


CLINICAL IMAGE

Aberrant common hepatic artery from the left gastric artery and with no connection to the gastroduodenal artery: Risky vascular anomaly in gastrectomy

Keisuke Noda | Shinichiro Kobayashi  | Mampei Yamashita  | Takanori Hirayama |
Koji Natsuda | Takayuki Tokunaga | Kosho Yamanouchi | Hiroaki Takeshita |
Tamotsu Kuroki | Shigeto Maeda

Department of Surgery, National Hospital Organization Nagasaki Medical Center, Omura, Japan

Correspondence

Shinichiro Kobayashi, Department of Surgery, National Hospital Organization Nagasaki Medical Center, 2-1001-1, Kubara, Omura City, Nagasaki 856-8562, Japan.

Email: skobayashi1980@gmail.com

Abstract

Knowledge of anatomical variations of the celiac axis is important in upper abdominal surgery. Aberrant common hepatic artery originating from the left gastric artery without connecting the gastroduodenal artery is extremely rare. Preoperative vascular anatomy assessment using reconstructions of CT images may be useful for safe surgical procedure.

KEYWORDS

gastroenterology and hepatology, general surgery, oncology

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Aberrant common hepatic artery originating from the left gastric artery without connecting the gastroduodenal artery is extremely rare. In gastrectomy, accidental ligation or injury of the aberrant common hepatic artery can lead to hepatic arterial ischemia. Reconstructions of CT images may be useful for the safer and faster performance of gastrectomy.

A 63-year-old man presented with advanced gastric cancer. Chemotherapy followed by distal gastrectomy with D2 lymph node dissection was planned. Multiplanar reconstruction in computed tomography (CT) showed a complex vascular anomaly of the celiac axis. The common hepatic artery (CHA) was absent in the suprapancreatic area but originated aberrantly from the left gastric artery (LGA)(Figure 1). Moreover, the gastroduodenal artery (GDA) was not originating from the CHA but from the pancreaticoduodenal arterial



FIGURE 1 Multiplanar reconstruction in CT examination demonstrates that CHA and the proper hepatic artery are absent around the PV (yellow triangle) and that an aberrant CHA (yellow arrow) originates from the LGA. CHA, common hepatic artery; PV, portal vein

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FIGURE 2 CT angiographic reconstruction using volume rendering. Reconstructed 3D image clearly shows an aberrant CHA, which is a branch from the LGA. The GDA originating from the SMA is completely separated from the CHA. #1; celiac axis, #2; LGA (left gastric artery), #3; aberrant CHA (common hepatic artery), #4; splenic artery, #5; SMA (superior mesenteric artery), #6; GDA (gastroduodenal artery)

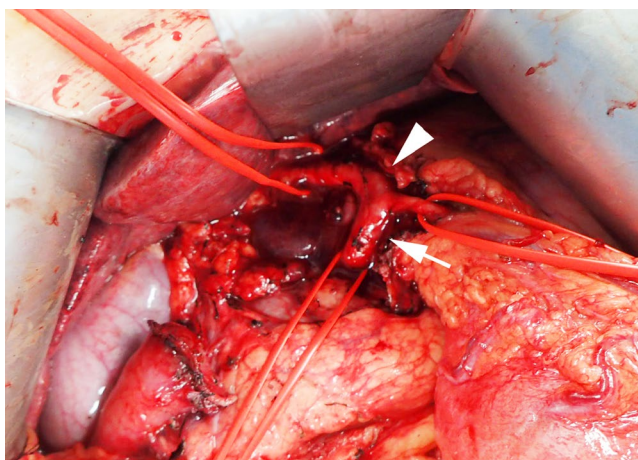


FIGURE 3 Intraoperative image of aberrant CHA and LGA. The CHA is absent in the suprapancreatic area. An aberrant CHA (white triangle) originating from the LGA (white arrow) is present. CHA, common hepatic artery; LGA, left gastric artery

arcades of the inferior pancreaticoduodenal artery. Therefore, the arterial perfusion of the liver was completely dependent on the aberrant CHA from the LGA (Figure 2). Intraoperative exploration confirmed the radiologic findings (Figure 3). The aberrant CHA was preserved, and the distal side of the LGA was resected. According to Song's and Adachi's studies of the classifications of CA variations, CHA is absent

in the suprapancreatic area in 2% of cases.^{1,2} In addition, an aberrant CHA originating from the LGA was demonstrated in 0.16% of cases.² However, there were no cases of aberrant CHA originating from the LGA without connecting the GDA. Observation of the vascular anatomy around the stomach using a CT reconstruction system may be useful for the safer and faster performance of gastrectomy.

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Published with written consent of the patient.

CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

KN: collected, analyzed, and interpreted the patient disease data and edited the manuscript. SK: supervised the patient treatments and the research project. All authors: have read and approved the manuscript.

CONSENT FOR PUBLICATION

Informed consent was obtained from the patient in this report.

ETHICS APPROVAL

The publication of the present study was in accordance with the ethical standards of our institution.

ORCID

Shinichiro Kobayashi  <https://orcid.org/0000-0003-3086-5470>

Mampei Yamashita  <https://orcid.org/0000-0003-4660-2448>

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