

OUR PRIZE COMPETITION.

WHAT PREPARATIONS WOULD YOU MAKE, AND WHAT APPARATUS WOULD YOU PUT OUT FOR THE INFUSION OF BLOOD? UNDER WHAT CONDITIONS MIGHT INFUSION OF BLOOD BE NECESSARY?

We have pleasure in awarding the prize this week to Miss Henrietta Ballard, Bermondsey Hospital, Lower Road, Rotherhithe, S.E.

PRIZE PAPER.

Preparation.—Before transfusion of blood can be carried out, the blood of the donor and that of the recipient must be tested as to compatibility, as the blood of one person may be quite incompatible with another, and the result be disastrous instead of beneficial, as destruction of the blood cells may take place instead of increasing their number.

Apparatus required for usual transfusion is Kempton's. This consists of a glass measure, having a tight-fitting cork, a small aperture for a small air-pump, and at its lower end the tapered glass tube upon which rubber tubing can be easily fixed.

A silver or glass canula, a scapel, artery forceps, aneurysm needle, novocaine and hypodermic syringe, scissors, retractors, needle-holder, needles and ligatures must also be prepared for the operation.

The apparatus for receiving the blood of the donor needs very special preparation; having been thoroughly sterilised and dried with a sterile towel or alcohol, the operator must first make the hands aseptic, and warm the apparatus over a suitable lamp; the canula is then dipped into melted paraffin wax and by the aid of the air-pump is drawn through the tubing until the whole is lined with a thin layer, including the glass vessel, and when all is well coated with the wax the excess is allowed to run out.

The object of this preparation is two-fold.

Firstly, the blood is kept sterile all the while.

Secondly, the paraffin prevents the blood clotting.

When all required is ready, the arms of donor and recipient are rendered aseptic with either iodine or spirit, and usually anæsthetised by an injection of novocaine (1 per cent). A tourniquet may be necessary to dilate vein of the donor, and some surgeons follow the infusion of blood with a solution of soda bicarbonate to prevent coagulation of blood taking place.

The donor and recipient should be near together, so that the canula can be taken straight out of the donor's vein and placed in the recipient's without delay; the syringe on the air-tube will be necessary to force the blood

into arm of recipient. The advantage of this method is that the exact amount of the blood infused is known, whereas by direct transfusion only an approximate amount can be estimated.

Conditions necessitating blood infusion are severe hæmorrhage, grave shock such as follows severe accidents, chronic conditions in which there is much destruction of blood cells, severe secondary anæmia following severe illness or accidents, spleen diseases, and conditions in which the patient has to be prepared for an extensive operation.

Shock must be prepared for, in case the donor collapses from the giving of blood; and saline may be necessary, or a gum preparation now used may have to be given intravenously, so that an intravenous apparatus should be ready, also a well-warmed bed.

Whitla states that "where possible the human blood should be defibrinated by collecting in a glass vessel as it flows from the basilic or great saphenous vein, and after whipping with a glass rod till the fibrin has entirely been removed, it may be injected into either an artery or vein. The best artery is the radial.

"If a vein be selected—the basilic being preferable—the blood should be injected in the direction of the venous stream—*i.e.*, towards the heart.

"If time does not admit of defibrinated blood being used, the transfusion must take place direct, notwithstanding the risk of embolism."

As transfusion only takes place under very grave conditions and the operation is a serious one, involving the gravest consequences if every precaution is not observed, nurses should familiarise themselves with the technique employed, so that if called upon suddenly to prepare for transfusion they may be able to render expert assistance.

HONOURABLE MENTION.

The following competitors receive honourable mention:—Miss M. Robertson, Miss S. Smith, Miss Jane Phillips, Miss P. Thomson.

QUESTION FOR NEXT WEEK.

What purposes are served by (a) chyme, (b) chyle, (c) pancreatic juice, and (d) bile.

Holborn Borough Council has passed a resolution making chicken-pox a notifiable disease. The object of the Council is to prevent the spread of small-pox. The medical profession to-day have had very little experience of small-pox, and that is why, at this juncture, it is expedient that chicken-pox should be made notifiable.

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