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Long-term outcome following testicular ischemia in the rat

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Male germ cells are quite sensitive to interruption in blood flow. Eight weeks after subsection to 45 minutes of testicular ischemia, the spermatogenic epithelium of the rat remains significantly damaged, though other cell types are well preserved. The authors evaluated the testicular recovery of the rats at 8 and 72 weeks after the 45-minute period of warm ischemia. Twenty-eight rats were studied: 14 underwent 45 minutes of total left testicular ischemia; 14 received no treatment. Four rats from each group were necropsied at 8 weeks to document the ischemic injury. At 72 weeks, the 18 surviving rats were necropsied to evaluate the long-term outcome of the treatment. At 8 weeks, significant left testicular injury was documented. However, at 72 weeks there was no difference in testicular weight or sperm head count between the groups: in all 36 testicles, the repopulation index was 1.00, the epididymal index was 3+, the modified Johnsen index was 14, and the spermatic cord score was 7 (all are maximum obtainable scores). Neither contralateral orchopathy nor injury to spermatic cord structures was observed. Our work shows that ischemia-induced testicular injury is fully reversible with time in this model.

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