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I read with interest the article by Geers et al[1] regarding the differences in estimated flow between CT angiography and 3D rotational angiography (3DRA). In that study, the authors noted almost a 50% difference in calculated mean wall shear stress between the 2 imaging modalities in a series of 10 patients. The remarkable variability in output as a function of imaging technique alone is enough to cast doubt on the utility of parameters such as wall shear stress in computational fluid dynamics (CFD) research. However, the authors never shared with us perhaps the most relevant imaging question of all: What is the "truth?"

The article never mentions which of the 2 imaging studies is considered the standard of reference, so we have no idea which of the 2 outputs we should trust. While I may be misreading the literature, it is my sense that most CFD researchers inherently trust 3DRA as the imaging technique with the highest fidelity. That would be incorrect, however, because the reconstructed 3DRA image is itself just a computer programmer's rendition of the truth. Indeed, it is well known to experienced interventionalists that the 3DRA should not be trusted, especially when defining the aneurysm neck, because the reconstructed image systematically overestimates neck breadth compared with 2D digital subtraction angiography (DSA) (Fig 1).[2] I would like to go out on a limb and claim that the 2D image is the truth until proved otherwise.

In short, the authors have done an excellent job of raising further doubt about the clinical utility of CFD but have unfortunately failed to point us in the direction of the truth.

References

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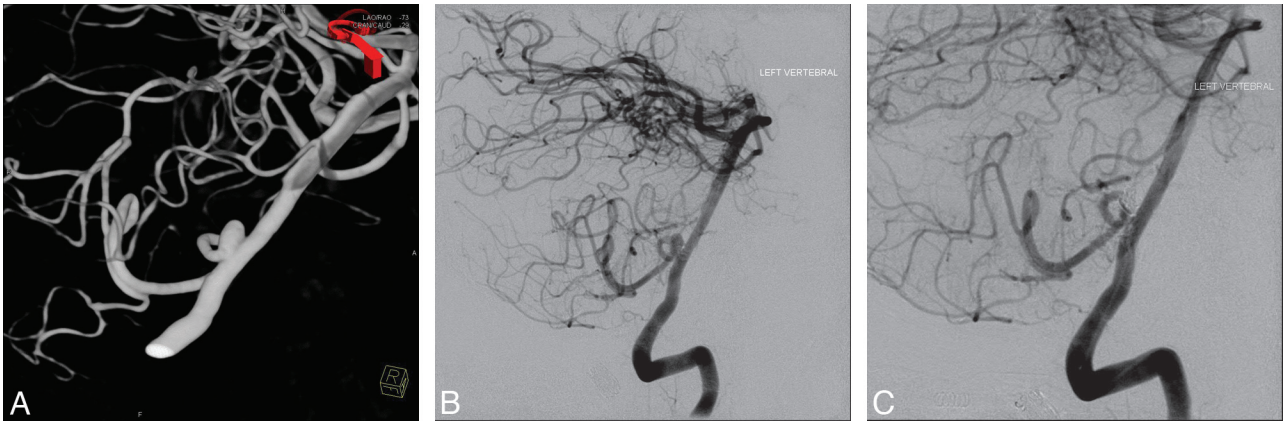

Fig 1. *A,* 3DRA of the left vertebral artery shows an apparent wide-neck posterior inferior cerebellar artery aneurysm. *B,* 2D DSA of the left vertebral artery in the same projection as the 3DRA in *A* shows a cleavage plane distally between the aneurysm and vertebral artery, suggesting that the aneurysm is narrow- rather than wide-neck. *C,* Postcoil embolization DSA confirms that the neck is accurately depicted by the 2D DSA in *B,* because the embolization was performed without an assist device and the coils remain contained distally.