

Langer's arm arch: Unifying Concepts

Response to the letter to the editor

by Georgi P. Georgiev & Lyumboir Gaydarski.

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To begin with, we would like to acknowledge the reviewer for those compelling suggestions, and for raising such interest in this research. We will gladly proceed to clarify each one of your concerns.

In this article we refer to the Langer's arm arch (LAA) as "a supernumerary musculo-tendino-fascial structure connecting two or more muscles that make up the boundaries of the axillary fossa, usually from the latissimus dorsi muscle to the to the lower fibers of the pectoralis major muscle" based on what is described by the following authors: Macalister (1889), Piñero et al. (1975) and Ortiz et al. (2009).

Even though we inquired into the original description of Karl Langer Ritter von Edenberg's in 1846 in order to delineate some historical facts, the purpose of this article was by no means to distrust it, rather to describe the LAA based on more recent investigations.

As regarding this, we consider unnecessary to give Langer's arm arch a different name, since there already exist a diverse number of terms to refer to the same anatomical structure, which

might end up leading to greater confusion. In fact, the article written by Jeleu et al. (2007) claims that: "In conclusion, from the text above, we can consider synonyms for description of the variant muscular structure in the axilla, to be all of the following terms: "axillary arch", "muscular axillary arch", "axillary arch muscle", "Langer's axillary arch", "Langer's muscle", "axillopectoral muscle". Certifying this point, we preferred to unify concepts and named the muscular arch shaped variation found on our cadaveric preparations, simply "Langer's axillary arch".

Moreover, we quote Alexander Ramsay, who was actually the first one to find the LAA in 1795 and published it in 1812 (Ramsay, 1812): "In the year 1795, I discovered a transverse muscle of the axilla, which may account for the liability of some subjects to swelling of the axillary glands on occasions of violent exertion. This body is composed of an oblong muscle, stretched from the pectoral muscle to the latissimus dorsi and teres major, which, in its violent contractions, must prove inconvenient to the axillary arteries, veins, and nerves, which lie within this muscle". We find it significant to emphasize that Ramsay refers to

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Langer's arm arch as an "oblong muscle" and not as a "fibrous thickening of the medial border of the axillary fascia".

According to what was mentioned about "Kaplan's anastomosis" being a misnomer, we agree that the word "anastomosis" must be used to refer to connections with hollow structures. Nevertheless, we chose to use "Kaplan's anastomosis" as the title of this article because it was how Kaplan originally mentioned it. However, it is clarified within the article that the variation is a neural communication (line 19, page 3).

To conclude, we would like to emphasize the original object of this research, which was to show the unusual bilateral coexistence of two anatomical variations on the upper limb.

Once again, we appreciate your observations and the great interest shown in this article. We will consider your advice to improve our future investigations.

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