

Multiple conjoined oocytes in a patient with polycystic ovary syndrome undergoing in vitro fertilization

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BACKGROUND and AIM

Conjoined oocytes are rarely found in reproductive age. Having only 12 reported cases in 2012, 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 in an IVF facility.

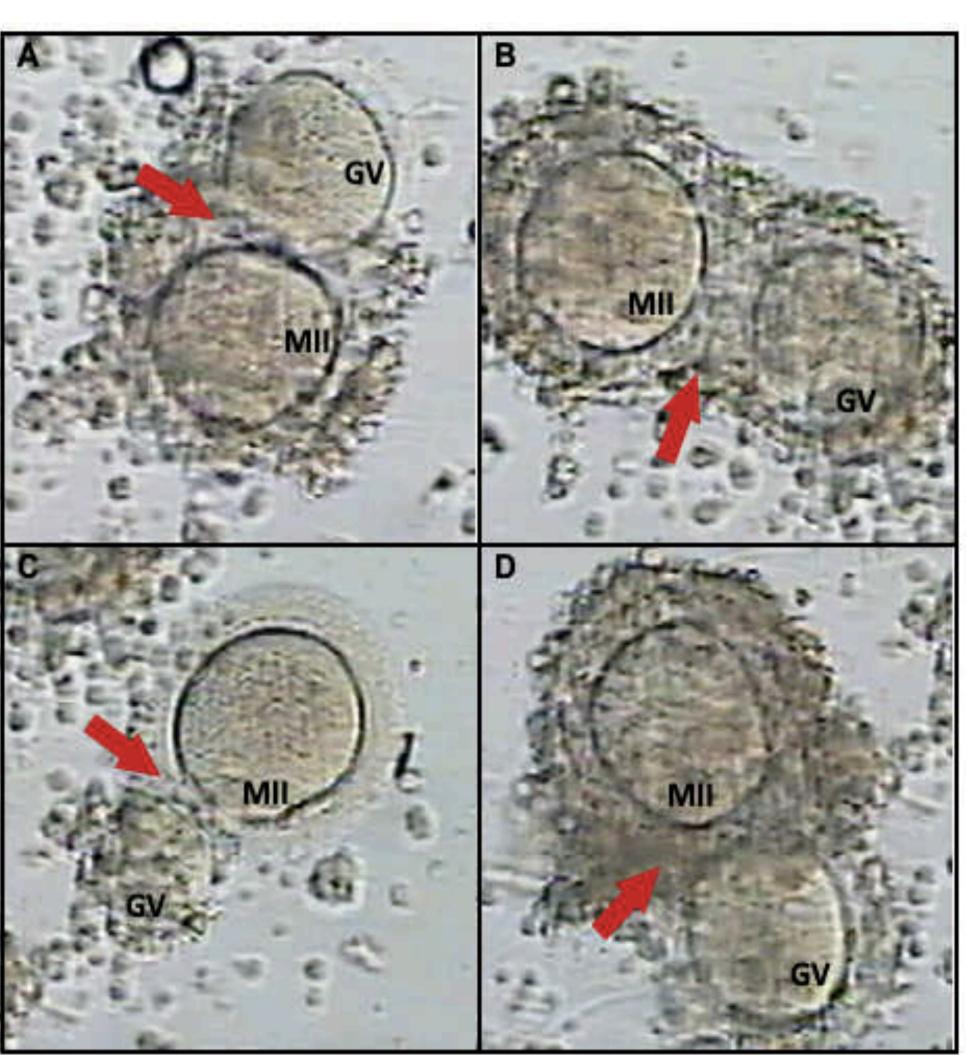
METHOD

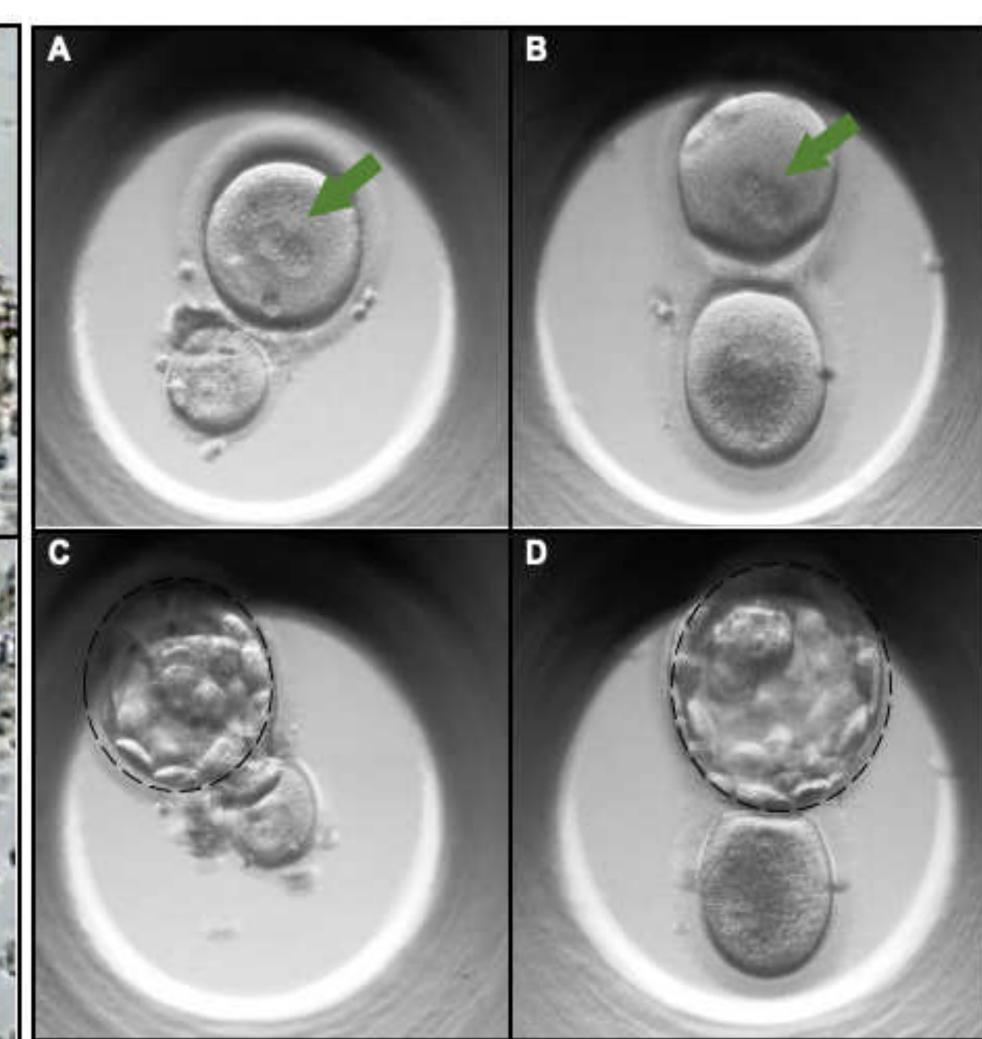
A case report of a PCOS patient seen in an IVF clinic for ART.

RESULTS

Ovarian stimulation was carried out using the antagonist protocol. Oocyte retrieval was scheduled 36hours 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 (2) 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 2 other 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 term twins.

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.





Fertilized conjoined oocytes. Two sets of
conjoined oocytes
completed fertilization. The
green arrows depict the
fertilized conjoined oocyte,
as demonstrated by two
pronuclei (2PN) while the
accompanying oocyte for
each set **(A, B)** arrested at
GV.

Blastocyst stages (enclosed in a broken circle). Five days after sperm injection, the oocytes developed into blastocyst stage 3BB (C) and stage 3CB (D).

CONCLUSION

Gonadotropin stimulation, coupled with PCOS, predisposes to the occurrence of conjoined oocytes. Although a result of developmental accident, conjoined oocytes still (has) 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 live birth, and probably the highest number of conjoined oocytes retrieved in a single IVF cycle.

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