

percentage of sugar, and the difference value of the blood, within well-defined limits; when this balance is interfered with abnormal relations result.

(6) A relative increase in the pancreatic secretion causes a fall in the percentage of sugar and in the difference value of the blood.

(7) A relative diminution in the secretion of the pancreas, with consequent greater liberty of action on the part of the glycolytic ferment of the liver, gives rise in the early stages to an increased formation of the intermediate products of glycogen degradation without any change in the sugar, and in the later stages to an increasing sugar production with a proportional diminution in the intermediate products.

(8) The appearance in the blood and urine of intermediate products of carbohydrate metabolism, as shown by the difference value of the blood and the iodine coefficient of the urine, indicates a prediabetic condition which, if allowed to progress unchecked, will be followed by hyperglycæmia and glycosuria.

(9) Incidentally it has been shown that a considerable proportion of a well-boiled starch is absorbed into the portal circulation in the form of dextrins and maltose, whereas an uncooked starch enters the portal blood chiefly as dextrose.

## Clinical Notes :

### MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

#### THE ANTIDIURETIC EFFECT OF

#### PITUITARY EXTRACT IN DIABETES INSIPIDUS.

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In April, 1919, there appeared in the *Quarterly Journal of Medicine* an interesting account of some observations by Drs. E. L. Kennaway and J. C. Mottram upon the antidiuretic effects of pituitary extract in diabetes insipidus with a detailed account of two cases. In view of the comparative rarity of this condition I now record the following notes of a case recently under my care in which injections of pituitrin were given, and observations made upon the total output of urine in the 24 hours, as well as notes on the amount and specific gravity of the samples collected at frequent intervals after the injections. The injections were always followed by an action of the bowels, and on the first occasion by vomiting, but except for this no untoward effects were observed. Apart from the discomfort and annoyance of the symptoms the patient suffered no inconvenience beyond that of a slight bronchitis, which yielded to treatment. There were no symptoms or signs to suggest any associated disorder of the pituitary gland.

The patient, an ex-soldier, aged 35, was admitted to the wards of the Miller General Hospital on May 21st, 1920. He gave the following history. He had always been a healthy man until he was invalided from the Salonika front in the winter of 1917 with bronchitis and nephritis (*sic*). He was sent back to England, and while in hospital at Malta, en route, he began to complain of polyuria for the first time. He was treated for bronchitis and asthma, but no special attention was paid to the other condition.

On admission to the Miller Hospital his condition was as follows:—He was a healthy looking well-developed man. He complained of some cough and of great thirst, and continual polyuria. On examination he had signs of some bronchitis; medium rhonchi were audible all over both lungs without moist sounds; there was a moderate amount of expectoration. He was treated for this with belladonna and stramonium, and the physical signs in the chest cleared up. The heart was normal. There was no sign of oedema of the face or legs, nor was there any albuminuria. His visual fields were not diminished; the appearance of the fundus oculi on both sides was normal. A skiagram of the skull showed no abnormality of the sella turcica. From the time of his admission he suffered continually from intense thirst, and was allowed as much water as he wanted day and night. The urine was pale, acid in reaction, of low specific gravity (1000), and contained no sugar or albumin. The amount passed per 24 hours averaged just over 300 oz.

It was decided to administer hypodermic injections of pituitary extract in order to observe its effect upon the diuresis, and to see whether after continuing the injections for some time any permanent or lasting

effect was obtained. The results are shown in Table I. It will be seen from this table that the antidiuretic effect of the pituitrin was such as to cause an appreciable diminution in the total excretion of urine in the 24 hours. The effect was much more pronounced during the period shortly following the injections as may be seen from the record of the hourly collection of

TABLE I.—Quantity of Fluid Taken and Urine Passed.

Days after admission on 21/5/20.	Pints of fluid taken per 24 hrs.	Ounces of urine passed per 24 hrs.	Days after admission on 21/5/20.	Pints of fluid taken per 24 hrs.	Ounces of urine passed per 24 hrs.
1	28	238	14	23	348
2	23	313	15	25	400
3	24.5	320	16	23	390
4	20	312	17	24	350
5	26	309	18	23	410
6	6*	340	19	22	350
7	18	54	20	20	326
8	17	145	21	22	328
9	18	140	22	20	288
10	15	155	23	22	294
11	21	252	24	22	304
12	24	244	25	24	320
13	22	278	26	21	304

\* Evening measure of intake not recorded.

From the sixth to the twelfth days injections of pituitrin were given daily as shown in Table II.

Body-weight on fourth day 9 st. 9 lb., on eleventh day 9 st. 7½ lb., on nineteenth day 9 st. 6 lb., on 26th day 9 st. 3½ lb.

TABLE II.—Hourly Record of Urine after Injection.

Date in 1920.	Injections of pituitrin and urine collected.	Specific gravity.	Date in 1920.	Injections of pituitrin and urine collected.	Specific gravity.
27/5	1 c.cm. at 7 p.m.		30/5	1 c.cm. at 6.30 p.m.	
	8 P.M. ... 12 oz.	1000		9.30 P.M. ... 3 oz.	1015
	9 P.M. ... 6 oz.	1007	31/5	0.5 c.cm. at 11.30 a.m.	
	10 P.M. ... 2 oz.	—		0.5 c.cm. at 11.10 p.m.	1010
28/5	6 A.M. ... 16 oz.	1010	1/6	12.10 A.M. ... 24 oz.	1000
	1 c.cm. at 7 p.m.			5.30 A.M. ... 20 oz.	1005
	8 P.M. ... 3 oz.	—		1 c.cm. at 9 p.m.	
	11 P.M. ... 4 oz.	1018		10 P.M. ... 8 oz.	1000
29/5	6.30 A.M. ... 15 oz.	1015	2/6	6 A.M. ... 10 oz.	1005
	1 c.cm. at 12.15 p.m.			1 c.cm. at 11.45 p.m.	
	12.30 P.M. ... 24 oz.	1000		12 m.dn. ... 10 oz.	1000
	1.15 P.M. ... 3 oz.	1000	3/6	6 A.M. ... 12 oz.	1015
	6 P.M. ... 24 oz.	1008			
	8 P.M. ... 2 oz.	1010			

specimens of urine. (Table II.) After June 3rd (thirteenth day after admission) several doses of pituitrin were given by the mouth, but without any appreciable effect upon the amount of urine secreted. The polyuria continued, the man's general condition being satisfactory and the bronchitis and asthma having completely cleared up. He was discharged from hospital in order to go for a short time into a convalescent home.

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#### AN INFANT AMAZON

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COMPLETE absence of the breast in a female infant appears to be a very rare occurrence, and the following case may therefore be worthy of record.

Mrs. K., multipara, was delivered on March 25th, 1920, of a full-term, healthy female child, of 9 lb. weight. On

examination of the infant I found that there was complete absence of the left breast and nipple, and absence of the major part of the anterior axillary wall,



due to absence of the costo-sternal portion of the great pectoral muscle.

The accompanying illustration shows the child at the age of 6 weeks.

Atherstone.