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Letter to Editor

## Displaced gastroduodenal artery with trifurcation into displaced right and left hepatic arteries and displaced right gastric artery – Unique anatomy

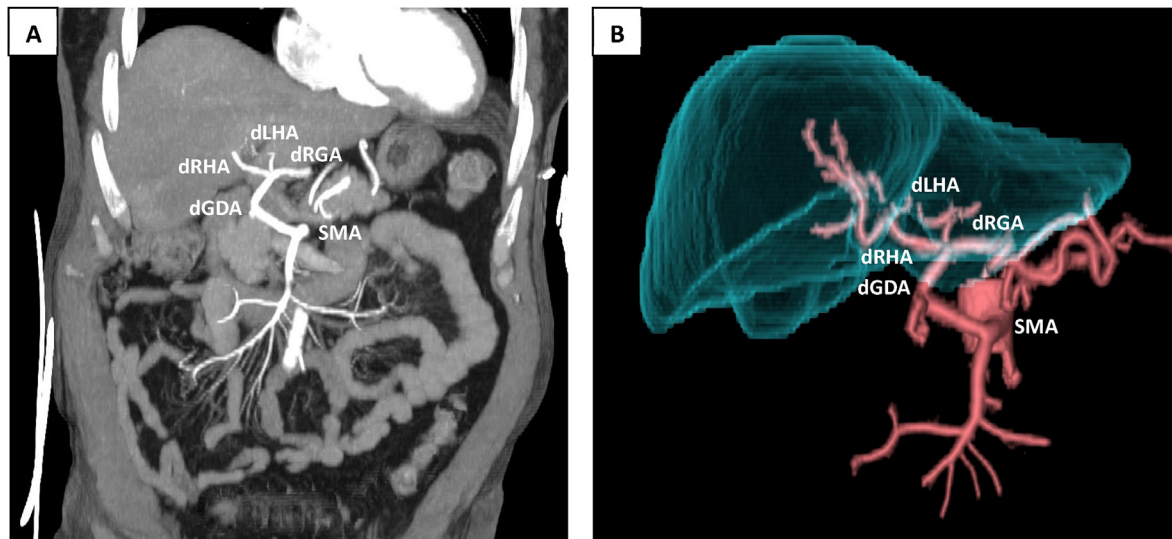
To the Editor,

The most common hepatic arterial variations include accessory or displaced right hepatic artery (dRHA), which arises from the superior mesentery artery (SMA), and accessory or displaced left hepatic artery (dLHA), which arises from the left gastric artery.<sup>1</sup> There are only three presented cases with displaced gastroduodenal artery (dGDA) in the literature, which branched off to the right or accessory hepatic artery.<sup>2–4</sup> We reported a case of dGDA, which branched off to dRHA, dLHA, and the displaced right gastric artery (dRGA). To the best of our knowledge, this is the first case in the literature with such an arterial anomaly.

During the liver procurement, it was noted that the common hepatic artery, arising from the coeliac trunk, was absent and the coeliac trunk only branched into the splenic artery and a small left

gastric artery. No accessory or dRHA, and no accessory or dLHA were detected. A prominent artery originating posterosuperiorly from the first part of the duodenum was identified, forming a trifurcation: two branches to the liver hilum and one – along the lesser curvature of the stomach. No additional arteries were observed within the hepatoduodenal ligament. Upon reassessing previous computed tomography (CT) imaging, it was interpreted as the dGDA emerging from the SMA, trifurcating into the dRHA, dLHA, and dRGA (Fig. 1). The liver was procured while preserving the distal segment of dGDA and its trifurcation. This arterial anomaly did not influence liver transplantation.

In conclusion, hepato-pancreato-biliary surgeons must be especially aware of the possible upper gastrointestinal tract vascular variations.



**Fig. 1.** Atypical anatomy of liver arteries: A – in computed tomography (CT) angiography, B – in 3D CT angiographic image. SMA – superior mesentery artery, dGDA – displaced gastroduodenal artery, dRHA – displaced right hepatic artery, dLHA – displaced left hepatic artery, dRGA – displaced right gastric artery.

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**Declaration of competing interest**

The authors declared no competing interests.

**Appendix A. Supplementary data**

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.asjsur.2024.09.095>.

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