

UTERINE TRANSPLANTATION IN SINGAPORE FOR ABSOLUTE UTERINE FACTOR INFERTILITY: PREPARATIONS AND PROGRESS

Tan Hak Koon¹, Tan Bien Keem², Tan Lay Kok¹, Tan Yin Ru¹, Yu Su Ling¹, Olofsson Jan³, Dahm Kahler Pernilla³, Brännström Mats⁴

¹Department of Obstetrics and Gynaecology, Singapore General Hospital, Singapore

²Department of Plastic, Reconstructive & Aesthetic Surgery, Singapore General Hospital, Singapore

³Division of Reproductive Medicine, Karolinska University Hospital, Stockholm, Sweden

⁴Department of Obstetrics and Gynecology, Sahlgrenska Academy at University of Gothenburg, Göteborg, Sweden

BACKGROUND AND AIMS

Uterine transplantation (UTx) is an ephemeral transplant with an established international track record for achieving successful pregnancies for women with Absolute Uterine Factor Infertility (AUI), which affects 8% of infertile couples. UTx would be an additional option besides adoption for such couples in Singapore and SE Asia, where surrogacy is illegal. The aim is to chronicle our preparations and progress in establishing a UTx service in a major tertiary teaching hospital in Singapore.

METHODS

The proposal was mooted in 2012. A multidisciplinary team involving Gynaecology, Plastic and Reconstructive Surgery, Transplant Medicine, Pathology, Psychiatry, Anesthesiology, Social services and Bioethics was formed, with Prof Mats Brännström and A/Prof Jan Olofsson as advisors. The team was divided into the following subteams: donor surgical harvesting, transplant surgical, immunosuppression support, IVF support and Obstetric support.

METHODS

The first animal workshop with macaque monkeys was held in 2015. One auto-transplantation and one allo-transplantation of macaque uteri were successfully performed, allowing better understanding of vascular anastomosis and perfusion of the transplanted uterus. There was no evidence of hyperacute or acute rejection up to 6 hours post-operatively with immunosuppression. This was followed up with a successful Human cadaveric uterine dissection workshop in November 2015. The Singapore team is one of the founding

members of the International Society of Uterine Transplantation (ISUTx) inaugurated in January 2016. The Singapore Team attended a Sheep Uterine Transplant Workshop in Gothenburg, and successfully carried out a sheep uterine transplant under direct supervision of Prof Brännström in August 2016. Future plans include an initial observational study of 5 patients with congenital absence of uterus or post hysterectomy chosen from an ongoing search for suitable patients and donors.

CONCLUSION

The preparations and progress made reflect effective multidisciplinary translational clinical research and international academic collaboration, and augur well for the Singapore Team to respond to the hitherto unmet demand for effective treatment for AUI in this region.