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## SS22.

### Late Outcomes Following Open and Endovascular Repair of Blunt Thoracic Aortic Injury

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**Objectives:** Previous studies have focused on early outcomes of open (DTAR) and endovascular (TEVAR) repair for blunt aortic injury (BTAI). Late results remain ill-defined and are the focus of this report.

**Methods:** 108 patients (1992-2009) underwent repair for BTAI. Mean age was 38.7 years (74.1% male). DTAR was performed in 90, with left heart bypass (85) or hypothermic arrest (5). TEVAR was used in 18 of 44 treated since 2002. Since 1997, repair was selectively delayed in 53 of 74 treated in that interval. The primary outcome was vital status (100% followup, mean 100 months).

**Results:** Mean Injury Severity Score (ISS) was 39.5. 30-day mortality was 5.5% (6). Early morbidity included permanent spinal cord ischemia (2, 1.8%), stroke (3, 2.8%) and need for permanent dialysis (2, 1.8%). Independent predictors of a composite outcome of early mortality and these morbidities included age > 60 years ( $p = 0.007$ ) and elevated preoperative creatinine ( $p = 0.04$ ), but not type of repair ( $p = 0.39$ ) nor ISS ( $p = 0.37$ ). 10 yr Kaplan-Meier survival was 85.1%. Independent predictors of late mortality included age > 60 years ( $p = 0.02$ ), and the presence of diabetes ( $p = 0.04$ ). In a comparative analysis, the TEVAR group was older (DTAR 36.8 years vs TEVAR 48.2 years,  $p = 0.01$ ), more frequently had coronary artery disease (DTAR 3.3% vs TEVAR 22.2%,  $p = 0.01$ ), and a higher incidence of delayed repair (DTAR 69% vs TEVAR 89%,  $p < 0.001$ ). When stratified by age, there was no survival difference based upon repair type ( $p > 0.4$ ). Endograft collapse occurred in 1 necessitating endovascular reintervention. Freedom from aortic reintervention at 4 years was higher after open repair (DTAR 100% vs TEVAR 94%,  $p = 0.03$ ).

**Conclusions:** Repair for BTAI has excellent early and late results, regardless of therapeutic approach. Although TEVAR has an increased risk for reintervention, factors other than treatment strategy impact late survival. These data support the growing role of an endoluminal approach for BTAI in anatomically appropriate patients.

**Author Disclosures:** **G. M. Deeb:** Nothing to disclose; **M. Hemmila:** Nothing to disclose; **H. J. Patel:** WL Gore, Consulting fees or other remuneration (payment) Medtronic, Consulting fees or other remuneration (payment) Cook, Research Grants; **D. M. Williams:** WL Gore, Consulting fees or other remuneration (payment).

## VS 4.

### Video Presentation

#### Left Renal Vein Transposition for the Treatment of Nutcracker Syndrome

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**Background:** Nutcracker syndrome, defined as compression of the left renal vein between the superior mesenteric artery and the aorta leading to flank pain and hematuria, was first described in 1950. Additional symptoms may include a left-sided varicocele, pelvic congestion syndrome, and orthostatic proteinuria. The diagnosis is primarily clinical but relies on information obtained by axial imaging along with duplex and venography. Indications for treatment include significant hematuria, severe flank pain, and renal functional impairment. Treatment options include left renal vein transposition, transluminal angioplasty and stenting, renal autotransplantation, and nephropexy.

**Technical Description:** We present the case of a 23-year-old male who presented with a 9-month history of left flank pain and hematuria. He underwent an extensive work-up including CT, MR, duplex ultrasound, and venography. Based on these studies and his clinical presentation he was diagnosed with Nutcracker syndrome. He subsequently underwent open left renal vein transposition. He recovered well and was discharged on postoperative day 5. At one- and three-month follow-up, he had markedly diminished flank pain and no further hematuria. Duplex ultrasound demonstrated a widely patent left renal vein.

**Author Disclosures:** **D. Baril:** Nothing to disclose; **R. Chaer:** Nothing to disclose; **M. Makaroun:** Nothing to disclose; **P. Polanco:** Nothing to disclose.

## SS23.

### Minimal Aortic Injury: Which Patients Can Be Observed?

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**Objectives:** Increased utilization of CT angiography in the work-up of trauma patients has led to increasing diagnosis of Minimal Aortic Injury (MAI). The aim of this study is to review the outcomes of patients with Blunt Aortic Injury (BAI) that were treated nonoperatively at our institution over the past decade.

**Methods:** All patients admitted with BAI from Jan 1, 1999 to Dec 31, 2008 were identified from a review of medical records. Patients were then analyzed based on type of aortic injury, method of repair, ISS, morbidity, and mortality. Type of injury was determined by review of imaging and divided into the following categories: MAI - absence of "external aortic contour abnormality" (EACA) with small intimal injury < 10mm, Large Intimal Flap (LIF) - absence of EACA with intimal injury > 10mm),