

Delayed vasal reanastomosis in rats: comparison of a microsurgical technique and a fibrin-glued procedure.

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Abstract:

OBJECTIVES: To compare fibrin-glued vasovasostomy to a conventional microsurgical technique in a protocol of delayed vasovasostomy.

MATERIALS AND METHODS: Forty male Sprague-Dawley rats underwent bilateral vasectomy through a midline abdominal incision. Two weeks later all animals underwent a bilateral vasectomy reversal through a bilateral inguino-scrotal incision, following two different protocols. Invariably, the proximal segment had a larger lumen. The control group (20 rats) had a conventional modified one-layer sutured vasal anastomosis with 10/0 nylon. The experimental group (20 rats) underwent vasal anastomosis using fibrin glue and consisting of three transmural sutures with 10/0 nylon followed by the application of fibrin glue circumferentially to seal the anastomosis. The fibrin-tissue adhesive was obtained from pooled donor plasma and was virally inactivated by a solvent-detergent treatment. Seven weeks after surgery all animals were killed and the vasal specimens were evaluated for gross patency and the incidence of sperm granuloma.

RESULTS: The control group had a patency rate of 85% and half had sperm granuloma. The experimental group had a patency rate of 92% and 40% had sperm granuloma; neither difference was significant. The mean operative time was significantly shorter for the fibrin glue-assisted vasovasostomy ($P < 0.001$).

CONCLUSION: This study showed that a delayed fibrin-glued vasovasostomy gave a comparable anatomical success and an incidence of sperm granuloma similar to that using a conventional microsurgical technique, but with the advantages of a shorter operative time and a less technically demanding anastomosis.