Acute celiac trunk thrombosis revealed by biliary peritonitis

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Abstract
Acute thrombosis of the celiac trunk is a very uncommon condition, which is a life-threatening emergency. The clinical presentation is highly variable depending on the extent of the ischemic territory. We report a case of biliary peritonitis related to an acute thrombosis of the celiac trunk. This case highlights the role of abdominal computed tomography in the diagnosis of acute upper abdominal pain.

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Acute mesenteric ischemia is a life-threatening emergency whose evolution is rapidly fatal in the absence of revascularization. Acute thrombosis most often involves the superior and inferior mesenteric arteries, whereas an isolated acute thrombosis of the celiac trunk is a very uncommon condition [1–4]. We report a case of biliary peritonitis related to an acute thrombosis of the celiac trunk. This case emphasized the role of computed tomography (CT), which allowed to make the diagnosis and assess the extent of the ischemic lesions, which were immediately confirmed by laparotomy.

Case presentation
A 73-year-old woman presented to the emergency department complaining of acute abdominal pain for 12 hours. Her physical examination found a temperature at 38°C,
the abdomen was distended and tympanitic with tenderness on whole abdomen, the rectal examination was normal. Laboratory tests showed elevated white cell count (14,000/mm³), elevated serum aspartate aminotransferase and alanine aminotransferase levels (5 times the upper normal limit).

CT showed celiac artery trunk thrombosis and normal trunk of superior mesenteric artery (Fig. 1) with areas of infarction in the spleen and the left lateral section of the liver (Fig. 2). The diagnosis of acute peritonitis from ischemia of organs dependent on the celiac territory was considered and an emergency midline laparotomy was performed. Intraoperative exploration revealed biliary peritonitis relating to necrosis of the gallbladder (Fig. 3). The left lateral section of the liver and the spleen were ischemic whereas the stomach was normal. Cholecystectomy was performed with peritoneal cleansing. No revascularization procedure was intended due to worsening of the hemodynamic status. The patient died soon after the operation due to multi-organ failure.

**Discussion**

Chronic thrombosis of the celiac trunk can result in various clinical manifestations designated as celiac territory ischemic syndrome [1]. It can also remain asymptomatic for a long time due to the development of collateral circulation from the superior mesenteric artery. In case of acute celiac artery obstruction, ischemic necrosis occurs more frequently in organs supplied by end arteries [2] as our case where gallbladder necrosis was responsible for biliary peritonitis. Gastric ischemia is uncommon as the stomach has a rich blood supply from branches of the celiac axis, as well as from the superior mesenteric artery collaterals [5]. The prognosis remains poor outside revascularization [2,4,5], which can be achieved either by endovascular balloon angioplasty or by surgical bypass with similar results [6].

**Figure 1.** Abdominal computed tomography showing complete thrombosis of the celiac artery trunk (white arrow) and normal trunk of superior mesenteric artery.

**Figure 2.** a: abdominal computed tomography showing infarction of the spleen (asterisk) and the left lateral section of the liver (white arrow); b: edematous thickening of the gallbladder wall is also present (white arrow).

**Figure 3.** Intraoperative picture showing necrosis of the gallbladder (white arrow).
Conclusion

Acute thrombosis of the celiac trunk is an emergency and the diagnosis must be performed before the development of end-organ damage. CT is essential for early detection and for the assessment of the ischemic lesions, which will help to guide revascularization.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References


