

SCIENTIFIC PROCEEDINGS.

ABSTRACTS OF COMMUNICATIONS

One hundred sixth meeting

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64 (1524)

A case of lipuria associated with chronic nephritis.

By **L. BAUMAN** and **G. H. HANSMANN.**

[From the Department of Internal Medicine, State University of Iowa.]

Clinical, pathological and chemical data of a case of lipuria associated with chronic nephritis which terminated in uremia. The lipuria was influenced by the amount of fat in the diet. The absence of coagulated protein, the scarcity or absence of cells in the urine and the apparent absence of a fistulous communication between the urinary passages and the lymphatics at autopsy indicate that the lipuria was due to an altered permeability of the renal cells. The available evidence makes it probable that there are at least two types of lipuria, the one associated with a fistulous communication, the other entirely due to an abnormal condition of the kidney cells.

65 (1525)

Calcium in the blood in diseases of the skin.

By **WILLIAM C. THRO** and **MARIE EHN.**

[From the Laboratory of Clinical Pathology, Cornell University Medical College, New York City.]

Before proceeding with experiments on the efficacy of calcium in the treatment of furunculosis it was thought advisable to deter-

mine the amount of calcium in the blood of patients with boils. We proceeded on the idea that the calcium might be decreased in such patients. As it happened, we first examined a number of patients with acne and we were much surprised to find the amount of calcium markedly increased in such. After testing about ten patients with acne we examined our first patient with boils and found the calcium was slightly below normal in amount. In one other patient with a large boil on the arm the amount of calcium was extremely low; that is, 5 mg. per 100 c.c. of plasma. Thus it is seen that in most of the patients with acne the amount of calcium in the blood was markedly increased while in some of the patients with furunculosis the amount of calcium was very low.

So far as we have searched the literature we have not found any results reported on the amounts of calcium in the blood of patients with acne and furunculosis. The amounts of calcium found by us in the blood of patients with acne were so extremely large that we determined to subject the gravimetric method, which we used, to a careful investigation. We ran through six blanks by the ashing method, which we used, with negative results. In one test we used 20 c.c. of our distilled water and found it free from calcium. In case No. 2, 22 c.c. of plasma were obtained at one time and divided into two portions of eleven c.c. each. In one portion the calcium was determined by Mr. Osterberg and in the other by Thro. The results disagreed by only 1.8 mg. per 100 c.c. of plasma. In case No. 6, Mrs. Ehn divided the whole blood into two lots of 25 c.c. each and her determinations of calcium agreed exactly. Six times the titration method, as given by Halverson and Bergeim¹, was used as a control. While the results were not in strict agreement with those obtained by ashing, it was noted that if high results were obtained with one they were also obtained with the other. It is our opinion that the ashing method is more accurate with large amounts of plasma than with small amounts. It is also believed that it is better to use blood plasma or serum than whole blood, since results are obtained sooner and variations in corpuscular volume do not affect the results. In every one of our patients the volume of corpuscles was greater than the volume of plasma.

¹Halverson, J. O., and Bergeim, O., *Jour. Biol. Chem.*, 1917, 32, 159-170.

As is well known, the giving of a diet low in carbohydrate^{1,2} tends to eliminate the calcium from the body. This was tried twice on patients with acne, resulting in the lowering of the calcium in the blood.

TABLE I.

Case No.	Name.	Diagnosis.	Quantity Used, C.c.	Mg. Ca in 100 C.c.	
				Ashing.	Titration.
2	N. W. C.	Acne	Plasma, 11	19.9 ¹	
	"	" Jan. 7, 1920. ²	" 11	18.1	
5	Miss C.	"	Whole blood, 25	24.5	
	"	" Jan. 19, 1920.	" " 25	13.6	
6	E. G. C.	"	" " 25	17.6 ³	
	"	"	" " 25	17.6	
7	M. C.	"	" " 25	12.0	
8	Mr. A.	"	Plasma, 15	17.8	
11	Mary F.	"	" 19	17.8	
12	Mr. R.	"	" 12	10.7	
17	Mrs. V.	"	" 19	25.4	
18	Miss M.	"	" 10	25.7	
20	L. R.	"	" 18	25.6	
24	Mr. L.	"	" 12.5	14.4	
25	Mr. S.	"	" 10	15.0	17.4
3	Mrs. R. V.	Furunculosis	Whole blood, 25	13.6	
13	Dr. B.	"	Plasma, 10	8.2	
23	J. D.	"	" 14	5.0	6.0
22	R.	"	" 18	11.8	14.4
27	Mr. Mc A.	"	" 20	11.5	
21	M. T.	Folliculitis barbae	" 12.5	22.24	20.83
15	— —	Epilepsy	Whole blood, 25	12.4	
16	— —	"	" 25	8.0	
26	G. C.	Diabetes	Plasma, 12	20.4	17.6

¹ Mr. Osterberg ascertained the Ca in one lot of 11 c.c. and Thro in another portion of 11 c.c.

² Between the two dates the carbohydrate intake was low.

³ 50 c.c. of blood divided into two portions of 25 c.c. each.

H. J. Schwartz has found that in acne there is a carbohydrate fermentation of the feces when examined by the Schmidt method. He has also reported that in skin diseases there is an increase in the blood sugar³ The blood of one diabetic was tested for the calcium content but the amount was not decreased.

¹ Thayer, W. S., and Hazen, H. H., *Jour. Exper. Med.*, 1907, 9, 1-17.

² Mendel, L. B., and Benedict, S. R., *Am. Jour. Physiol.*, 1909-10, 25, 25.

³ Schwartz, H. J., Heimann, W. J., and Mahnken, H. C., *Jour. Cutan. Dis.*, 1917, March.

The pathologic lesion of acne is in the sebaceous glands of the hair follicles, while in furunculosis the sweat glands become infected. It is of interest, then, to note that in one patient with folliculitis barbae, in which the hair follicle is involved, the amount of calcium in the blood was increased.

GRAVIMETRIC METHOD USED.

The blood was collected in a flask containing 90 mg. of sodium citrate. After centrifugalization the plasma was drawn off and evaporated in a platinum dish; ashed with addition of nitric acid. The ash was taken up with dilute hydrochloric acid. The solution was made alkaline with ammonia and then faintly acidulated with acetic acid. The iron was precipitated with 20 per cent. sodium acetate. The calcium was precipitated from the filtrate with 4 per cent. ammonium oxalate. The solution was allowed to stand over night. Gooch crucibles packed with asbestos were used. The calcium was weighed as calcium oxide.

66 (1526)

The preparation of animal nucleic acid.

By EMIL J. BAUMANN.

[From the Chemical Laboratory of the Montefiore Home and Hospital, New York City.]

The proposed method depends on the following properties of nucleic acid: (1) that it is separated from its protein combination by treatment with sodium hydroxide, (2) that it is soluble in dilute acetic acid and, (3) that it is precipitated by hydrochloric acid, or in the case of dilute solutions, by hydrochloric acid in the presence of magnesium sulphate.

Fresh, trimmed glandular tissue, finely hashed, is mixed well with twice its weight of tap water and 100 c.c. of 50 per cent. sodium hydroxide is then added for each kilogram of tissue. The material is then heated until all except the connective tissue is dissolved (40° C.-70° C.). Neutralize hot and at once with strong acetic acid; the reaction should finally be distinctly acid to litmus. Bring to a boil and filter hot on large folder filters.

When the filtrate has cooled an aliquot of 200 c.c. is taken and