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The Effects of Experimental Cryptorchidism on the Entry of [^{3}H]-Inulin and [^{3}H]-Horseradish Peroxidase into the Lumen of the Rat Seminiferous Tubules

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The objective of this research was to determine if experimental cryptorchidism causes significant changes in the rat blood-testis barrier. Micropuncture of the seminiferous tubules of normal, sham-operated, or surgically-cryptorchid rats was performed after intravenous infusion of [^{3}H]-inulin or subtunica injection of [^{3}H]-horseradish peroxidase. Concentration of the isotopes in the lumen of the seminiferous tubule was determined. Normal, sham, and cryptorchid tissues were also immersed in hypertonic (.75 M) LiCl and prepared for observation by light microscopy.

Micropuncture experiments demonstrated that cryptorchidism significantly increased the penetration of the blood testis barrier by [^{3}H]-inulin and [^{3}H]-horseradish peroxidase. The LiCl emersion techniques, a histological method of visually detecting the presence of an intact blood-testis barrier, also demonstrated partial disruption of the blood-testis barrier in the cryptorchid testis. In spite of these alterations, the seminiferous tubules of the experimentally-cryptorchid testes retained a large proportion of their capacity to exclude macromolecules.

Key words: cryptorchidism, blood-testis barrier, rat, testicle, seminiferous tubule

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