

An uncommon anatomic variant of visceral arteries

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Section: Cardiovascular

Area of Interest: Abdomen Arteries / Aorta Vascular

Abdominal wall

Procedure: Normal variants

Imaging Technique: CT

Imaging Technique: Catheter arteriography

Special Focus: Congenital Case Type: Anatomy and Functional Imaging

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Patient: 72 years, female

Clinical History:

A 72-year-old woman with acute upper gastrointestinal bleeding (haematemesis) and pancreatic head cancer.

Imaging Findings:

1. A single arterial trunk arising directly from the aorta bifurcates early and gives both cranially- and caudally-oriented branches.
2. One of the cranial branches follows a curved pathway running counterclockwise from the left towards the right upper quadrant (arrows in Figure 4).

Discussion:

The most prominent anomaly seen is a single arterial trunk arising directly from the aorta and bifurcating early into a cranial and a caudal branch, respectively the celiac trunk (cranially oriented) and the superior mesenteric artery (SMA) (caudally oriented). This trunk is thus a celiomesenteric trunk, an anatomic variant (incidence estimated in the 0.25-2.7% range) [1-2]. Rarely, a celiomesenteric may share a common aortic origin with a renal trunk [3].

The presence of a celiomesenteric trunk has been associated with aneurysms and with median arcuate ligament compression [2]. Thrombosis of the celiomesenteric trunk may also occur and cause severe, life-threatening intestinal ischaemia involving the liver, spleen, and from the stomach up to the transverse colon [4]. The extent and consequences of intestinal ischaemia might be mitigated depending on whether the middle colic artery is absent and thus not connected to the celiomesenteric trunk [5]. In the present case, the middle colic could be visualised on selective contrast injections of the celiomesenteric trunk branches (Figure 4).

A second anatomic variant is also present in this case (Figure 5): the left gastric artery (straight red arrow) continues counterclockwise as a replaced left hepatic artery (curved yellow arrows) (incidence: 3-11%).

Differential Diagnosis List: 1. Celiomesenteric trunk. 2. Replaced left hepatic artery., Celiomesenteric and renal

trunk [5], Middle mesenteric artery [6], Splenomesenteric trunk

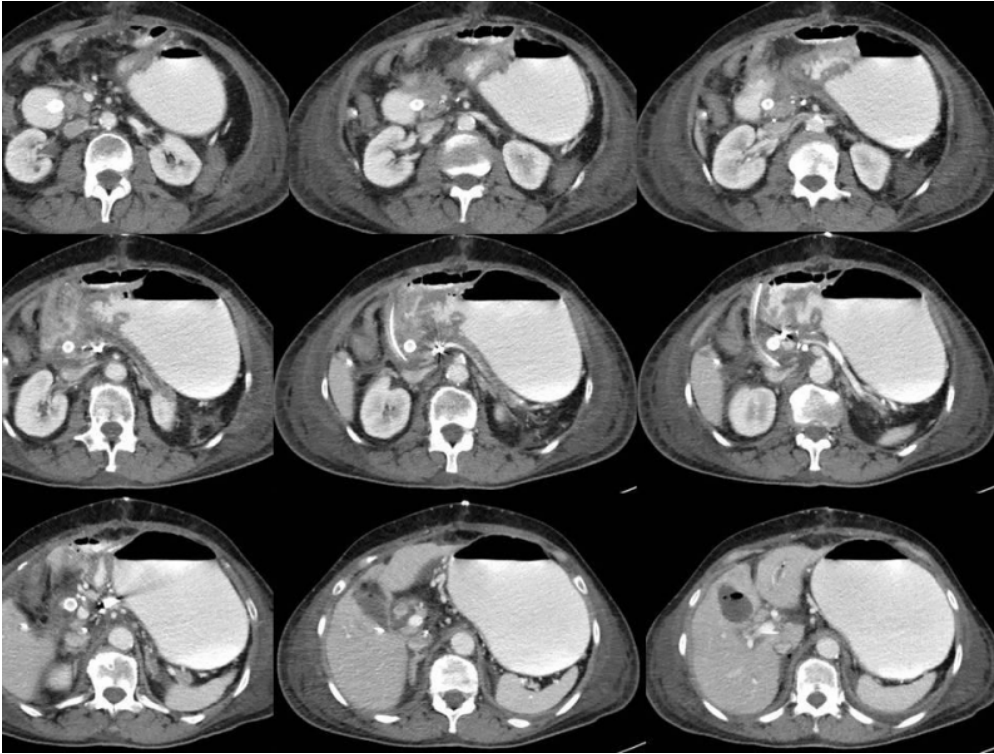
Final Diagnosis: 1. Celiomesenteric trunk. 2. Replaced left hepatic artery.

References:

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- Sarlon-Bartoli G, Magnan PE, Lépidi H, Bartoli MA. (2014) Celiomesenteric and renal common trunk associated with distal thoracic aorta coarctation and three saccular aneurysms. J Vasc Surg 59(5):1432. (PMID: [24767274](#))
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- Dewitt RC, Cooley DA. (2004) Celiomesenteric trunk compression and absence of collateral vessels in the large intestine--a case report. Vasc Endovascular Surg 38(5):461-3. (PMID: [15490045](#))

Figure 1

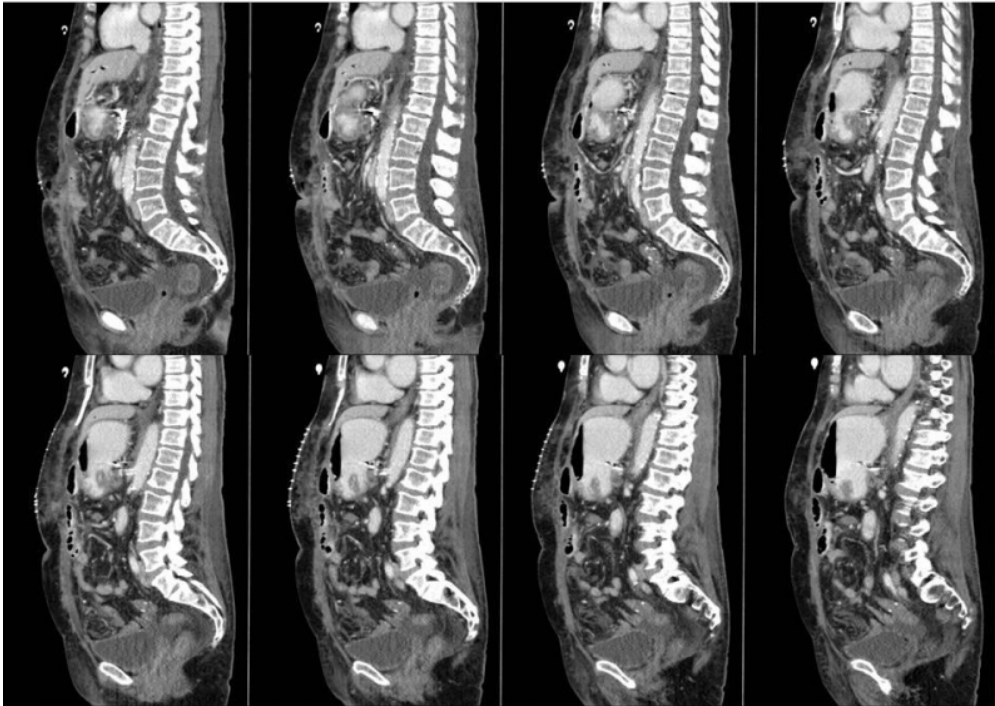
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Description: Axial slices from abdominal CT scan examination **Origin:** Dept. of Diagnostic Radiology & Nuclear Medicine, University of Maryland Medical Center, Baltimore, MD, USA

Figure 2

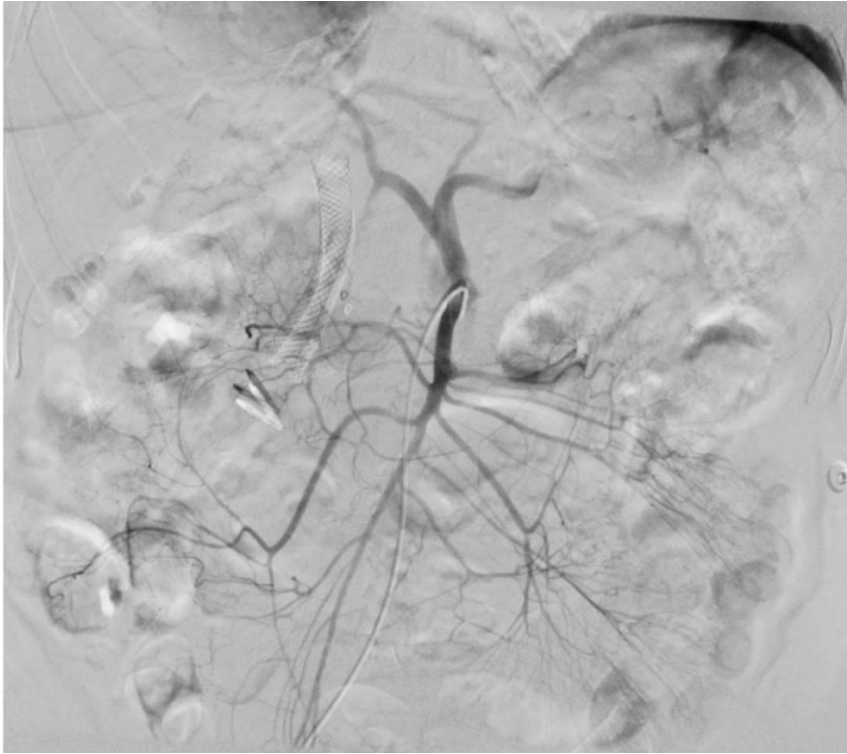
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Description: Abdominal CT scan, sagittal slices **Origin:** Dept. of Diagnostic Radiology & Nuclear Medicine, University of Maryland Medical Center, Baltimore, MD, USA

Figure 3

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Description: Digital subtraction arteriogram (DSA) **Origin:** Dept. of Diagnostic Radiology & Nuclear Medicine, University of Maryland Medical Center, Baltimore, MD, USA

Figure 4

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Description: Digital subtraction arteriogram (DSA), annotated **Origin:** Dept. of Diagnostic Radiology & Nuclear Medicine, University of Maryland Medical Center, Baltimore, MD, USA

Figure 5

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Description: Middle colic artery **Origin:** Dept. of Diagnostic Radiology & Nuclear Medicine, University of Maryland Medical Center, Baltimore, MD, USA