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Ongoing pregnancy following frozen embryo transfer of a blastocyst with inner cell mass of C grade after preimplantation genetic testing for aneuploidy (PGT-A): A case report

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ABSTRACT

Introduction: Blastocyst morphology is conventionally evaluated by IVF centers worldwide to predict pregnancy. Blastocysts with insufficient cells forming the inner cell mass (ICM) or trophectoderm (TE) are considered as poor quality (C grade) and are mostly not selected for embryo transfer due to poor clinical outcomes. This case report describes a successful pregnancy following frozen embryo transfer (FET) of a blastocyst with C grade ICM after preimplantation genetic testing for aneuploidy (PGT-A). **Case Description:** A 36-year-old woman with secondary infertility underwent IVF treatment at Alpha IVF & Women's Specialists Centre in August 2020. Following oocyte retrieval, 17 oocytes were inseminated using PIEZO-ICSI (Japan). The embryos were cultured to blastocysts and their morphologies were assessed (Gardner's grading, 1999). Six blastocysts had their TE biopsied for PGT-A, including one blastocyst with C grade ICM and B grade TE. Vitrification was by the Cryotec Method (Japan). PGT-A was performed using Next Generation Sequencing (Ion Torrent, USA). Euploidy was confirmed in only two blastocysts (2/6), of which one was the blastocyst with C grade ICM. This grade C blastocyst was thawed and transferred, resulting in pregnancy. At the time of writing, she is 12 weeks pregnant with one gestational sac seen. **Discussion:** This case report demonstrated that euploid blastocysts with C grade ICM can result in clinical pregnancy. Therefore, such embryos should not be discarded and instead considered for transfer to increase the chance to conceive.

A-068

Calcium ionophore activates cell division in a patient with previous history of cell cleavage failure: A case report

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ABSTRACT

Introduction: This case report describes the resumption of cell mitosis following calcium ionophore treatment. **Case Description:** In 2013, a 35-year-old patient had 13 MII-oocytes cryopreserved in Alpha IVF & Women's Specialists. She was clinically normal, had regular menstrual cycles and complaints of dysmenorrhea. Her husband, aged 39, had normal semen parameters and no other significant history. Eight years later, eight frozen MII-oocytes were warmed, six survived and underwent insemination. Four oocytes fertilized normally (2PN) while 2 fertilized abnormally (3PN). Unfortunately, all zygotes including 3PNs remained at 1-cell stage throughout incubation. Calcium ionophore was introduced to activate the remaining vitrified-warmed oocytes in the subsequent cycle. Following the first cycle attempt with cleavage failure, the remaining 5 MII-oocytes were warmed using Cryotec (Japan) for insemination using PIEZO-ICSI. The oocytes were incubated in calcium ionophore (GM508 CultActive, Germany) immediately after ICSI for 15 minutes prior to culture. All embryos were cultured up to Day 7 and blastocysts with at least 3BB were vitrified. In the subsequent cycle, all five MII-oocytes were inseminated post-warmed. Following the use of calcium ionophore in this cycle, all oocytes fertilized normally (2PN), of which 1 developed into a second grade Day 5 blastocyst and was vitrified. **Discussion:** Calcium ionophore treatment appears to help the resumption of cell mitosis in patients with history of cleavage failure.