Letter by Pristipino and Hamon Regarding Article, “Cerebral Microembolism During Coronary Angiography: A Randomized Comparison Between Femoral and Radial Arterial Access”

To the Editor:

We read with interest the article by Jurga et al reporting the results of a small randomized study in which the main finding is the higher incidence of particulate microemboli after right transradial access as compared with transfemoral access.

We think that the results of the study should be interpreted with caution for the following reasons.

First, transradial catheterization is a challenging technique requiring a steep learning curve and a high volume of procedures to maintain the procedural performance. Indeed, the duration and outcomes of radial procedures may significantly differ according to the expertise of operators. The marked difference in fluoroscopy times between radial and femoral procedures reported in this analysis contrasts with recent findings even more strikingly because only diagnostic procedures were included and casts doubts on the effectiveness of the adopted radial techniques. In keeping with this hypothesis also stands the high rate of crossover and converted procedures to femoral access. Therefore, more expert and/or higher-volume radial operators might have yielded different results with shorter times of catheter manipulation and hence possibly in lower microemboli incidence.

Second, the study was performed only through the right radial artery. It should be considered that accessing the heart through the left radial artery might have reduced the incidence of cerebral microemboli because the right carotid artery originates from the brachiocephalic trunk, thus leading to its greater exposure to particulate microemboli. This conjecture is supported by the higher incidence of microemboli detected in the right versus the left middle cerebral artery in this study.

Third, periprocedural differences in antiplatelet treatments and several individual technical aspects independent of the arterial route (such as guiding catheter size, the number of catheters used per patient, the use of exchange wires, or the amount and number of saline flushing through the catheters) may have significantly influenced the formation of microparticles, but unfortunately, these data were not considered in the study. All the described reasons might have biased the results, particularly in a study in which the radial procedures were longer than those performed through the femoral artery and only a control for those variables could clarify the study outcomes. Moreover, as mentioned by the authors, systematic microembolism is detected for all left cardiac catheterizations, but only a minority develops silent cerebral injury as detected by diffusion-weighted MRI.

Taking these considerations together, we think that the results of this study cannot be generalized and larger controlled studies, ideally using diffusion-weighted MRI, are needed to elucidate the relevance and implications of microembolism detected by transcranial Doppler and its relationship to arterial access.

Disclosures

None.

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