

TESTIS TISSUE CRYOPRESERVATION IN AZOOSPERMIC PATIENTS WITH GERM CELL NEOPLASIA IN SITU

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Abstract Body

Onco-TESE is a valuable diagnostic and therapeutic approach for young infertile men with no spermatozoa in their semen. Since infertile men have a significantly higher chance of developing a testicular malignancy, this approach enables cryopreservation of testicular tissue in cases of apparent testicular tumours and early detection of germ cell neoplasia in situ (GCNIS). We reviewed patients' records of 412 cases with azoospermia operated in our centre in the period 2013-2022. All patients were subjected to open testicular biopsy (with multiple sampling of testicular parenchyma) and cryopreservation. In 17 cases, a detailed histological analysis identified GCNIS in either one (15 patients) or both testicles (2 cases). Hormone analysis demonstrated that FSH was increased in 12 cases, whereas 5 remaining cases had normal values. LH was high in 14 patients, with 3 cases that displayed normal values. However, total testosterone was normal in 12 cases (in 5 patients below normal values). The vast majority of patients had a decreased testicular volume and various pathological changes of testis parenchyma, ranging from hypospermatogenesis to Sertoli cells only syndrome (SCOS) and tubular fibrosis. Moreover, the most frequent histological picture was mixed atrophy of seminiferous tubules with some preserved foci of spermatogenesis. When related to Johnsen's score (the estimation of the spermatogenesis status /10-1/), 6 patients had significantly low score value (< 4), in 4 cases, the score was moderate (4-8), whereas the rest of patients (7) exhibited high score (>8). In 10 cases, despite GCNIS, seminiferous tubules with the presence of spermatozoa and late spermatids were detected. Since corresponding testicular biopsies have been cryopreserved, this valuable material could be used for TESE/ICSI. In conclusion, male infertility can be accompanied with GCNIS. Multiple testicular biopsies and their cryopreservation offer both early diagnosis of GCNIS and treatment of male infertility.