

P-1116 A 9-year monocentric retrospective analysis of glutaraldehyde-fixed and semithin section of testicular biopsies and TESE in azoospermic patients

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Study question: What is the outcome of testicular sperm extraction (TESE) after microinjection of frozen–thawed sperm and the correlation with histological analysis in azoospermic patients?

Summary answer: In our cohort of 240 azoospermic patients, sperm could be retrieved in 167 patients (69.6%).

What is known already: Testicular biopsy is a crucial assessment in reproductive practice with diagnostic and prognostic importance for ICSI. Divers histological procedures are used throughout the centres. There is increasing need to accurately analyse histological biopsies in order to characterise different type of spermatogenic failure and allows data storage of value in clinical practice and research. Compared with Bouin's and formalin, glutaraldehyde fixed and semithin section of testicular biopsies have the advantage of yielding not only good cellular morphology but also it allows the possibility of performing electron microscopy.

Study design, size, duration: This is a monocentric retrospective study of TESE practice in azoospermic patients in Strasbourg University Hospital from February 2011 to December 2019.

Participants/materials, setting, methods: A total of 240 azoospermic patients underwent TESE followed by sperm cryopreservation when sperm were present and data of histological analysis and clinical outcome of ICSI were analysed. The analysis include initial hormonal status, type of azoospermia, body mass index, classification of histological findings, freezing rate and outcome of ICSI-IVF procedure.

Main results and the role of chance: The mean age of 240 patients was 34.5 years. Out of all patients, 42% were diagnosed with obstructive azoospermia (OA) and 58% patients with non-obstructive azoospermia (NOA). There was no correlation of sperm retrieval with the body mass index. Overall, sperm could be retrieved in 69.6% patients. Spermatozoa were always successfully recovered in patients with normal testicular histological findings, 41.7% patients (n 100). Histological analysis revealed a Sertoli cell-only (SCO) syndrome in 27.5% cases (n 66), hypospermatogenesis in 14.2% (n 34), germ cell arrest in 7.9 (n 19) and mixed pattern in 8.3% (n 20).

In patients with serum FSH concentrations >12 IU/l, 46% of patients (n 42) sperm were present at TESE. In patients with no sperm retrieval, 31.5% had normal FSH levels. Out of all men with elevated FSH, 63% had SCO pattern, 4% germ cell arrest, 21% hypospermatogenesis and 12% mixt patterns. In the group of patients with no sperm retrieved at TESE, histological analysis showed SCO in 69.9% cases, germ cell arrest in 15% and hypospermatogenesis in 9.6% of cases. Out of 167 patients with TESE and sperm cryopreservation, 126 patients undergone ICSI-IVF procedure and 80 babies were born.

Limitations, reasons for caution: This study is a retrospective analysis in a single centre. The cohort was not compared with groups of patients with different histological and fixation techniques.

Wider implications of the findings: Accurate histological diagnosis is a prerequisite for research and clinical data collection and open the possibilities to include patients with NOA in subsequent detailed genetic screen.

Trial registration number: NA