

Live Birth after Transfer of a Vitrified-warmed Euploid Blastocyst derived from Vitrified-warmed Oocyte and Frozen-thawed Testicular Sperm: A Case Report

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ABSTRACT

Objectives: The science of cryopreservation has advanced tremendously. We report a successful live birth of a healthy baby after transfer of a vitrified-warmed euploid blastocyst derived from vitrified-warmed oocytes and frozen-thawed testicular sperm. **Methods:** The patient was a 43-year-old woman with pre-mature ovarian failure while her husband had non-obstructive azoospermia. Intracytoplasmic sperm injection (ICSI) was performed on the vitrified-warmed donor oocytes with frozen-thawed sperm derived from testicular sperm extraction (TESE). She underwent transfer of a vitrified-warmed euploid blastocyst following pre-implantation genetic screening (PGS). **Results:** 30 vitrified donor eggs were warmed. 29 survived with good morphology and were injected with frozen-thawed testicular sperm. 12 fertilized (42.9%). Following extended culture, trophectoderm biopsy was performed on the two suitable blastocysts followed by vitrification. Chromosomal evaluation using Next Generation Sequencing (VeriSeq Protocol, Illumina) was performed which showed no copy number variation in both blastocysts. A controlled protocol was subsequently commenced to prepare the endometrium. One warmed-vitrified euploid blastocyst was transferred in May 2017 but this did not result in a pregnancy. The remaining blastocyst was transferred in August 2017 resulting in a pregnancy and subsequent live birth of a healthy baby girl. **Conclusions:** This is a rare case of a live birth after transfer of vitrified-warmed post PGS euploid blastocyst derived from ICSI with vitrified-warmed oocytes and frozen-thawed testicular spermatozoa. This "triple freezing" and an invasive biopsy procedure on the blastocyst are testament of the integrity of gametes and embryos, and safety following cryopreservation with vitrification.

Is Cleavage Rate Indicative of the Outcome of Blastocyst Transfer? A Retrospective Analysis

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ABSTRACT

Objectives: Previous studies have shown that abnormal (slow or fast) cleaving embryos are associated with low implantation rates. This study was carried out to assess the correlation between the rate of cleavage and the implantation potential of both fresh and vitrified-warmed blastocysts. **Methods:** All blastocyst transferred, both fresh (n=96) and vitrified-warmed (n=454) from the year 2015 to 2017 in women ≤ 40 years old were analysed in this retrospective study. The cleavage rate of Day 3 embryos was divided to 3 groups: Slow (≤ 4 cells), Normal (5-9 cells) and Fast (≥ 10 cells). Following extended culture, the most optimal quality blastocysts (good or fair) were either transferred or vitrified for a subsequent vitrified-warmed transfer. **Results:** The implantation rates of blastocyst(s) transferred fresh from the different groups were 0.0% Slow, 37.2% Normal and 29.4% Fast. For vitrified-warmed blastocyst(s), the implantation rates were: 41.7% Slow, 36.6% Normal and 37.0% Fast. There was no significant difference between the groups. **Conclusions:** Our study suggests that abnormally slow or fast cleavers have similar implantation rates compared to normal cleavers, as long these embryos develop into viable blastocysts suitable for transfer. As such, abnormally slow or fast cleaving embryos should be subjected to extended culture before being considered for transfer or vitrification.