



Live birth after uterine transplantation using nulliparous deceased donor uterus

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Abstract

Backgrounds

Thanks to uterine transplantation (UTx) and assisted reproductive methods, women with absolute uterine factor infertility (AUI) have a chance to conceive and give birth to a genetically own child. The Czech UTx trial has been established in 2015 and the first UTx was performed in 2016. To our knowledge, live birth in our recipient with nulliparous uterus from deceased donor (DD) was the first of its kind worldwide.

Methods

A 25-year-old woman with Mayer-Rokitansky-KÜSTER- Hauser syndrome (MRKHS) and self-dilated neovagina was admitted into clinical trial of UTx. 12 vitrified embryos were collected and cryopreserved prior to the transplantation. UTx from DD was performed in January 2017. The recipient was on maintenance immunosuppression with non-fetotoxic tacrolimus before the first embryo transfer has been initiated.

Results

The first menstruation started on week 8 posttransplant. Embryo transfers (ET) started on month 14 posttransplant. The fourth ET on month 24 after UTx led to the clinical pregnancy. As the uterus after transplantation lacks any serum laboratory signs of rejection, repeated transvaginal biopsies from the uterine cervix with histopathological examinations of the signs of rejection were performed before conception. During the pregnancy, as the first worldwide, we chose a non invasive approach to the control of impending rejection. Patient was examined regularly in gynecological specula to assess the clinical appearance of the cervix as the severe rejection presents typically with the redness of the cervix. Ultrasound examinations of blood flow in both uterine arteries were normal during pregnancy. Gestational diabetes mellitus was diagnosed in gestational week 28 and treated with low dose of insulin. The recipient has been scheduled for admission to hospital in week 34 and day 6 at August 2019. Regular uterine contractions were revealed on cardiotocography after admission, which the patient did not feel. Therefore, immediate uncomplicated caesarean section was performed. Healthy baby-boy in cephalic position was born with Apgar score 7, 9, and 9, respectively, and with the birth weight of 2740 g. Post partum period was uncomplicated. The baby is fully breastfed at present. The patient decided to keep her uterus after the cesarean section to eventually achieve a second pregnancy.

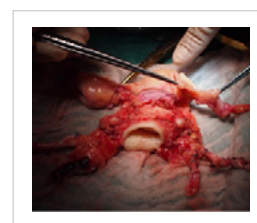


Image: Back-table allograft preparation.

Conclusions

The proof of concept of living donor UTx was reached in late 2014 in Sweden when the first ever baby after UTx was born. In late 2017, the proof of concept of DD UTx has been reached in Brazil. Our reported case had two worldwide priorities: it was the proof of the possibility of successful pregnancy and birth in nulliparous uterus, and it was the first ever pregnancy without the use of invasive cervical biopsies to control the signs of rejection.

Biography

Roman Chmel is working in Charles University and Motol University Hospital, Czech Republic. His research interest expands in the field of uterine transplantation.

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