ANEMIA


Four patients with severe macrocytic anemia in pregnancy and one in whom anemia had dated from pregnancy but had increased since delivery, are described, with their response to treatment with vitamin B12 isolated from liver. Forty micrograms in a single injection produced a good response in 3 patients. In one there was a general improvement but a suboptimal hematologic response. In the fifth case, seen first in the puerperium, 10 micrograms gave an incomplete response.

This response to vitamin B12 of the megaloblastic anemia of pregnancy seen in the tropics contrasts with the finding in temperate zones, where such anemia is often refractory to liver or vitamin B12. This is illustrated by a report of Ungley and Thompson in the same journal (Brit. M. J. 1: 919-924, 1950). They describe ineffective treatment with vitamin B12 in doses of 6 to 80 micrograms of 6 patients with megaloblastic anemia of pregnancy or the puerperium, and subsequent good response to folic acid.—S.C.


The problem of aniso-macrocytosis in acute hepatitis and its relation to the same changes in pernicious anemia is discussed. Two cases of pernicious anemia with acute hepatitis are especially studied. The differences in the peripheral blood picture in the two diseases were found to be great. The author concludes that there is probably no inability to store the hemopoietic principle. Neither is it probable that there is present a simple inability of the liver to utilize and release this principle in acute hepatitis.—J.W.

**Serum Protein Changes in Pernicious Anemia.** Fritz Hartmann. From the Department of Medicine, University of Gottingen (Germany). Klin. Wchnschr. Pp. 110-111, 1949.

In 8 cases of "decompensated" pernicious anemia the changes of the serum proteins under liver therapy were followed. In the state of decompensation the globulins were normal or slightly elevated. With improvement, these rates fell below normal. The author assumes that the globulin that disappeared was used for synthesizing hemoglobin.—C.M.


The problem of induced allergy against parenteral liver extracts is discussed from the literature and from the author's experiences.

Allergic reactions of more or less severe type had previously been found in 10 per cent of an unselected material of 160 cases.
Among 24 patients, where the symptoms could be analyzed, 13 had itching, 11 had nausea, 9 faintness, 6 vomiting, 6 urticaria and 6 shock as commonest symptoms. Intracutaneous tests were compared with scratch tests. In the latter group (scratch) 13 patients had clinically manifest allergy in spite of negative skin reactions. In the former the relation was 1/93. Fourteen patients obviously had a latent allergy to liver extracts; i.e. the cutaneous reactions were positive even in the absence of clinical symptoms.

The onset of allergic reactions was found to come early during treatment, only exceptionally after four years of treatment. The allergen was more often organ-specific than species-specific. Nine patients who were manifestly allergic and had strongly positive skin reactions to several brands of liver extract gave negative skin tests with pure vitamin B₁₂. Negative intracutaneous skin tests make the presence of manifest allergy extremely unlikely.—J.W.

A Plan for Avoiding Sensitization Reactions to Liver Injections. J. E. Cook. From the Department of Medicine, Washington University School of Medicine and the Jewish Hospital, St. Louis, Mo. Ann. Int. Med. 32: 506-509, 1950.

Observations on 2 patients sensitive to liver extract are reported. The author found that injections of 0.25 cc. of Reticulogen every other day or every third day prevented a reappearance of hypersensitivity manifestations. Such fractional injections can be given by the patient or by relatives without necessitating more frequent visits to the physician.—P.F.W.


Details are given of 5 patients with megaloblastic anemia refractory to liver treatment who were shown to have steatorrhoea. Three of them were also shown to be refractory to vitamin B₁₂. They all showed a good response to treatment with folic acid, in one case the folic acid was given in the form of pteroylglutamic acid.

Attention is drawn to the difficulty of diagnosis in such cases, especially when bowel disturbance is not noted. Three of the 5 showed endocrine disturbance, with poor sexual development. All 3 improved on folic acid treatment without specific endocrine therapy.—S.C.


Two cases are reported, the first a 25 year old woman with megaloblastic anemia in the puerperium, who showed no response to 20 micrograms of vitamin B₁₂, but a good response to folic acid. She showed a flat blood sugar curve and an 88.2 per cent absorption of fat on a four-day balance.

The second case was one of megaloblastic anemia in a 30 year old woman, not responding to two injections of 20 micrograms of B₁₂, but showing a remission after transfusion and folic acid. A four-day fat balance showed 80 per cent absorption.

These 2 cases emphasize again the importance of looking for a defect in fat absorption in cases of megaloblastic anemia refractory to liver or vitamin B₁₂, even in the absence of characteristic bowel symptoms.

In a subsequent letter, however, Cooke and co-workers (Lancet i: 834, 1950) draw attention to the fact that not all this group of megaloblastic anemias are refractory to liver or B₁₂. They have observed a maximum reticulocyte response in 3 patients with steatorrhoea to vitamin B₁₂.—S.C.


In the family described, the father and 4 of his 6 children were found to have steatorrhoea.

Attention was first drawn to this by the finding of a hypochromic anemia in the 4 children. The clinical appearance of the youngest one suggested celiac disease, and the others gave histories suggestive of steatorrhoea. Three-day fat balance studies confirmed the diagnosis in each case.

The underlying pathology of the condition is discussed and the conclusion reached that the most likely diagnosis was fibrocytic disease of the pancreas in an unusually mild form.—S.C.
HEMOLYTIC SYNDROMES


The author has thoroughly investigated clinically and experimentally a case of nocturnal hemoglobinuria. In contradiction to the view of Ham, he reaches the same conclusion as Dacie, that the amboceptor of the disease is not identical with the complement. The similarly thermolabile amboceptor can be found in any normal individual, and, according to the author, the derangement is found in the erythrocytes which are especially sensitized or possess abnormal receptors. This, however, is not identical with the Coombs reaction. This test was negative. (It was also negative in 2 cases studied by the abstracter.)—C.M.

Fatal Hemoglobinuric Nephrosis Following Intrathecal Penicillin in Neurosyphilis. A Case Report. V. Moragues and J. P. Wyatt. From the Department of Pathology, St. Louis University School of Medicine, St. Louis, Mo. Am. J. Syph., Gonor., & Ven. Dis. 34: 177-181, 1950.

A case is presented in which a fatal hemoglobinuric nephrosis followed the second of two intrathecal injections of penicillin during the treatment of neurosyphilis (early paresis). There was an eight-day interval between injections, and the hemoglobinuria and kidney shutdown followed rapidly after the second injection.

The value of this observation is reduced by the absence of testings for potential hemolytic mechanisms in the patient (e.g., Donath-Landsteiner hemolysin), and the paucity of hematologic data, but the authors speculate as to the possibility that the massive, sudden hemoglobinemia was due to activation of the immunohemolytic bodies sometimes present in tertiary syphilis. The speculation is interesting, but the details of the process in this patient are obscure.—S.E.


The authors observed intravascular hemolysis produced by local stasis and by applying cold to healthy people. The blood serum exhibits a positive Donath-Landsteiner reaction with normal erythrocytes. This test obviously is not specific for paroxysmal cold hemoglobinuria.

Investigation in vitro showed that CO₂-saturation of erythrocytes does not result in hemolysis. This occurred only after cooling and subsequent heating. Adding CO₂ to blood of hemoglobinuric patients, however, effected immediate hemolysis. The most pronounced action of CO₂ was seen upon blood of patients with paroxysmal nocturnal hemoglobinuria, especially after long action.—C.M.

HEME, PORPHYRIN AND BILE PIGMENT METABOLISM


The carboxyl carbon atom of glycine is not utilized for heme synthesis. Eight α-carbon atoms of glycine seem to be utilized for the synthesis of the porphyrin molecule. For each nitrogen atom, 2 α-carbon atoms of glycine are involved. Glycolic acid, iminodiacetic acid, pyruvic acid, serine, acetic acid, and formic acid are probably not involved in the utilization of glycine for heme formation.—P.F.W.


Both the carboxyl and methyl groups of acetate are used for heme synthesis. Hemin produced from methyl-labeled acetate is six times as radioactive as that formed from carboxyl-labeled acetate of the same activity. The methyl carbon is converted to the methyl and β-carbon atoms of the pyrrole, and the carboxyl group of acetate contributes two carboxyl groups of heme and four of the carbon atoms in the porphyrin molecule. Pyruvate is utilized for synthesis of heme; acetone and CO₂ are not. The data suggest that most or all of the carbon atoms of heme are derived from acetate and glycine.—P.F.W.
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ON THE ORIGIN OF BILE PIGMENT IN NORMAL MAN. I. M. London, R. West, D. Shemin and D. Rittenberg.
From the Departments of Medicine and Biochemistry, College of Physicians and Surgeons, Columbia University and the Presbyterian Hospital, New York, N. Y. J. Biol. Chem. 184: 351-358, 1950.

The studies described in this report offer evidence pertinent to the problem of the biologic origin of bile pigment. Stercobilin was isolated from the feces and hemin from the circulating erythrocytes of 2 normal male adults following the administration of N\textsuperscript{15}-labeled glycine. The N\textsuperscript{15} concentrations in hemin and stercobilin were determined. During the first eight days of the experiment, at a time when there was apparently no destruction of mature circulating erythrocytes containing labeled hemoglobin, the N\textsuperscript{15} concentration in the stercobilin was very high. This indicates that a portion of the stercobilin (at least 11 per cent) is not derived from the hemoglobin in mature circulating erythrocytes. The possible nature of the additional sources is discussed.—P.F.W.

LEUKOCYTIC DISEASES AND ABNORMALITIES


Another case of infectious mononucleosis with acute polyradiculitis is reported. The Paul-Bunnell reaction was not performed; there was found a pneumonia with cold agglutinin titer and a bilateral ischiopubic osteochondrosis. Polyradiculitis with high protein content without much pleocytosis was present. The blood picture showed maximally 13,000 cells, with 32 per cent mononuclears; later, 75 per cent mononuclear cells with 50 per cent large lymphocytes.

The case seems to stress the importance of a thorough serologic and, if possible, virologic analysis of such infectious conditions with an atypical blood picture.—J.W.


The chief interest in this report lies in the possible therapeutic value of BAL in the polyneuritis which sometimes complicates infectious mononucleosis.

The case is that of a 17 year old girl with apparently typical infectious mononucleosis who, some three weeks following onset of the illness, rapidly developed polyneuritis involving both legs, both arms, the facial muscles, and the palatal muscles. Lumbar puncture showed an increased protein, but with no cells and no increase in intraspinal pressure. The blood picture showed lymphocytosis, with many atypical lymphocytes; and the heterophil antibody test was positive in dilutions to 1:1280. Following a period of therapy with penicillin, vitamins, active and passive exercises, and physical therapy, the patient improved up to a point, and then her progress stopped. At this point, parenteral BAL was given, in doses of 1.5 mg/Kg/day, and improvement now became dramatic and rapid, so that the patient was completely well some six weeks later. The relationship of the BAL to the improvement is not definite, but seems at least likely. It is suggested that BAL restores disrupted cellular metabolism in this and other neuropathies.—S.E.


A case is reported of a 17 year old Negro girl who developed acute hemolytic anemia during the course of infectious mononucleosis. The diagnosis of infectious mononucleosis was supported by the lymphadenopathy, palpable spleen, lymphocytosis with many atypical lymphocytes and a significant rise in heterophile antibody titer. In addition there was jaundice, anemia, spherocytosis, increased urinary urobilinogen, reticulocytosis with several nucleated red cells in the peripheral blood, and a bone narrow picture consistent with hemolytic anemia. Repeated sickle-cell preparations were negative. Hemagglutinins and hemolysins could not be demonstrated by the usual methods. The Coombs test, however, was strongly positive. Red cells from 2 normal subjects, after incubation with the patient's serum, also gave a positive Coombs reaction. Complete recovery occurred within a month, although it was several months before the heterophile agglutination titer decreased significantly and the Coombs test became negative.
This case is of interest in view of several recent and somewhat similar reports and because of the apparent rarity of the concomitant occurrence of these two conditions.—H.W.B.

From the Department of Medicine, Evanston Hospital, Evanston, Ill. J. A. M. A. 142: 1133-1136, 1950.
This is a report of a good, controlled study of 47 patients with infectious mononucleosis, in which the possible therapeutic effect of aureomycin (as compared to placebo therapy) was evaluated. The conclusion was reached that aureomycin was of no value in the treatment of infectious mononucleosis, since there was no difference in the courses of those patients treated with aureomycin (about 2 grams daily for four days), as compared with those not so treated.—S.E.

From the Department of Surgery, Division of Urology, the University of California, San Francisco, Calif. California Med. 72: 390-391, 1950.
The authors report a fatal case of agranulocytosis in an elderly white male receiving small doses of sulfadiazine for urinary bacteriostasis subsequent to prostatectomy. The patient received 2 Gm. of sulfadiazine daily for six days and then 0.5 Gm. daily for thirty-four days. The total dose was 29 Gm. over a thirty-four-day period. Agranulocytosis was noted on the thirty-second day of therapy and death occurred on the forty-fourth day after institution of therapy, at which time the total leukocytes were 150/cu. mm. with no granulocytes present. The only other medication received which could be deemed a possible etiologic agent was penicillin.—W.N.V.

Agranulocytosis after Trimedal (Tridion) Therapy. R. Komárek.
From the Medical Department, State Hospital in Prague I., Czechoslovakia. Časop. lék. čes. 88: 1398, 1949.
A case of agranulocytosis after uncontrolled and excessive intake of Trimedal (Tridion) is reported. The main clinical signs were fever and a marked alteration of the general condition. The hemato logic syndrome of agranulocytosis improved in a short time spontaneously after withdrawal of the drug. Simultaneously with this improvement of the hemato logic changes, the clinical picture reverted quickly towards normality. This observation does not permit any conclusion as to the problem of pathogenesis of agranulocytosis, whether anaphylactic or cytoplastic, after Trimedal or Tridion respectively. The author calls attention to the necessity of hemato logic control of patients treated with Trimedal. He is of the opinion that the harmlessness of agranulocytosis after Trimedal is only relative and that there always exists the danger of a serious accessory infection.—M.N.

From the Department of Internal Medicine, University of Illinois, College of Medicine, Chicago, Ill. Am. J. Med. 8: 124-130, 1950.
The authors report the case of a 30 year old male who developed anemia, granulocytopenia and thrombocytopenia with a hypoplastic bone marrow following prolonged mesantoin and thymphenytoin therapy. In this patient, who recovered, the toxic drug was believed to be mesantoin. Other reported cases of pancytopenia and agranulocytosis following anticonvulsant medication are reviewed briefly and the potential danger of these otherwise valuable drugs discussed. The importance of periodic hematologic investigation and of forewarning the patient of possible toxic or even minor symptoms cannot be overemphasized.—H.W.B.

Leukemia and Multiple Myeloma
From the Department of Physiology, Cornell University Medical College, New York, N. Y. Federation Proc. 9: 11-13, 1950.
In vitro study of the peripheral blood of patients with various forms of leukemia gave the following results: (1) The leukocytes from both chronic myelocytic and chronic lymphocytic leukemia showed a
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respiratory quotient of 0.85. (2) The leukocytes of chronic myelocytic leukemia showed moderate glycolysis, and high anaerobic glycolysis. (3) The leukocytes of chronic lymphocytic leukemia showed very low glycolysis (one-fifth of that showed in myelocytic leukemia), low anaerobic glycolysis. (4) When blasts in the leukocyte mass in the experimental vessel exceeded 60 per cent, oxygen consumption increased and glycolysis was depressed.—S.E.


A case is reported of a 61 year old man with chronic lymphatic leukemia who, following a series of treatments with total body irradiation, developed anemia. Cystoscopic observation revealed that the anemia was the result of crystallization of uric acid within the bladder, both ureters, and the pelves of the kidneys. The blood uric acid at this time was 15.8 mg. per cent (no previous blood uric acid determination had been made). Improvement in urinary output followed cystoscopy and mechanical removal of the ureteral crystals, but sepsis followed and caused the death of the patient.

The authors suggest that, in the x-ray treatment of patients with leukemia, preliminary investigations be made of the blood uric acid; and that, perhaps, such patients should be placed on a low purine diet and have their urine alkalinized during radiation therapy. The case is the first report of anemia due to uric acid crystallization during radiotherapy of leukemia, but other cases are noted of the (unexplained) development of uremia following irradiation in leukemia, which the authors suggest might have been due to a similar mechanism.—S.E.

Pituitary Adrenocorticotropic Hormone (ACTH) Therapy in Eosinophilic Leukemia. A Preliminary Report. W. L. Donohue, C. E. Smiling, S. H. Jackson, J. D. Keith, A. L. Chatz, B. Lasik, and N. Silverthorne. From the Department of Pathology, the Hospital for Sick Children, and the Department of Pathology of the University of Toronto Faculty of Medicine, Toronto, Canada. J. A. M. A. 143: 154–157, 1950.

The authors report a 7 year old child in whom simultaneous diagnoses of acute rheumatic fever (with carditis and valvulitis) and eosinophilic leukemia were made. The latter diagnosis was based on four findings: (1) eosinophilic leukocytosis in the peripheral blood (e.g., 27,100 white cells with 47 per cent eosinophils); (2) progressive anemia; (3) a bone marrow showing 53 to 95 per cent blasts, with up to 15 per cent eosinophilic granulocytes in some marrows; and (4) x-ray findings suggestive of leukemia at the metaphyses of the long bones. There was no particular enlargement of lymph nodes, liver, or spleen; and there was no thrombocytopenia.

Several courses of ACTH were given, which resulted, briefly, in a reduction of the peripheral leukocyte count toward normal, with a marked diminution or disappearance of eosinophils from the blood. At the same time, the marrow became more and more hypocellular, and the percentage of blasts fell from 95 per cent to as low as 4 per cent. The necessity for blood transfusion was reduced. The carditis was unchanged.

The hematologic data presented are interesting and dramatic, although it remains difficult to accept unequivocally the designation "eosinophilic" leukemia in the face of the rarity of this disorder, and the blastic ("acute") nature of the bone marrow aspirations. The transient remission of "acute" leukemias in children induced by ACTH is now well known. The eosinophilia here noted is puzzling, as well as the lack of response of the rheumatic carditis.—S.E.

Treatment of Leukemia with Urethane. J. Libanový and J. A. Trojan. From the First Medical Clinic, Charles University, Prague, Czechoslovakia. Časop. lék. čes. 88: 1037, 1949.

Most of the papers dealing with urethane treatment of leukemia have been based on relatively short observation periods, and have been on the whole rather optimistic. The present work aimed at studying the effects of urethane over a long period in chronic leukemia. These cases were mostly chronic myeloid leukemias, in which the effect of urethane should have been most favorable, according to published records. In one of these cases of chronic myeloid leukemia, urethane was administered, with interruptions, over a period of eighteen months. In the course of the treatment, the general condition of the patient was not very satisfactory. An acute leukemic relapse occurred at the end of the treatment, and the following course of the illness was then relatively short. During treatment, the patients presented...
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an aspect of chronic intoxication. Two patients died. At autopsy, a miliary tuberculosis of the peritoneum and of other organs was found as an associated illness. It is suggested that the long-continued administration of urethane weakened the natural resistance and allowed reactivation and dissemination of an old healed tuberculosis. It is possible that urethane played a role in precipitating a relapse from chronic to acute leukemia. It is of course necessary to consider the possibility of the tuberculous lesion influencing this relapse. The intoxicated aspect of the patients, which was extremely conspicuous, may perhaps confirm the experimental results of Winchester and Higgins.

The authors administered urethane by mouth, intravenously and by suppository. Intramuscular administration proved very useful indeed.

The third patient to whom urethane was administered over a long period, with appropriate interruptions, is still alive, but not in satisfactory health.

On the whole, the results of these observations may be summarized as follows: (1) Urethane treatment does not prolong the life of patients suffering from leukemia, and may even shorten it. (2) Urethane treatment of leukemia is no improvement on x-ray therapy; on the contrary, x-ray therapy in appropriate dosage seems to be more convenient and less strain for the patients. Out-patient treatment with urethane has not proved more successful than hospital treatment.

We therefore cannot agree with the optimistic opinion of some authors who have made their observations over only a short period.—M.N.


The authors report 10 cases of acute leukemia which were treated with an antagonist of folic acid (aminopterin) and/or exchange blood transfusion.

In 2 children a marked remission of clinical symptoms and bone marrow pathology was observed. One child died eight and a quarter months after the beginning of the disease, and the other child is still under treatment. Three other children showed a distinct transitory improvement of the clinical and the hematologic picture, but no improvement in the bone-marrow.

The only marked change in two of the remaining children was a distinct decrease of the size of the organs in the course of the treatment.

In 3 children no improvement could be observed, but in 2 of them the treatment was given late in the course of the disease.

It appeared that the therapeutic results become worse with increasing age.—C.M.

THE THERAPY OF ACUTE LEUKEMIA BY EXSANGUINATION. V. Roehnal. From the First Pediatric Clinic, Charles University, Prague, Czechoslovakia. Časop. lék. čes. 88: 1397, 1949.

The author describes therapy of acute leukemia by exsanguination. A hypothesis of the mechanism of exsanguination is given. A case is presented of a 5 year old girl with acute leukemia (aleukemic form) in whom a complete remission occurred after three weeks. The remission appeared in all clinical symptoms as well as in the peripheral blood and bone marrow. Blood from 11 donors was used; 3600 cc. of fresh citrated blood was given, and 3550 cc. blood was withdrawn (exchange of 90 per cent of patient’s cells). When the condition of the child deteriorated (after three weeks), a second exsanguination was performed, which did not result in remission.—M.N.

MULTIPLE PLASMOCYTOMA TREATED WITH URETHANE. CASE REPORT. F. Saltzman and H. Borgström. From the Medical Department, Maria Hospital, Helsingfors, and from the Out-Patients Department for Diseases of the Ear, Nose and Throat, Stengård Hospital, Helsingfors. Acta Med. Scandinav. 136: 388-392, 1950.

This paper describes a very interesting case of multiple plasmocytoma probably beginning as a solitary nasal tumor with marked remission (regression of nodules in the skull, cessation of pains, decrease of erythrocyte sedimentation rate) after urethane 1.5 Gm. thrice daily for one month. The therapy was continued with smaller doses with good results. After one year’s therapy there came a relapse and a new course of urethane in large doses had no effect. There was no autopsy, but biopsy of different nodes showed plasmocytes.—J.W.

A very interesting case of undulant fever showed temporary increase in sedimentation rate (maximally 104 mm.) with a serum globulin of 5.1 per cent and serum albumin of 2.6 per cent. Sternal puncture showed 45 per cent lymphocytes at the same time. A previous puncture had shown only 7 per cent. The author discusses the connection between plasma cells and hyperglobulinemia and regards his case as an argument in favor of this connection. Curiously enough, the plasma cell count was higher (8.66 per cent + 1.66 per cent) before an earlier puncture but only 0.66 per cent during the height of the sedimentation rate. In the blood there was found a transient rise in "Plasmazelluläre Retikulumzellen" to 2.1 per cent and endothelial cells 5 per cent. The lymphocytes were described as "plazmazellenartig." It is unfortunate that photomicrographs of the cells are not given. The publication shows the difficulties in making a purely morphological distinction and explains the fact that opinions about the source of plasma globulins are still divergent.—J.W.


A 50 year old man with pains in the extremities of five years’ duration, and edema of the legs and sacrum of three months’ duration, was found to have a cystic, osteolytic sacral tumor which turned out to be a solitary myeloma. Extensive x-ray investigations, confirmed by subsequent autopsy, showed no evidence for myeloma elsewhere in the body. There was x-ray evidence that the solitary myeloma had been present for the five years of the patient’s symptoms, but had not been recognized originally.

In spite of the solitary nature of the myeloma, there were marked metabolic changes in the patient’s blood. Thus, the serum calcium was elevated and there was increased calcium excretion in the urine; however, the serum alkaline phosphatase was normal. Surgical exploration of the neck failed to reveal a parathyroid adenoma. These metabolic abnormalities (as well as proteinuria, increased sedimentation rate, etc.) were therefore attributed to the myeloma. Their association with a solitary myeloma suggested to the authors that the metabolic disturbances of "multiple" myeloma may be due, not necessarily to a multiplicity of lesions, but, at least sometimes, to an extensive isolated solitary lesion involving a large amount of osseous tissue.—S.E.

HEMORRHAGIC DISEASES

FAMILIAL HEMORRHAGIC TELANGIECTASIA WITH ASSOCIATED PULMONARY ARTERIOVENOUS ANEURYSM


The case histories of two patients with pulmonary arteriovenous aneurysm associated with familial hemorrhagic telangiectases are reported in detail. Prominent features of the first case were repeated episodes of epistaxis and hematemesis, anemia, hepato-splenomegaly, telangiectases on the skin, oral cavity and stomach, and a pulmonary arteriovenous aneurysm lying adjacent to the cardiac apex. Cyanosis and polycythemia later became evident during a six-month hemorrhage-free period. The second case presented a history of repeated epistaxes and dyspnea, and the physical findings of more extensive telangiectatic lesions on the skin and mucous membranes, cyanosis and early clubbing of the fingers. Definite polycythemia could not be confirmed by laboratory studies. The arteriovenous aneurysm lay in the posterior portion of the apex of the right lower lobe. It was believed that in both patients the symptoms due to the pulmonary shunt were minimized by repeated blood loss.

Until recently the association of pulmonary arteriovenous aneurysm with familial hemorrhagic telangiectasia was rarely recognized. The importance of looking for such an association is obvious, as some of the aneurysms with a significant or increasing degree of pulmonary shunt may be operable, and the subsequent and frequently serious effects of the compensatory mechanisms of the body to anoxemia avoided.—H.W.B.