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人造血管外支架抑制高胆固醇血症兔移植静脉远期粥样硬化 [点此下载全文](#)

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摘要:

目的: 研究人造血管外支架在高胆固醇血症内环境下对移植静脉的远期粥样硬化的抑制作用及其可能机制。方法: 15只新西兰大白兔, 建立高胆固醇血症模型后将双侧颈静脉一端吻合于同侧颈总动脉上, 随机分配一侧移植静脉加用静脉外支架(实验组), 另一侧不加外支架(对照组)。术后12周行超声检查了解血流动力学情况后取下移植静脉, 测量其中膜厚度、面积及脂质沉积情况; 免疫组化法检测VCAM-1阳性细胞分布情况, 扫描电镜检查了解内皮细胞重塑情况。结果: 超声检测提示支架组静脉血流为层流, 对照组为涡流; 支架组内中膜厚度及面积较对照组显著降低($P < 0.01$); 泡沫细胞明显减少, 脂质沉积减轻, 未见粥样硬化斑块; 支架组内中膜层内VCAM-1阳性细胞率较对照组明显减低, 差异显著($P < 0.01$); 扫描电镜提示支架组内皮细胞排列整齐、紧密, 大小一致, 对照组内皮细胞排列紊乱, 间隙大, 大小不一致。结论: 人造血管外支架可改善静脉血流动力学, 促进内皮细胞良性重塑, 减轻脂质沉积及中膜平滑肌细胞增殖, 减少泡沫细胞生成, 最终抑制高胆固醇血症内环境下移植静脉远期粥样硬化。

关键词: [移植静脉](#) [高胆固醇血症](#) [粥样硬化](#) [外支架](#) [内皮细胞](#)

External stent inhibits long-term atherosclerosis of autologous vein graft in hypercholesterolemic rabbits [Download Fulltext](#)

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Abstract:

Objective: To study the long-term inhibitory effect of external stent on atherosclerosis of autologous vein graft in hypercholesterolemic rabbit and the possible mechanism. Methods: Hypercholesterolemic model was established in 15 rabbits and their bilateral jugular veins were anastomosed with bilateral carotid arteries. One jugular vein graft was stented with a polytetrafluoroethylene tube (external stent group) and the other receiving no stenting served as control (unstent group). Ultrasound was used to evaluate the haemodynamics 12 weeks after operation. The grafts were harvested to examine the thickness and area of intima and media, the deposition of lipid in the vessel wall, and the distribution of VCAM-1 positive cells. Scanning electron microscope (SEM) was used to evaluate the regeneration of endothelium. Results: Ultrasound results showed that the stent group was laminar blood flow and the control group had vortex flow. The thickness and areas of intima and media were significantly lower in the stent group than in the control group ($P < 0.01$); the foam cells and deposition of lipid in the vein wall were significantly less in the stent group ($P < 0.01$). No atherosclerosis plaque was founded in the stent group. VCAM-1 positive cells in the control group were significantly more than those in the stent group ($P < 0.01$). SEM showed that the endothelia were orderly, closely, and evenly arranged in the stent group; while those in the control group were in disorder, with larger gaps and different sizes. Conclusion: External stent can improve hemodynamics of vein graft, accelerate endothelium remodeling and reduce the deposition of lipid; it can also inhibit vein graft smooth muscle hyperplasia, and reduce foam cells in vein graft, indicating that external stent can inhibit the atherosclerosis of vein grafts in a long run.

Keywords: [vein graft](#) [hypercholesterolemia](#) [atherosclerosis](#) [external stent](#) [endothelial cells](#)

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