DIRECT TRANSFUSION OF BLOOD.

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ALTHOUGH, the advantages of direct transfusion are so apparent, this treatment does not appear to be in such frequent use as it would merit. Apart from its obvious indication in cases of severe hæmorrhage, it would appear to be a valuable treatment for severe sepsis and shock. The delivery of healthy blood to patients suffering from septicæmia must provide them with the bactericidal agents, bacteriolysins, antibodies, agglutinins, opsonins, leucocytes, and tryptic power, of which they are deficient.

How far the alteration of the blood in cases of shock determines the result is at present uncertain, but the effect of healthy blood upon the tissues of such patients appears to be worthy of consideration.

Transfusion would appear to be a more scientific remedy than the empirical injection of antiseptics into the blood-stream.

The difficulty of obtaining someone willing to submit to an operation entailing ligation of an artery is, in my opinion, the only bar to a much greater use of this treatment.

The operation is very simple, and can be performed without the use of special apparatus—in fact, I consider the use of any apparatus most undesirable.

To be efficient and certain in its results the operation should be performed by the direct transfusion of blood from artery to vein. It is only in this way that clotting, the one danger of transfusion, can be avoided with certainty.

The only disadvantage of this method is that the amount of blood transfused cannot be measured, but this is outweighed by the safety and simplicity of the method, and, moreover, the amount of blood which flows before the donor becomes faint is fairly constant.

Position of the Patient and Donor.—The left hand of donor grasps the arm of the patient just above the elbow, bringing the donor’s radial artery in close proximity to the patient’s median-basilic vein.

The Operation.—An incision about two inches in length is made in the patient’s arm over the median-basilic vein.

The Preparation of the Artery.—A similar incision is made over the radial artery of the donor—the artery is cleaned for about an inch; the lower end of the artery in the wound is clipped. Digital pressure is made over the brachial artery, and the radial is cut above the clip.

The end of the radial artery is pulled out of the wound, and a traction suture is tied through the wall of the artery.

The next step is the preparation of the vein. Two probes about an inch apart are passed under the vein for haemostatic reasons—a small cut is made into the vein (two millimetres in length), through this the needle bearing the traction ligature from the radial artery is passed. The needle emerges from the vein an inch above the incision, a second suture is now passed through the wound in the vein; this suture is used to close the vein when the artery has been inserted. By drawing upon the traction suture the artery is drawn into the vein, the vein suture is tied, and the probes and digital pressure removed.
The blood is allowed to flow until the donor feels faint. The artery is then clipped, pulled out, and ligatured. The whole procedure is carried out under local analgesia.

It may be objected that making use of the radial artery as a canula involves a serious and avoidable mutilation upon the donor; this is not the case—ligature of the radial artery must be performed in any case, and the excision of an inch or so of the vessel makes no difference. The elasticity of the artery renders its use as a canula easy, and a considerable length of vessel becomes available through a comparatively small wound.

THE PROBLEM OF BILHARZIASIS IN SOUTH AFRICA.

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The report of some experiments by Mizaira and Suzuki to determine the life-history of the parasite which causes the Asiatic form of Bilharzia disease was reviewed in the Tropical Diseases Bulletin for March 30, 1914, and referred to redia-produced cercariforms in the hepatic ducts of infested snails.

In 1916 Dr. Juan Iturbe published for the National Academy of Medicine in Venezuela an illustrated paper on the Intermediate Host of Schistosoma mansoni, in which he describes undoubted redia-formation. It is a little difficult to understand that the same species of trematode worm should be sporocyst-produced in one part of the world and redia-produced in another; but observations of the development of closely allied species would seem to show that such a thing is not altogether improbable.

The report by Lieutenant-Colonel Leiper of the Bilharzia Mission to Egypt which appeared in the Journal of the Royal Army Medical Corps for 1915 includes a description of Bilharzia-infested snails producing the Egyptian forms of the disease. These cercariforms are said to develop in sporocyst and daughter sporocysts, and no mention is made of redia-formation in the life cycle of the Bilharzia parasites in Egypt.

Schistosoma hematobium, which is responsible for Bilharzia disease in South Africa, develops in sporocysts in the liver-substance or nephritic ducts of Physopsis africana. In some instances a few isolated cercariforms may be found in the liver-substance and the liver entirely free from sporocyst-formation. In such cases one has to look in the nephritic and genital region of the snail before one comes across the sporocyst that produces them. The cercariforms develop to their full size in the sporocyst and, at whichever stage of infection one examines the snail, there is no trace of redia-formation, except in mixed infections. Dr. J. G. Becker, who reported adult Bilharzia worms in a guinea-pig to which he had given those cercariforms from P. africana, describes the cercariforms in the Medical Journal for South Africa, April 1916, but makes no mention of redia-formation in the infested snails.

P. africana is one of the commonest fresh-water snails of semi-stagnant water in infested areas. I have never found any redia-formation in infested specimens from Magaliesburg, Rustenburg, Mulder’s Drift, Umbilo, Toll Gate and the Umsindusi river at Maritzburg.