LETTER TO THE EDITOR

A new simple technique of epididymal sperm collection for obstructive azoospermia

Tatsuo Morita¹, Maiko Komatsubara¹, Tomohiro Kameda¹, Ai Morikawa¹, Taro Kubo¹, Akira Fujisaki¹, Shinsuke Kurokawa¹, Hirotoshi Kawata², Akira Tanaka²

Dear Editor,

Sperm in patients with obstructive azoospermia (OA) have been retrieved from the reproductive tract and/or from the testis for intracytoplasmic sperm injection (ICSI) in several ways, including microsurgical epididymal sperm aspiration (MESA),¹ percutaneous epididymal sperm aspiration (PESA),² testicular sperm extraction (TESE),³ and other techniques.¹ Each of these has advantages and drawbacks in terms of microsurgical expertise or equipment, number of sperm obtained, invasiveness, and cost. Therefore, we developed a safe, simple, feasible, and low-cost modified MESA technique to collect epididymal sperm under direct vision, which we have labeled macroscopic epididymal sperm imprint collection (MESIC). Herein, we present the details of the MESIC technique and our initial experience in patients with suspected OA.

Macrosurgical epididymal sperm imprint collection was performed in 17 patients with suspected OA (mean age: 36 years) from 2002 to 2014. The present study was approved by the Institutional Review Board of Jichi Medical University, and informed consent was obtained from all patients. Evaluations included history taking, a physical examination, and semen analysis including centrifuged pellet analysis on at least two occasions. They had normal ejaculate volume (mean ± standard deviation [s.d.], 3.6 ± 1.0 ml), palpable vasa deferentia, normal-sized testis (mean ± s.d., 15.5 ± 1.7 ml), normal karyotype and normal serum levels of follicle stimulating hormone (median ± s.d., 5.7 ± 2.9 mIU ml⁻¹), luteinizing hormone (mean ± s.d., 3.7 ± 1.6 mIU ml⁻¹), prolactin (mean ± s.d., 7.7 ± 3.7 ng ml⁻¹), and total testosterone (mean ± s.d., 4.6 ± 2.0 ng dl⁻¹). These clinical findings led to the diagnosis of suspected OA.¹⁴

Macrosurgical epididymal sperm imprint collection was performed on the clinically more dilated epididymis under local, spinal, or general anesthesia based on patients’ requests and institutional guidelines: 1-day hospitalization for local anesthesia and 2 or 3 days hospitalization for spinal or general anesthesia. We believe that MESIC could be done on an outpatient basis as is the case for PESA because one patient underwent MESIC under local anesthesia in the present study.

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1Department of Urology, Jichi Medical University, Shimotsuke-shi, Tochigi, Japan; ²Department of Pathology, Jichi Medical University, Shimotsuke-shi, Tochigi, Japan. Correspondence: Dr. T Morita (moritatu@jichi.ac.jp)

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The advantages of MESIC are as follows. First, a single MESIC procedure, as is the case for MESA, could provide a sufficient number of sperm for cryopreservation for future multiple ICSI cycles, thus avoiding the need for repeated invasive sperm retrieval procedures. Second, MESIC is a safe, simple, and easy technique, which does not require microsurgical skills, under direct vision. Third, MESIC is a low-cost technique without requiring specialized microsurgical equipment. The drawbacks of MESIC includes the followings; it seems to be invasive compared to PESA because the MESIC procedure is very similar to that of MESA, except for the method to collect epididymal fluid; histologic information could not be obtained by MESIC alone although TESE has the advantages of not only sperm retrieval but histologic evaluation. The present study has some limitations, including its retrospective nature, the small number of patients, and lack of ultrasound epididymis assessment and comparison with other techniques for epididymal sperm retrieval. An additional limitation is the lack of subsequent data on fertilization rates and pregnancy rates due to the majority of patients being lost at follow-up or transferred to other hospitals for ICSI as well as cases in which female partners developed malignancy before ICSI.

In conclusion, we developed a new modified MESA technique, MESIC, which is a safe, simple, feasible, and low-cost technique to retrieve epididymal sperm in patients with OA. The choice of method for sperm retrieval from the epididymis in patients with OA depends primarily on the local practice preferences and expertise since the best method to obtain sperm has not yet been identified.6,10 Thus, the present study suggests that MESIC would be one of the treatment options for patients with OA.

AUTHOR CONTRIBUTIONS
TM designed the surgical technique and drafted the manuscript. TM, MK, ToK, AM, TaK, AF and SK participated in operation and acquisition of data. TM, HK and AT performed data analysis. All authors read and approved the final manuscript.

COMPETING INTERESTS
The authors declare no competing interests.

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