Survival of adult rat retinal ganglion cells with regrown axons in peripheral nerve grafts: A comparison of graft attachment with suture or fibrin glue.

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Abstract:

Object. The goal of this study was to examine whether the method of attachment of a peripheral nerve graft would have an effect on retinal ganglion cell (RGC) regeneration. Methods. The number of adult rat RGCs with regrown axons in a peripheral nerve graft was compared under two grafting conditions: 1) attachment of the graft to the optic nerve stump made using a suture; and 2) attachment made using fibrin glue. Counts of RGCs retrogradely labeled with FluoroGold from the grafts 1 month after attachment revealed approximately seven times the number of RGCs in the fibrin-glue group compared with the suture group. Conclusions. The use of fibrin glue may be a useful tool for enhancing the regrowth of central nervous system neuron axons into peripheral nervous system grafts.