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### *Reply:*

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## REPLY:

We would like to thank Drs Rajagopal and Sharma for their interest in our letter “Common Origin of Brachiocephalic and Left Common Carotid Arteries: Proposal of New Terminology.”<sup>1</sup> We are glad they agree that the term “bovine” is a misnomer and should no longer be used to describe a very common variation in the normal human anatomy. However, there are a few points in their comment that are worth further discussion.

First, in their attempt to explain the embryology of the brachio-bicephalic trunk, they included a theory based on the persistence of the fifth embryonic arch and the involution of the fourth arch between the left common carotid and left subclavian arteries. This theory is not widely accepted on the basis of the rarity of the persistent fifth arch in contrast to the common occurrence of the brachio-bicephalic trunk.<sup>2</sup> The embryologic development of the brachio-bicephalic trunk was not in the scope of our original letter; however, there are other simpler and more reasonable theories based on slower growth of the ventral aortic roots between the third and fourth arches or arrested bifurcation of the aortic sac allowing fusion between the brachiocephalic and left common carotid arteries.<sup>3,4</sup>

Second, they described the “bi-carotid” trunk as a brachio-bicephalic trunk in which the right subclavian artery has an aberrant origin from a bulbous dilation from the proximal descending thoracic aorta (the Kommerell diverticulum). We would like to further explain that the bi-carotid trunk denotes a common trunk for both carotid arteries and separate origins of the subclavian arteries. Thus, the right subclavian artery may arise in its original location as the first aortic arch branch<sup>5</sup> or arise as the last branch from the aorta

as an aberrant right subclavian artery. Moreover, the current understanding is that an aberrant right subclavian artery is not necessarily associated with a Kommerell diverticulum.

Finally, the prefix “bi-” has, unsurprisingly, more than 1 meaning.<sup>6</sup> In our suggested terminology, the intended meaning is “both sides”; hence, the term brachio-bicephalic trunk refers to a trunk for a brachial artery and 2 arteries for both sides of the head. Moreover, the term is short and is similar to the original brachiocephalic term.

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