

**BP PP 3-7****Feasibility of using the homologous parietal peritoneum as a vascular substitute for venous reconstruction during abdominal surgery: an animal model****Seok-Hwan KIM***Surgery, Chungnam National University Hospital, Korea*

Introduction : The interest in vascular substitutes has recently increased. We evaluated the feasibility of using a homologous parietal peritoneum (HPP) as a vascular substitute for venous reconstruction during abdominal surgery.

Methods : The inferior vena cava was replaced with an HPP after cross-linking with glutaraldehyde in 15 rabbits. At 7, 14, and 28 days, the patency rate, outer and inner graft diameters, histology, and immunohistochemistry were evaluated.

Results : Both the 7- and 14-day groups maintained vascular patency. Vascular patency was maintained in three rabbits in the 28-day group. The inner diameters of the anastomotic sites were 6.12 ± 0.20 , 5.63 ± 0.14 , and 2.22 ± 0.23 mm in the 7-day, 14-day, and 28-day groups, respectively. The mid-point inner diameters of the HPP grafts were 6.21 ± 0.13 , 5.82 ± 0.16 , and 2.12 ± 0.24 mm in each group, respectively. Endothelial cell proliferation on the HPP graft surfaces in all groups was based on the histological findings from the first group. Multiple neo-vascularizations of the HPP graft were found in the 14- and 28-day groups, indicating neo-media formation. Acute inflammation appeared to progress to the entire layer of the HPP graft without an intraluminal thrombus, but the graft was patent in the 14-day group. In the 28-day group, two rabbits showed near-total occlusion and a thrombus formed in the HPP graft at the anastomosis site with severe stricture; however, the rabbits were alive and had collateral vessel formation.

Conclusions : Use of the HPP is feasible for venous reconstruction in abdominal surgery.

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