



minimum of trauma may result. Tests have shown that aspiration is satisfactory either through the tip alone or through either lateral opening alone but it is best, of course, when all three are engaged in the process.

A further modification with several lateral openings has been used by the surgical service[†] for enterostomy drainage and the impression has been gained that results have been better than with the conventional type of urethral catheter.

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1. Conventional type of urethral catheter
2. Modification for tracheobronchial aspiration
3. Modification for enterostomy drainage

CORRESPONDENCE

May 9, 1946

To the Editor:

After reading the article "A Blood Transfusion Service, Dangers and Safeguards" by Seldon, Lundy and Adams of the Mayo Clinic, which appeared in the March, 1946, issue of *ANESTHESIOLOGY*, I felt there were certain criticisms and suggestions which should be made.

To lend a more authoritative air to these criticisms and suggestions I have consulted Doctor Lewis K. Diamond, Hematologist at the Children's Hospital and Director of the Blood Grouping Laboratory, and the following suggestions are a composite of Doctor Diamond's and my own feelings about the matter.

There are four important points to which attention should be called. 1. Not only should all obstetric patients and certain patients who are receiving repeated transfusions, but all patients who are to receive even a single transfusion, have Rh typing done as a preliminary. The authors point out that they keep on hand and in the ice box ready to use group O Rh negative blood, so if an emergency trans-

fusion is necessary and Rh typing cannot be done, Rh negative blood should be used until such time as the Rh type is determined. The importance of this is that once an Rh negative patient has been sensitized, if it happens to be a woman, not only all future transfusions but all future pregnancies, if the patient's husband happens to be Rh positive, will be adversely affected. All too frequently nowadays obstetricians are discovering the first pregnancy of an Rh negative female to an Rh positive male can result in the production of erythroblastosis foetalis and the loss of the baby with the first pregnancy. This unfortunate happening can be explained in most instances by checking back in the history to find that the Rh negative female has sometimes during her life received an incompatible Rh positive transfusion which has not only sensitized her to all future transfusions but all future pregnancies where the husband happens to be an Rh positive. And, after all, there is no reason to believe that a future transfusion will not be a greater emergency and offer less opportunity for Rh typing than the first

one. Therefore, even the first transfusion should not be given lightly. In addition, it is now possible, with newer techniques and more readily available serum, to perform Rh typing on blood taken from the finger or ear of a patient directly on a slide within two minutes or less. No emergency suggests that a delay of this brief duration might be harmful to the patient.

2. A second point is the use of group O blood universally, without addition of Witebsky A and B substances. It has now been proved beyond possible doubt that the addition of this material is perfectly harmless even for repeated injections into recipients of O, A or B groups, whereas even a titer of anti-A or anti-B as low as 1-64 may destroy some of the recipients' own incompatible cells in certain cases, particularly if more than a single transfusion must be given within a period of twelve hours or less. The routine use of group O blood; therefore, seems to demand the routine addition of Witebsky's A and B substances.

3. Most important of all, it has been shown by studies in the Army Transfusion Service, in the similar organization of the Navy and in various projects sponsored by the National Research Council, that the greatest harm to blood may result from variations in temperature and fluctuations between refrigerator and room temperature. Therefore, the practice of warming the blood to body temperature, keeping it so for several hours, and then refrigerating it is a very dangerous one indeed. In fact, it seems advisable in most instances to pre-cool the bottle containing the preservative diluent before the blood is drawn into it, then immediately restore the blood to the refrigerator after drawing it from the pa-

tient, and keep it there until it is ready for use. If it is necessary to warm blood before giving it to the patient, which is rarely an important consideration except when dealing with cold agglutinins, the warmed blood should be discarded if not completely used, and certainly never refrigerated for later use.

4. Finally it might be pointed out that even after only three days' storage in plain sodium citrate solution blood cells are less viable when injected into the recipient than after storage for a week or more in the newer acid-citrate-sodium citrate-dextrose mixtures, which have been adopted by the Navy, by the English Medical Services, and by most of the hospitals in this country during the past year or two. It seems wise, therefore, to use routinely this so-called ACD solution in preference to plain sodium citrate, unless the blood is to be used for injection into a recipient within forty-eight hours of the time of its withdrawal.

If you have no objections I should be very glad if my criticisms were sent on to the Mayo Group so that they might have a chance to answer them, for, after all, they might have some very good and authoritative reasons for having omitted the things for which I am making my criticisms. In addition, it would seem that if they were to make an answer and the two could be published in the near future under the section "Current Comment and Case Reports" it might be more beneficial to the reader than to have my criticisms appear one month and their answers another.

Sincerely yours,

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May 24, 1946

To the Editor:

Doctor Nicholson's consideration of our paper is thoughtful and courteous. To us it seems that he excludes other viewpoints in some particulars concerning which other opinions than those he records are admissible; but let us, in a few words, take up the four points he raises:

1. In the interview between the writing of our paper and its publication, new

knowledge became established and we changed our technic in some (not in all) of the particulars to which Doctor Nicholson draws attention.

2. This is one of the points on which we think Doctor Nicholson is more positive than present knowledge warrants. Even now we would not change our sentences which read: "We do not hesitate to use group O blood as a universal donor blood. . . . The blood of all group O donors hav-