



Author Disclosures: M. Ferreira, COOK Medical; COOK Medical; L. Lanzotti, None; M. Monteiro, None.

SS18.

Ruptured Abdominal Aortic Aneurysm: The Harborview Experience-Part 2

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Objectives: Our institution treats between 30 and 50 patients per year with ruptured abdominal aortic aneurysm (rAAA) and our overall 30-day mortality between 2002 and 2007 averaged 60%. We sought to evaluate the effect on mortality of the implementation of an algorithm to manage these patients with a preference for endovascular aneurysm repair (EVAR) when feasible.

Methods: Patients presenting with rAAA between July 1, 2002 and June 30, 2007 served as retrospective controls. The treatment group consisted of patients presenting after July 1, 2007, who were treated with a structured protocol including early proximal control with an aortic occlusion balloon, permissive hypotension, and endovascular repair when possible. The primary outcome measure was 30-day mortality. Data were analyzed using Chi Square and Fisher's Exact Test where appropriate.

Results: The 30-day mortality for the 131 control patients was 60%. After implementation of the protocol, 50 patients with rAAA were managed. Eighteen (36%) underwent successful EVAR, and twenty-eight (46%) underwent open repair. Four patients (8%) received comfort care only. Three patients in the EVAR group (17%) and thirteen patients in the open group (46%) died during the follow up period for an overall 30-day mortality rate of 35% ($p=0.006$ vs 60% of controls). There was no difference in the incidence of hypotension on presentation (SBP<80mmHg) between control (65%) and treatment (61%) groups. In the treatment group, 28/46 (61%) presented with hypotension. The incidence of hypotension between open and EVAR patients did not differ in the treatment group. Average transfusion requirement for those undergoing EVAR was 1 unit (0-13) and for open repair, 8 units (0-19). The difference in transfusion requirement amongst survivors in each group was not different ($p=0.06$).

Conclusions: An algorithm using early proximal aortic control with a balloon catheter, permissive hypotension, and endovascular repair when possible reduced rAAA mortality by 40% (absolute risk reduction of 25%). Using this approach in a large, urban hospital, the majority of patients presenting with rAAA survived. Further reduction in mortality is expected as improvement in endovascular techniques allows treatment of more patients with complex aortic anatomy.

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SS19.

Implications of Endoleaks on Aneurysm Sac Pressures Following Endovascular Repair of Elective and Ruptured Aortic Aneurysms

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Purpose: To analyze the implications of endoleaks on sac pressures following endovascular aneurysm repair (EVAR) of elective and ruptured abdominal aortic aneurysms (AAA).

Methods: Since 2006, 480 patients underwent EVAR and simultaneous placement of the cardioMEMS Endosure® wireless pressure sensor in the excluded aneurysm sac for elective ($n=455$, 94%) and ruptured ($n=25$, 6%) AAA. Aneurysm sac pressures were measured prior and subsequent to completion of stentgraft placement, at 1 month, and every 6 months thereafter. Patients were also followed-up by CTA at 6-12 month intervals, and evaluated for the presence of endoleaks. All patients with type I endoleaks were treated at the time of diagnosis, patients with type II endoleaks at 6 months without decrease in aneurysm size were treated by coil embolization. The ratio of sac to systemic pressure was used to create a standardized pressure index for systolic pressures (SPI), diastolic pressures (DPI), mean (MPI), and pulse pressures (PPI).

Results: At postoperative time intervals ranging from 1 day to 24 months, in patients with No Endoleak ($n=364$, 76%), there were no significant differences in any of the mean pressure indexes, and all indexes decreased at 2 wks; SPI (0.09), DPI (0.2), MPI (0.12), and PPI (0.03). In patients with Type II Endoleak ($n=102$, 21%), there were marked elevations in all mean pressure indexes when compared to No Endoleak group. In this group, all indexes were higher than in patients without endoleak up to 6 months; SPI (0.30), DPI (0.46), MPI (0.38), and PPI (0.2). Treatment of Type II endoleaks lead to a significant reduction in these indexes; SPI (0.08), DPI (0.18), MPI (0.12), and PPI (0.02). Patients with Type I endoleaks had consistent elevation in all pressure indexes that approximated pre-exclusion aneurysm sac pressures; SPI (0.8), DPI (1.20), MPI (0.92), and PPI (0.42) and these indexes decreased significantly following treatment of the type I endoleaks. There was no difference in sac pressures in any group when comparing EVAR for elective vs. ruptured AAA.

Conclusions: Presence of Type I and II endoleaks can be predicted on by evaluating aneurysm sac pressures; the DPI and MPI are significantly elevated in presence of Type I and II endoleaks. Successful treatment of endoleaks can be predicted by decrease in aneurysm sac pressures.

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S4: SVS Plenary Session

SS20.

Asymptomatic Perioperative Myocardial Damage is Associated with Poor Long-term Outcome after Vascular Surgery

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Background: Cardiac troponin T (cTnT) release is a sensitive marker for myocardial injury and occurs frequently after vascular surgery. However, the prognosis of cTnT elevations without clinical symptoms and/or new electrocardiographic changes (asymptomatic cTnT release) is unknown.

Aim: To assess the long-term prognosis of vascular surgery patients who experience perioperative asymptomatic myocardial damage.

Methods: A total of 1545 patients undergoing elective vascular surgery were enrolled. Baseline characteristics and medication were noted. Routine sampling of cTnT and ECG recording was performed on day 1, 3, and 7 after surgery and at the day of discharge. Elevated cTnT was defined as serum concentrations ≥ 0.01 ng/ml. The mean follow-up was 3.7 years and mortality was noted.

Results: A total of 213 (14%) patients experienced asymptomatic cTnT release, median 0.08 ng/ml (IQR 0.04-0.20 ng/ml), while 71 (5%) patients had symptomatic cTnT release. During follow-up 304 patients (20%) died. Mortality was higher in patients with asymptomatic cTnT release compared to patients without cTnT release (13% vs. 40%; $p<0.001$, figure). After adjustment for risk factors and type and site of surgery, the association between asymptomatic elevated cTnT levels and increased late mortality persisted (adjusted HR 2.3; 95% CI 1.8-3.0) and risk increased with higher cTnT levels (HR 1.64 for every 0.10 ng/ml increase, $p=0.02$). Elevated cTnT had prognostic value irrespective of baseline creatinine value or renal dysfunction after surgery.

Conclusions: Asymptomatic cTnT release, without clinical symptoms or new ECG changes, is associated with an increased long-term mortality in patients undergoing vascular surgery.