Comparison of microsurgical suture with fibrin glue connection of the sciatic nerve in rabbits.

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Abstract:

The regeneration of the sciatic nerve after microsuture was compared with the connection of transected nerve with a coagulum of autologous blood plasma in 20 rabbits. The epineuroperineural suture was performed in 10 rabbits (group A). The severed nerve was approximated with fibrin glue of autologous blood plasma in 10 rabbits (group B). Their skin sensation margin during a 3-month-period of regeneration was examined, 90 days after surgery the connection was inspected and the nerve conduction velocity was measured across the site of the anastomosis. The microsuture was found to be firm in all 10 animals of group A. On the other hand, in 2 animals of group B, the glue failed to keep the nerve stumps approximated (dehiscence occurred in 20% of the animals). There were no significant differences found on clinical and electrophysiological testing of regenerated nerves of both groups. The method of autologous fibrin glue in the repair of peripheral nerve transection does not provide a sufficiently firm connection. This procedure with the preparation of the centrifuged plasma is a more time-consuming method in comparison with the microsuture. Epineuroperineural microsuture with maximal effort to adapt the corresponding nerve fibres remains the method of choice for peripheral nerve reconstruction.