Fibrin glue mitigates the learning curve of microneurosurgical repair.

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Abstract:

Microneurosurgical technique has a steep learning curve. An alternative to microepineurial suture repair of peripheral nerves that circumvents this learning curve would be ideal. We investigated the effect of surgeon experience on suture versus fibrin glue coaptations in a mouse sciatic nerve graft model. Sixty-four mice received sciatic nerve grafts with either suture or fibrin glue repair by either a naive surgeon (medical student) or a surgeon with extensive microsurgical experience. Grafts underwent quantitative histomorphometry at 3 weeks postoperatively. Suture repairs performed by the naive surgeon demonstrated significantly poorer distal regeneration than all other repairs. Histomorphometric parameters of suture and glue repairs performed by the experienced surgeon were not significantly different from the glue coaptation by the naive surgeon. Fibrin glue may be considered as an alternative to microepineurial suture repair, particularly in the setting of relative surgeon inexperience with microsurgical technique.