A SCHEME FOR TRANSPLANT OF THE UTERINE TUBE

by

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The agony of a barren mother is shared by every gynaecological surgeon. The largest single factor of sterility is the blocked uterine tube. A large majority of these are curable by tubal insufflation and other suitable surgical procedures, such as salpingolysis and tuboplasty operations. However, if the whole tube is disorganised either by disease or previous ligation we are completely helpless. Is not there now a new horizon beckoning for a new approach? When the 'Heart' is being transplanted, the 'Kidney' is being transplanted and the Arteries are being grafted, why can we not transplant healthy uterine tube from a donor to such a helpless donee.

In the case of Heart we have to wait for accidental death (?) of the donor (?) of suitable blood group, in the case of kidney we have to accept the sacrifice of one kidney of a near relation of suitable blood group, but in the case of the uterine tube we have more donors than are required. Lots of women are volunteering for permanent sterilisation. We can easily select a suitable case for grafting on to a case of disorganised tube.

As the author has retired and is no longer on the staff of a hospital he is only giving a theoretical scheme for such a transplant and waiting for the posterity to find out in practice how the scheme is feasible. In 1964 author presented a new approach for chemical blocking of the uterine tube without laparotomy and workers in Santiago (Chile) and Egypt are carrying on further human experiments with good results. In many centres in the U.S.A., such as Denver and New York, animal experiments are also under study with some promise. The author now hopes that others will work out a practical evaluation of the scheme now presented.

Should it succeed, attempt may also be made to transplant the uterus in cases of non-malignant pathology and developmental gross defects, with uterus from elderly patients who have completed their family.

Transplant of ovary is also likely to be possible, but if it succeeds the children thus born in the womb of the donee mother will partake of the physical and mental traditions of the donor woman. It's legal status will be difficult to determine. In some countries the status of a child born as a result of artificial insemination from a donor is nothing more than that of a child born out of adultery committed with the consent of the husband. The occasion for determination of legal status of ovarian transplant cases has not arisen as yet but needs attention of the judiciary and the legislators.

Suggested Method

A donor will have to be selected from cases coming for permanent non-puerperal sterilisation. The donor's children must have reasonable expectancy of life. Blood for grouping, matching and W.R.

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and Kahn tests must be done for the donor and donee. Blood count and sedimentation rate should also be done to eleminate active infection, particularly of the donee. The donor should be free from gross ill health. Two sets of surgeons should work simultaneously on two side by side tables.

The Donor

The Donor's tubes should be removed completely with portion of mesosalpinx containing the arteries. No clamp should be used but at the uterine end a wedge resection is done of the cornu of the uterus which must contain the uterine ostium of the fallopian tube. The end of the uterine artery just near the cornu is ligated towards the uterus under direct vision, without using clamps. The intact artery is to be left untied with the tube and mesosaplinx. On the ovarian end, the artery is to be tied just below the ovary but the tubal side to be left untied. The cornual end of the donor's uterus has to be closed with mattress stitches. The mesosalpinx may be stitched up if slight oozing is present. Both tubes are to be dealt with in the same manner. If there is delay in preparing the donee, the excised tube with the blood supply may be kept suspended in Ringer's solution for the time being. Citrate solution should be injected through the end of the open artery to prevent clotting.

The Donee

The surgeon working on the donee patient should remove the disorganised tube completely, trying to preserve as much length of the anastomotic artery as possible below the ovary on either side. It may be a real difficulty in cases of long neglected tubo-ovarian masses. In future, removal of enitre mass and grafting of one ovary with the tube entirely of one side of the donor may be possible in such cases. The lower end of the ovarian vessel of the donee in such cases will be available from the infundibulo-pelvic ligament with less difficulty. On the uterine end a cornual resection should be done of the same size as that of the donor. The two ends of the arteries in the donee should be compressed with rubber mounted small pressor forceps which should not crush the arteries. A small rubber tube may be tied around cervico-uterine area through holes made in the broad ligament, as a tourniquet to prevent bleeding during the operation.

The Transplantation

Sets of mattress sutures of No. 1 chromic catgut are passed through the uterine tissue left attached at the cornual end of the graft. The ends of these sutures are passed through the corresponding sites of the donees uterus through the cornual opening (Figs. I and II). In case of difficulty it may be facilitated by slitting open the fundus, as in the case of Shirodkar's tubo-uterine transplant. However, the maintenance of patency of the uterine end of the tubes will be easier as we are grafting the intact ostium with the uterine tissue. No plastic splint need be used. On tying these sutures the uterine side of grafting will be achieved and haemostasis will be effective. The ends of the uterine side of the arteries of the graft and the donee can be anastomosed by telescoping the narrower artery within the lumen of the wider artery by pulling in with a very fine transfixing sutures (Fig. III). One or two securing sutures may be tied also. The arterial ends at the ovarian side may be similarly telescoped for anastomosis. To prevent leakage of blood the anastomosed area may be sealed off with a small quantity of silicon rubber. The mesosalpinx of the

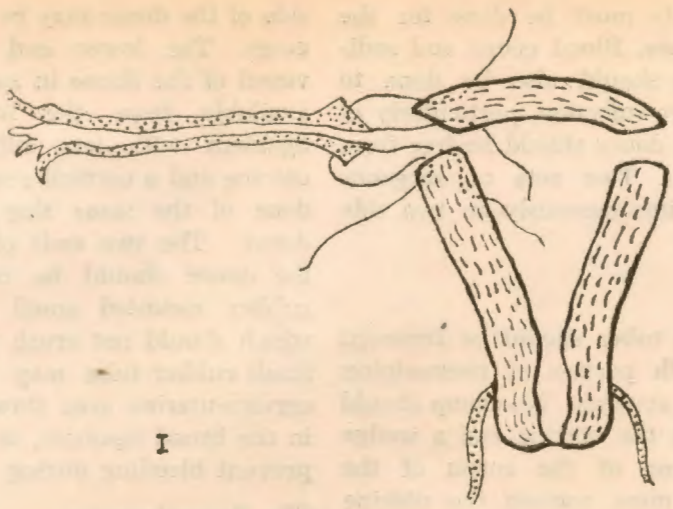


Fig. 1
The graft tube with portion of uterine cornu is being sutured with donee's uterus.

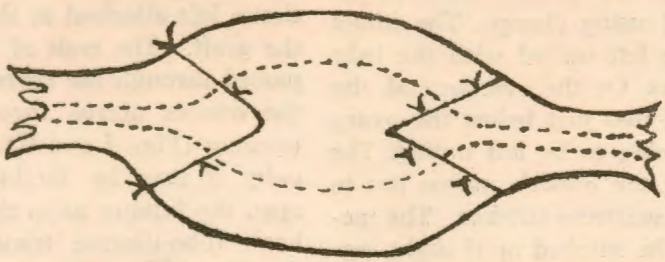


Fig. 2
Both tubes have been sutured with donee's uterus seen from above.

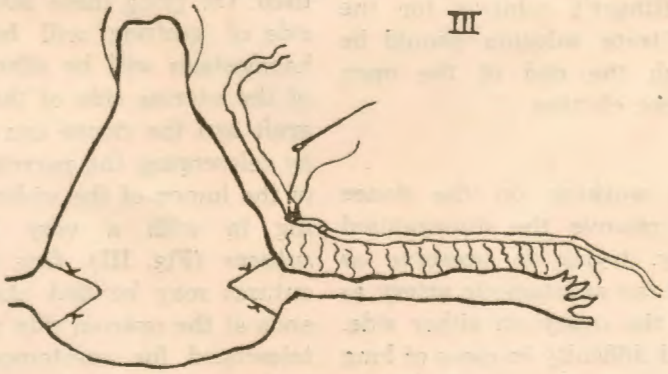
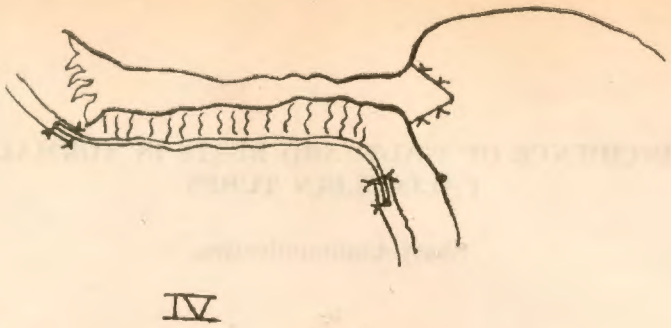


Fig. 3
Artery below the graft is being pulled by transfixing suture for telescoping within the end of the uterine vessel of the donee.



IV

Fig. 4
The artery below the graft tube has been transfixed by telescoping with donee's arteries at both ends.

grafts should be sutured with the cut ends of the broad ligaments on either side. Anastomosis of veins may only be possible if this is a well defined large one, but if a bunch of small veins are present then we shall have to depend on spontaneous growth of anastomotic veins through the broad ligaments.

If anastomosis of both ends of the arteries be not possible, at least one end should be done, preferably the uterine end. The other end lightly tied and embedded in the adjacent tissue, with the hope of achieving spontaneous growth of anastomotic vessels. Plication of the round ligaments should be done to prevent retroversion.

The success and feasibility of the operation and necessary modifications are subject to trial and error by the actual workers. The author is presenting a scheme which seems more easily practicable than transplant of other organs.

Transplant of one ovary along with tube may be done in some suitable cases, where both ovaries are damaged and where both ovaries of donor are healthy. For eugenic and social point of view the donor should be a blood-sister of the donee in such cases.

Why not transplantation of one testicle be possible to a patient of non functioning testicle? However, that question is to be decided by the genito-urinary surgeons. The legal implications of such operations are to be decided by the judiciary and the legislators.