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Title
Cyanoacrylate- assisted Four-corner Lid Technique for Microvascular Anastomosis

Purpose
The conventional end-to-end technique of microvascular anastomosis with interrupted sutures can be time consuming, especially when performed by a less experienced microsurgeon. It has been shown to cause media wall necrosis with intimal hyperplasia, leading to intraluminal thrombosis. Studies have been done on the use of tissue adhesives to achieve sutureless microvascular anastomosis. The 'Lid technique', described by Ulusoy in 2009, combines two sutures placed 180 degrees apart with cyanoacrylate adhesive. We describe a modification of this technique, whereby four corner stitches were used instead of two, for microvascular anastomosis.

Methods
Twelve anastomoses were carried out on bilateral common iliac arteries in six rabbits. Two groups were compared; conventional anastomosis versus 'Four-corner Lid' technique. For the described technique, four parallel incisions were made 90 degrees apart, on both ends of transacted vessel. Four sutures were placed passing from the proximal end to the distal part of the longitudinal incisions. The tissue adhesive was then applied onto the 'lid' flap. Outcomes were measured.

Results
100% patency rates were achieved in both groups. The mean anastomosis time for the conventional and lid group was 36 minutes and 37 minutes respectively, and the mean bleeding time was 2 minutes and 0.3 seconds respectively. Histopathological evaluation for both anastomoses showed distinct significant findings. There was no intraluminal adhesive leakage in the four-corner lid technique.

Conclusion
Our preliminary results for both conventional and the described technique is comparable in terms of anastomosis and bleeding time. A larger sample size is required to produce more significant results.