

A modified technique of renal artery anastomosis in rat kidney transplantation.

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Publication Date: 2010

Abstract:

Aims: To reduce warm ischemic time and avoid irreversible damage to the graft in rat kidney transplantation. **Methods:** After left nephrectomy, recipients were transplanted with syngeneic kidney grafts using microsurgical techniques. In control rats ($n = 20$), the renal artery anastomoses were performed with 8-9 interrupted sutures by the conventional technique. In experimental animals ($n = 20$), a modified anastomosis was performed using fewer (5-6) sutures and fibrin glue devoid of thrombin. **Results:** The number of sutures in the control group was 8.09 ± 0.35 while that in the experimental group was 5.65 ± 0.48 ($p < 0.01$). The warm ischemic time reduced from 29.7 ± 1.1 min in the control group to 23.9 ± 0.9 min in the experimental group ($p < 0.01$). These anastomoses maintained adequate patency rates and mechanical strength. Up to 21 days after operation, the graft survival rates in the experimental and control groups were 90 and 85%, respectively. **Conclusions:** Our modified technique for renal artery anastomosis significantly reduced the warm ischemic time in rat kidney transplantation. This technique would be a safe and reliable method for rat renal artery anastomosis as well as for other microarterial anastomoses, particularly for novice surgeons. © 2009 S. Karger AG, Basel.