

Clarification on the term Langer's arch

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Re: Axel O. Colombo, Sofia Funes, Agustina Medin, Tomás Ferré, Juan M. De Zan, Mariana Bendersky. Coexistence of bilateral Langer's arm arch and Kaplan's anastomosis: a case report and literature review. *Eur J Anat*, 28 (2): 261-267 (2024). <https://doi.org/10.52083/ETTH6352>.

We have read with great interest the article titled "Coexistence of Bilateral Langer's Arm Arch and Kaplan's Anastomosis: A Case Report and Literature Review" by Colombo et al. (2024). The paper provides a compelling examination of the coexistence of Langer's arm arch (LAA) and Kaplan's anastomosis (Colombo et al., 2024). While we commend the authors for their valuable contributions, we would like to offer some comments and suggestions for further consideration.

The authors describe a bilateral supernumerary muscular fascicle they term "LAA." On the right side, this structure extends from the latissimus dorsi to the coracoid process and the conjoined tendon of the biceps brachii and coracobrachialis muscles. On the left side, it extends similarly but also attaches to the distal part of the pectoralis major muscle. We believe that this muscular variation may have been misidentified as LAA. Karl Langer Ritter von Edenberg's original description in 1846 referred to "Langer's arch" as a fibrous thickening of the medial edge of the axil-

lary fascia, located between the pectoralis major and latissimus dorsi muscles (Langer, 1846). In a sequel of this article, Langer investigated muscular fibers inserting at or encircling the connective tissue "Achselbogen" (Langer, 1846).

In contrast, Colombo et al. (2024) description of "LAA" as a supernumerary musculo-tendino-fascial structure extends beyond Langer's original concept of a fibrous thickening. The term "Achselbogen" was explicitly used by Langer to describe a fibrous thickening rather than a more complex structure involving muscular and tendinous components. For historical accuracy, the term "Langer's arch" should be reserved for the fibrous thickening described by Langer (Langer, 1846). The more complex structure presented in the publication might benefit from a different term to avoid confusion with Langer's original description. It is essential to clarify Langer's original description in his 1846 work, "Zur Anatomie des Musculus Latissimus Dorsi," where he identified a fibrous thickening, not a musculo-tendino-fascial structure (Langer, 1846). Thus, "Langer's arch" should specifically refer to this fibrous thickening (Georgiev, 2020; Georgiev et al., 2023; Georgiev, 2024; Georgiev and Tubbs, 2024).

Furthermore, while Colombo et al. (2024) referenced the classification of LAA proposed by Bo-

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nilla-Sepúlveda et al. (2021), they did not address other significant classifications. For example, Testut (1884) categorized the axillary arch (AA) into “complete” and “incomplete” forms. Corning (1911) introduced the terms “Langerscher Arm-bogen” and “Langerscher Achselbogen.” Eisler (1912) refined this with “Latissimus Achselbogen” and “pectoraler Achselbogen.” Von Lanz and Wachsmuth (1935) used “Pectoralisachselbogen” and “Latissimusachselbogen.” Takafuji et al. (1991) expanded the classification to eight types based on form and nerve supply. Bonastre et al. (2002) conducted a comprehensive literature review of the cases available at that time. JeleV et al. (2007) categorized the AA into “superficial” and “deep” forms. Das et al. (2024) proposed a novel classification, dividing the LAA into six types based on its origin, insertion, and whether it compresses the axillary vessels and nerves. Including these classifications in their review would have provided a more comprehensive understanding of the variations associated with Langer's arm arch. Finally, we would like to clarify that the term “Kaplan's anastomosis” is a misnomer, as it refers to a neural connection rather than an actual anastomosis. The term “anastomosis” should be reserved exclusively for connections between hollow structures.

In conclusion, we would like to emphasize that the purpose of this letter is not to criticize or reprimand but to offer constructive feedback regarding the incorrect application of the term “Langer's AA.” Mislabeling this anatomical structure could confuse readers and hinder future research. When feasible, authors conducting anatomical studies must consult classical anatomical texts thoroughly, including those in non-native languages. Anatomy has a rich historical background; many variations were documented long before our current understanding. Ensuring accuracy in terminology is crucial to advancing knowledge and preventing misunderstandings in anatomical research.

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