Case Report

A case of absent coeliac trunk

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Abstract:

During routine dissection of abdomen and pelvis of sixty five years old donated female cadaver in Department of Anatomy, Grant Government Medical College, Byculla, Mumbai, India, we observed absence of coeliac trunk. All three classic branches viz. left gastric, splenic and common hepatic artery originated from abdominal aorta independently without any common trunk. Normally all these branches arise from common trunk called as coeliac trunk which in turn arises from abdominal aorta. The further course of each of three branches was normal. The knowledge of such variation is of utmost importance for radiologists and surgeons performing on upper abdominal region for chemotherapy for pancreatic carcinoma, liver transplantation and triple vessel angiography etc.

Keywords: Coeliac trunk, splenic artery, common hepatic artery, left gastric artery

Introduction:

The coeliac trunk is the first anterior branch of abdominal aorta and arises just below the aortic hiatus at the level of T12/L1 vertebral bodies. It is 1.5 – 2 cm long and passes almost horizontally forwards and slightly right above the pancreas and splenic vein. It divides into the left gastric, common hepatic and splenic arteries [1]. The coeliac trunk may also give off one or both of the inferior phrenic arteries [2]. The superior mesenteric artery may arise with the coeliac trunk as a common origin. One or more of the superior mesenteric branches may arise from the coeliac trunk. Anterior to the coeliac trunk lies the lesser sac. The coeliac plexus surrounds the trunk, sending extensions along its branches. On the right lie the right coeliac ganglion, right crus of the diaphragm and the caudate lobe of the liver and to the left lie the left coeliac ganglion, left crus of the diaphragm and the cardiac end of the stomach. The right crus may compress the origin of the coeliac trunk, giving the appearance of a stricture [1].

Case report:

In present case coeliac trunk was absent in sixty five years old indian female cadaver during routine dissection schedule for First MBBS batch at Department of Anatomy, Grant Government Medical College, Mumbai. After exposure of coeliac region above pancreas posterior to stomach, the dense connective tissue and nerve plexus over the abdominal aorta were removed and all the arteries were exposed in that region [Figures 1 and 2]. Left gastric artery originated from the anterior aspect of abdominal aorta. Splenic and common hepatic arteries arose below left gastric artery from left and right anterolateral aspects of abdominal aorta respectively. As usual superior mesenteric artery independently arose from anterior aspect of abdominal aorta at lower level. All these arteries found during dissection were traced to the tissues

and organs supplied by them to confirm normal course. No other common trunks like coeliacomesenteric, gastrosplenic or hepatomesenteric trunks were encountered.

Figure 1.

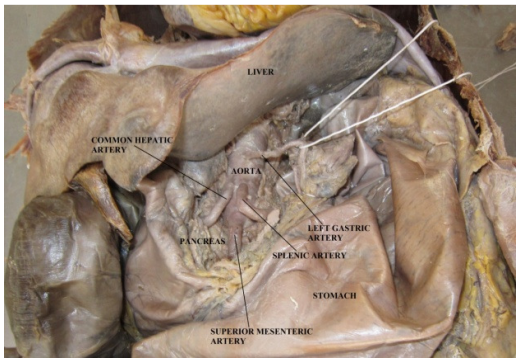
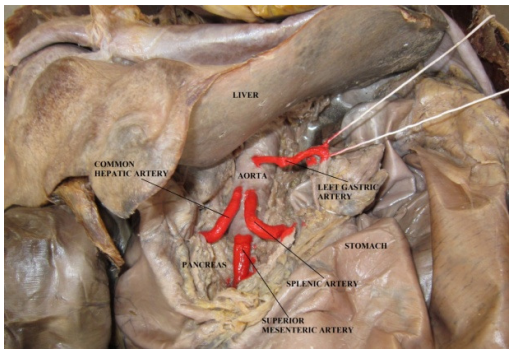


Figure 2.



Figures 1 and 2: Photographic presentations of dissected coeliac region of abdomen showing absence of coeliac trunk. All three branches left gastric, splenic and common hepatic arteries are arising from abdominal aorta.

Discussion:

Absence of coeliac trunk is very uncommon. In past various studies and case reports have observed the incidence of absent coeliac trunk. Rossi and Cova observed 1.96% incidence in 102 specimens [3]. Picquand studied 50 cadavers showing 2% without coeliac trunk [4]. Morettin et al reported a case of congenital absence of coeliac trunk on intravenous abdominal aortography, later surgically confirmed [5]. Yamaki K et al described a case of absent coeliac trunk in a female Japanese cadaver [6]. Iyori K et al reported a case of aneurysm of gastroduodenal artery associated with absence of coeliac axis on angiography in 64 years old woman [7]. Yi SQ et al reported a case of absence of coeliac trunk in 95 years old Japanese male cadaver [8]. Ugurel MS et al retrospectively observed a case of absent coeliac trunk out of 100 patients who underwent multidetector CT (MDCT) angiography [9]. Petru Matusz et al reported a case of absent coeliac trunk using MDCT angiography in a 57 years old male patient of peripheral vascular disease [10]. Regression of many vitelline/ omphalomesenteric branches of fused dorsal aorta leads to formation of coeliac, superior and inferior mesenteric artery [11]. Possibly variation of coeliac trunk is caused by the anomalous regression of these arteries.

Conclusions:

Knowledge of such variation has important clinical significance in invasive arterial procedures like triple vessel angiography of abdominal aorta, MDCT angiography. This finding can also be encountered during certain abdominal operations such as liver transplantation, laparoscopic surgery for abdominal vascular aneurysm and Appleby operation for carcinoma of pancreas.

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