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JOURNAL ARTICLE

Impaired estrogen production by Leydig cells of the naturally retained testis in unilaterally cryptorchid boars and stallions

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Estrogen production in vitro was compared for Leydig cells from cryptorchid and scrotal testes in boars and stallions. Animals with natural and experimental cryptorchidism were used. Purified Leydig cells were prepared from testes of mature animals by collagenase treatment and Percoll density gradients. After incubation for 3 hours (1×10^6 cells), estrone sulfate and estrone in the media were measured by direct radioimmunoassay. Androstenedione and testosterone in media extracts also were determined. Cells from the abdominal testis of unilateral cryptorchid boars and stallions showed impaired estrogen production compared with that of the contralateral scrotal testis. Surgical translocation of the scrotal testis to the abdominal cavity in four unilaterally cryptorchid, prepubertal boars did not result in a reduced capacity for estrogen secretion by Leydig cells examined after puberty. Cells from the naturally retained testis in each of these four animals produced practically no estrogen. In a naturally bilateral cryptorchid stallion, there was a high rate of estrogen secretion by both testes. It was concluded that the scrotal testis of a unilaterally cryptorchid animal exerts a suppressive influence on estrogen formation by the abdominal testis.

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