

EXPERIMENTAL RESULTS WITH AUTOLOGOUS RECTUS FASCIA SHEATH FOR VASCULAR REPLACEMENTS

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BACKGROUND

The use of different vascular grafts in liver transplantation is common, but the results are controversial. The problem is still present, mostly in cases with difficult vascular reconstructions and small size vessels.

The aim of this study was to create an 'ideal' arterial interponate for vascular replacements in the clinical field.

METHOD

Autologous, tubular graft prepared from the posterior rectus fascia sheath was used for iliac artery replacement in experimental animals (dogs) for 1, 3, 6 and 12 months under immunosuppression. Forty-one grafts were implanted successfully and the patency rate was followed by Doppler ultrasound. Thirty-seven (90%) grafts remained patent on long term, 2 cases with thrombosis and 2 cases with stenosis occurred in the early postoperative period. There was no evidence of necrosis or aneurysmatic formation. The histological analysis included conventional light microscopic and immunohistochemical examinations for CD34 and factor VIII.

RESULTS

The explanted grafts showed signs of arterialisation, appearance of elastin fibres, and smooth muscle cells after 6 months. Electron microscopy showed intact mitochondrial structures without signs of hypoxia.

CONCLUSION

In conclusion, the rectus fascia sheath autologous graft presents acceptable long-term patency rate. It is easy to handle and the concept of beneficial presence of the anti-clot mesothelium until endothelialisation seems to work. Use in clinical practice was already reported by our group with more than 3 years survival.