

COMPARISON OF THE OUTCOME OF INTRACYTOPLASMIC SPERM INJECTION USING EJACULATED SPERM VERSUS SURGICALLY-RETRIEVED SPERM

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Purpose: Male infertility caused by azoospermia due to obstructive or non-obstructive azoospermia can be treated by microsurgical epididymal aspiration (MESA) or testicular sperm extraction (TESE) followed by an intracytoplasmic sperm injection (ICSI). We aimed to examine whether the clinical outcomes of ICSI cycles differs when using retrieved epididymal and testicular sperm in azoospermic men and ejaculated sperm in oligospermic men.

Materials and Methods: A total of 120 ICSI cycles were included in this retrospective study. They included 24 cycles with azoospermia and 96 cycles with oligospermia in the male partner. Of the men with azoospermia, 13 underwent MESA and 11 underwent TESE. TESE was only applied when MESA failed to produce enough spermatozoa for simultaneous ICSI. In the 96 cycles with oligospermia, ejaculated sperm was used for ICSI. The differences in the clinical outcomes of ICSI using surgically-retrieved (MESA or TESE) and ejaculated sperm were evaluated. The ovarian stimulation protocol was not different between groups with majority consisting of long GnRH-agonists protocol. The data were statistically analyzed by Student's t-test, X2-test, Fisher's exact test

Results: No significant differences were seen between the ejaculated sperm and surgically-retrieved groups in terms of embryo cleavage rate (95.7% vs. 94.9%), fertilization rate (62.7% vs. 56.0%), miscarriage rate (35.5% vs. 7.7%). However the chemical pregnancy, implantation, clinical pregnancy and ongoing pregnancy rates were significant higher in the surgically-retrieved group compared with the ejaculation group (54.2% vs 32.3%, 23.3% vs 13.0%, 50.0% vs 25.0%, 50.0% vs 20.8%, $P < 0.05$). Although the chemical pregnancy rate was higher in the surgically-retrieved group, the miscarriage rate was not statistically difference ($p = 0.075$).

Conclusion: Intracytoplasmic sperm injection in combination with MESA and TESE seems to be a good method to help couples become genetic parents when the man presents azoospermia. Our experience indicates that the clinical outcomes of ICSI with surgically-retrieved sperm are not inferior to ICSI using ejaculated sperm. The previous observations of elevated frequency of aneuploid sperm, and higher rates of miscarriage in surgically-retrieved sperm were not seen in our data. There may be subcategories of men who are at greater risk for poor outcomes. Further study is needed to determine whether men with different infertility diagnoses have poorer outcomes.