**Abstract Body:**

Objectives: Takayasu’s arteritis (TA) is a rare inflammatory arterial disease that may compromise brain perfusion when supra-aortic vessels are involved. Aorto-bicarotid bypass is rarely indicated and performed; and its clinical and hemodynamic impact has not well studied. We aim to examine the hemodynamic changes in the intracranial vasculature observed during Transcranial Doppler (TCD) evaluation in two subjects following both hemispheres revascularization.

Methods: Two female patients with history of TA with symptomatic bilateral carotid occlusive disease who underwent aorto-bicarotid bypass at the age of 32 and 35 were evaluated with TCD (Figure 1). The imaging evaluation was completed in one case pre-and postoperatively (Patient 1), and postoperatively in the second case 20 years after the surgical reconstruction (Patient 2).

Results: Following the complex revascularization procedures, both patients experienced significant clinical improvement, with a Modified Rankin Scale of "3" at 3 months and "0" at 20 years respectively. In patient 1, preoperative magnetic resonance angiography (MRA) revealed complete occlusion of supra-aortic vessels, and TCD showed blunted spectrum with decreased pulsatility of intracranial arteries. Twenty-four hours after revascularization this study showed improvement of velocity spectrum in anterior and middle cerebral arteries and restoration of antegrade flow in the left middle cerebral artery in the territory of a previous infarction (Figure 2). In patient 2, MRA demonstrates patent grafts and intracranial vessels, while TCD confirms normal spectral flows in anterior and middle cerebral arteries.

Conclusions: A comprehensive evaluation of intracranial circulation with TCD may assist in understanding cerebral hemodynamics in TA patients and in determining risks and benefits of performing revascularization procedures. Aorto-bicarotid bypass is deemed to be safe and effective in carefully selected patients with perfusion deficits in both cerebral hemispheres.