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Letter to the editor

Uterus Transplantation and the redefinition of core bioethics precepts

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To the Editor,

The first uterus transplantation (UTx) to be successfully carried out in Italy occurred at the Transplant Center of the Policlinico di Catania, on 21st August 2020. The patient, a 30-year-old woman with absolute uterine factor infertility (AUFI) due to Rokitansky syndrome, is now set to undergo a medically assisted reproductive procedure aimed at implanting her own oocytes, which had been stored via cryopreservation, following *in vitro* fertilization.

Only UTx from deceased donors has been approved in Italy, although most UTx attempts and live births worldwide have been achieved from live donors, mostly closely related to the recipient (1). If UTx becomes a mainstream surgical practice for women who could not otherwise experience pregnancy, such an option will mark a point where the set of moral and ethical precepts which we espouse could soon become obsolete.

Still, UTx is undoubtedly a milestone bound to give rise to even more complex bioethical issues. In fact, it encompasses the ethical complexities inherent in MAP as well as those arising from its status as a non-life saving transplantation, but rather a "life-giving" one (2). Moreover, since the development of UTx was primarily motivated by the potential to allay dissatisfaction and unhappiness stemming from the discrepancy between procreative ability and reproductive aspirations, it can be viewed as "life-enhancing" as well. An important framework providing perspective is the revised version of the Montreal Criteria for the Ethical Feasibility of Uterine Transplantation (3). Nevertheless, such a set of criteria is emblematic of how fast scientific innovation can outpace fundamental bioethics standards, and may itself be already outdated, in that it requires the recipient to be a "genetic female", whereas research on the possibility to perform UTx on transgender women is already in progress.

That future scenario goes to the heart of UTx and its fundamental purpose: not life-saving but, as far as transgender women are concerned, life-enhancing. Research has clarified the primary motivation for which transgender women would opt for UTx. Findings from a recent survey unequivocally reflect the "life-enhancing" purpose: an overwhelming 90% majority of respondents expressed the belief that having a transplanted, functioning uterus and vagina would benefit their sex life and perceived sense of femininity, improving quality of life overall (4). Such findings are rather similar to those regarding the perceptions of biological women with AUFI: 95% of respondents in a UK study exploring the attitudes of women toward uterus transplant stated that, despite the additional risks posed, they would choose uterus transplant over surrogacy and adoption (5). Hence, it is not unreasonable to assume that in transgender women, UTx may go a long way towards the achievement of reproductive aspirations, benefit quality of life overall, and be effective in allaying dysphoric symptoms. After all, gender dysphoria entails discomfort and even distress with one's biological sex. It has the potential to severely affect quality of life overall. Treating gender dysphoria in transgender women relies on a

multidisciplinary approach involving medical, psychological, and surgical specialists. Psychological input, hormonal therapy, or gender affirmation surgery are all potential options according to a highly individualized assessment for each patient.

Nonetheless, UTx intended as a means for transgender women to foster their sense of femininity does present considerable contraindications.

UTx is in fact ephemeral in nature: following childbirth, the graft has to be removed in order to eliminate the need for immunosuppressive medications. If on the other hand UTx were performed for reasons other than reproduction, i.e. to improve dysphoric symptoms, the duration of the graft would have to be significantly longer, hence a worse risk-benefit ratio.

From a merely reproductive perspective, however, it is worth bearing in mind that transgender women may deem pregnancy as the final and conclusive stage in the process of reconfiguring their life aspirations according to the gender with which they psychologically identify. Certainly, the safety of the procedure into a biologically male body will likely be more complicated and risky than performing UTx in a female body. One of the pioneer scientists who first mastered UTx has acknowledged that transgendered pregnancy may be feasible, but in addition to the anatomical barriers, he has expressed ethical concerns (6).

The fundamental ethical question that needs an answer is: if UTx becomes mainstream, safe and effective for biological women with AUFI, would there be any morally tenable grounds as to why transgender women should be denied such an opportunity for gestation? In countries where transgendered women who have transitioned are granted the same legal rights as their female counterparts, this will become a relevant question if UTx is offered as clinical treatment in women. Arguably, UTx and ever more innovative MAP procedures pose ethical quandaries bound to grow as such practices become available on a large scale (7).

Already, in vitro fertilization entails the separation between sexuality and procreation, which has made it possible for same-sex couples and singles to have children through heterologous fertilization (8). Such practices are governed with varying degrees of restrictions by each country, which reflects the diversity of approaches in terms of ethical acceptability (9). Advances in embryo manipulation through genome editing could soon pave the way for the eradication of diseases before birth, or even the enhancement of humans yet to be born (10), a whole new frontier in beginning of life bioethics for which we are unprepared. Ultimately, we feel it may all go down to whether procreative liberty ought to be deemed as entailing an absolute right to gestate, and whether transgender women can be denied such a right without infringing upon ethical precepts of equality and non-discrimination. Current bioethics approaches need to undergo a radical update if we are to successfully meet the challenges posed by fast-growing scientific advances, set to shape and mold our lives ever more dramatically.

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