

Effect of fibrin glue associated with antisense to PCNA on preventing restenosis of vein grafts.

Authors: Wan L., Wang W.-j., Cao Y.-p., Wang Q., Liu J.-c.

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Abstract:

BACKGROUND: Preliminary findings show that fibrin glue is not only a good non-restrictive, extravascular biodegradable stent, but also can prevent intimal and medial hyperplasia of vein grafts. It is also a good drug delivery system that can improve the extravascular membrane gene transfection efficiency. **OBJECTIVE:** To verify the effect of fibrin glue associated with antisense to PCNA on preventing restenosis of vein grafts. **METHODS:** Rabbit models of external jugular vein carotid artery bypass grafting were prepared and then randomized into model group, fibrin glue group and fibrin glue+antisense group. Commercially available fibrin glue and fibrin glue mixed with adenovirus expressing the antisense oligonucleotides to PCNA were applied separately around vein grafts in the latter two groups, respectively. **RESULTS AND CONCLUSION:** Twenty-eight days after operation, the intimal and medial thickness and area was increased obviously in the model group and decreased significantly in the fibrin glue group ($P < 0.01$). A significant difference in the intimal and medial thickness and area was found between the fibrin glue group and fibrin glue+antisense group ($P < 0.05$). The mRNA and protein expressions of PCNA in the fibrin glue+antisense group was lower than those in the fibrin glue group ($P < 0.05$). The expression of PCNA in vein grafts can be inhibited by adventitial delivery of antisense to PCNA. The fibrin glue mixed with antisense has a synergistic effect on reducing the intimal and medial thickness and area of vein grafts.