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The C-Port xV® vascular anastomosis system: results from an animal trial.

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Abstract

BACKGROUND:

In this study, facilitated anastomosis using an anastomotic device was compared to conventional hand-sewn (HS) vascular anastomosis in an animal model.

METHODS:

A pig carotid bypass model was employed. C-Port xV® (xV) and HS anastomoses were compared by evaluating intraoperative performance, midterm graft patency, and histology.

RESULTS:

All animals survived; none developed early/late neurological deficits. Mean graft blood flow was comparable between groups (HS group: 161 ± 61 ml/min; xV group: 143 ± 44 ml/min). All anastomoses were patent at necropsy (at 111 ± 6 postoperative days). Histologically, no significant inflammation was found around the fasteners or in the vessel wall. Neointimal overgrowth on the lumen surface appeared organized and covered with endothelium. There was no adherence of fibrin, platelets, or inflammatory cells to the surface. The neointimal tissue appeared normal without any inflammation, hemorrhage, calcification, or necrosis.

CONCLUSION:

Facilitated vascular anastomosis using the xV anastomotic device is safe and effective in the pig carotid bypass model. Further studies should evaluate the efficacy of this device when used in confined spaces to define its potential role in minimally invasive procedures.