Microvascular anastomosis with minimal suture and fibrin glue: Experimental and clinical study.

Authors: Han S.-K., Kim S.-W., Kim W.-K.

Publication Date: 1998

Abstract:

A comparative study was undertaken to evaluate a new microvascular anastomosis technique utilizing only four sutures placed 90 degrees apart and sealed with fibrin glue, in contrast to the conventional method of eight sutures as a control. The two methods were compared in regard to patency rates, time needed for vascular anastomosis, and microscopic evaluation. Postoperative patency rates were 100% and 85% with the fibrin glue technique compared with 100% and 90% with the conventional technique immediately postoperative and 2 weeks postoperative, respectively. Less time was consumed with the fibrin glue technique, which took 16 minutes, compared with the conventional technique, which took 21 minutes. Microscopically, re- endothelization was complete, with a smooth and less injured inner lining and also with less inflammatory response in the fibrin glue technique compared with the conventional technique. We applied this new technique to clinical cases of 17 digit replantations and one free flap. All cases survived completely except for one toe replantation case, which was severely crushed at the time of injury.