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JOURNAL ARTICLE

Hypertensive changes in intratesticular arteries impair spermatogenesis of the stroke-prone spontaneously hypertensive rat

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It is reported that some elderly males exhibit both hypospermatogenesis and intratesticular arterial changes. These arterial changes are thought to contribute to spermatogenic damage. In this study the process of the damage to spermatogenesis induced by such changes was evaluated using stroke-prone spontaneously hypertensive rats (SHRSP). SHRSP showed a rapid increase of blood pressure, followed by hypertensive vascular changes. At 23 weeks of age, 61.8% of seminiferous tubules were atrophic in SHRSP, simultaneously with the development of hypertensive vascular changes. In addition, the transferrin concentration in the cytosolic fraction of the testicular homogenate was decreased at 23 weeks of age exactly when the severe damage to the spermatogenesis was seen, suggesting that Sertoli cell function in SHRSP regressed at 23 weeks of age. Based on these findings, it was suggested that the decline in the Sertoli cell function caused by the hypertensive vascular changes is part of the mechanism whereby spermatogenic damage occurs in SHRSP.

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