P-095 Outcomes and predictive factors of successful salvage microdissection testicular sperm extraction (mTESE) after failed TESE in men with non-obstructive azoospermia: results from a multicenter study

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Study question: We assessed the outcome and predictors of successful salvage microdissection testicular sperm extraction (mTESE) in non-obstructive azoospermia (NOA) men previously submitted to unfruitful classic (cTESE).
Summary answer: The sperm retrieval rate at salvage mTESE was almost 50%. Hypospermatogenesis and low FSH values were associated with positive outcomes at salvage mTESE
What is known already: In men with NOA testicular sperm can be retrieved using cTESE in approximately 50% of cases. mTESE has been proposed as a salvage treatment option for men with a previously failed TESE, but data are scarce.
Study design, size, duration: Multicenter, cross-sectional study. Complete data from 61 NOA men who underwent mTESE after a failed cTESE between 01/2014 and 10/2020, at 6 tertiary referral centers in Italy were analysed.
Participants/materials, setting, methods: All men underwent testicular ultrasound, hormonal and genetic blood testing. Histopathological diagnosis from TESE was collected in every man. Semen analyses were based on the 2010 WHO reference criteria. mTESE was performed according to the technique of Schlegel et al. (1999). Descriptive statistics and logistic regression models were used to investigate potential predictors of positive sperm retrieval (SR+) after salvage mTESE.
Main results and the role of chance: Overall, median (IQR) age and testicular volume were 35 (31-38) years and 10 (6-15) ml, respectively. Baseline serum FSH and total testosterone levels were 17.1 (8.6-30.4) mUI/mL and 4.7 (3.5-6.4) ng/mL, respectively. Sertoli-cell-only (SCO) syndrome, maturation arrest (MA) and hypospermatogenesis were found in 24 (39.3%), 21 (34.4%) and 16 (26.2%) men after cTESE, respectively. Spermatozoa were retrieved in 30 (49.2%) men at salvage mTESE. Patients with a diagnosis of hypospermatogenesis had a higher rate of SR+ [12/16 (75%)] than those with MA [12/21 (57.1%)] and SCOS [6/24 (25%)] after salvage mTESE ($p<0.01$), which was bilateral in 36 (59%) cases. FSH

was higher [16.5 (8-22) vs. 8.9 (5-13) mUI/mL, p<0.01] in SR- patients compared to SR+. No difference in clinical characteristics was found between patients with SR+ and SR- at salvage mTESE. There were no significant complications after mTESE. Multivariable logistic regression analysis showed that hypospermatogenesis (OR 9.7; p<0.01) and low FSH levels (OR 0.9, p<0.001) were independent predictors of SR+ after salvage mTESE, after accounting for age.

Limitations, reasons for caution: Despite we analysed one of the largest series of salvage mTESE, the samples size is too small to draw general conclusions. Because of the multicenter nature of the study we cannot rely on standardization of surgical techniques for TESE.

Wider implications of the findings: This is one of the larger studies on salvage mTESE. The selection of patients for salvage mTESE is of critical importance.

Trial registration number: na