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THE INFLUENCE OF ILIAC ARTERY OCCLUSION ON CENTRAL BLOOD PRESSURE AND AUGMENTATION INDEX AT THE ASCENDING AORTA

Poster Contributions
Hall C
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Authors: *Kojiro Miki, Kenichi Fujii, Masashi Fukunaga, Hiroto Tamaru, Takahiro Imanaka, Mitsumasa Ohyanagi, Tohru Masuyama, Hyogo College of Medicine, Nishinomiya, Japan*

Background: Central blood pressure and augmentation index (AI) are surrogate indicators of systolic arterial load to left ventricle, which results in deteriorated left ventricular relaxation. We hypothesized that vessel occlusion of the iliac artery has negative influence on central hemodynamic parameters.

Methods: Thirteen patients who underwent endovascular therapy (EVT) for isolated iliac artery lesions were enrolled. The ascending aortic pressure waves were obtained using a 5Fr catheter immediately after successful EVT with stent implantation and during balloon occlusion of the iliac artery. From the pressure waveforms at the ascending aorta, AI and central hemodynamic parameters were calculated. AI was calculated as augmented pressure divided by central pulse pressure (Figure).

Results: Central systolic pressure and AI at the ascending aorta measured immediately after EVT were significantly lower than those measured during balloon occlusion of the iliac artery (169.0±27.5 vs. 178.4±28.1 mmHg, $p<0.01$, and 0.32±0.16 vs. 0.35±0.17, $p=0.02$, respectively). In 5 patients, who had chronic total occlusion of the iliac artery, pre- and post-procedural AIs were measured, and it showed that post-procedural AI decreased from 0.39±0.11 to 0.30±0.06.

Conclusion: Temporal vessel occlusion of the iliac artery has negative influence on central hemodynamic parameters. EVT for totally occluded iliac artery lesions may improve left ventricular relaxation for patients with peripheral artery disease.

Figure. A Representative Case
Waveforms at Ascending Aorta Immediately After EVT and During Occlusion