plasma loss will the hemoglobin and hematocrit give an accurate picture of the trend of blood volume alterations.

In the surgically ill patient, there must be added the inherent differences present, and the effects of surgical operation, anesthesia, and shock, all of which contribute to changes in circulating blood. The introduction of intravenous fluids further complicate the picture.

Direct measurements of blood loss during operation have demonstrated that determinations of hemoglobin failed to give quantitative information regarding the quantities of blood lost.

Observations of the volumes of blood and interstitial fluid during operations under ether anesthesia show that the reduction in plasma volume may be greater than can be accounted for by hemorrhage. The red cells may take up some of the fluid transferred from the interstitial space to the blood stream.

The blood picture at the end of operation is thus the resultant of these variable influences and it becomes impossible to select any one determination indicative of the condition of the postoperative patient.

The data compiled from the determinations of hemoglobin, hematocrit and plasma proteins of 35 patients before and after major surgical operations are presented. An analysis of the findings furnishes further evidence that blood losses calculated from these changes would lead to an underestimation of the need for replacement, and that no easy practicable laboratory procedure would indicate the status of the circulating blood in the postoperative patient.

A knowledge of the blood loss during operation as available in the literature offers a practical basis for planned transfusions during operation.

M. F. P.


Although the Rh factor is important to all who use blood as a therapeutic agent, it is particularly in the field of obstetrics that this discovery has its greatest significance because not only is the obstetrician concerned with the untoward transfusion reaction, but also he must take into account the fact that the transfusion of an Rh negative patient with Rh positive blood, on the one hand, or the harboring in the utero of an infant which has inherited Rh positive blood characteristics from an Rh father on the other, may induce the production of antibodies which may, and often do, affect the offspring adversely.

The fine practical application of the Rh immunizing principle was made in 1940 when it was demonstrated that three Rh negative persons having transfusion reactions following the use of homologous bloods probably had been transfused and sensitized previously with the Rh positive blood.

It has been found that there are racial differences in the incidence of Rh positive and Rh negative. Whereas the white race is approximately 85 per cent Rh positive, the Negro race is about 93 per cent positive and the Indian and Chinese races from 95–97 per cent positive.

It is inherited as a dominant in the Mendelian manner and there are several groups and subgroupings of Rh positive phenotypes. It is obvious that there are many possible types of Rh positive, the meaning of which in terms of transfusion and reproductive compatibility remain to be studied.

Rh agglutinins are not normally found in the human body, and must either be transmitted possibly by transfusion or be generated actively as a result of transfusion or pregnancy.
The response on the part of the host depends upon the antigenic potency of red blood cells introduced into the circulation as well as the ability of the recipient to produce immune bodies. The evidence thus far accumulated goes to show that the intimate relationship of mother and fetus provides a more favorable background for the development of Rh antibodies. Whatever the mechanism may be for providing an intermixture of maternal blood elements, the Rh negative mother who carries an Rh positive infant will frequently, and more often after the first pregnancy, develop Rh antibodies which she then may transmit to her progeny by way of the placenta. The effect on the fetus depends upon many factors some of which we do not fully comprehend.

The action of the Rh antibodies in vitro results in agglutination, whereas, in vivo the response is hemolysis.

The jaundice due to hemolysis, the enlargement of the spleen and liver, as well as the blood picture showing an abnormal number of early red blood cells, is pathognomonic of erythroblastosis fetalis. Occasionally, instead of icterus, one finds with the above extensive and massive edema of the fetus, umbilical cord and placenta. A number of subclinical evidences of hemolytic disease of the newborn infant may be found to be an expression of Rh inheritance. Many Rh positive fetuses conceived by Rh negative mothers succumb early in fetal life.

In a group of 110 Rh negative mothers, 66 Rh positive infants were born. The total incidence of abnormality for the whole group is 24 per cent, including 10.6 per cent incidence of erythroblastosis.

We have been determining the titer of Rh antibodies in our Rh negative mothers. Preliminary results show that of the 21 Rh negative women showing definite anti Rh titers anti-partum, the children of 9 of them (43 per cent) showed some abnormality. On the other hand 37 Rh negative mothers, showing no appreciable Rh titer either during pregnancy or afterward, produced infants on five occasions which had some subclinical manifestations. The study of titers therefore is only suggestive.

Treatment of new born infants having hemolytic disease involves the avoidance of any means of anesthesia or analgesia which is associated with a decreased oxygen-carrying capacity on the part of the maternal blood and the prompt transfusion of the infant with Rh negative blood from some other donor than the mother. Oxygen therapy has proved to be of some assistance. 21 references.

M. F. P.


"Saddle block is a term used to designate low spinal anesthesia which is confined exclusively to the perineal area. Pitkin, in 1928, first described a technique for producing this distribution of anesthesia. . . . Roman-Vega and Adriani have simplified the technique for the use of 'nupercaine' for abdominal surgery by mixing it with glucose. The drug is used for all lengthy operations at the Charity Hospital at New Orleans, and has been used in 1500 spinal anesthetics during the past 15 months. This is a report of a detailed study of its use for analgesia during labor in 100 obstetrical patients. . . . Obviously, 100 cases is not a sufficient number to prove the merits or demerits of any method of analgesia or anesthesia. However, this series does establish the applicability of saddle spinal block anesthesia to obstetrics. Although the results were gratifying and no untoward reactions were ob-