



## Response to article: “Unusual anatomical variation: tetrafurcation of the coeliac trunk”

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To the Editor, *Surgical and Radiological Anatomy*

We read Grigoriță et al.’s case report “Unusual anatomical variation: tetrafurcation of the celiac trunk” [1]. They report a coeliac trunk giving rise to a common inferior phrenic artery and an accessory left gastric artery before bifurcating into a common hepatic artery and a splenogastric trunk. The terminology they use causes confusion, as they do not distinguish between the two meanings of the *splenogastric trunk*. One refers to a common trunk for the splenic and left gastric arteries, with the common hepatic arising elsewhere and the second refers to a variation in the order of branching of the complete coeliac trunk.

A complete coeliac trunk is defined as a common trunk for the left gastric, common hepatic and splenic arteries independent of the superior mesenteric artery. It can be subdivided on the basis of its branching pattern. Classical branching of the coeliac trunk is described when all three branches leave from the same point. Non-classical branching is described when one branch leaves before the other two and can be subdivided depending on which branch leaves first [4]. It leads to confusion when subtypes of the non-classical coeliac trunk are referred to as “splenogastric, hepatosplenic, and hepatogastric trunks”, as these terms more commonly refer to incomplete coeliac trunks, which arise when one of the three main branches of the coeliac trunk arises from the aorta, superior mesenteric artery or is absent. We suggest instead using the terms “hepatic type”, “gastric type” and “splenic type”, for the subtypes of the

non-classical coeliac trunk, in reference to which artery leaves the trunk first, and we recommend to define these terms in the anatomical nomenclature.

The findings in the report should be presented as a complete coeliac trunk with non-classical branching and two collateral branches: a common inferior phrenic artery and an accessory left gastric artery. When the distal left gastric artery is considered to be accessory the case should be described as a normal coeliac trunk with “gastric type” branching, which is in the most common branching order reported in the literature [5]. When the proximal left gastric artery is considered to be accessory the trunk can have the “hepatic type” of branching, which is much less common. The diameters of two left gastric arteries could have been used to determine which one was accessory, but this information was not given.

Accessory left gastric and inferior phrenic arteries arising from the coeliac trunk have been described in the literature and are not uncommon. In Michels’ seminal work on the upper abdominal organs accessory left gastric arteries arose from the coeliac trunk in 4 of 200 cases (2%) [3]. Loukas et al. [2] reported inferior phrenic arteries originating from the coeliac trunk in 163 out of 300 cadavers (54%), including 12 common inferior phrenic arteries and 111 cases of bilateral origin of left and right inferior phrenic arteries. Thus, it is debatable whether inferior phrenic arteries arising from the coeliac trunk should be considered variant.

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