

Journal of Andrology, Vol 11, Issue 5 401-408, Copyright © 1990 by The American Society of Andrology

JOURNAL ARTICLE

Spermatic cord torsion: effects of cyclosporine and prednisone on fertility and the contralateral testis in the rat

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Unilateral spermatic cord torsion results in contralateral degeneration and reduced fertility in the prepubertal male rat. This study was conducted to investigate the use of immunosuppression with cyclosporine and prednisone to prevent these untoward effects. Thirty-five-day-old male rats were subjected to 720 degrees unilateral spermatic cord torsion of 9 hours duration. At the time of detorsion, animals were given a subcutaneous injection of i) cyclosporine, ii) prednisone, or iii) cyclosporine combined with prednisone. Control groups included: i) animals undergoing orchiectomy of the ipsilateral testis following the torsion period, ii) hemicastration in the absence of torsion and iii) sham surgery. Orchiectomy at the end of the torsion period prevented the torsion induced reduction of fertility, contralateral seminiferous tubule diameter and testis weight. Treatment with cyclosporine combined with prednisone significantly increased these parameters above detorsion alone. These data indicate that short term immunosuppression with cyclosporine alone or in combination with prednisone limits the adverse effects of unilateral spermatic cord torsion as does removal of the damaged organ at the end of the torsion period.

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