

## Imaging Classification and Treatment of Spontaneous Intracranial Fusiform and Dissecting Aneurysms



### LETTER:

We read with great interest the article by Zhang et al.<sup>1</sup> titled “Endovascular Treatment of Spontaneous Intracranial Fusiform and Dissecting Aneurysms: Outcomes Related to Imaging Classification of 309 Cases.” We appreciate the authors’ attempt to try to classify an unusual and diverse (rather black spot) pathology, i.e., various forms of dilations of intracranial artery segments, in a single setting. Unlike Zhang et al., we do not include intracranial artery wall dissections within the category of intracranial aneurysms.

Most intracranial aneurysms (IAs) are saccular pouches that develop during life on the branching sites of intracranial arteries. The “true” fusiform IAs, as we understand them, spontaneous, nontraumatic dilations of intracranial artery segments, are unusual in neurosurgical IA databases.<sup>2,3</sup> The dissection of intracranial artery wall, separation of the artery wall layers by intraluminal blood, whether spontaneous or traumatic, also may cause dilation of the external surface, but it is a much quicker and different process than the slow formation of the “true” fusiform IAs.<sup>4,5</sup> How often our “true” fusiform IAs are “healed” end stages of dissection, whether clinical or incidental, remains to be shown.

The elongation and tortuosity of the artery trunk are other processes to be considered.<sup>6,7</sup> Dolichoectasia is used to characterize arteries throughout the human body with significant elongation and distension. In IAs, dolichoectasia is seen most often in the vertebrobasilar complex, occasionally in the internal carotid artery. Dolichoectasia may associate to aortic aneurysms.<sup>8</sup> Dilation, elongation, and tortuosity of artery trunks also may be associated with a variety of predisposing genes.

Very large and international databases should be combed for dilated, elongated, or tortuous intracranial arteries to make sense of one of the remaining microsurgical/endovascular black spots. We suggest that the intracranial artery wall dissections, with or without fusiform dilation of the artery wall, are kept separate from the “true” fusiform IAs and dolichoectasias, as the 2 latter do not seem to include the process of arterial wall layer dissection.

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