31	32.0	6.669	320.38	$\frac{1}{4}$	"	"	Meat.
" 16	21	—	5.273	300.93	$\frac{1}{4}$	Absent	"	Milk.

The estimation of uric acid was carried out by Haycraft's process, the value of which appears now to be very doubtful. I could not, however, find that either the acidity of the urine or the absolute or relative amounts of urea and uric acid had any constant relations to the albuminuria. For, though albumen tends to appear with the higher proportion of uric acid—when, for instance, the $\frac{\text{uric acid}}{\text{urea}} = \frac{1}{4}$, $\frac{1}{4}$, and $\frac{1}{4}$ —it is absent in other specimens when the proportion is $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$, as well as in many where the fraction is less. An excessive percentage of urea has been suggested by Dr. Ralfe as an explanation, but it did not occur in any regular connection with the albumen in this case.

The same thing might also be inferred from the little effect that diet by itself had upon his disease. For first, he passed

¹ Read in the Section of Medicine at the Annual Meeting of the British Medical Association held in Birmingham, July, 1890.

TABLE I.

Date.	Time of Day.	Quantity.	Acid, its Equivalent in Grains of Oxalic Acid.	Amount of Uric Acid.	Percentage of Urea.	Amount of Urea.	Proportion, Uric Acid Urea.	Albumen.	Position.	Diet.
		Ozs.		Grains.		Grains.				
April 3	7.30 A.M. to 1.30 P.M.	3	8.593	1.218	3.8	53.01	$\frac{1}{17}$	Present	Up	Fish.
" "	1.30 to 3.15 P.M.	4	5.27	0.933	2.1	39.06	$\frac{1}{11}$	Absent	"	"
" "	3.15 to 7 P.M.	4	8.784	0.684	2.9	53.94	$\frac{1}{18}$	"	"	"
" "	7 P.M. to 4.50 A.M.	9	19.725	1.539	3.4	147.69	$\frac{1}{27}$	"	In bed	"
" "	4.50 to 7.30 A.M.	5 $\frac{1}{2}$	4.003	0.689	1.8	46.03	$\frac{1}{25}$	"	"	"
April 5	7.30 to 11.15 A.M.	6	4.394	1.679	1.6	44.64	$\frac{1}{27}$	"	Up	Meat.
" "	11.15 A.M. to 5 P.M.	5	4.394	1.165	2.2	51.15	$\frac{1}{23}$	Present	"	"
" "	5 to 7.45 P.M.	7	4.589	1.197	1.7	55.33	$\frac{1}{29}$	Absent	"	"
" "	7.45 P.M. to 5.25 A.M.	13	19.032	2.628	2.8	169.26	$\frac{1}{59}$	"	In bed	"
April 8	7.30 A.M. to 12.30 P.M.	4	6.44	1.374	3.2	60.72	$\frac{1}{31}$	Present	Up	Meat.
" "	12.30 to 2.45 P.M.	4	5.56	?	1.9	35.34	?	"	"	"
" "	2.45 to 6 P.M.	5	9.07	0.933	2.7	62.77	$\frac{1}{27}$	"	"	"
April 16	7.30 A.M. to 1.45 P.M.	3	8.3	0.7	3.4	48.23	$\frac{1}{28}$	Absent	"	Milk.
" "	1.45 to 4.45 P.M.	4	11.12	0.995	3.0	55.8	$\frac{1}{25}$	"	"	"
" "	4.45 to 8.45 P.M.	6	6.14	1.213	2.6	72.54	$\frac{1}{28}$	"	"	"
" "	8.45 to 5.15 A.M.	8 $\frac{1}{2}$	25.77	2.365	3.3	125.16	$\frac{1}{37}$	"	In bed	"
April 20	7.30 to 10.15 A.M.	2 $\frac{1}{2}$	3.416	?	2.8	62.55	?	Present	Up	Milk.
" "	10.15 A.M. to 4.10 P.M.	3 $\frac{1}{2}$	5.856	1.202	2.6	42.38	$\frac{1}{27}$	"	"	"
" "	4.10 to 6.46 P.M.	2	4.687	0.497	3.0	27.9	$\frac{1}{28}$	"	"	"
" "	6.45 P.M. to 4.45 A.M.	6	?	0.788	2.9	80.91	$\frac{1}{28}$	"	In bed	"

albumen regularly while he was on fish diet; secondly, he passed albumen once during a short period of milk diet; thirdly, the chief precipitate occurred in the morning before he took any meat; fourthly, he was taking meat regularly during a period of nearly a month, when he had hardly any albuminuria; and fifthly, he on many days took meat while in bed and yet passed no albumen.

Between February 10th and March 4th there was a period for which I am quite unable to account, during which the albuminuria almost ceased. During this time the urine was examined 13 times on twelve days while he was up, and albumen was only found certainly thrice and doubtfully once. One, however, of the other nine specimens was of evening urine which would naturally be free from albumen. At the time we hoped that the immunity was due to treatment, but this fond hope was subsequently shattered. He was ill in bed with rheumatism for several days ending March 23rd, when he rose again. For the next three days he passed no albumen, but it began again on the 26th.

Nor did the microscope help me any more than other methods of inquiry. I was never able to see any casts, but there were plenty of leucocytes in the field, and more than once some oxalate crystals. Oxalates have been found in several cases, but their importance is a very doubtful matter.

As a result of these various observations, I came to the conclusion that position was the most important of all the conditions that I could consider, and though this may act in many unknown ways, I am at present inclined to believe that it produced its effect simply by increasing the weight of blood resting on the renal veins. One thing seems to be very common in this class of patients—a weak circulation and a general loss of tone. This would greatly predispose to a condition of venous stasis such as I suppose to be present, and to which the kidney is, by reason of its double capillary system, more liable than other parts. I have, at any rate, failed to find any other factor likely to have a bearing on the case.

The greater liability to albuminuria in the forenoon is, perhaps, due to the weaker state of the circulation at that time, and since exercise is the best stimulant, the instances in which we could postpone the albuminuria till the afternoon by keeping the patient at rest may probably be explained by the absence of exercise.

Lastly, I would add that this case is on all fours with the cases of Rooke,² Dukes,³ Pavy,⁴ and von Noorden,⁵ and that I should offer this explanation for this class alone. There are many other forms of intermittent albuminuria; indeed, in children, I believe slight albuminuria is generally intermittent, but I should think that they probably depend on quite other causes.

Treatment was of little avail in this case:

From Jan. 6 to 15	...	Fish diet	...	No drugs	...	Albuminuria.
" " 16 to Feb. 7	...	Meat	...	Hydro-chloric acid	...	Albuminuria.
" Feb. 8 to 13	...	"	...	Atropine	...	Little albuminuria.
" " 14 to 18	...	"	...	Arsenic	...	"
" " 19 to 25	...	Fish	...	"	...	"
" " 26 to Mar. 11	...	Meat	...	"	...	Little albuminuria up to March 4; then increasing.
" Mar. 12 to 23	...	Fish	...	Salicin	...	For subacute rheumatism; in bed.
" " 24 to 26	...	"	...	Arsenic	...	No albuminuria
" " 27 to 28	...	"	...	"	...	Albuminuria.
" " 29 to Apr. 5	...	"	...	Iron	...	"
" Apr. 6 to 11	...	Meat	...	"	...	"
" " 12 to 14	...	"	...	Digitalis and arsenic	...	"
" " 15 to 20	...	Milk	...	"	...	Little albuminuria.

MULTIPLE MULTICULAR CYSTS OF THE MESENTERY.

By WILLIAM ROBINSON, M.S., M.D.,
Stanhope.

SIR SPENCER WELLS contributed to the BRITISH MEDICAL JOURNAL of June 14th, 1890, a note on mesenteric and omental cysts, and a description of the latter was given by Dr. Ransom in the JOURNAL for November 8th, 1890. These reports induce me to publish a few brief notes of a similar rare case.

A little girl, aged 24 months, was brought to me on September 7th, 1889, owing to the great and increasing size of her belly preventing her from walking and stooping. The enlargement was first noticed three months before. The child was anæmic and had signs of slight rickets (enlarged bone ends, lax joints, and history of sweating of the head); there were nebulae of the cornea and a history of severe bronchitis at 12 months of age. The belly was now 20 $\frac{1}{2}$ inches in circumference; the enlargement was most marked on the left side, and was not quite uniform; on palpation the growth could be felt to extend from the left hypochondrium (where there was stomach resonance) to the brim of the true pelvis, into which it did not seem to dip, as the lower rounded end could be mapped out, and from the left loin to the median line, near which was a depression in its inner border; in fact, in shape and position it felt just like a uniformly enlarged kidney. The growth was highly elastic, freely movable, and dull on percussion, but the note varied in different parts of it; the left loin and groin were both dull. Sometimes on very slight percussion some resonance could be made out on the front of the tumour at the upper part. It was impossible to elicit a wave of fluctuation either in the whole or any part of the swelling. Alteration of the patient's position caused no alteration in the signs. Under chloroform all the above signs were verified, and an examination *per rectum* showed the pelvis was not invaded by the growth. On puncturing the growth with a hollow needle 2 or 3 drachms

² BRITISH MEDICAL JOURNAL, 1878, ii, 596.

³ Lancet, 1878, ii, 794.

⁴ Lancet, 1885, ii, 706; 1886, i, 437.

⁵ Deutsches Archiv f. klin. Med., Leipzig, 1886, xxxviii, 20