A Simplified Method for Bone Marrow Transfusions

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Bone marrow transfusions have shown themselves to be of value in preventing death in mice which had received a heavy dose of radiation (1). Some work has been started which indicated that bone marrow transfusions may also be of value in humans suffering from bone marrow deficiency due to radiation or disease (2).

The technic for bone marrow preparation at -80°C , and glycerol preservation for transfusion, described up to the present (2) are quite elaborate and beyond the scope of the average hospital. The following technic for obtaining and transfusing bone marrow is simple and needs only the facilities available in any small hospital.

Method

A donor is selected whose blood is compatible with that of the recipient. This is determined by the usual grouping and crossmatching.

A $\frac{1}{2}$ oz. glass wide-mouth bottle with a plastic screw cap is autoclaved. The one we use has a mouth 2 cm. in diameter.

From 10 cc. vial of 1000 U.S.P. units of sodium heparin solution 1 cc. is aspirated into a sterile 2 cc. syringe with a 23 gauge needle. This 1 cc. of heparin which contains 10 mg. is expelled into the $\frac{1}{2}$ oz. glass bottle.

A bone marrow puncture is done on the donor, 5 cc. of material is aspirated and expelled into the prepared heparin bottle. The cap is screwed on and the bottle is shaken for two minutes.

The screw cap of a bottle of 250 cc. isotonic sodium chloride solution (Abbott No. 4124) is removed and the heparin bone marrow mixture is poured from the small bottle into the saline.

The saline bottle top is replaced and the saline bone marrow mixture shaken vigorously for two minutes.

An Abbott No. 4440 Y-Type recipient set is now attached to the saline bottle and the bone marrow mixture is transfused into the patient in the usual manner.

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Conclusions

This technic has been found to be completely safe and satisfactory for the following reasons:

The patient and donor have been matched and cross-matched.

The bone marrow is used immediately and there is no danger of changes in its composition.

The transfusion filter prevents any possibility of pulmonary fat emboli from the bone marrow which always contains some fat.

The bone marrow cells prepared in the above manner pass through the filter quickly and easily.

Summary

A simple and safe technic for transfusing bone marrow is described.

Zusammenfassung

Es wird eine einfache und gefahrlose Methode der Knochenmarkstransfusion beschrieben.

Resume

Description d'une technique simple et sure de transfusion de moelle osseuse.

References

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