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Objectives: Endovascular aortic repair has revolutionized the management of blunt aortic trauma. However, debate continues about the extent of injury requiring endovascular repair, particularly with regard to minimal aortic injury. Therefore, we conducted a retrospective observational analysis of our experience with these patients.

Methods: We retrospectively reviewed all blunt traumatic aortic injuries at an academic Level I trauma center over a ten-year period (2001-2010). Images were reviewed by a radiologist and graded according to SVS guidelines (Grade I-IV). Demographics, injury severity, and outcomes were recorded.

Results: We identified 214 patients with blunt injuries to the thoracic or abdominal aorta. 115 were deemed operative injuries at presentation and were excluded from analysis. The remaining 99 were observed. On presentation, 54 had minimal (Grade I or II) injury. Of these, 43 had follow-up imaging at a mean of 102 days postinjury and constitute our study cohort. Mean age was 39 years and mean length of stay was 16 days. Forty-one patients (95%) had Grade I injury (intimal flap) and two patients had Grade II injury (medial hematoma). Forty (93%) were thoracic aortic injuries and the remaining were abdominal. On follow-up imaging, 23 of 43 (54%) had complete resolution of injury, 18 (42%) had no change in aortic injury, and two (5%) had progression (enlargement) of injury. Of the 2 patients with progression, one progressed from Grade I to Grade II and one progressed from Grade I to Grade III (pseudoaneurysm). Mean time to progression was 16 days. Neither of the patients with injury progression required operative intervention. No patients were operated on or died from a grade I or II aortic injury.

Conclusions: Injury progression in Grade I-II blunt aortic injury is rare (~5%) and did not cause death in our study cohort. Since progression to Grade III injury is possible, follow-up with repeat aortic imaging is reasonable.

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SS19.

Validating Common Carotid Artery Stenosis by Duplex Ultrasound With Carotid Angiogram or Computed Tomographic Angiography Scan

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Objectives: No consensus exists for duplex ultrasound criteria in diagnosing significant common carotid artery (CCA) stenosis. In general, peak systolic velocity (PSV) >150 cm/s with poststenotic turbulence indicates a stenosis >50%. The purpose of our study is to correlate CCA duplex velocities with angiographic findings of significant CCA stenosis >60%.

Methods: We reviewed the carotid duplex records from 2008-2011 looking for patients with isolated CCA stenosis and no ipsilateral internal or contralateral carotid artery disease who either received a carotid angiogram (CA) or a computed tomographic angiography (CTA). We identified 25 patients who had CCA stenosis >60%. We also randomly selected 74 controls with no known CCA stenosis. We performed receiver operating characteristics (ROC) analysis to correlate PSV and end-diastolic velocity (EDV) with angiographic stenosis >60%. The degree of stenosis was determined by measuring the luminal stenosis in comparison to the proximal normal CCA diameter just below the lesion.

Results: Most patients had a carotid angiogram (17/25), four had a CTA only and four had both. Eighteen patients had history of a radiated neck. Eighteen patients were treated with a stent, three with endarterectomy and four with medical management. The CCA PSV > 250 cm/sec had a sensitivity of 100% (81.5%-100%) and a specificity of 98.7% (92.0%-99.9%), The CCA EDV > 60 cm/sec had a sensitivity of 95.5% (75.1%-99.8%) and specificity of 100% (94.1%-100%). The presence of both PSV <250 and EDV <60 cm/sec had a 100% negative predictive value, and the presence of both PSV ≥250 and EDV ≥60 had 100% positive predictive value.

Conclusions: Establishing CCA duplex criteria to screen patients with significant stenosis is crucial to identify those that will need further imaging modality or treatment. In our lab, CCA PSV > 250cm/sec and EDV > 60cm/sec are thresholds that can be used to identify significant (>60%) CCA stenosis with a high degree of accuracy.

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S5: SVS Plenary Session V

SS20.

Patency of Forearm and Upper Arm Hemodialysis Arteriovenous Grafts: Does Configuration or Location Matter?

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Objectives: Arteriovenous grafts (AVG) are used in hemodialysis patients when autogenous fistulas are not feasible. The optimal location (forearm vs upper arm) and configuration (loop vs straight) of AVG is not known. To evaluate relationships between AVG location or configuration and patency we conducted subgroup analyses among participants enrolled in a randomized, placebo-