Dokumenttyp: Zeitschriftenaufsatz


Titel des Beitrags: Microsurgical Technique of Simultaneous Pancreas/Kidney Transplantation in the Rat: Clinical Experience and Review of the Literature

Abstract: Background: For experimental basic research, standardized transplantation models reflecting technical and immunologic aspects are necessary. This article describes an experimental model of combined pancreas/kidney transplantation (PKTx) in detail. Materials and Methods: Donor rats underwent en bloc pancreatectomy and nephrectomy. Revascularization was performed using the aorta with the superior mesenteric artery and the inferior vena cava with the portal vein. Exocrine drainage of the pancreas took place over a segment of the duodenum which was transplanted side-to-side to the jejunum. The kidney vessels were transplanted end-to-side. The ureter was anastomosed by patch technique. Postoperatively, serum parameters were monitored daily. Biopsies for histopathology were taken on days 5, 8 and 12. Results: All 12 recipients survived the combined PKTx without serious surgical complications. One thrombosis of the portal vein led to organ failure. Blood glucose levels were normal by the 3rd postoperative day. The transplanted duodenal segment showed slight villous atrophy, and the kidneys were well perfused without vascular complications. The anastomosis between ureter and bladder was leakproof. Conclusions: Excellent graft function and survival rates can
be achieved due to simplified operation technique and short operation time. It may thus have high clinical relevance to immunologic issues within the scope of basic research.

Stichworte: Transplantation; Pancreas; Kidney; Allograft; Surgical technique; Rat model

Zeitschriftenstitel: European Surgical Research

Jahr: 2009
Band: 43
Heft / Issue: 2
Seiten: 245--251
Volltext / DOI: http://doi.org/10.1159/000228250
Verlag / Institution: S. Karger AG
Verlagsort: Basel, Switzerland
Print-ISSN: 1421-9921
E-ISSN: 1421-9921
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- Kollektionen > Open Access Publikationen > Verlage > Karger
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