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JOURNAL ARTICLE

Germ cell degeneration in the contralateral testis of the guinea pig with unilateral torsion of the spermatic cord. Quantitative and ultrastructural studies

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This study evaluated the long term effects of unilateral torsion of the spermatic cord on the contralateral testis of guinea pigs, employing both fine structural and quantitative studies. Young, adult Hartley strain guinea pigs were divided into six experimental groups (12 animals per group). The first three groups consisted of 36 animals in which unilateral torsion was surgically induced. In group I (torsion maintained), unilateral torsion of the spermatic cord was maintained until the day of sacrifice; in group II (torsion and untwist), torsion of the spermatic cord was maintained for 8 to 12 hours, then the spermatic cord was untwisted and the testis was retained until the day of sacrifice. In group III (torsion and orchiectomy), testes were removed after 8 to 12 hours of spermatic cord torsion. The second three groups consisted of 36 animals: group IV (unilateral orchiectomy), group V (unilateral sham operation), and group VI (pentobarbital injection alone), which served as controls. One half of the animals from each group were killed after 4 months and the other half were killed after 8 months. The most frequently observed histologic changes in the contralateral testes of the experimental animals were focal disorganization and exfoliation of immature germ cells into the lumen. Severe damage, with almost complete absence of germ cells, was noted only in an occasional tubule. Quantitative evaluation of the germ cells of the contralateral testis revealed significant loss of germ cells in groups I, II, and III after 4 months, and in groups I and II after 8 months.(ABSTRACT TRUNCATED AT 250 WORDS)