

crease of internal pressure would tend to break the adhesions and re-establish the normal posterior horn. Might not such straining on the adhesions give rise to pain or other symptoms?

6. That the calcarine fissure and the cerebellum, which modify so much the shape of the posterior horn, are developing rapidly about the time of the appearance of convulsions in infants is an interesting coincidence, especially taken in consideration with the case briefly mentioned in this paper.

7. The large proportion of anomalies in the posterior horns of brains from institutions is significant.

8. In all cases the ventricle should extend far into the occipital lobe, and traces of its having been there at one time during development are always to be found.

9. The relationship of the optic radiation and other structures to the posterior horn are important facts for consideration in connection with the causes of temporary scotoma and migraine, and possibly other conditions.

10. The condition of the posterior horn should be examined in all cases of obscure cerebral diseases or mental disorders.

I wish to thank Professor Dwight and Dr. Warren for the material used in this study.

CHEMICAL EXAMINATION OF THE FECES OF INFANTS AND CHILDREN AFTER GASTRO-ENTEROSTOMY.

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THE following investigation was undertaken, at the suggestion of Dr. Charles L. Scudder, upon specimens obtained from cases operated upon by him and upon other material collected from a wide territory. The object of this study was primarily to determine whether or not gastro-enterostomy, performed on babies with benign pyloric stenosis, modified the digestion of fat, starch and protein. It was hoped that accurate data of the amounts and quality of the food could be obtained. The patients, however, were not under the writer's control, and it thus was impossible to make this a metabolism experiment. The parents or physicians in charge of the patients were requested to collect all the stools, free from urine, passed during a period of three days. There was no attempt to mark off the beginning and end of the three days with carmine. The specimens were placed in glass jars and sent to the writer by express, some of them arriving the next day, and the most distant one taking five days. They were all collected during the cold weather of the winter of 1908-1909, and were, therefore, chilled or frozen when received. They were thawed out, thoroughly mixed up, and examined microscopically for muscle fibers, connective tissue, starch and fat. Muscle and connective tissue were looked for in an unstained cover glass specimen,

and starch in a specimen stained by Lugol's solution. The estimation of fat under the microscope will not be recorded, because the chemical examinations recorded in the accompanying table give accurate figures.

The character but not the quantity of the food during the three days was known in all but two instances. These were two five-months-old babies which were probably fed on milk in some form. The diets of Case 3 and Case *a* included all kinds of meat, and Case *e* and Case 2 chicken only. None of the stools from these contained an excess of muscle fiber or connective tissue. All but Case 6 and Case *f* took starch in some form, and none of the stools showed starch either by the macroscopic or microscopic test with Lugol's solution.

Cases 1, *f* and 4 were said to be "constipated, but otherwise well." The rest were reported "perfectly well."

In spite of the fact that the data were not as accurate as could be wished, because the patients were not under the writer's control, because the quantities of the food components were not recorded, and because the urine was separated from the feces by untrained observers, the stools were dried down and examined chemically for fats and nitrogen, according to a modification of Fr. Müller's method, described in the BOSTON MEDICAL AND SURGICAL JOURNAL, June 11, 1908, page 906.

The work of Camerer, Hartmann, Escherich and Rubner shows that the quantity and quality of the food ingested may cause wide variations in the amounts of feces excreted. The weights of the stools of these patients after gastro-enterostomy when compared with these figures all come within the normal limits. In comparing the total weight of stools passed per day with those for corresponding ages collected by Schmidt and Strassburger, the results do not show a great variation from the normal.

The percentage of nitrogen is also influenced by the quality of the food given. According to Biedert, it varies from 4.23% of the dried stool in bottle-fed babies to 5.28% of the dried stool in breast-fed babies. The percentages are somewhat higher on the average adult diet, ranging from 5 to 8%. If these figures are representative of all normal conditions, the percentages of nitrogen in the above table are within the variations of the normal. Three only approach the highest limit. It is safe to say, therefore, that none of these specimens show a marked increase in the amount of protein excreted.

Cases *c*, 1 and *d* contained a higher percentage of total fat in the dry stool than would be expected in normal children of the same age. The others were well under the normal limits. According to Fr. Müller, 75% of this fat should be split into fatty acids and soaps, or, in other words, less than 25% of the total fat of the dried stool should be in the form of neutral fat. Cases 6, *f*, *b*, 4, *e*, *a* and *d* were very close to or within this arbitrary limit of 25% of neutral fat; on the other hand, Cases *c* and 3 were considerably above

the normal, and Cases 1 and 2 were markedly above the normal. The splitting of the fat is not completed in the usual manner in these four cases, and the percentage of nitrogen, though not outside of normal limits, was close to the high limit. In Case 1 the fat alone was apparently at fault.

The writer was fortunate enough to get all the stools excreted by a five-weeks-old baby from the time of his operation, Jan. 24, to Feb. 3, 1909. The baby was fed almost immediately after the operation on breast milk in increasing amounts and did perfectly well.

In this instance the total fat in the dry stool, which was at first over 50%, quickly fell to normal. The splitting of the fat was complete only

in stool No. 2 and the percentage of nitrogen does not suggest a deficient utilization of the protein. I have no normal stools of the first days of life with which to compare these figures. They show, however, marked improvement during the ten days under observation.

According to clinical reports all these children are perfectly well and have gained weight satisfactorily. The chemical and microscopic examinations of these stools show that in the majority of cases the digestion is normal. It is evident that if there is any indigestion it is more probably of the fat, and that chemically and microscopically there are no signs of marked protein or starch indigestion.

TABLE I.

Name.	Age at operation.	Age at time specimen was sent.	Total weight.	Total dry weight.	Per cent nitrogen in dry stool.	Per cent total fat in dry stool.	Per cent neutral fat in dry stool.	Per cent fatty acid in dry stool.	Per cent soaps in dry stool.	PER CENT OF TOTAL FAT OF		
										Neutral fat.	Fatty acid.	Soaps.
(6) Nutting	7 wks. 5 days	5 mos.	64	13.503	2.80	38.0	10.8	7.2	20.0	28.4	18.	53.6
(f) Thomas	5½ wks.	5 "	75	11.004	3.10	34.4	6.6	4.0	23.8	19.1	11.3	69.6
(b) Burke	3 "	1 yr.	155	34.484	2.90	20.8	6.2	4.0	10.6	29.8	19.1	51.1
(4) A. F. S.	14 days	1 " 4 mos.	250	34.935	3.78	17.6	2.4	5.2	10.0	13.	29.0	58.0
(c) Martin	50 "	1 " 6 "	85	18.344	5.20	44.0	16.4	20.4	7.2	37.2	46.3	16.5
(e) Smith	72 "	1 " 6 "	135	30.334	4.06	38.2	10.6	14.2	13.4	27.7	37.1	35.2
(3) Colby	22 "	2 yrs. 5 mos.	180	34.8	6.10	16.6	6.0	6.2	4.4	36.1	37.2	26.7
(a) Arnold	10 wks.	3 "	240	51.004	4.80	37.8	11.2	7.4	19.2	29.6	19.6	50.8
(1) Wales	14 days	3 " 5 "	205	32.308	4.80	49.4	22.4	14.8	12.2	45.3	30.0	24.7
(2) Larrabee	24 days	3 " 8 "	185	42.865	5.60	26.8	11.2	8.4	7.2	41.4	31.3	27.3
(d) Sawyer	280	75.288	2.40	42.2	10.4	5.0	26.8	24.6	11.9	63.5

TABLE II.

(7) Mathews (1)	5 wks.	5 wks.	5	.876a	4.40	57.8	29.2	17.4	11.2	50.5	30.1	19.4
" (2)	5 "	5 "	?	3.649b	5.46	37.0	10.2	20.8	6.0	27.5	56.2	16.3
" (3)	5 "	5 "	?	.802a	5.86	12.2	5.2	3.6	3.4	42.6	29.5	27.9
" (4)	5 "	6 "	15	2.335b	6.06	21.6	7.0	7.4	7.2	34.2	33.4	33.4
" (5)	5 "	6 "	19	2.990b	5.23	21.2	7.6	6.4	7.2	35.8	30.1	34.1

(a) Excreted during 24 hours.

(b) Excreted during 72 hours.

Clinical Department.

CANCER OF THE STOMACH; PYLORECTOMY; REPORT OF CASE.

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In presenting this paper for consideration to the Tennessee Medical Association, it is not my purpose to show anything new in regard to treatment, or to elaborate as to the theories presented by the different schools as to the cause of cancer of the stomach.

Suffice it to say, no known therapeutic agent has ever cured cancer of the stomach, and that all, or nearly all, cancers of the stomach show a pre-cancerous history of derangement of the stomach at some period of the patient's life. Since, then, this being so, it is reasonable to assume that cancer of the stomach is strictly a surgical disease. It is by a knowledge of these things

and a proper presentation of the subject to our patients that we may hope to prevent that which we cannot cure. It is relatively only a few years since the world awoke to the evil effects of delayed operation for appendicitis and the many good results following operation for this condition, so that to-day it is rare to find a victim of this malady who dreads surgical measures for his relief. In like manner by agitation may we hope to stimulate the profession to educate the public to the danger of delay and the good results following operation in stomach diseases. In such circumstances I hold that a patient who has for any length of time suffered from stomach trouble, the symptomatology of which points to catarrh or ulcer, and which after a reasonable lapse of time does not yield to therapeutic measures, should be recommended for surgical treatment.

The only apology I have to offer in presenting this case is to substantiate in a measure my preliminary remarks, in that this patient showed a