

Celiacomesenteric trunk: A rare case

Cihat Tek, Sonay Aydın, Elif Ergün, Pınar Nercis Koşar

Department of Radiology, Ankara Training and Research Hospital, Ankara, Turkey

ABSTRACT

We present a case of celiacomesenteric trunk that was incidentally detected on routine multi-detector row computed tomography angiography of lower extremities. A 59-year-old patient had intermittent claudication. The celiacomesenteric trunk is a rare vascular variation that is important to be detected before surgical and interventional procedures. Multi-detector row computed tomography angiography is excellent on showing vascular anatomy, pathology and variations.

Eur Res J 2018;4(3):248-250

Keywords: Celiacomesenteric trunk, celiac trunk, superior mesenteric artery, mesenteric vascular variation, multi-detector computed tomography angiography

Introduction

The celiac trunk and superior mesenteric artery are the most important visceral branches of abdominal aorta, supplying nearly total blood flow for gastrointestinal tract. The celiac trunk generally originates from ventral part of abdominal aorta at the level of 12th thoracic vertebrae and branches off the left gastric, common hepatic and splenic arteries. The superior mesenteric artery generally arises at the level of first lumbar vertebrae, about 1 centimeter below the origin of the celiac trunk [1].

The celiacomesenteric trunk is a rare (1-2%) vascular variation which has clinical importance especially before surgical or interventional radiological procedures. The superior mesenteric artery and the celiac trunk arises from a single trunk [2].

Multi-detector computed tomography angiography (MDCTA) has an excellent performance and more comfortable for the patient, to show vascular anatomy, pathology and variations [3].

Case Presentation

During the MDCTA scan of a 59-year-old man complaining intermittent claudication (an aching, crampy, tired or burning pain in the legs - typically occurs with walking and goes away with rest - due to poor circulation of blood in the arteries of the legs), a stunning variation was detected. The celiac trunk and superior mesenteric artery were seen to originate from a common trunk from ventral part of abdominal aorta

Address for correspondence:

Cihat Tek, MD., Ankara Training and Research Hospital, Department of Radiology, Cebeci, 06340 Ankara, Turkey.

E-mail: cihattek@gmail.com

Fax: +90 3125953683

Received: November 3, 2017; Accepted: January 8, 2018; Published Online: February 8, 2018



Figure 1. Sagittal maximum intensity projection (MIP) image of the case; origin of celiacomesenteric trunk (star), the celiac trunk (black arrow) and the superior mesenteric artery (white arrow).



Figure 2. Coronal maximum intensity projection (MIP) image of the case; origin of celiacomesenteric trunk from abdominal aorta (star), the celiac trunk (black arrow) and the superior mesenteric artery (white arrow).

(Figures 1, 2, and 3). The celiacomesenteric trunk was to be length of 14 mm and 12 mm in diameter. The celiac trunk was 9 mm, and the superior mesenteric artery was 8.5 mm in diameter.

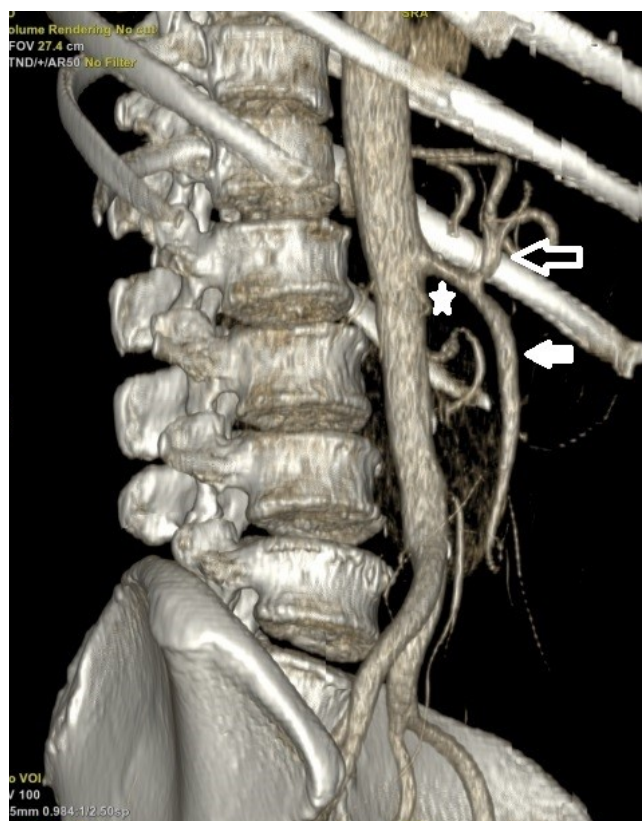


Figure 3. Volume rendering image of celiacomesenteric trunk (star), the celiac trunk (empty arrow) and the superior mesenteric artery (white arrow).

There was no variation on the celiac trunk and superior mesenteric artery branching; left gastric, splenic and common hepatic arteries were originating from the celiac trunk, inferior pancreaticoduodenal, jejunal, ileal, middle colic, right colic, ileocolic arteries originated from the superior mesenteric artery.

Discussion

In general population, the celiac trunk arises from the abdominal aorta and branches into left gastric, splenic and common hepatic arteries. The superior mesenteric artery arises from the abdominal aorta, too, and branches into inferior pancreaticoduodenal, jejunal, ileal, right colic, middle colic and ileocolic arteries.

The celiacomesenteric trunk is a rare variation which is presenting that the celiac trunk and superior mesenteric artery arises from a common trunk. A review showed the incidence of the celiacomesenteric

trunk is in the rate of 2% [4]. Matusz *et al.* [5] reported that 0.68% of cases. Tandler [6] provided an embryological theory for the celiac trunk and superior mesenteric artery variations. In embryologic life, retention of the ventral longitudinal anastomosis and disappearance of the first or fourth vascular root, causes a celiacomesenteric trunk [6].

The celiacomesenteric trunk is usually discovered incidentally during radiologic imaging or cadaveric dissection by anatomists. It is substantial to be aware of this rare variation. Because if it is thrombosed or injured, the blood supply of abdominal viscera is dramatically blocked. On the other hand it is very important to report if the celiacomesenteric trunk exists before surgical or interventional radiologic procedures.

Conclusions

In conclusion, the celiacomesenteric trunk is an important vascular variation that is usually asymptomatic. But it must be kept in mind for the patients that will undergo surgical or radiologic aortic

procedures.

Informed consent

Written informed consent was obtained from the patient for the publication of this case report.

Conflict of interest

The authors declared that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- [1] Munger RS. Report of an unusual coeliaco-mesenteric trunk with unique distribution and anastomoses. *Anat Rec* 1941;80:55-9.
- [2] Lagoutte N, Facy O, Guiu B, Favier C, Cheyrel N. Celiacomesenteric trunk: a variation that must be known before aortic surgery. *Clin Pract* 2011;1:e69.
- [3] De Cecco CN, Ferrari R, Rengo M, Paolantonio P, Vecchiotti F, Laghi A. Anatomic variations of the hepatic arteries in 250 patients studied with 64-row CT angiography. *Eur Radiol* 2009;19:2765-70.
- [4] Yi SQ, Terayama H, Naito M, Hayashi S, Moriyama H, Tsuchida A, et al. A common celiacomesenteric trunk, and a brief review of the literature. *Ann Anat* 2007;189:482-8.
- [5] Matusz P, Miclaus GD, Ples H, Tubbs RS, Loukas M. Absence of celiac trunk: case report using MDCT angiography. *Surg Radiol Anat* 2012;34:959-63.
- [6] Tandler J. Über die Varietäten der Arteria celiaca und deren Entwicklung. *Anat Hefte* 1904;25:473-500.