

THE ISRAELI TEAM PREPARATION FOR HUMAN UTERUS TRANSPLANTATION

Ben Shachar, Inbar; Marcus, Naama; Solomonov, Evgeny

Abstract Body

Background: Absolute uterine infertility can be the result of an absence of uterus at birth or caused by surgical removal of the uterus. In Israel, surrogacy is not allowed in all religious. After the publications of the successful human uterus transplantation (UTx) by the Swedish group, our group (two gynecologists and one transplant surgeon) asked for their assistance to prepare ourselves for human UTx in Israel. Team preparations included (a) workshop with the Swedish team (b) UTx in sheep model (c) cadaver workshop (d) participation in human live donor case of UTx.

Methods: In the sheep model, we performed autologous uterus transplantation using the living-sheep donor model. Five sequential operations (in 3 ewes) were prospectively conducted. At 3 weeks follow-up, the uterus and anastomoses were checked for strictures and thrombosis. As dissection of the parametrium is much easier in sheep than in humans, we continued our preparation with fresh human cadaver.

Results: In the sheep model, 2 successful auto-transplantations were made, and one failed because of undeveloped uterine arteries. We identified and used a deep, separate uterine vein, which was not described in other publications. The team was able to perform safe dissection and auto-transplantation, with no signs of strictures or thrombosis after 3 weeks. In the cadaver workshop, the uterine arteries and veins were successfully dissected at their origin on both sides. In March 2017, we were invited by the Swedish team to participate in UTx between identical twins in Belgrade. The transplantation was successful and the recipient is pregnant.

Discussion: The sheep and the cadaver models were both essential and complementary in the team preparation for human UTx. Our main observations are: 1) Using the deep uterine vein in the sheep model can anatomically simulate better the human uterine vein dissection and the difficulty to approach it 2) In order to avoid using unsuitable vessels for anastomoses, the uterine transplantation protocol in humans should include imaging of the donor's uterine vessels 3) It might be advised to use the ovarian vein, instead of the uterine vein for venous drainage, to simplify and shorten the UTx in post-menopausal donors.