CASE REPORT

HEPATOSPLENOMEGALY RESEMBLING NIEMANN-PICK'S DISEASE: RECOVERY FOLLOWING LIVER THERAPY

BY

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The following case is of considerable interest, as the patient showed many of the characteristics of Niemann-Pick's disease, yet recovery followed treatment with injections of liver extract.

Case report

D. N., a girl aged twelve months, was admitted on September 12, 1938. Nine months previously she was said to have had measles, and shortly after this the mother noticed that the abdomen was swollen. It had been gradually increasing in size since then. She had attacks of vomiting about every two weeks: the appetite was poor; the bowels were rather loose, with green frothy stools. The child became progressively paler and the general condition steadily deteriorated. There was no cough nor urinary symptoms.

FAMILY HISTORY.—The patient is the only child of healthy, unrelated parents, neither of whom is Jewish.

PREVIOUS HISTORY.—The labour was normal: birth weight seven pounds. Breast fed for three months, then fed on milk, water and sugar mixture. First tooth appeared at seven months, but only two teeth were present at the time of admission. The patient had made no attempt to stand (fig. 1).

Condition on admission. A pale, rather sallow, puffy infant, with a markedly mongoloid appearance. Weight 17 pounds 10 ounces. Anterior fontanelle widely open.

ALIMENTARY SYSTEM. Tongue clean: only two teeth present. Fauces healthy. The abdomen grossly distended, with an umbilical hernia. The liver is enlarged four fingerbreadths below the costal margin. The spleen is enlarged and extends two fingerbreadths below the costal margin. Both organs are smooth and firm.

CIRCULATORY SYSTEM. Pulse is regular, rate 130 per minute. The heart apex is in the fifth space and not displaced. The heart sounds are normal.

RESPIRATORY SYSTEM showed no abnormality.

CENTRAL NERVOUS SYSTEM. No abnormality detected apart from great muscular hypotonia. Fundi oculorum normal.

FAECAL FAT. Total 20 per cent. of dried faeces: split 16 per cent., unsplit 4 per cent.

URINE contains no abnormal ingredients.

X-RAY of the bones of the forearm and skull shows no abnormality.

BLOOD. Haemoglobin 66 per cent.: red blood cells 5,252,000 per c.mm.:

colour index 0.8 ; white blood cells 22,500 per c.mm. ; polymorphs 46 per cent., lymphocytes 48 per cent., mononuclears 4 per cent., eosinophils 1 per cent., basophils 1 per cent.

MANTOUX REACTION (1 in 10,000) negative.

WASSERMANN REACTION negative.

BLOOD CHOLESTEROL. 533 mgm. per 100 c.c. serum. The serum is milky in appearance.

BLOOD SUGAR CURVE. Percentage at half-hourly intervals after ingestion

FIG. 1.—Before treatment. Liver and spleen outlined.

of 7 grammes of glucose : 0.095 (fasting)—0.109—0.113—0.100—0.90. No glycosuria.

PROGRESS. The liver and spleen increased steadily in size, and the condition of the patient rapidly deteriorated. The weight had fallen to 16 pounds by November 7, 1938.

The case was diagnosed as Niemann-Pick's disease. The only alternative appeared to be an infantile form of Gaucher's disease. Moncrieff (1930) has summarized the difference between these diseases, and in view of the sallow skin, the mongoloid appearance, the absence of leucopenia and particularly the raised blood cholesterol in the present patient, the above diagnosis was made. The only sign of Niemann-Pick's disease absent was enlargement of the lymphatic glands.

Splenic puncture was performed. The films showed reticulo-endothelial cells in a vacuolated matrix. At first it was thought that some of the cells

themselves showed vacuoles. The films were submitted to several pathologists, who were unable to give any definite opinion. Eventually they were sent to Dr. G. W. Nicholson, who reported as follows :—'The film . . . does not justify dogmatic statements. The vacuoles appear to me to be all intercellular, i.e. artefacts, and I can see nothing resembling foam cells.'

The case appeared to be hopeless, but at the time there was a patient suffering from coeliac disease in the ward who was responding remarkably well to treatment by injections of crude liver extract. It occurred to one of us (J. H. D. M.) that as he also had a high blood cholesterol, the patient under discussion might also benefit from this treatment. Accordingly on November 11, liver therapy was started. 2 c.c. of campolon were injected on alternate days for three weeks. From November 30, 1938, until January 29, 1939, injections were given twice weekly, and from that date until the time of writing 2 c.c. have been given at weekly intervals.

A fortnight after the treatment had begun the liver and spleen had decreased considerably in size. There was a striking change in the patient; she became alert and playful, and her facial appearance returned to that of a normal child.

She lost her fretfulness, began to speak and attempted to walk (fig. 2).

BLOOD CHOLESTEROL : 336 mgm. per cent.

BLOOD COUNT. Red cells 5,749,000 per c.mm. ; haemoglobin 97 per cent. ; colour index 0.85 ; white cells 27,812 per c.mm. ; polymorphs 30 per cent., lymphocytes 62 per cent., mononuclears 4 per cent., eosinophils 4 per cent.

BLOOD SUGAR CURVE was unchanged.

The improvement was steadily maintained. By January 21, 1939, the abdomen had returned to normal proportions, neither liver nor spleen being palpable. The weight had risen to 19 pounds, although there was a slight initial loss.

BLOOD CHOLESTEROL : 168 mgm. per cent.

By February 27 the weight was 20 pounds 8 ounces, the patient took a lively interest in her surroundings, walked, and talked. Mentally she was quite up to the standard for her age. The liver and spleen were still impalpable.

BLOOD CHOLESTEROL 180 mgm. per cent.

When last seen on April 11, 1939, the weight was 21 pounds 4 ounces, and the child seemed quite normal in every way (fig. 3).

FIG. 2.—After 6 months' treatment. Liver and spleen impalpable.

Discussion

The disease from which this patient suffered is evidently some form of lipoidosis, which does not conform to any of the described types. In view of Dr. Nicholson's report on the slides from splenic puncture the diagnosis of Niemann-Pick's disease cannot be maintained, although clinically the patient presented a typical picture of this disease. The successful result of liver therapy, moreover, does not correspond with the invariably fatal outcome of this malady. In a valuable paper on the subject Atkinson (1937) collected

FIG. 3.—Weight and blood cholesterol curves.

forty-two cases from the literature up to 1936. Of these three were alive at the time of their being reported, their ages being seventeen, nine and a half and seventeen and a half months respectively. They were all gravely ill, and had shown no sign of improvement during the course of the illness. Of the other thirty-nine, only four lived into the third year. Since Atkinson's paper, Freudenberg (1937) has reported a case of twins with Niemann-Pick's disease, one of whom survived to the thirty-first month, and Müller (1938) has recorded a case which lived for twenty-five months.

The fact remains, however, that a gravely ill infant, with great enlargement of the liver and spleen and with lipaemia, recovered dramatically after receiving injections of liver extract. It remains to be seen if other lipoidoses will not respond in a similar manner, and this case suggests a possible line of treatment for a group of diseases the majority of which end fatally.

REFERENCES

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INTERNATIONAL CONGRESS OF PEDIATRICS

The American officers of the International Congress have decided that the international situation is such at the present time that it seems advisable to postpone to an indefinite date the Fifth International Congress of Pediatrics which was scheduled to be held in Boston, Massachusetts, U.S.A., September 3, 4 and 5, 1940.