

## OUR PRIZE COMPETITION.

STATE WHAT YOU KNOW OF INTRAVENOUS INFUSIONS AND TRANSFUSIONS; THEIR PURPOSE, THE BLOOD SUBSTITUTES UTILIZED, AND THE MANNER OF THEIR APPLICATION, AND THE DANGERS TO BE GUARDED AGAINST.

We have pleasure in awarding the prize this week to Miss E. A. Noblett, Priestley Hall, Beckett's Park, Leeds.

### PRIZE PAPER.

The intravenous infusion of salt solution is reserved for cases of shock or hæmorrhage, where immediate relief to the vascular system is necessary, and where absorption from beneath the skin would be too slow. Intravenous infusion of salt solution is being largely superseded by hypodermoclysis. Its disadvantage is in its much slower and more difficult technique. Its advantage lies in the immediate relief it gives to the vascular system. On the other hand, if the saline is too rapidly infused the blood taken into the heart will be extremely diluted; imperfect æration and dyspnoea will be induced or acute dilatation ensue, and immediate death may occur. One of the larger superficial veins of the upper arm is usually chosen—the basilic or cephalic. This is made to stand out by a loose tourniquet applied above, and, aseptically, it is dissected out through a longitudinal incision about one inch long. Two silk ligatures are passed under it. The lower one is tied; between the two the vein is nicked, the end of the cannula attached to the tube from the salt solution bottle is introduced (taking care there is no air in the tube), and the upper ligature tied once about its tip. Not more than two pints had better be given at one time. After the bottle is nearly and slowly emptied, the cannula is slipped out and the upper ligature drawn taut, so as to tie off the proximal end of the vessel. The skin is sewed and a sterile dressing applied. Great care must be taken to stop the infusion while some solution is still in the flask, otherwise air might be forced into the vein. Air in any quantity forced suddenly into a vein causes dilatation of the left chambers of the heart and of the pulmonary vessels, a condition always fatal. Such an accident could only take place in such a process as intravenous infusion, as, for example, by allowing the flask to become perfectly empty and refilling it with the needle in place.

Transfusion of blood is indicated in acute hæmorrhage from any cause. Cases which have been exsanguinated, so that the infusion of salt solution to increase the blood volume does not suffice to maintain life, may be saved by transfusion. This not only makes up for

loss of fluid, but provides red blood corpuscles, which can serve temporarily as oxygen carriers. It is of the greatest value in internal hæmorrhage preceding operation (as in extra uterine pregnancy), post-operative hæmorrhage, hæmorrhagic disease of the newborn, hæmophilia, and illuminating gas poisoning.

Ordinarily, transfusion cases are emergency cases to the donor.

Experience has shown that it is best to use a radial artery of the donor and any superficial arm vein of the recipient near the elbow. Usually the median basilic vein is the best one, on account of its size and easily accessible position. The regeneration of blood lost by the donor is uninterrupted and rapid. At first he will show loss of colour in his mucous membranes, pallor of the skin, slight uneasiness, slight quickening of the pulse and respiration, lowering of the blood tension, and beginning of shrinkage in the skin of the face. As far as the recipient is concerned, the chief danger to be feared is acute cardiac dilatation and subsequent cardiac failure, caused by transfusion in excessive amount or at excessive rate of flow.

The vessels to be anastomosed are exposed, and, after selection of a cannula of size suitable to the size of the vessels, the end of the vein is pushed through the needle end of the cannula with the help of fine-pointed forceps, or the vein may be pulled through by means of a single fine suture. The end of the vein is then cuffed back over the cannula and tied firmly in place. The cuffed part is next covered with sterile vaseline; this facilitates slipping the artery over the cuff.

### HONOURABLE MENTION.

The following competitors receive honourable mention:—Miss Winifred M. Appleton, of University College Hospital, W.C. (who sent an excellent paper, but the length was about 1,000 words), Miss E. J. Rankin, Miss M. James, Miss M. Robinson, Sister E. F. Hannay.

### QUESTION FOR NEXT WEEK.

What premonitory symptoms would cause you to suspect the onset of eclampsia? What features does this disease present, and how would you deal with a case pending the arrival of a doctor?

### IMPORTANT.

Will competitors note that the Prize Coupon must be cut out of the JOURNAL and attached to the paper sent in. Also the number of words contained in it must be written on the top left-hand corner of the first page. Will competitors note further that the number of words in the Prize Competition papers must now be between 500 and 650.

[previous page](#)

[next page](#)