Viewpoint

What is the ethical way that frozen embryos, kept but now disowned or rejected, dealt with

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Assisted reproductive technologies (ART) have developed over time to help couples struggling with infertility. The aim of this technology is to help them conceive and carry the pregnancy to terms. One of the oldest methods of assisted reproductive technology is Intrauterine insemination, also commonly known as Artificial insemination. It was first performed by Dr. John Hunter but was published in the 1790s after his death. Artificial Insemination involves sperm from the husband, or the donor being injected into the uterus of the wife to aid fertilization [1].

In the 1970s, Patrick Steptoe developed a laparoscopic technique that enabled egg retrieval from the follicles in the ovaries. This led to the development of In vitro fertilization (IVF). IVF is a process in which an oocyte is fertilized with sperm in a lab before implantation in the mother's uterus. Occasionally donor eggs and sperm are used to help couples struggling with infertility. Robert Edwards and Patrick Steptoe created the first successful human IVF baby Lousie Brown, who was born in 1978 in Manchester, United Kingdom. In the same year, the birth of Baby Durga was announced as the first IVF baby in India and the second IVF baby in the world. Today IVF is known by various names due to the different modifications to the technology. Some of them include Gamete intrafallopian transfer, Zygote intrafallopian transfer and Intracytoplasmic sperm injection [1].

As IVF is one of the most common technologies used today, this essay focuses on frozen embryos created through this technology. This essay aims to explore all avenues available to deal with these embryos and to understand ethical issues associated with each of these methods through a Catholic worldview.

Ethical issues with IVF

There are a few ethical issues that arise during IVF. It is essential to understand the ethical issues associated with the production and use of embryos in IVF before exploring avenues to deal with frozen embryos. As the principles of human dignity and non-maleficence play a role across the board. The Congregation of the Doctrine of the Faith of the Roman Catholic Church in the documents Dignitas Personae and Donum Vitae, stated that IVF is morally illicit as it opposes the dignity of the child created and the conjugal union, despite avoiding the death of human embryos. IVF addresses a couple's desire to have children without fully comprehending or treating the root cause of infertility [2].

Procreative not unitive

Embryos are created through IVF in a sterile lab environment devoid of parental love. As they are created by scientists, rather than being born by the marital act between spouses. The Catholic Church states in Dignitas Personae that IVF separates the procreative and the unitive aspects of marriage. These embryos even though created through ART, still have human dignity given to them by God because they are human.

Surrogacy
A surrogate mother carries a child to term and agrees to surrender it to a couple once the child is born. Surrogacy is quite altruistic, as it aims to help a couple struggling with infertility. There are two technologies used in surrogacy, one is artificial insemination and two is implantation of the donor embryo created through IVF. According to the Church, surrogacy contradicts the marital union between the spouses as it recruits a third person to carry the child. It is devoid of true maternal love as the child is handed over once born. This goes against the dignity of the child, as the bond formed between the mother and the child in her womb over the course of 9 months is broken the minute the child is born.

Pre-implantation genetic testing
Genetic testing is part of the IVF process. This testing helps identify if these embryos have any genetic abnormalities prior to embryo transfer into the woman's uterus. This results in several fertilized embryos being discarded, when tested positive for genetic abnormalities. This is also known as embryo selection and promotes a eugenic approach against individuals with disabilities.

Embryo reduction
From the number of successfully fertilized embryos, no more than three embryos are injected into the mother's uterus and only a few of these embryos will attach. When most of the embryos have been implanted, some may be weaker or smaller than others. Here embryo reduction comes into play, where the weaker ones would be killed off to reduce the risk associated with multiple pregnancies. Both embryo selection and reduction are eugenic practices that choose to destroy embryos that have genetic abnormalities or a lesser chance of survival. This process disregards the dignity given to the individuals at conception by God, as his children. The Church states that both pre-implantation testing and embryo reduction are selective abortion methods.

Cryopreservation of embryos
This is done by freezing surplus embryos in liquid nitrogen, for some time in the future. Embryos are preserved to help the parents pace the number of children they wish to have. This view asserts embryos as property to be used and discarded as pleased rather than a human being with dignity. The Church stated, cryopreservation is incompatible with the dignity owed to an individual'. A downside to freezing embryos is that several of them don't survive the thawing process. Thus, there is a significant loss of individual embryos [3].

In the United States, on 23rd February 2024, there was a recent court ruling from the Alabama Supreme Court on frozen embryos. This case came about because of the accidental destruction of frozen embryos in a clinic due to a lack of security. The supreme court ruled that frozen embryos are children under the state's law 'Wrongful Death of a Minor Act'. This case led to a pause in the IVF treatments in the state, to help with reasonable regulation of IVF in the state. Most fear that this would permanently halt access to fertility treatment, but it won't. The law protects frozen embryos and would help put in place better regulations for IVF treatment.

What can be done with Frozen Embryos
There are three major ways to deal with frozen embryos. They are preserving them, discarding them or donating them. Couples that have surplus frozen fertilized embryos must decide on how to proceed.
Preserve: One would keep the frozen embryos to have future children. This option helps a couple buy time before they make a final decision. An issue arises when some embryos end up eventually being abandoned. Once the embryos are abandoned and the couple isn't contactable or has passed, these frozen embryos will then be discarded. As maintaining these embryos would be a cost to the clinic.
Discard: Some couples actively choose to discard these embryos as they no longer want to have more children, or they no longer wish to pay for cryopreservation. As mentioned previously abandoned embryos are also discarded.

In 2021, a case was published in the press about a Hollywood actress who went through the IVF process along with her fiancé. A few years later, they split up, and this commenced a custody battle over the ownership of the created embryos. As one party wanted to keep the embryos to eventually have these children whereas the other party didn't want the embryos to be carried to term and wanted them to be destroyed. This case raises a few unanswered questions. Firstly, who has the rights over these embryos after a couple splits? Would the law side with one of the parties or protect the embryos? Secondly, would it be unethical if one decides to use these embryos to have children without the full consent of the other party?
Both preserve and discard options treat these embryos as commodities rather than individuals with dignity. For this reason, the Church is against cryopreservation of embryos.

Donate: A couple can choose to donate the surplus fertilized embryos which are cryopreserved as they no longer require them. These embryos can be donated for two uses. Firstly, donated to scientific research and training. And, secondly, donated to a couple so that the child is born.
Use in scientific research: Embryos are donated for scientific research and training, to aid in the study of the process of human development and fertility. This unfortunately involves the destruction of these embryos. Thus, the Church states that the use of these embryos for science is morally illicit. As embryos donated for research are viewed as biological material rather than an individual with dignity.
Embryo Adoption: When an adoptive mother is implanted with anonymously donated embryos, to experience pregnancy, childbirth and motherhood. These couples will have the embryos implanted and will carry them to term and care for them as their own children. It helps reduce the number of embryos in the freezer by giving them a chance to develop into a mature human being. Many organizations around the world facilitate these adoptions. In 2022, twins were born from embryos frozen for 30 years. This was the oldest embryos thawed which successfully resulted in children. Three embryos were transferred to the adoptive mother's uterus, however only two were successful. The couple was very happy to welcome these children into their family. In this case, it was good-willed people who chose to adopt embryos that had been frozen for multiple years. Prior to 2022, the oldest embryo thawed that successfully resulted in a child was 27 years.
Embryo adoption has good intensions, but its consequences are a bit more complicated. Starting with the term itself. Should we call it embryo adoption when it seems more like Surrogacy? Embryo adoption like surrogacy falls into the category of heterologous embryo transfer as the adoptive parents and the child don't share the same genetic makeup. A downside of embryo adoption is that it depends on time, as it could take a few months to years before they are matched and adopted. As it relies on the decision to be donated and the willingness of a couple to adopt these embryos. There is also a claim that these children once born may have developmental issues due to being frozen for some time. However, there is no substantial evidence proving it but inherited genetics could play a role [4].

Ethical issues with embryo adoption
There could possibly arise a case of discrimination along the lines of which couples could adopt. As certain organizations refuse the use of a surrogate mother for embryo adoption. This would lead to excluding couples struggling with infertility.
A major moral conundrum with embryo adoption is, whether it is better for a fertile couple to carry an embryo to term that is not genetically related to them rather than have their own child? As a pregnancy could last for 9 months, is it ethical to devoid the future possibility of having their own children over to adopt and carry a child that is not genetically theirs? To counter this argument, the principle of Autonomy does come into play. As a couple, they can make such a decision. However, the argument still stands because in the hypothetical absence of ART, one woman would never be pregnant with another woman's child.
The Congregation of the Doctrine of Faith (CDF) of the Catholic Church has stated, in Dignitas Personae section 19, that prenatal adoption has good intensions but as it is a heterologous embryo transfer there would be psychological, medical and legal issues. The document, however, doesn't go into much detail on this issue. Thus, there is a divide among Catholic ethicists on whether the

CDF has given a definitive conclusion on the topic or whether it is a warning to those adopting these embryos to be more vigilant to these issues that would arise. The latter group suggests that in due course the church would eventually agree that prenatal adoption is good. However, the former group suggests that the teaching is definitive and that accepting prenatal adoption would mean legitimizing the IVF process which is the root cause of this issue. Some in the former group also suggest that adoptive parents should pay to preserve these embryos till the time incubators that can bring them to term are invented. There is still a lot of ongoing debate in this area.

A hypothetical case where embryo adoption may be justified, is when a woman has no eggs but a fully functional uterus such as the case after one undergoes bilateral salpingo-oophorectomy. It would be acceptable for this couple to use these donated embryos. However, it would still be considered as a heterologous embryo transfer and the psychological, medical and legal ramifications to the individual born would persist.

Conclusion

There is unfortunately no morally good way to deal with frozen embryos created through IVF. In 1996, Pope John Paul II appealed to the scientific community to halt the production of embryos as there is no morally illicit solution to this issue. Most of the choices discussed view the embryos as property to be used or discarded. Only prenatal adoption upholds the dignity of life for the individual embryos. However, it is the lesser evil of the options available. As these individuals born through prenatal adoption could face medical, psychological and legal issues in the future. Good support systems need to be set up to help these individuals. More work needs to be done on the psychological and legal aspects of embryo adoption.

A possible safeguard that could be put in place is to cryopreserve gametes instead of embryos. This would partially help solve the issue. However, it would still utilize IVF to create these embryos. Apart from the ethical issues discussed on IVF, the Church states in Dignitas Personae that cryopreserving gametes for the purpose of ART is morally unacceptable. As it legitimizes the IVF process which is the main cause of the issue.

REFERENCES

1. Ombelet W, Van Robays J. Artificial insemination history: hurdles and milestones. Facts Views Vision Obs Gyn 2015;7(2):137-40.
2. Asplund K. Use of in vitro fertilization—ethical issues. Upsala J Med Sci 2020;125(2):192-9.
3. Bankowski BJ, Lyerly AD, Faden RR, Wallach EE. The social implications of embryo cryopreservation. Fertility Sterility 2005;84(4):823-32.
4. Lee J, Yap C. Embryo donation: a review. Acta Obstr Gynaec Scand 2003;82(11):991-6.

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