OPINION

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Uterine Transplants:

Evaluating the Implications Through the Sociopolitical & Medical Context

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INTRODUCTION

There is an inevitable point where ethics meets medicine and the question of why becomes subject to debate. In 2019, the Cleveland Clinic became the first North American institution to successfully deliver offspring from a uterine transplant (UTx) and —while this suggests infinite implications for infertile and transgender women— the associated medical, emotional, and financial risks challenge the reasons for why it should be operationalized in hospitals.[1,2] Reasons for undergoing UTx are two-fold: (1) having the ability to carry offspring and (2) furthering the anatomical transition process in male-to-female gender affirmation procedures.[3] Emerging literature argues that there should be "an individual right of people to exercise control and shape their role in reproduction" and sexuality, while others say that the dire aftereffects leave the patient in a better state before UTx.[3] In this piece, we dissect the benefits and disadvantages of having UTx and recommend whether or not it should be practiced. We argue that surgeons should be more conservative in their practices and defer their use of UTx procedures until further research is done to diminish procedural risks.

UTERINE TRANSPLANTS FOR INFERTILE WOMEN

To bear and parent offspring is a milestone deemed essential for many women and holds great significance in how many perceive their own worth.[4] Women who have either a damaged uterus or Mayer-Rokitansky-Küster-Hauser Syndrome (abnormally developed uterine systems) are often subject to a life of infertility. Given the association between fertility and self-esteem, approximately 44% of women in this population tend to experience depression and anxiety, compared to 28.7% among their fertile counterparts.[4] Studies by Zaami et al. underscore the immense implications that UTx may serve for the 15% of the female population that is infertile.[3] In 2014, Swedish clinical trials were the first to achieve uterine transplantation and subsequent delivery, after which 50 more transplants and 16 more UTx-births occurred worldwide.[5] This data suggests that UTx may enable gestation and may make infertility impermanent, increasing fulfillment in life for many women globally.[2,5]

It is, however, important to acknowledge that the surgical and healing processes of UTx are highly complex and dangerous to patients' health. Both the uterine donor and recipient must undergo months of counselling, psychological screening, as well as social and financial evaluations pre-operation.[6] The uterus is then surgically removed from the donor via hysterectomy and transplanted into the recipient.[6] A multitude of immunosuppressant drugs are administered orally to diminish the chances of transplant rejection.[2] In the unlikely event that transplantation is successful, menstrual cycles begin as early as one month post-operation.[6] After 6 to 18 months post-operation, a previously fertilized ovum from the recipient is implanted onto the uterine lining.[7] Should pregnancy last until the third trimester, the fetus is delivered via cesarean section, followed by a hysterectomy to remove the transplant.[3]

Current arguments around UTx suggest that the adverse effects may outweigh the potential benefits, which include both medical adversities and psychological issues linked with overwhelming physiological distress. Complications that have arisen in UTx cases include uterine thrombosis, eclampsia, and intrauterine infection, which lead to embryo transfer failures,

complications in pregnancy, and immune rejection of the uterus even with immunosuppressive therapies.[7,8] While the recipient may benefit from the possibility of pregnancy, live UTx donors experience increased risk of ovarian failure and dependence on hormonal therapy to treat early menopause.[9] Recipients also experience enumerated psychological adverse effects, with Järvholm et al. reporting increased levels of anxiety in approximately 22% of patients due to failure in maintaining a pregnancy alongside the chemical damages of immunosuppressants.[10,11] For these reasons, there is strong evidence that UTx may not be worth its potential benefits. While most patients are subject to adverse side effects, very few are successful in pregnancy. The reality for most UTx recipients is that they may need to endure these difficulties only to bear no children and have their uterus removed after two to three years. In these cases, surrogacy and adoption are almost objectively better choices for both mental and physical health.

UTERINE TRANSPLANTS FOR TRANSGENDER WOMEN

There is an evergrowing pressure for transgender women to have the civil right to live as any healthy cisgender female does: to have the anatomy to potentially gestate and bear children. Studies show that among the assigned male at birth population, 52.72 million globally experience gender dysphoria—the persistent discomfort of not conforming to the gender traditionally corresponding to one's sex.[12] Unfortunately, as Jones et al. state, most transgender persons do not find comfort in their gender identity until "surgical intervention [is used] to change their external genitalia and sexual characteristics."[12] These issues consequently manifest as declining mental health and increasing suicidality, with studies by McNeil et al. reporting suicidal thoughts and behaviours among 37% to 83% of varying transgender population samples.[13]

As females without uteri, transgender women also qualify for UTx and may benefit from its groundbreaking implications to revolutionize the gender affirmation process. In the *Journal of Law & Biosciences*, Alghrani underscores the potential that UTx may have in allowing a person assigned male at birth to gestate.[14] There is ongoing political debate regarding the extent to which transgender women may legally and medically identify themselves as female —having the reproductive characteristics of cisgender women may give them greater autonomy to identify with the female gender. It is a constitutional right in many countries to self-identify with genders, and it only seems reasonable that UTx be practiced for these reasons.[15]

However, in conjunction with previous arguments, UTx for transgender populations has been argued to pose more disadvantages compared to benefits. A significant reason is that uteri must be removed via hysterectomy two to three years after transplantation regardless, which may place transgender women at their original position of having no female reproductive attributes.[3] Moreover, the aforementioned medical, financial, and emotional costs that transgender women are subjected to for an impermanent transplant may damage their physical and mental health more than if they were not a UTx patient.[3] While it is extremely important for transgender women to transition and feel comfortable with themselves, as Sparrow et al. argue: "the need to align with gender identity comes secondary to […] ensuring [the] safety" of the individual.[16] It may be in the best interest of transgender women and surgeons to explore alternative options —such as hormonal therapy, speech-feminization therapy, and vaginoplasty— until more research is done to make UTx a safer procedure.[3,17]

DISCUSSION & CLOSING REMARKS

While UTx has potential to revolutionize many lives, it is objectively clear that significant research is needed before the standardization of UTx in healthcare. Given the present findings, it is advisable to defer the use of UTx in male-to-female transition, as the psycho-emotional and medical risks outweigh the benefits of having an impermanent uterus. The same reasons follow for infertile, cisgender females as the chance of pregnancy is low and gestational surrogacy is a safer alternative. However, it is important to emphasize that current UTx trials involving deceased donors have succeeded in bearing offspring in one among three total cases.[7] The prospects of these trials have significant implications for the future as it minimizes procedural risks, using already-deceased donors.

Unfortunately, the novel means of reproduction have become significant topics of controversy. For instance, uterine donation from deceased donors proposes ethical considerations as to whether a non-lifesaving transplant should be prioritized over the harvest of more essential organs.[9] In many countries, UTx is either prohibited or considered taboo.[3] Many legislatures place barriers upon the right to undergo this procedure, but this ultimately preserves the health and safety of potential recipients in the long term. Nonetheless, the importance of UTx for these populations is undisputed. Hence, we suggest that these practices should undoubtedly be improved, regulated, and made available in the future.

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References can be found on our website: meducator.org