Anastomosis with fish-mouth technique using fibrin glue.

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Abstract:

Researchers have made numerous attempts to shorten anastomosis duration since Jacobson first used the term microvascular surgery in 1960. However, none of these alternatives has its combination of facility, low cost, reliability, durability, and high success rate. This study aimed to shorten the anastomosis duration, especially in operations that require multiple anastomoses, and the authors performed experimental anastomoses with the fish-mouth technique using fibrin glue. This technique first involves 2 longitudinal incisions made 180 degrees apart in the shape of a fish mouth at each vessel end, thus creating a pair of equal-sized, full-thickness flaps on both vessels. These incisions, equal in length, were as long as the radius of the vessel. Two simple stay-sutures placed on the corners of the flap bases and vessels were approximated. Then, the anastomosis site was sealed with fibrin glue. Both control and experimental groups are consisted of 32 rats. This study assessed and statistically evaluated the groups with biopsies on days 3, 7, 14, and 21 and also assessed patency rates, microaneurysm formation, histologic healing patterns, and operation duration. The present study concluded that anastomosis with fish-mouth technique using fibrin glue takes less time, requires fewer sutures, decreases the amount of foreign materials in direct contact with the blood stream, creates less foreign-body reaction in the vessel wall, and everts contact surfaces. With these advantages, this technique provides a reliable and successful alternative, especially in operations requiring multiple anastomoses.