

Journal of Andrology, Vol 18, Issue 6 672-680, Copyright © 1997 by The American Society of Andrology

JOURNAL ARTICLE

Spontaneous degeneration of testicular germ cells in congenitally athymic nude mice of four strains: a light microscopical observation

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Many hormonal studies have demonstrated that the presence of thymic factors affects testicular function. However, morphological studies on the testis in the absence of thymic factors are very limited. In the present study, seminiferous tubules of nude mice of four strains were light microscopically observed in order to investigate the effect of congenital athymia on germinal cell components. Testes obtained from congenitally athymic nude mice of CD1, BALB/c-nu/nu, LASAT, and KSN strains were fixed in Bouin's solution, dehydrated, and embedded in plastic. The samples were cut and their sections were stained with hematoxylin and eosin. The results showed that degeneration of testicular germ cells was focally observed in all four strains of athymic mice. The degenerating morphology was characterized by karyopyknosis and karyolysis of immature germ cells, multinuclear giant cell formation, and severe depletion of epithelial components with remaining Sertoli cells and/or some spermatogonia. KSN nude mice showed the most severe degenerative changes among the four strains of nude mice examined. Their significant degenerative changes first appeared at 2 weeks of age. In contrast, CD1 nude mice showed very slight degenerative features even at 20 weeks of age. BALB/c-nu/nu and LASAT nude mice had more degenerated epithelia than did CD1 nude mice; however, their significant degenerative changes were apparent at 20 but not at 10 weeks of age. Therefore, the severity and the onset of spontaneous degeneration and depletion of testicular germ cells in congenitally athymic mice were different among the four strains examined.

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