Reports of Scientific Meetings

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American Association of Blood Banks

In 1947, 118 physicians and technicians gathered in Dallas, Texas, to attend the first meeting of national scope for blood bank workers. In October of 1967, 2,700 persons attended the 20th annual meeting of the American Association of Blood Banks in New York City.

Hemolytic transfusion reactions were the subject of a one-day seminar, during which Myhre reported that females are involved more often than males. No signs or symptoms are pathognomonic of the reactions, although generalized oozing or shock unrelieved by blood often is seen in anesthetized patients. Reactions from the transfusion of incompatible plasma ("minor" side reactions) are usually mild unless the antibody is present in very high titer or is the hemolytic anti-A or B type that occurs in some group O donors (Bowman). Delayed hemolytic reactions, seen 4–14 days after transfusion, result from a secondary response after previous immunization (Busch). As soon as any hemolytic reaction is suspected, 100 ml. of 20 per cent mannitol should be given and, if the reaction is accompanied by a hemorrhagic tendency, intravenous heparin is indicated (Polesky).

Information about the biochemical structures of the A, B, and Lewis blood group antigens is now quite complete, due mostly to the work of Drs. W. T. J. Morgan and Winifred W. Watkins, who reported that the soluble blood-group-specific substances are glycoproteins, whereas those on the erythrocyte are glycolipids. Specificity is conferred by the terminal sugar in the carbohydrate moiety. The addition of L-fructose to Lewis^a-specific substance converts it to H substance. The addition of D-galactose to the H antigen converts it to B, and D-N-acetyl-galactosamine added to B substance changes it to A substance. Since DNA carries information for protein synthesis, Watkins suggested that the blood group genes control the formation or functioning of protein enzymes responsible for the assembly of carbohydrate subunits.

In choosing donors for renal transplants, Perkins reported that leukocyte typing and selection of donors who had "compatible" leukocytes were associated with a lowered incidence of graft rejection.

Buchholz reported that erythrocytes from patients with cancer, aplastic anemia or other conditions show changes in ABO antigens that occasionally are manifest as changes in blood group.

One morning was devoted to the discussion of prevention of Rh hemolytic disease by the passive administration of anti-Rh immunoglobulin to Rh-negative mothers. Usually the immunizing event for antibody formation occurs at the time of delivery, when Rh-positive cells from the fetus cross the placenta and induce antibody formation in the mother. The administration of 1 ml. of highly concentrated anti-Rh within 72 hours of delivery removes the Rh-positive fetal cells and prevents Rh sensitization. To date, only six of more than 3,000 treated Rh-negative mothers have formed Rh antibody. At least 173 second children have been born to mothers in the treated group; none has had erythroblastosis. This remarkable record suggests that erythroblastosis may be eliminated in the near future.

Studies of anti-A and anti-B in the blood of group O donors suggest that dangerous isoagglutinins are present in almost all donors who have been immunized against plague or yellow fever (Camp). In addition, 59 per cent of random group O donors have hemolytic anti-A in their plasma. The use of group O blood, therefore, should be restricted to group O recipients (Grundbacher).

The use of platelet concentrates in patients with thrombocytopenia is increasing; adequate supply is a problem. ABO-incompatible plate-

lets are as effective as compatible ones, although the administration of incompatible plasma along with the platelets may lead to "minor" transfusion reactions (Clifford). The use of platelets from the newly-available CPD (citrate-phosphate-dextrose) blood is effective (Button), and the addition of extra acid to the usual ACD solution improves platelet yield (Shively). Frozen platelets are about half as effective as fresh platelets, but may be useful in an emergency (Pert).

Administrative sessions met in parallel with the scientific meeting. Problems of adequate donor supply, government control, and computer application received the most attention. The meeting was marked by a widespread feeling that the administrative and jurisdictional problems facing blood banks, particularly the shortage of adequate replacement donors, had, in 20 years, gradually overshadowed the scientific aspects of blood banking. The scientific sessions presented good, but not imaginative, work, and this reporter, at least, felt a bit disappointed.

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Effects of Diffuse Electrical Currents on Physiological Mechanisms, with Application to Electroanesthesia and Electrosleep

From October 25–28, 1967 a conference with the above title was held in Milwaukee, Wisconsin. It was sponsored by the Marquette School of Medicine, the Marquette College of Engineering, the National Science Foundation, the American Society of Anesthesiologists, the Veterans Administration Center in Milwaukee, and several pharmaceutical and industrial organizations.

The purpose of the conference was threefold: to provide a meeting ground for communication for many highly diverse bioscientists and physical scientists; to direct the investigational aims of these scientists toward exploration of the effects of all types of diffuse electrical currents on a multitude of physiological mechanisms; and, finally, to define, if possible, the applications of diffuse electrical currents in the production of electroanesthesia and electrosleep. The conference included a wide range of interests applicable to neurophysiology, neurosecretion, cerebral and peripheral circulation, behavioral alteration, and what is generally called "electrosleep" but is better termed "electrotherapy." The conference also considered problems of mathematical models and data analysis, methodology, impedance and current-density measurements, neuroanatomy, electroshock and electroanesthesia.

Of particular interest to anesthesiologists were not only the discussions of the value of electroanesthesia, but also discussions of the methods of induction of sleep and reflex inhibition produced by electrical stimulation of the forebrain inhibitory system, as reported by Clemente, from the Brain Research Institute, University of California. It was suggested that anatomical pathways associate the basal forebrain area with the orbital frontal cortex and the reticular formation in the medulla of the midbrain. In addition, a quantitative analysis of electroencephalographic frequency spectra in various states of sleep and wakefulness was reported. This indicated that low-voltage, random, predominantly alpha and other types of electroencephalographic records thought to be homogeneous by visual inspection might, in fact, be heterogeneous in respect to the distribution of frequencies. Methods were reported which permit pattern recognition not obtainable by visual inspection alone and also provide quantitative data permitting accurate comparison of records obtained from the same individual on different occasions.

An interesting finding regarding the effects of electroanesthesia on gastric secretion in cats was reported also. Secretion was arrested during the application of electroanesthesia. In contrast, salivary secretion was increased markedly during the application of current.

An elegant method of observing the microcirculation in a transparent rabbit ear chamber showed that under electroanesthesia blood flow usually, although not invariably, was suppressed, thus emphasizing that activity of the microcirculation during electroanesthesia dif-