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LETTER TO THE EDITOR

Male Infertility

Microdissection testicular extraction for a patient with transverse testicular ectopia and testicular fusion

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Dear Editor,

Transverse testicular ectopia (TTE) is a rare condition whereby both testes migrate toward the same hemiscrotum. Most of the cases (65%) are diagnosed intraoperatively during an inguinal hernia repair; only few are diagnosed preoperatively.¹ On the basis of various anomalies, TTE is classified into three types: Type 1, accompanied only by inguinal hernia (40%–50%); Type 2, accompanied by persistent Müllerian duct structures (30%); Type 3, accompanied by genitourinary anomalies, such as hypospadias (20%).² In the case of TTE, the spermatic vessels of the ectopic testis pass through the midline and the inguinal canal adjacent to the spermatic cord of the normal opposite testis.³ To date, fewer than 150 cases of TTE have been reported in the literature,⁴ mostly in children. Adult patients with TTE consult doctors mainly because of oligoasthenozoospermia or infertility. To date, there have been no reports in the literature about TTE in infertile males with fused testicles and unilateral congenital

absence of vas deferens (CAVD). Microdissection testicular sperm extraction (micro-TESE) is an effective treatment option for patients with azoospermia. Herein, we present a case of application of Micro-TESE in an infertile patient with TTE.

A 29-year-old infertile male who had not taken any contraceptive measures during 5 years of marriage visited our clinic. Sperm analysis showed azoospermia. Blood tests showed a serum testosterone level of 287 ng dl⁻¹, luteinizing hormone 4.3 mIU ml⁻¹, and follicle-stimulating hormone 4.98 mIU ml⁻¹, all within normal limits. Physical examination revealed a testis-like mass in the right hemiscrotum and an empty left hemiscrotum. Scrotal ultrasonography showed hydrocele in the left testis and no testis on the left side, with right testicular volume slightly larger than that of a normal testis. Two fused testicles were revealed when we opened the left groin, one testis with epididymis and vas deferens and another with unilateral CAVD, both having a rich blood supply (**Figure 1a**). Micro-TESE was applied to the testis with CAVD (**Figure 1b**). A midline incision

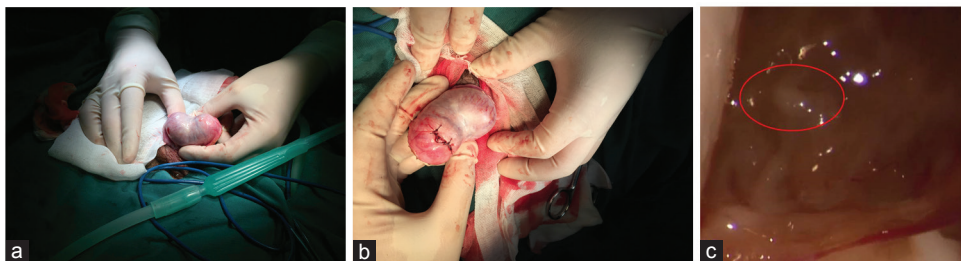


Figure 1: (a) Two fused testicles without unilateral vas deferens. (b) A midline incision in the scrotal raphe. (c) Microsurgical extraction of testicular tissue with dilated seminiferous tubules using a microsurgical forceps.

in the scrotal raphe was performed to expose the underlying testicular parenchyma. Microbiopsies of the testicle were made under higher magnification (15×–25×) (**Figure 1c**). The surgeon examined the microscopic images with the embryologist to enable definition of spermatozoa. Active sperms were found after culture and were kept under cryopreservation.

Ultrasonography and magnetic resonance imaging are used in the diagnosis of TTE.^{5,6} However, the diagnosis before surgery is not always correct (as in our case) and is only revised intraoperatively. Hence, the detection of ectopic testis by radiologic evaluation remains controversial.⁷ Moreover, azoospermia by semen analysis was the major reason for the patient's visit to our clinic. Once the diagnosis is confirmed during surgery, TESE can be introduced as an optional treatment for patients with azoospermia.

The utilization of TESE for nonobstructive azoospermia was reported in 1995 by Silber *et al.*,⁸ and several procedures to

obtain sperm have been reported. However, traditional TESE such as open single biopsy, fine-needle aspiration, and core biopsy does not obtain foci of spermatogenesis until tissue is excised from the patient. Although multiple TESE could obtain more testicular tissue for identification of testicular spermatozoa, larger resections could cause damage arising from pressure atrophy from intratesticular swelling and hematoma.⁹ In other words, micro-TESE could minimize the damage to testicular tissue while maximizing sperm recovery. Moreover, spermatozoa retrieval improved from 45% to 63% after using the microdissection technique.¹⁰ We performed micro-TESE on the testis with CAVD to protect the normal function of the other testis. This procedure can maximize sperm retrieval in minimal volumes of testicular tissue with minimal postoperative testicular damage.

In conclusion, micro-TESE can safely and effectively treat TTE patients with two fused testicles in the hemiscrotum without unilateral vas deferens (CAVD).

AUTHOR CONTRIBUTIONS

CQ designed the study and revised the manuscript; NHS, YCW and YMW collected the clinical information; and CC drafted the manuscript. All authors read and approved the final manuscript.

COMPETING INTERESTS

The authors declared no competing interests.

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