

A Novel Aortic Cannula to Reduce Intraoperative Embolic Events- In- Vitro Results

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Objective: Patients who undergo myocardial revascularization procedures are susceptible to stroke. Up to 60% of intraoperative cerebral events are caused by emboli generated by manipulations of the aorta during surgery. The purpose of this In-Vitro study was to evaluate the efficacy of a novel aortic cannula. The cannula is designed to produce simultaneous forward flow and backward suction in order to extract from the distal aorta solid and gaseous emboli that are being released during cardiac surgery.

Methods: In-Vitro study was carried out on a 24F novel aortic cannula designed to capture and reduce intraoperative embolic events in patients undergoing cardiac surgery using a heart and lung machine. A model of a silicon aorta with four exits in a closed loop flow was established. To simulate emboli, osseous particles of different sizes were injected to the proximal aorta. An external filter was located on the suction tube in order to evaluate the amount of solid emboli caught by the cannula. Filters were placed at every exit as well. Emboli were injected in three conditions: steady high net flow, Time dependent simulating transfer to low flow and manipulation phase at a low net flow. Cannula was compared to two standard 24F commercial cannulae. Total average of particles injected at every trial was 120 mg.

Results: At steady high net flow of 4 Liter/min and suction of 0.5 L/min the novel cannula retrieved 64.20 ± 9.3 mg ($53.50\% \pm 7.77$). At time dependent conditions, simulating transfer of 1 to 4.5 L/min net flow, the novel cannula retrieved 92.20 ± 7.13 mg ($76.84\% \pm 5.94$), $p = 0.00001$. At manipulation conditions of 1 L/min net flow suction of 0.5 L/min the novel cannula retrieved 105.35 ± 3.90 ($87.80\% \pm 3.25\%$), $p = 0.00001$.

Conclusions: This study demonstrated the efficacy of a novel aortic cannula in capturing intraoperative emboli. Emboli extraction correlated with different flow and suction regimens. This novel technology should be further validated in vivo and in human trials.

Survival after Combined AVR CABG and AVR in 23 Years Experience

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Background: As population is aging more Aortic valve and coronary bypass surgery is needed. We present our 23 years experience results of survival following combined CABG and aortic valve replacement and isolated aortic valve replacement.

Objective: The objective of our study is to evaluate retrospectively the overall survival of performing combined CABG and AVR compared to isolated AVR.

Materials and Methods: We reviewed the medical records between the years 1984 and 2006 of patients undergoing isolated AVR compared to combined CABG and AVR. Statistical analyses were performed by SPSS software using Kaplan-Meier and survival curves.

Results: This study included 1381 patients. 824 performed isolated aortic valve replacement and 550 performed combined CABG and aortic valve replacement. The overall survival of those performed isolated AVR was 14.3 years compared to 9.1 years for those performed combined CABG and AVR.

Conclusion: This study shows that survival following isolated AVR is higher than combined CABG and AVR.

Initial Experience with the Jetstream™ Pathway Device for Femoro-Popliteal Disease.

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Objectives: To report safety and efficacy of Jetstream™ Pathway rotational atherectomy/thrombectomy device for the treatment of femoro-popliteal arterial lesions with special emphasis on rate of re-intervention and intervention free period.

Materials & Methods: Duration of study is from Mar 2008 to Nov 2009 (21Months). Total numbers of patients is 86. Males are 55(64%) & Females are 31(36%). Age range is 36 to 87 Years. All patients underwent Pathway Atherectomy during this time period regardless of their previous status were included. Re intervention in the same limb after atherectomy was endpoint of the study.

Results: TLR (Target Lesion Revascularization) was 15% in patients during follow up period. Re intervention was more common in first 3 months after first intervention. It was more common in TASC II type B lesions and mostly managed by Balloon Angioplasty.

Conclusion: The JetStream™ Pathway device with thrombectomy and aspiration capabilities has added advantages to femoro-popliteal atherectomy. Adjunctive stenting remains very low in this difficult segment. Long term follow up will definitely be needed for durability and patency. **Key Words:** Femoro-Popliteal Disease, JetStream™ Pathway device, Re intervention.