HEMORRHAGIC DISEASE


The authors studied the effect of irradiation on the blood of animals and 2 hemophilic patients, both in vitro and in vivo, and came to the conclusion that the general effect of x-rays is to reduce the coagulation time of the blood. The determination of coagulation time was made by the use of venous blood in small glass test tubes. Certain parallel studies—prothrombin time, platelet count, calcium and fibrinogen determinations—showed that the change in the coagulation time was not accompanied by changes in these factors and could not be explained on that basis.

The effects were similar whether irradiation was applied to the blood after it had been placed into the test tube, or to the individual before the blood was drawn. Splenic irradiation in 2 cases of hemophilia was of especial interest: the application of 189 r over the spleen of the first patient resulted in a change of the coagulation time from 145 minutes before treatment to 15 minutes five days after treatment, and 35 minutes six days later. In the other patient, in whom the initial coagulation time was 135 minutes, that after irradiation was 90 minutes.

It is obvious that certain variations in coagulation time occur on different determinations, and that the coagulation time of a given hemophilic may vary markedly from test to test. It is of great interest, however, that in virtually all instances here reported, both in animals and in human beings, the coagulation time change was in the direction of reduction after irradiation. In the most marked case, the reduction was of the order of 90 per cent (145 to 15 minutes). Further and more elaborate experiments along the lines of this report are certainly necessary, including control studies of the coagulation time of nonhemophilic patients who are receiving irradiation. If these results are confirmed, irradiation may come to serve as a weapon in certain acute hemorrhagic emergencies, notably those of hemophilia. The implication of an alteration in some blood plasma factor during x-irradiation would be worthy of investigation.

S. E.

THE SPLEEN AND SPLENIC DISEASE


Elliott presents an up-to-date report on the experience of the Spleen Clinic of the Presbyterian Hospital in New York which has for some years been followed with interest by many hematologists.

Best results from splenectomy have been obtained in spherocytic hemolytic icterus. Of the 56 patients in this group, anemia recurred in only 1 case and was attributed to the presence of accessory spleens. The author bases prognosis from splenectomy in hemolytic anemia largely on the presence or absence of
The fact that spherocytes may be found, however, in apparently acquired hemolytic anemia as well as in the congenital disease is not stressed. It is of interest in this connection that Boorman, Dodd, and Louriz (Lancet 7:821–814, 1946) have found that red cells from patients with certain acquired hemolytic anemias are agglutinated by anti-human-serum rabbit serum whereas cells from patients with congenital hemolytic icterus are not so agglutinated. It is the reviewer’s belief that the rabbit serum test may prove to be a valuable adjunct to observations on spherocytosis in estimating prognosis from splenectomy.

The results of splenectomy in thrombocytopenic purpura in patients followed in the Spleen Clinic were less satisfactory than in hemolytic icterus, but an arrest of the disease was obtained in approximately 85 per cent of 58 cases. Results from splenectomy were uniformly poor in atypical purpura subsequently found to be secondary to previously unrecognized underlying disease.

In congestive splenomegaly, best results from splenectomy were obtained in cases in which the obstructive factor could not be determined and in the group caused by schistosomiasis. In cases due to Laennec’s cirrhosis or extrahepatic obstructive factors, more than one-half of the patients in the series have died, but in those with cirrhosis life expectancy was increased from 2 to 5 years by splenectomy.

Elliott stresses the inadvisability of delaying surgery where indicated once a definite diagnosis has been made.

L. E. Y.


In the authors’ series of 178 consecutive patients operated upon for various splenic diseases, 56, or 31 per cent, were found to have accessory spleens. Of the patients with accessories, varying from 1 to 8 in number, 83 per cent had them in a single location. In the 8 cases of double location, the hilus was always one of the sites. The various locations of accessories (hilus, pedicle, omentum, left gonad, etc.) are discussed in relation to the embryology of the spleen.

Curtis and Movitz state that the decreasing incidence of accessories with advancing age is a reflection of gradual involution and atrophy which normally occur. The onset of pathologic processes in splenic tissue, however, apparently causes the accessory to remain, and thus occurs the increased frequency of accessories in patients with certain splenic diseases.

The recurrences of disease in the authors’ series of splenectomies are reported in detail. One patient with congenital hemolytic icterus responded well to removal of the major spleen; hemolytic anemia recurred 4 years later and was completely relieved by removal of 2 accessory spleens. One patient with primary thrombocytopenic purpura had a recurrence 2 years after removal of the major spleen; death occurred from severe bleeding and accessory spleens were found at necropsy.

From the literature, the authors cite 2 additional cases of recurrence of primary thrombocytopenic purpura due to accessory spleens, and 2 cases of torsion of the pedicle of accessory spleens.

L. E. Y.


The removal of a spleen, enormously enlarged as a result of chronic malarial infection, is described and comments are made on the surgical management of large spleens which cause symptoms by pressure upon neighboring structures.

A total of 8,000 cc. of stored, cuffed whole blood transfused preoperatively to this patient, a 27 year old Filipino woman, over a period of 16 days raised the red blood cell count from 1,630,000 to only 2,330,000. During the remaining 5 days prior to operation, transfusion of 1,000 cc. of whole blood raised the red cell count to 3,950,000. The poor initial response to transfusion is attributed by the authors to two possible factors: (1) destructive hemolytic action of the spleen, and (2) the use of stored blood (age and conditions of storage not given). The authors conclude that the response of the patient is the most reliable guide in estimating the amount of blood to be transfused prior to splenectomy. They advocate administration of fresh blood during and after operation rather than massive preoperative transfusions. The customary injection of epiinephrine for the purpose of contracting the spleen and autotransfusing the patient was omitted in this case because of the danger of transferring (partially) hemolyzed erythrocytes into the systemic circulation.
It seems possible that the peculiar response to transfusion in this patient might have been due in part to sequestration of red cells in the liver which enlarged greatly during the initial period of intensive blood administration. No mention of icterus is made. In the reviewer’s experience, some patients with chronic hemolytic anemia and splenomegaly have responded well to preoperative transfusions and the donated cells have survived in a normal manner.

L. E. Y.


Removal of the enlarged spleen in cases of Felty’s syndrome (rheumatoid arthritis with splenomegaly and neutropenia) has often been done in an attempt to return the hematologic values to normal. In these cases it is generally agreed that the operation has no effect on the underlying arthritic process.

In 1940 Bach reported the removal of a nonenlarged spleen in 3 cases of active rheumatoid arthritis, and claimed slow and sustained improvement in 2 cases. In the present article Bach describes another patient with active advanced rheumatoid arthritis, a normal blood count, and a nonpalpable spleen. Splenectomy was followed by immediate general improvement with a marked reduction of joint swelling and muscle spasm.

The rationale of the procedure, the author admits, is obscure. He has performed the operation in 8 selected cases and believes the results encouraging (in some cases the follow-up has been seven years). The author notes that rheumatoid arthritis is known to improve during starvation, pregnancy, and any type of jaundice, all of which are associated with increase in the serum cholesterol, and mentions that splenectomy is also followed in certain cases by increase in the serum cholesterol. He also notes the chemical relationship between cholesterol and various antiarthritic drugs.

The argument remains unconvincing. Check of the author’s 1940 references to the literature reveals that splenectomy was done only in cases in which the spleen was clinically palpable, and that, although joint improvement was regularly mentioned immediately after operation, 7 of the cases subsequently died from 33 days to 18 months after splenectomy. The cause for the splenomegaly in rheumatoid arthritis remains obscure. The bulk of evidence is that removal of the hyperactive spleen—although it eliminates anemia, neutropenia, thrombocytopenia, and their attendant complaints—has no effect on the arthritis. The removal of the nonhyperactive spleen does not seem justified.

S. E.


The title of this paper is a misnomer, inasmuch as the case reported is one of idiopathic splenic pancytopenia (panhematopenia). The patient was a 64 year old man who had previously been perfectly well, and who complained of bleeding from the rectum and gums, and into the skin, for three years. Physical examination revealed petechiae and ecchymoses, and splenomegaly. The blood picture included anemia, neutropenia, and thrombocytopenia. The bone marrow was not hypoplastic, but rather showed adequate development of erythrocytes and granulocytes. The spleen weighed 410 grams at operation, and showed only congestion on pathologic examination. Splenectomy was followed by elimination of all symptoms and a return of the blood counts to essentially normal values.

Three points are of especial interest. (1) Injection of adrenalin gave no significant changes in the blood count. This is in contrast to the experience of Doan with the adrenalin test, but in conformity with that of others. (2) The bone marrow showed large numbers of granulocytes despite their marked diminution in the peripheral blood. (3) Supravital studies of the excised spleen showed no erythro- or neutrophagocytosis. The authors point out, however, that of the 10 cases of splenic neutropenia in the literature, only 7 showed neutrophagocytosis in the spleen.

This case is another instance of "hypersplenism"—splenic neutropenia, anemia, or thrombocytopenia. In this instance, all three bone marrow elements were affected, resulting in pancytopenia. The use of the term 'hypoplastic' is to be deplored for these cases, inasmuch as the marrow shows normoplasia or hyperplasia of the involved elements.

S. E.
ABSTRACTS


Banti's disease as originally described is considered to be an entity of unknown etiology characterized by splenomegaly, anemia, leukopenia, gastrointestinal hemorrhages, and, later, cirrhosis of the liver. The cause of the disorder has been obscure, and, in recent years, the existence of such a specific disease has been doubted. The term "Banti" has rather been applied to virtually any disorder in which splenomegaly has been associated with otherwise unexplained anemia and leukopenia.

The authors of the present article describe what they consider to be a new cause of "Banti's syndrome." They report 1 case of acute infectious hepatitis in which, subsequently, persistent splenomegaly, anemia, and, in 1 case, pancytopenia were discovered. In 1 case splenectomy was done with moderate improvement. The authors conclude that such a cause may be responsible for certain instances of Banti's syndrome, inasmuch as infectious hepatitis is considered to be of virus etiology, and recommend splenectomy as soon as splenomegaly is found following hepatitis.

Anemia, leukopenia, and pancytopenia have been described in a variety of unrelated conditions in which the spleen becomes enlarged. In portal cirrhosis this enlargement is interpreted as due to portal congestion; and the same explanation probably holds for acute hepatitis, the postulate of a virus etiology probably being unjustified. Routine splenectomy in such cases does not seem warranted, but in selected cases it may be counted upon to eliminate anemia, neutropenia, and pancytopenia.

S. E.


Rupture of the spleen has been reported in recent years with increasing frequency. The underlying cause is usually malaria, sometimes infectious mononucleosis; and rarely no cause can be found. In the present report, severe epigastric pain and vomiting occurred in a 49 year old man, and the presence of a tender and rigid abdomen led to a diagnosis of peritonitis of obscure origin. At operation a spleen was found which seemed normal except for multiple hemorrhagic areas and one large rent through the upper pole; bleeding from this rent had resulted in a moderate amount of fluid and clotted blood in the peritoneal cavity. Pathologically, the spleen disclosed many pulp and subcapsular hemorrhages; but the unexpected finding was the presence of the typical lesions of Boeck's sarcoid. Subsequent investigation of the patient failed to reveal other evidence of sarcoid in the eyes, skin, bones, lungs, or lymph nodes.

The presence of signs of obscure intraperitoneal hemorrhage should suggest the possibility of splenic rupture, even if the spleen was not previously known to be diseased. Sarcoidosis must be added to the list of causes of splenopathy which may be followed by spontaneous rupture.

S. E.

SEROLOGY


The occurrence of transiently positive serologic tests for syphilis in several repeat blood donors with no other evidence of syphilis led the authors to investigate the incidence of false positive serologic tests at the Red Cross Center in Columbus, Ohio. It was confirmed that a certain number of donors, initially seronegative, became seropositive after giving from one to four donations. An incidence of 0.4 per cent of such serologic reversal occurred among some 18,000 repeat donors. Reversal was rarely seen after the fifth or subsequent donations. The positive serology occurred from 10 days to 3 weeks after a particular blood donation, and disappeared in from 1 week to 4 months later.

The authors point out that, although the incidence of this aberration is small, the actual number of cases must have been large because of the millions of blood donations given during the war years. A knowledge of the occurrence of the phenomenon will prevent unnecessary antisyphilitic treatment (which was actually given in several cases described) and eliminate premature and incorrect diagnoses of syphilis. It is of great theoretical interest that venesection may so alter the plasma as to result in false serologic reactions. The nature of this alteration is not as yet clear.

S. E.