ANEMIA


Sideropenic anemia is known as a definite disease. Experimentally the syndrome has been produced in the white laboratory rat and, as in human patients, was shown to respond to iron therapy. The authors found that normal hemoglobin findings do not always correspond to normal iron depot.

C. M.

Development of Pernicious Anemia in a Case of Microcytic Hypochromic Anemia. F. Fier. From the Medical Section of the Cantonal Hospital, Aarau, Switzerland. Schweiz. med. Wschr. 1947: 1198-1199.

A female patient with nanism of pituitary origin was under observation for hypochromic microcytic anemia. She developed during pregnancy by exhaustion of the intrinsic factor the hematologic picture of pernicious anemia.

C. M.

Folic Acid Therapy. Results of a Clinical Study. W. S. Adams and J. S. Lawrence. From the Department of Medicine, University of Rochester School of Medicine and Dentistry and Medical Clinic of the Strong Memorial and Rochester Municipal Hospitals, Rochester, New York. Am. J. M. Sc. 215: 487-497, 1948.

Thirty-four miscellaneous cases treated with folic acid are reported and correlated with other reports in the literature. The authors conclude that folic acid is effective in macrocytic anemia with a megaloblastic marrow, and in sprue. No effect was obtained in the anemia of chronic nephritis, leukopenic of Addison's disease or Felty's syndrome, idiopathic leukopenia, leukemia or leukopenia following irradiation. Again the statement is made that folic acid does not prevent the progression of the neurologic manifestations of pernicious anemia.

C. A. F.

LEUKOCYTES AND LEUKOCYTIC DISEASE


The author has extended his interesting studies on the effect of variation in the tonicity of blood on the circulating leukocytes. In seven patients in diabetic coma, levels of hypertonicity were determined by freezing point depression measurements on defibrinated blood and compared with changes in circulating leukocytes. These patients showed a variation in molarity of their blood from 344 to 349 millimoles per liter on admission and after recovery a variation from 301 to 349 millimoles. White counts varied from 18,700 to 26,760 per cubic millimeter. There was a linear relationship between molarity and absolute numbers of circulating neutrophils. It is of interest that there were no eosinophils seen in the
smears of these patients when in coma, and that the same alteration in leukocyte pattern is seen in conditions of stress and after adrenal cortical stimulation. The author, however, has previously shown that these changes occur in circumstances where the adrenal cortex mechanism is not involved.

C. A. F.


The authors describe the case of a child, 6, with an acute leukemia with pyrexia, pallor, gum lesions, hemorrhages, hepatomegaly, splenomegaly, enlarged lymph glands; and with a typical blood picture: 1,370,000 red cells, 86,000 white cells of which 98 per cent were lymphoblastic, and an abnormal bone-marrow (99 per cent lymphoblasts). Transfusions were undertaken when the outlook was extremely grave and death appeared imminent. They were immediately followed by a marked and progressive improvement. In a few days the child's state was transformed, the physical signs disappeared and the blood and marrow returned to normal. The authors stress the following points: the diagnosis cannot be questioned. It was an absolutely typical acute leukemia, conforming to the classical descriptions. The rapidity and scale of the improvement are very remarkable. This child was moribund on admission to hospital. His state was so grave that the exsanguino-transfusion decided for the next day, was done during the night. From the first exsanguino-transfusion (only partial), the improvement was profound. After the second the child was transformed and, within a few days, apparently in excellent health. The progression of the improvement should also be noted. Not only was there a very marked improvement after each exsanguino transfusion, but the maximum improvement was not reached at once. It continued during the days following the transfusion. This fact seems to counteract the idea that the treatment has only a palliative action. The final condition of the patient is worthy of attention: not only had the pallor, fever and hemorrhages disappeared, but also the liver, spleen and lymph glands diminished in size and after a few days became completely normal. There was also a progressive improvement of the blood and marrow. This favorable course was provoked by each exsanguino transfusion. The first one allowed the patient to survive. The second caused a considerable regression of physical signs and a partial improvement in the condition of the blood and marrow. The third was followed by the return of the blood and marrow to normal. The authors do not believe that they have cured the child, but think that these early results allow hope that more will soon be known about the mechanism of the leukemia. The studies that they have undertaken may perhaps cause them to improve the method, possibly by the choice of special donors whose blood will contain the maximum quantity of the hypothetical "antileukemic substance." It is possible too that the method will be applicable to other sarcomatoses, apart from the leukoses.

J. P. S.


The authors have reviewed the reports in the literature of skeletal changes associated with leukemia. They selected 131 well documented cases of leukemia of which 103 had been adequately studied roentgenologically. Data as to signs and symptoms, laboratory findings, and clinical course are included. Fifty-two of the 103 patients showed bone lesions. These were of four types: (1) transverse bands of diminished density (14 patients); (2) osteolysis (39 patients); (3) osteosclerosis (9 patients); and (4) subperiosteal new bone formation (17 patients). Approximately one half of these had bone pain.

The differential diagnosis presented by these patients is discussed. While some of the more general material in this article is of an arbitrary nature, the article provides a comprehensive discussion of the value of the roentgenologic examination in childhood leukemia.

C. A. F.


Observations in healthy subjects under therapeutic doses of urethane during 14-32 days did not show
any notable changes in bone-marrow. In chronic myeloid leukemia no evident changes in cell composition were found. Calculation of the mitotic index in leukemia cells showed a decrease of mitotic activity. The favorable action of urethane in leukemia is based upon a selective suppression of mitosis in the pathologic myeloblastic cells.

C. M.


A case of Felty syndrome is described characterized by a peculiar agranulocytic bone marrow reaction. During clinical observation of three years the patient showed recurrent agranulocytosis in a three weeks cycle. Splenectomy had no effect.

C. M.


Three days after they had skinned a hare which they found dead, two subjects presented simultaneously the following symptoms: fever, headache, asthenia, anorexia, numerous enlarged, tender lymphglands, especially in the neck and the trapezoid regions. The spleen was palpable in one patient and enlarged to percussion in the other. One of the patients developed conjunctivitis, the other enlarged tonsils.

The diagnosis of a Pasteurella tularensis affection was confirmed in both cases by serodiagnostic test positive to 1/75 and reaching 1/5000 on the 45th day) and by guinea pig inoculation of a portion of a lymph gland and of a positive pharyngeal swab.

In both cases, treatment by streptomycin showed itself remarkably efficacious—apyrexia within 72 hours, disappearance of all symptoms within 8 days and rapid resolution of the conjunctivitis.

The diagnosis was facilitated by the occurrence of two simultaneous cases and by the contact with a suspect hare. Had the case been isolated, or had one been unaware of the contact with a hare, the clinical diagnosis would doubtless have been that of infectious mononucleosis. In fact, the number of leukocytes in each case was 8,000; with only 43 per cent of polymorphs in the first case and 37 per cent of polymorphs in the second. In both cases 6-7 per cent of atypical lymphocytes were found among the mononuclears.

The really interesting point was the occurrence in both cases of a Paul and Bunnel reaction positive to 1/112 in one and 1/896 in the other.

The two observations are however still troubling. Although the authors have studied the agglutination of P. tularensis in six cases of infections mononucleosis and have found it constantly negative, when one is faced by the clinical picture of infectious mononucleosis, the possibility of tularemia should be kept in mind and enquiries made as to possible sources of contagion (particularly game).

J. P. S.

MALIGNANT BONE AND BONE MARROW NEOPLASTIC TUMORS. K. Rohr. University Clinic of Internal Medicine, Zurich, Switzerland. Schweiz. med Wschr. 1947: 207-211.

According to the authors’ conception, leukemias are neoplastic manifestations of the hematopoietic organs. In the clinical course of these neoplasias he distinguishes a first phase of primary tumor, a second phase of hematogenic and lymphogenic generalization and, in leukemias, a third phase with propagation of cells in the blood stream. All bone and bone marrow tumors show early metastatic growth. In order to understand the biologic aspect of the different tumor types, it is necessary to consider the histiogenesis.

Besides the morphologic differentiation, certain physiologic aspects are of importance (increase of phosphatase in sarcomas, hyperproteinemia in multiple myelomas, increase of oxydase and porphyrins in leukemias). The author considers the reticulohistiocytic system as the genetic substrate for the myeloma cells and presumes a differentiation either towards plasma-cells or towards histiocytes. In leukemias he discriminates a myelocytic (chronic) variation, a promyelocytic (more subacute) and a myeloblastic (acute) variation based on the degree of morphologic differentiation of the cells. The myeloblastic leukemia more often has lymphogenic origin.

C. M.
ABSTRACTS


The authors discuss a concept of plasmocytoma, based on recent articles in the Netherlands medical literature and on case studies. They have adapted Apitz's opinion that solitary plasmocytoma and diffuse plasmocytosis represent the same process. They question whether a local increase in plasma cells occurs and have always found a diffuse increase in plasma cells in cases of plasmocytoma. The importance of fresh preparations obtained either by sternal puncture or immediately after death in identification of plasma cells is stressed. They discuss the origin of Bence-Jones protein and feel that it is found specifically in this disease. Primary amyloidosis is felt to be a manifestation exclusively of plasmocytoma.

Some of these statements are open to question, in the opinion of the reviewer. A diffuse increase in plasma cells is found not infrequently in other diseases, and some caution must be exercised in making the diagnosis of plasmocytoma on such grounds. Likewise, one hesitates to accept the statement that all cases of primary amyloidosis are attributable to plasmocytoma.

C. A. F.

HEMOLYTIC ANEMIA


The authors believe they have demonstrated the presence of a factor in sera from Rh negative individuals which partially inhibits agglutination of Rh positive cells by Rh agglutinating antibodies. It is suggested that this inhibiting or protective factor may be active in vivo when Rh negative blood is used in the treatment of hemolytic disease of the newborn, and may at times be present in the maternal circulation and exert an inhibiting effect on the disease in the fetus. The observations on which these important assumptions are made appear rather tenuous and need confirmation.

R. S. E.


Following the technic of Singer, investigations in hemolytic anemia were conducted. In anemia with secondary hemolytic action the lysolecithin-resistance is normal. In a case of severe subacute acquired hemolytic anemia with reduced osmotic resistance, the lysolecithin-resistance was distinctly increased. In cases of constitutional hemolytic anemia the lysolecithin-resistance is reduced. The same findings have been obtained in a case of chronic thrombosis of the splenic vein.

C. M.


According to the proceeding of Damashek and Schwartz the author produced hemolytic anemia of the immune body type in guinea-pigs. For the first time he found in the histologic examination of the spleen large macrophage cells storing erythrocytes. Antibodies are supposed to act not only as agglutinins and hemolysins but also as opsonins. He also found parenchymatic cells containing erythrocytes in the liver. Similar finding could not be obtained in cases of constitutional hemolytic anemia.

C. M.


Eighteen cases of hemolytic anemia are discussed under the three headings of miscellaneous, acquired hemolytic spherocytic jaundice, and hemolytic anemia with paroxysmal hemoglobinuria. The difference between the first two groups does not appear fundamental, since neither studies of longevity of transfused cells nor the Coombs test was used as a basis for separation. The Coombs test was found to be positive when done in one case. The report serves to stress further the infinite variety of patients with
hemolytic disease and the author makes a pertinent observation in the association of hemolytic anemia, leukopenia, and thrombocytopenia, and states, "It seems reasonable to postulate a similar rather than a dissimilar pathologic process to account for the deficiency in the other two components, the platelets and the neutrophils."

R. S. E.


Differences in the peripheral blood picture between patients with Thalassemia Minor and control groups were studied. The difference was already apparent in childhood, and amounted to 2-3 grams hemoglobin per 100 cc. blood. This difference was superimposed on the normal sex variation. The tendency to have an elevated erythrocyte count was also observed. While these data are not new, they serve to quantitate the abnormalities in this condition.

C. A. F.


Sickle cell preparations were made on 226 consecutive Negro newborn infants and their mothers. There was an incidence of sickleemia of 8 per cent among the mothers and 8.4 per cent in the infants. A longer time was required to sickle the infants’ erythrocytes, and infants’ erythrocytes showed only 0.5 to 2.5 per cent sickling in contrast to 84-100 per cent in maternal blood. The authors suggest that this difference represents a chemical difference between fetal and adult hemoglobin. Sickling increased in one patient studied from 6-90 per cent over the first four and a half months, paralleling the expected disappearance of fetal hemoglobin. This focuses attention on the role of hemoglobin in the sickling process.

C. A. F.

BLOOD CLOTTING AND HEMORRHAGIC DISEASE


The authors studied the fibrinogen levels in sixty cases with hemorrhagic syndromes. They distinguish three primary groups of hypofibrinemias:

1. An idiopathic hypofibrinemic diathesis with a fibrinogen level between 1 and 2.5 gm. (méthode pondérale) responsible for certain recurring hemorrhages, such as epistaxis, vitreous hemorrhages, metrorrhagia, etc.

2. Hypofibrinemias of hepatic origin.

3. Finally, the authors report three cases of pseudohemophilic afibrinemia with fibrinogen levels less than 0.5 gm. Clinically, this more or less total absence of fibrinogen may be suspected by the sign of the microclot.

This work has been developed in an important study by Favre-Gilly (Paris, Publ. Vigot Freres. 1947) in which he deals with the whole problem of the fibrinopenias.

The only point which seems to us to need discussion, concerns the hypofibrinemias. A level of 1.5-2 gm. of fibrinogen is often found in normal subjects. On the other hand, the fact that a fibrinogen level of 1.5-2 gm. coincides with localized recurring hemorrhages does not seem to us to be proof that it is the cause of these phenomena.

J. P. S.


The authors describe the technic of their examinations: in order to observe the platelets in their cir-
culating form, as in vivo, they took the blood with a paraffined needle and put it directly into a citrate solution containing 1 per cent formol.

In order to observe the transient resting forms, already described as seen under the ultra-microscope by Fonio and Schwedener, they put the blood into citrate or oxalate solution.

In both cases the plasma is centrifuged for three minutes at a speed of 2000 r.p.m. One drop of the plasma is then spread on a slide and covered with collodion, before dissolving glass with hydrofluoric acid. The fine particles of collodion which are to be deposited on the objective of the electron microscope are then dispersed.

Under these conditions, the circulating forms appear perfectly round with a central, very dense, nucleus and occasionally several granules.

In the transitional or dendritic forms, one observes the dentrites which can be seen on many microphotographs (magnification × 10,000).

Finally, the resting forms appear as a layer of round cells with a very fine cytoplasm and a slightly condensed granular nucleus.

Goose thrombocytes were examined by the same technic.

The authors draw attention to the internal structure of the platelets which are formed of interlacing fibres around tiny spheres, and also to the little spherical bodies found in the plasma during the pre-coagulation period and of which the significance is still unknown.

J. P. S.