SHORT COMMUNICATIONS

AUCHENFLOWER, QUEENSLAND,
AUSTRALIA

GIFT-ICSI for the Treatment of Male-Factor Infertility for Patients with Religious Objections to In Vitro Fertilization: A Case Report

Submitted: July 9, 1998
Accepted: August 17, 1998

INTRODUCTION

In the past it has been difficult to effectively treat patients who have severe male infertility and who have a religious or moral objection to having their oocytes fertilized in the laboratory. We report here a case where pregnancy resulted following the combination of gamete intrafallopian transfer (GIFT) and intracytoplasmic sperm injection (ICSI) in a couple who had religious objections to the *in vitro* fertilization (IVF) process.

A 30-year-old female and her 34-year-old husband with a 14-month history of primary infertility were initially referred in 1993 for IVF treatment. His semen parameters were within normal ranges including negative antisperm antibody testing, and a GIFT cycle was undertaken in 1995, resulting in pregnancy and the delivery of a healthy baby girl.

The couple returned for further treatment in 1997 and two semen analyses were performed. It was found that the husband's semen quality had significantly deteriorated, with counts of between 6 and 8 million/ml, 32–40% motility with poor forward progression, and 5–8% normal forms. In addition, he tested strongly positive for immunoglobulin G antisperm antibodies, contrary to his 1993 assessment. Because of the poor quality of the semen, it was felt that GIFT would be of little assistance; however, the couple objected to IVF, as the process was contrary to their religious

beliefs. We proposed GIFT-ICSI, whereby the sperm would be placed inside the oocyte in the laboratory but the series of fertilization events following this would occur *in vivo*. The couple were first offered PROST, whereby actual syngamy would not occur *in vitro*; however, since almost all of the fertilization process was *in vitro*, they still were not comfortable with the idea. The couple consulted their religious counselors and were told that there would be no religious impediment to their proceeding with the GIFT-ICSI treatment, providing that the injected oocytes were immediately transferred and that any remaining oocytes were immediately discarded.

MATERIALS AND METHODS

Ovarian stimulation was carried out using lueprolide acetate (Lucrin; Abbott Laboratories, Chicago, IL) in conjunction with follicle-stimulating hormone (Metrodin, Serono Laboratories, Sydney, Australia). Seven oocytes were collected, and three were immediately denuded of their cumulus/corona complex using a 5 mg/mL hyaluronidase treatment (Type II sheep Testes; Sigma Chemicals, St. Louis, MO) and small-bore sterile glass Pasteur pipettes. All three oocytes were mature as evidenced by the presence of the first polar body. ICSI was immediately performed on the three oocytes using Leica micromanipulation equipment. The three injected oocytes were washed 10 times in fresh embryo culture medium (human tubal fluid; Irvine Scientific, Santa Ana, CA) supplemented with 10% autologous serum, then immediately transferred to the fallopian tube (K-GIFT-1020 transfer catheter; Cook Australia, Brisbane, Queensland, Australia). The total time for oocyte collection, removal of the cumulus/corona with hyaluronidase, ICSI, and gamete transfer was 26 min, during which time the patient remained anesthetized. The remaining four oocytes were discarded as requested by the patients.

The luteal-phase support following this procedure involved the administration of human chorionic gonadotropin (Profasi; Serono Laboratories, Sydney, Australia), 2000 units, on the day of oocyte retrieval, and,

also, 3, 6, and 10 days afterward. In addition, one progesterone pessary containing 200 mg of micronized progesterone was administered on a daily basis.

RESULTS

A positive urine human chorionic gonadotropin test was obtained 18 days after the GIFT-ICSI procedure, with confirmation of the pregnancy by ultrasound at 6 weeks. A healthy boy was delivered at 37 weeks.

DISCUSSION

In 1994, Trounson (1) suggested subzonal sperm microinjection (SUZM) in conjunction with GIFT as a treatment option for male-factor infertility. This technique, termed MIFT (microinjection and intrafallopian tube transfer), involved injecting one to five sperm into the oocyte's perivitelline space and placing up to four microinjected oocytes into the ampulla of the fallopian tube using GIFT transfer catheters. Trounson concluded that MIFT increased the effectiveness of SUZM for the treatment of severe male-factor infertility, as compared with uterine transfer of SUZM embryos. McLachlan *et al.* (2) also supported MIFT over the uterine transfer of microinjected oocytes, and suggested that the tubal transfer of ICSI oocytes should be considered for future treatment of patients with severe male-factor infertility where the partner has a normal tubal anatomy.

CONCLUSIONS

We believe that the GIFT-ICSI technique described here provides a way of expanding IVF treatment in a way that is acceptable to patients and their religious advisers. The time required to prepare the oocytes and perform ICSI can be kept to a minimum provided that an experienced ICSI scientist carries out the appropriate preparations beforehand. This ensures that the operative time is not significantly prolonged beyond that of the normal GIFT procedure. The GIFT-ICSI technique should give hope to those couples who have a religious or moral objection to IVF of their oocytes when the major component of their infertility is due to male factor.

REFERENCES

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