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Editorial

Uterus transplantation and altruistic surrogacy: Are they complementary or alternative options?—A statement from the CNGOF French Uterus Transplantation Committee

The first healthy child resulting from a uterus transplantation (UTx) was born in Sweden in 2014 [1]. This unprecedented success sparked an increase in the number of UTx procedures around the world and provided women with absolute uterine factor infertility (AUFI) with the hope that one day they may be able to become pregnant. AUFI (absence of a uterus) can be congenital (e.g., Mayer-Rokitansky-Kuster-Hauser [MRKH] syndrome) or acquired (e.g., prior hysterectomy to control major bleeding or treat cervical or uterine cancer), and women with this condition have three options for motherhood: adoption, altruistic surrogacy, or UTx.

Adoption is the only option currently available in France but it is becoming increasingly difficult following the tightening of international adoption regulations designed to reduce child trafficking. The French Adoption Agency processed 8747 adoption applications in 2017 [2]. Of these, just 7.83% (n = 685) were successful, down 5.1% from the previous year [3]. Thus, adoption is no longer a solution for applicants either in terms of number of placements or expectations of the would-be parents. Most applicants in France look to adopt a Caucasian child no older than 3 months, but in 2017, 50% of the children adopted were over 3 years old and just 12% were European [3]. Administrative red tape is an additional complication, as the average adoption wait time is around 3 to 4 years with some couples having to wait for as long as 7 years [2].

UTx and altruistic surrogacy offer women with AUFI another option for motherhood. Nevertheless, considering the potential surgical risks of UTx, particularly in the case of living donors, it seems logical to weigh up the risks and benefits of becoming a mother by surrogacy or by UTx. In this article, we reflect on these two options.

What does the law say?

The French Bioethics Law of January 14, 2011 prohibited altruistic surrogacy. This prohibition was further enforced by the position statement of the National Consultative Committee on Ethics on September 25, 2018. Altruistic surrogacy is permitted by law in a number of European countries – Ireland, the United Kingdom, Greece, Denmark, Romania, and Portugal – albeit with some differences in form and practice. In other countries, such as Belgium, the Netherlands, Poland, and Slovakia, it is neither allowed nor prohibited. In 2015, the French National Academy of Medicine published a report on the legislative, clinical, and ethical aspects of UTx [4]. The grafts used in UTx can come from a deceased (brain-dead) [5] or living donor [6,7]. UTx differs from other organ transplantations in that the uterus is a non-vital organ that gives life. The 2015 report describes UTx as a way of considerably reducing the need for altruistic surrogacy. It draws attention to the fact that it does not infringe bioethics law and highlights one particular advantage based on the principle of *mater semper certa est,* i.e., it ensures genetic relatedness, thereby avoiding potential legal disputes. In the case of deceased donors, UTx respects the principle of respect of autonomy over one's body, unlike surrogacy where the surrogate mother assumes all the risks of a pregnancy. While this principle of autonomy is not respected in the case of UTx with a living donor, the genetic link is still guaranteed. In altruistic surrogacy, medical decisions regarding an unborn child can be the source of disagreement between the surrogate mother and the intended parents. There have already been cases of an unborn child being rejected by its intended parents following detection of a malformation, leaving the surrogate mother to face the pregnancy alone. The 2015 report also notes that UTx is still in the experimental stage and that all procedures should be performed within the framework of a clinical trial. Since the publication of this report, however, numerous teams have reported successful results with the procedure [8]. The main disadvantages of UTx are potential surgical complications for both the recipient and the living donor, and foetal exposure to immunosuppressive drugs.

Like all organ transplantations, UTx must abide by certain general ethical principles: it must have a therapeutic purpose and be authorised by the French Biomedicine Agency. In addition, living donors must not receive monetary compensation and their consent must be approved by an expert committee.

What do women say?

Several studies have looked at the attitudes to UTx of women with and without AUFI. In a French survey of 60 patients with MRKH syndrome published by Gauthier et al. [9] in 2015, 58% of patients previously informed about the surgical modalities and potential risks, stated that they would be willing to undergo UTx to

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become pregnant [9]. In England, 39 out of 40 women (97.5%) with AUFI also stated that they would undergo UTx after a presentation informing them about the surgical options and risks [10]. In Japan, a survey of 3098 women of reproductive age found that 35% of the women were in favour of UTx [11]. The reasons they gave for wanting or not wanting to undergo UTx were interesting and are relevant to our reflection. For those in favour the fact that they would have a child with their own genetic material (gametes) and that this avoids any ethical issues. They wanted to be pregnant with their own child. In short, they were in favour of the gestational, genetic, and legal mother being the same person. They also argued that exposure to immunosuppressive drugs would only be temporary if they opted for a hysterectomy after delivery. The reasons given by the women who were not in favour of UTx were also varied. First, they considered that organ transplantation should be reserved for vital organs; second, they were afraid of surgery; third, they were concerned about the effects of immunosuppressive therapy; and last, they were wary of the potential risks for both them and the donor. Finally, in a Swedish study of 2000 women aged 30–39 years, 80% thought that UTx was acceptable compared with 47% for altruistic surrogacy [12]. Interestingly, UTx is on the rise in some parts of the world where surrogacy is allowed, such as Brazil, Belgium, and some states in the United States.

What are the risk of UTx and altruistic surrogacy?

UTx and altruistic surrogacy do not carry the same risks for the people involved. In UTx, living donors have to undergo a lengthy operation (although operating times are decreasing with new techniques [13]) and face potential surgical complications, such as urethral lesions (which might require a repeat surgery), bleeding, vesicovaginal fistulas, lower extremity sensory or motor deficits, and premature menopause. Donors also need to be prepared to accept the risks of an operation from which they will not benefit directly. Recipients may also experience surgical complications, such as bleeding, hematoma, and infection. Potential psychological repercussions are an additional concern, although the results of a Swedish study, the first of its kind to perform psychological follow-up of live donors, provide some reassurance as no evidence of psychosocial effects was observed 12 months after donation regardless of whether or not the donor had experienced perioperative or graft-related complications [14]. In the case of surrogacy, the gestational mother faces the risks inherent to any pregnancy, such as preeclampsia, bleeding and perineal injury (during delivery), and postpartum disorder. The risk of complex situations which both the surrogate mother and the intended parents may have to face should also be taken into account. These include detection of a foetal malformation, foetal death, hospitalisation costs, and potential loss of earnings. On this note, there is sometimes a short period (6 weeks in the United Kingdom, for example) during which the gestational mother can decide to keep the child.

Who should fund UTx?

In countries where surrogacy is allowed, the costs incurred during pregnancy are covered by the health system, while associated costs (e.g., pregnancy clothes, food supplements, creams) are met by the intended parents. As UTx procedures are currently performed within the framework of clinical trials, these costs are largely covered by trial funding. Nevertheless, depending on the legislation of the country involved, in certain cases the transplant recipient is required to meet some of the costs related to treatment, preoperative tests, or in vitro fertilisation. The question remains open: What proportion of the cost of UTx should society pay? Women with AUFI, for instance, cannot become pregnant without UTx. Should the full costs of the procedure be met in such cases?

Where does UTx stand in France?

UTx offers an alternative to altruistic surrogacy and adoption. The reading of French law and regulations suggests that UTx is allowed in France just as transplantation of any other solid organ (heart, liver, kidney). Advances in the field should ensure sufficient geographic coverage so that all patients with AUFI throughout France have access to a UTx centre [15]. In addition, as success rates vary according to prior experience, new centres should be required to demonstrate prior success with an animal model: rates range from 56% (15/27) for teams without prior experience with animal models to 82% (9/11) for those with experience [16].

UTx provides would-be parents with the opportunity of having a genetically related child thereby establishing filiation in that the biological, gestational, and legal mother is one and the same person. It is one of several options for motherhood and should not be limited to women with AUFI. Likewise, women with AUFI should be allowed to decide how they would like to become mothers. As evidenced by a case from the United States in which a woman with AUFI had her first child by surrogacy and her second child by UTx, UTx would appear to be a complement rather than an alternative to altruistic surrogacy. These two options should certainly be made available for AUFI patients in France.

Conflict of interest

The authors have no conflict of interest.

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