

Journal of Andrology, Vol 4, Issue 2 131-135, Copyright © 1983 by The American Society of Andrology

JOURNAL ARTICLE

Effect of cryptorchidism and orchidopexy on inhibin secretion by rat Sertoli cells

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The present study explored the effects of experimental bilateral cryptorchidism (of 21-, 28-, and 35-days duration) and orchidopexy (14 and 42 days) in the adult rat on the secretion of inhibin by cultures of isolated Sertoli cells. Changes in serum levels of gonadotropins, testis weight, and spermatogenesis also were assessed to verify the effectiveness of the surgical procedures. Cryptorchidism resulted in a progressive decline in testicular weight and a loss of germ cells, associated with increasing serum levels of FSH and LH.

Inhibin secretion in vitro became nondetectable by 28 days after surgery. At 42 days after orchidopexy, spermatogenesis showed qualitative recovery, with a small increase in testes weight. Levels of LH in the circulation declined, but only to twice the intact control levels. However, inhibin secretion and serum FSH levels returned to nearly normal values. These results indicate that bilateral cryptorchidism severely impairs the secretion of inhibin and possibly other Sertoli cell functions which may account, at least partly, for the increase in circulating FSH levels and the arrest of spermatogenesis. The effects of cryptorchidism on these parameters can be reversed to a large degree by orchidopexy.

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