Pulsatile Flow Analysis of the Femoral Artery

To the Editor:

We read with great interest the article, “Pulse Pressure Amplification, Arterial Stiffness, and Peripheral Wave Reflection Determine Pulsatile Flow Waveform of the Femoral Artery” by Hashimoto et al., studying the correlation between reverse diastolic blood flow and increased arterial stiffness in the femoral artery. The authors emphasize the importance of pulsatile flow shear stress on the arterial endothelium and suggest possible clinical implications of retrograde flow impact on visceral perfusion. In this study, flow velocities were measured using Doppler ultrasound equipment, and 3 parameters were established by the authors for the assessment of the pulsatile flow components and their correlation with the pressure pulse wave analysis results. However, frequently used indexes for the analysis of Doppler velocities, such as Pulsatility Index, were not calculated. Particularly, Pulsatility Index (peak-to-peak sonogram waveform/mean height over one cardiac cycle or systolic forward maximum peak velocity − reverse minimum peak velocity/time-averaged mean velocity) was specifically designed to study vessels that present retrograde flow. Pulsatility Index is automatically calculated by built-in software of most Doppler equipment and can be calculated manually from the results presented in the Hashimoto et al investigation. Given the importance and the clinical perspectives suggested by the correlation between arterial stiffness and retrograde flow, we believe it is of great interest to analyze the results with a validated index used in daily practice.

Disclosures

None.

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