

ELANA

The excimer [laser](#)-assisted nonocclusive anastomosis (ELANA) technique enables large-caliber [bypass](#) revascularization without temporary occlusion of the parent artery.

Case series

Between July 2002 and December 2007, 64 consecutive patients (37 in Germany and 27 in Finland) were selected for high-flow bypass surgery with ELANA. [Modified Rankin Scale](#), a bypass success rate, and the success rate of the laser arteriotomy were assessed.

In 66 surgeries for 64 intent-to-treat patients, 58 ELANA procedures were completed successfully. A favorable outcome (postoperative modified Rankin Scale score less than or equal to preoperative modified Rankin Scale) at 3 months was achieved in 43 of 56 patients (77%) with anterior circulation lesions (37 of the 43 patients had aneurysms, 4 had ischemia, and 2 received a bypass before tumor removal) and only in 2 of 8 patients (25%) with posterior circulation aneurysms. Perioperative (< 7 days) mortality for anterior and posterior circulation aneurysms was 6% and 50%, respectively. At the 3-month follow-up, 12% and 63% of patients with anterior and posterior circulation aneurysms, respectively, were dead. The success rate of the laser arteriotomy was 70%. Another 14% were retrieved manually after a nearly complete laser arteriotomy.

The ELANA procedure requires a meticulous and careful operative technique. Morbidity and especially mortality rates, usually unrelated to ELANA, are comparable to those of contemporary series of conventional high-flow revascularization operations. This underscores the overall complexity of treating neurovascular pathologies by high-flow bypasses ¹⁾.

¹⁾

Vajkoczy P, Korja M, Czabanka M, Schneider UC, Reinert M, Lehecka M, Schmiedek P, Hernesniemi J, Kivipelto L. Experience in using the excimer laser-assisted nonocclusive anastomosis nonocclusive bypass technique for high-flow revascularization: Mannheim-Helsinki series of 64 patients. *Neurosurgery*. 2012 Jan;70(1):49-54; discussion 54-5. doi: 10.1227/NEU.0b013e31822cb979. PubMed PMID: 21760557.

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