

BACKGROUND and AIM

Conjoined oocytes are rarely found in reproductive age. Having only 28 reported cases to date, limited data exist among IVF centers on its potential significance. Theories to explain its existence are developmental accident and failure of meiotic division. Published studies indicate that ovarian stimulation in Assisted Reproductive Technology (ART) predisposes to its occurrence. Polycystic ovaries, on the other hand, give rise to follicles with different maturational states, thereby further contributing to the occurrence of conjoined oocytes. We present a case of multiple conjoined oocytes from one patient in an IVF facility.

METHODS

Case report of a PCOS patient in an IVF clinic for ART.

RESULTS

Ovarian stimulation was carried out using the antagonist protocol. Oocyte retrieval was scheduled 36 hours after GnRH agonist trigger, which resulted in the retrieval of 16 metaphase II (MII) and 5 germinal vesicles (GV). Four conjoined oocytes, each containing a pair of MII and GV oocytes, were likewise noted. Intracytoplasmic sperm injection of mature oocytes led to normal fertilization in 2 conjoined oocytes, which then developed to blastocyst stage (3BB and 3CB, respectively). The other two conjoined oocytes remained immature and unfertilized. Preimplantation genetic screening on all surviving blastocysts showed euploid 3BB and aneuploid 3CB embryos arising from the conjoined oocytes apart from the other two euploid embryos arising from uniovular oocytes. Upon frozen embryo transfer, the GV oocyte conjoined to the euploid XX blastocyst (3BB) was removed and transferred together with a euploid XY blastocyst (4BB), which eventually resulted to healthy twins.

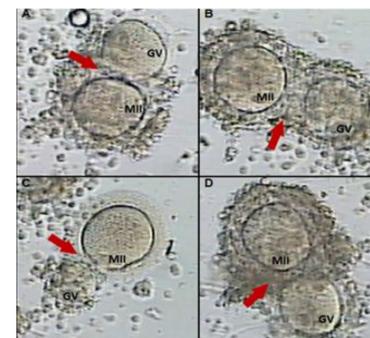


Figure 1. Conjoined oocytes. There were four sets of conjoined oocytes harvested, each containing a larger metaphase II and a smaller germinal vesicle (GV). The arrows depict the connected region of the zona pellucida. (A) and (C) share the same zona pellucida, while (B) and (D) are conjoined oocytes that have fused zona pellucida.

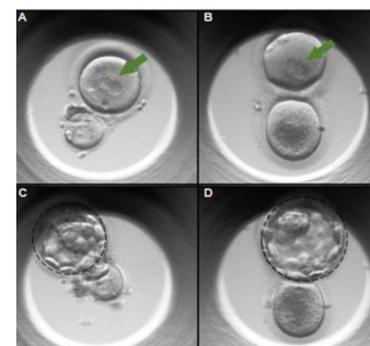


Figure 2. Development of the conjoined oocytes. The green arrows depict the fertilized conjoined oocytes, as demonstrated by two pronuclei (2PN) while the accompanying oocyte for each set (A, B) arrested at GV. Five days after sperm injection, the oocytes developed into blastocyst stage (enclosed in broken circles) - 3BB (C) and 3CB (D).

CONCLUSION

Gonadotropin stimulation, coupled with PCOS, predisposes to the occurrence of conjoined oocytes. Although a result of developmental accident, conjoined oocytes still have the potential to develop into a genetically normal embryos, hence, into a normal pregnancy. To our knowledge, this reports the third case of conjoined oocyte that resulted to a livebirth, and probably the highest number of conjoined oocytes retrieved in a single IVF cycle.

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