

가 50
(tapering)
34
45 , 5
(umbilical point)
가 27 (54%) 가
가 21 (42%)
가 28 (56%)
27 (79%),
(pulmonary hypervascular -
가
가 21 (61.8%),
가 4 (11.8%)
(curvilinear wall stain) 31 (91%), (nodular stain) 3
(9%)
가
(1).

(transarterial chemoembolization : TACE)

(1, 2).

가

(delayed arterial phase)
(capillary phase)
(tortuosity)
가 50

1997 10 1998 9

2000 3 14

2000 7 18

45 5

51 (30 - 78) .
 , 34
 2
 (Angiostar: Siemens
 Medical system, Erlangen, Germany)
 Rosch hepatic(Cook,
 Australia)
 6 - 7 cc 6 - 7
 3 - F (micro -
 catheter) 1 - 2 cc 5 - 7
 2 가
 가
 , , (taper -
 ing)
 ,
 .
 2 3 (, left lateral hepatic artery)
 S2, S3) 가 (, left hepatic artery)
 19 (38%) S2,3,4 가 (, left hepatic artery)
 14 (28%) 가 , 5 (10%)가
 (Fig. 1). 45
 9가
 16 (35.5%) type I , 11 (24.4%)
 type V 가 가 (Fig. 1).
 9가
 가 , 가
 45 가
 (Figs. 2, 3).

S2 S3 S2
 S3 가 27 (54%) (Fig. 3) 가 , S2 S3
 가 12 (24%) 3 (6%) . S2
 S3 가 가 3 (6%), 1 (2%) , S2
 S3 가 가 1 (2%), S2 2 (4%),
 S3 가 1 (2%) .
 21 (42%)
 , 15 (30%) , 14
 (28%) 가 .
 33 (66%)
 , 12 (24%)
 (Fig. 2), 5 (10%) .
 28 (56%)
 가 , 18 (36%)
 4 (8%)
 가 가 .
 34
 27 (79.4%) 가
 (Fig. 2), 가 3 (9%)
 1 (3%) , 1 (3%) (Fig. 4)
 . 15 가 가
 가 21 (61.8%) 가 (Fig. 2),
 가 6 (17.6%),
 가 4 (11.8%) ,
 가 2 (5.9%), 1 (2.9%) .
 (4 cm) , (3
 cm) 11 (32%) 16 (47%)
 31 (91%)
 (curvilinear pattern) (Fig. 2), 3 (9%) (nod -
 ule) (Fig. 4)

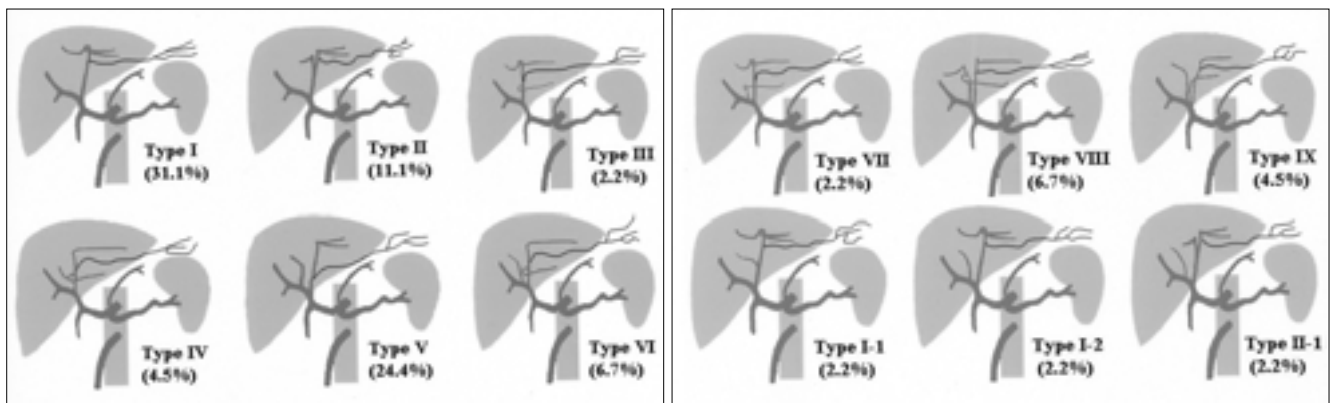
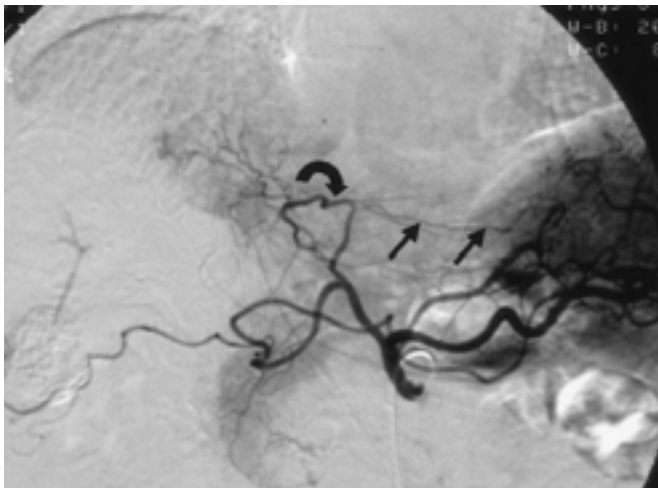
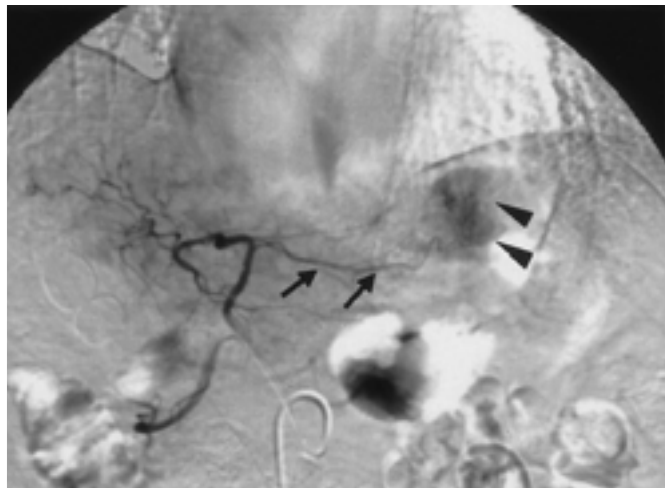


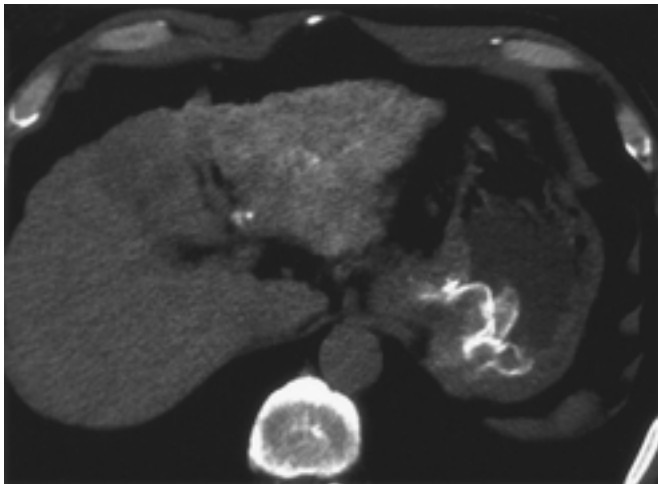
Fig. 1. Diagrams of the branching pattern of the left hepatic artery and origin site of accessory left gastric artery (accLGA).



A



B

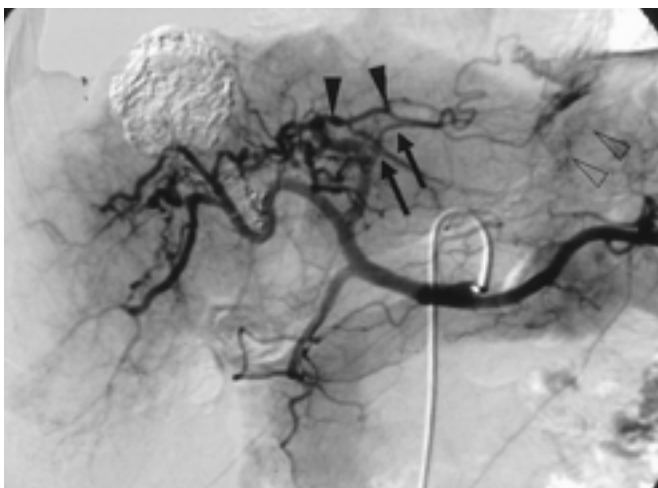


C

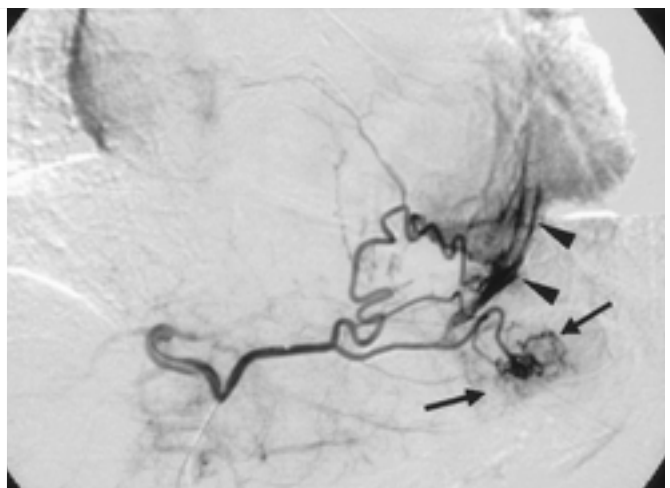
Fig. 3. A. On celiac angiogram, the branching pattern of the left hepatic artery is type I and the accLGA (arrows) arises from the left hepatic artery proximal to the umbilical point (curved arrow) and runs between S2 and S3 segmental branches.

B. Selective angiogram of the left hepatic artery shows nodular staining of the gastric fundus (arrowheads), mimicking a hypervascular tumor.

C. Non-enhancing abdominal CT immediately after TACE shows lipiodol uptake in gastric mucosa.



A



B

Fig. 4. A. On celiac angiogram, the branching pattern of accLGA is type I-2 and accLGA (arrows) runs overlapping with S2 segmental branch (arrowheads).

B. Selective angiogram of the accLGA, the accLGA has two divisions, the lower one shows nodular staining of the gastric wall (arrows) and the upper one shows pulmonary hypervascularization (arrowheads).

가 12 (24%)

가 5 (10%)

가 28 (56%)

가 27 (79.4%)

Nakamura (1)

1 (Fig. 4),

가 1

가 , 가

(celiac stenosis), (hepatic artery occlusion)

(1, 3, 4)

가

1

cular HCC) (hypervas-
(1, 6).
3

1 가 (Fig. 3). Hirakawa (2) 45%

- [illegible]

Accessory Left Gastric Artery: Angiographic Anatomy¹

Kang Soo Lee, M.D.², Jin Wook Chung, M.D., Hyung Guhn Lim, M.D.², Soon-Young Song, M.D.³,
Hong Soo Kim, M.D.², Doo Sung Jeon, M.D.², Jae Hyung Park, M.D.

¹Department of Radiology, Seoul National University College of Medicine and Institute of Radiation Medicine, SNUMRC

²Department of Radiology, Presbyterian Medical Center, Chunju

³Department of Diagnostic Radiology, Myongji Hospital, College of Medicine, Kwandong University

Purpose: To evaluate the angiographic anatomy of the accessory left gastric artery (accLGA).

Materials and Methods: We evaluated the angiographic findings of the accLGA in 50 patients (Angiostar; Siemens, Erlangen, Germany). Performing celiac and selective angiography in 50 and 34 patients, respectively. By means of celiac angiography, 1) site of origin, 2) anatomical course, 3) diameter, 4) degree of tortuosity, and 5) distal tapering were evaluated, while selective angiography was used to determine 1) arterial branching, 2) area of blood supply, and 3) patterns of gastric wall stain.

Results: Celiac angiography showed that the accLGA arose from the left hepatic artery (LHA) in 45 cases (90%) and from the proper hepatic artery in five (10%). If the accLGA arose from the LHA, its origin entirely depended on the branching pattern of the latter. It always arose from the lateral branch of the LHA furthest to the left and uppermost, and proximal to its umbilical point. The most common anatomical course of the accLGA, seen in 27 cases (54%), was between the S2 and S3 segmental branch. The diameter and degree of tortuosity of the accLGA were similar to those of adjacent intrahepatic branches in 21 (42%) and 33 cases (66%), respectively. The degree of tapering was less than that of adjacent intrahepatic vessel in 28 (56%). Selective angiography demonstrated esophageal branching of the accLGA in 27 cases (79%), inferior phrenic arterial branching in three (9%), a mediastinal branch in one (3%), and hypervascularity of the lung in one (3%). In 15 cases (44%), bifurcation of the accLGA was recognized. The vascular territory of the accLGA was the gastric fundus together with the distal esophagus in 21 cases (62%), mainly the gastric fundus in six (18%), and mainly the distal esophagus in four (12%). The pattern of gastric mucosal stain was curvilinear wall in 31 cases (91%) and nodular in three (9%).

Conclusion: A knowledge of the angiographic anatomy of the accLGA facilitates accurate recognition of this artery on routine celiac and hepatic arteriography, thus reducing gastric complications after transarterial management of hepatic tumors and improving the angiographic diagnosis and treatment of upper gastrointestinal bleeding.

Index words : Arteries, gastric
Arteries, hepatic
Distal subtraction angiography

Address reprint requests to : Jin Wook Chung, M.D., Department of Radiology, Seoul National University Hospital
28, Yongon-dong, Chongno-gu, Seoul 110-744, Korea.
Tel: 82-2-760-2584 Fax: 82-2-743-6385 E-mail: chungjw@radcom.snu.ac.kr