

## Case Report

## Post-traumatic pseudoaneurysms of the left gastric artery: A case report

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## ABSTRACT

Post-traumatic pseudoaneurysm of the gastric artery is very rare. Prompt diagnosis and management are necessary because mortality is high due to massive intra-abdominal hemorrhage. A 79-year-old man complained of abdominal pain after slipping down 2 days prior to admission. Abdominal computed tomography showed some hemoperitoneum with suspicious contrast leakage and aneurysmal change of the left gastric artery. Pseudoaneurysm of the left gastric artery was treated by angioembolization. After the angioembolization, he recovered without any problems. Delayed pseudoaneurysm of the gastric circulation should always be kept in mind as a possible cause of delayed hemoperitoneum.

## Introduction

Post-traumatic pseudoaneurysm of the gastric artery is very rare. Prompt diagnosis and management of visceral pseudoaneurysms are necessary because mortality is high due to massive intra-abdominal hemorrhage. Here, we present a case of delayed pseudoaneurysm of the gastric artery after blunt abdominal trauma.

## Case report

A 79-year-old man was brought to the emergency room for abdominal pain. He slipped down two days prior to admission. He complained of generalized abdominal tenderness, but no rebound tenderness. Abdominal rigidity was noted on physical examination. The blood pressure was 119/87 mm Hg, and pulse rate was 87 beats/min. He was admitted 3 months prior due to multiple rib fractures with hemothorax on the right after vehicular accident, computed tomography (CT) showed no evidence of any vascular anomaly or vasculitis at that time. Laboratory studies during the present admission showed thrombocytopenia and platelet dysfunction, due to transient bone marrow depression and chronic liver disease. CT showed moderate amount of hemoperitoneum with suspicious contrast leakage from the left gastric artery and left gastroepiploic artery (Fig. 1A). His hemoglobin and hematocrit levels

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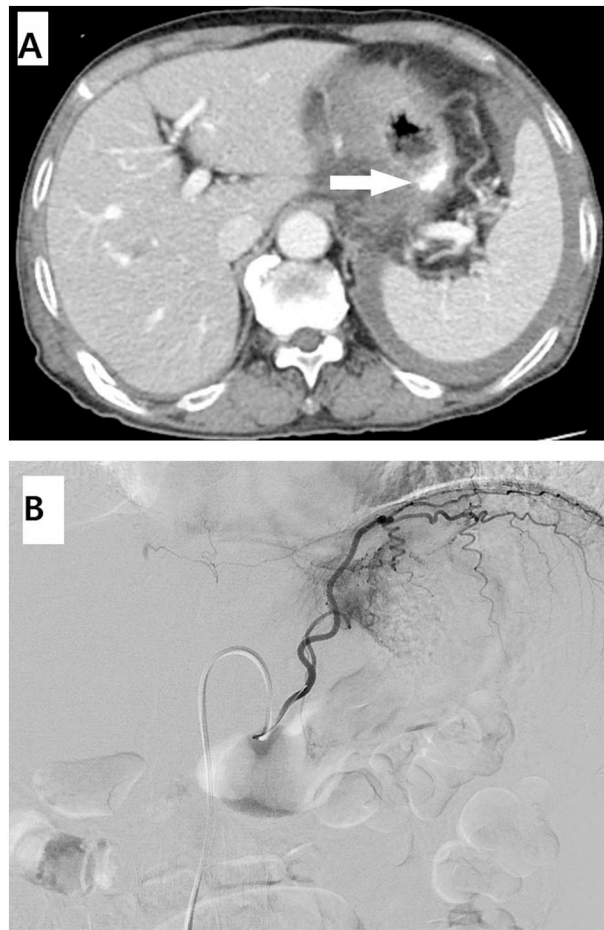
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**Fig. 1.** A: Abdominal CT scan showed some hemoperitoneum with suspicious contrast leakage within the gastro-hepatic ligament (arrow). B: Angiography showed no definitive extravasation or pseudoaneurysm from left gastric artery direct arising from aorta.

were 7.6 g/dl and 22.1%, respectively. Because vital sign was stable, angioembolization was planned; the angiography showed no evidence of active bleeding from the celiac trunk, gastroduodenal artery, and left gastric artery (Fig. 1B). Conservative management, including absolute bed rest, hemostatic agents and transfusion, was applied to keep the vital signs stable. Follow up CT showed a 0.5 cm pseudoaneurysm of the left gastric artery and no evidence of active bleeding 4 days post-admission (6 days post-trauma) (Fig. 2A, B). Angioembolization for the pseudoaneurysm of the left gastric artery was planned. Angiography revealed the left gastric artery arising from the aorta. Selective injection of the left gastric artery revealed multiple pseudoaneurysms with extravasation along the lesser curvature of the stomach (Fig. 3A). Superselective catheterization of the vessel allowed embolization with microcoils. Postembolization angiography revealed no further pseudoaneurysm or extravasation (Fig. 3B).

The patient was discharged 10 days at post-admission without any problems. One month post-trauma, follow-up CT showed no evidence of contrast leakage or aneurysm of the celiac trunk and left gastric artery (Fig. 3C, D).

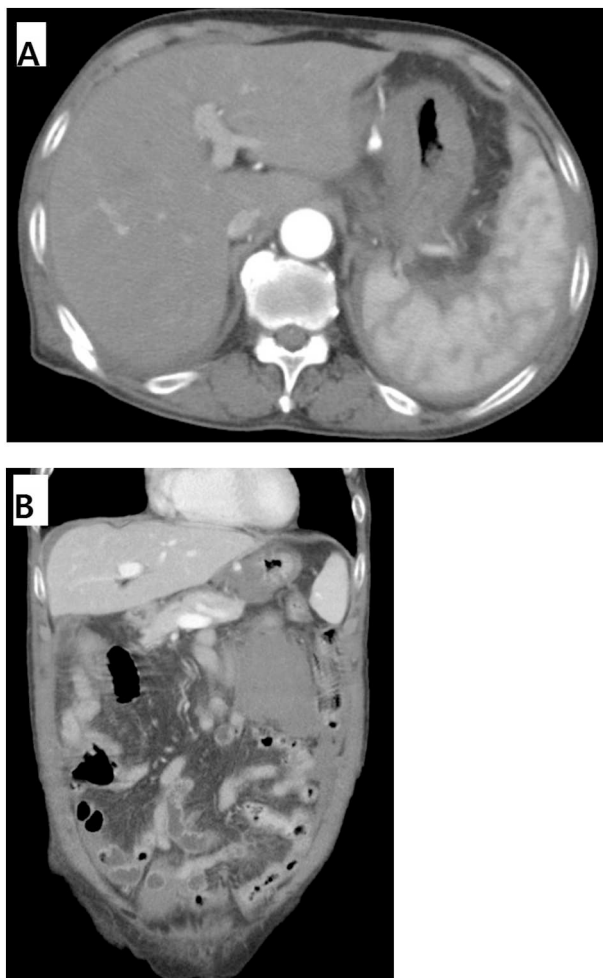
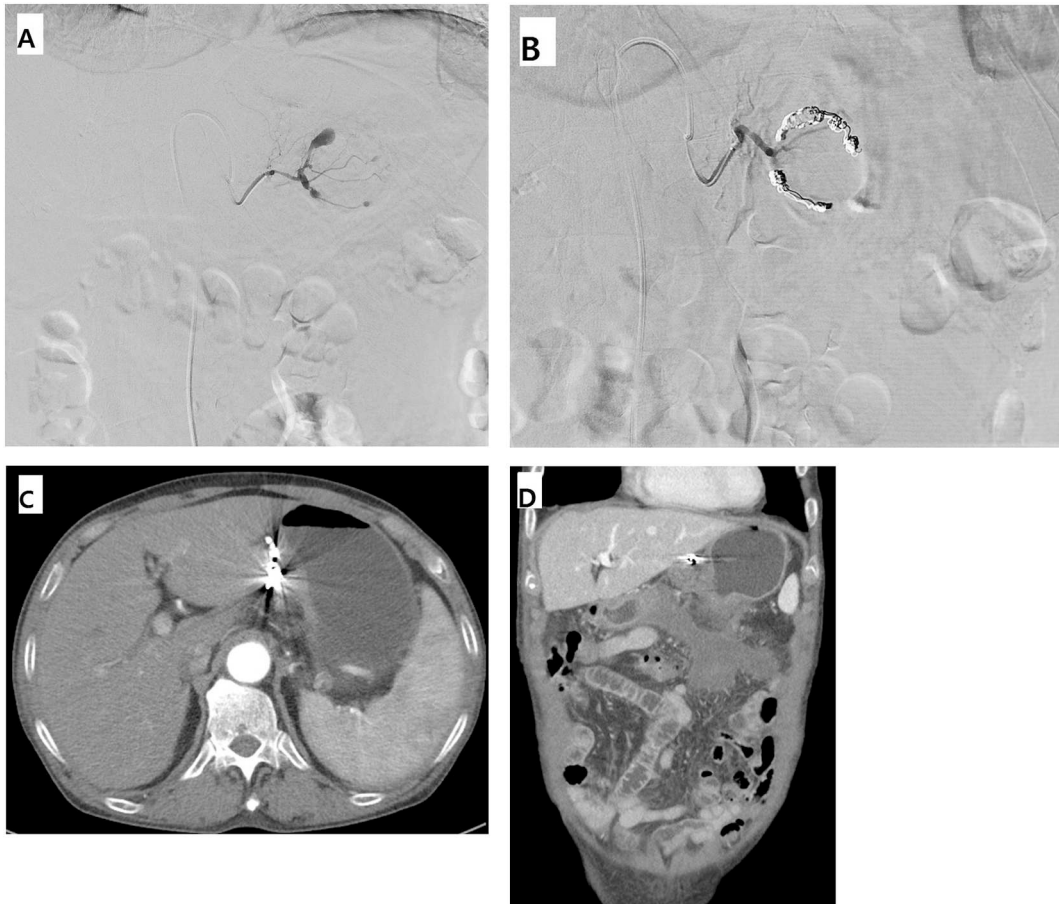


Fig. 2. A, B: Followed up CT showed about 0.5 cm sized pseudoaneurysm at left gastric artery.

## Discussion

Aneurysmal changes of the visceral arteries are rare. Most of them are asymptomatic, and are found incidentally after spontaneous development of pseudoaneurysms [1,2]. Few cases with pseudoaneurysms and rupture of the gastric artery due to trauma have been reported [3–5], and no reports are available on delayed presentation of a left gastric artery pseudoaneurysm due to blunt trauma (Table 1). The etiology of visceral artery pseudoaneurysms is not fully understood yet, but the causes might be atherosclerosis, inflammatory or degenerative vasculopathies, and trauma [2–5]. In this case, we believe the gastric artery pseudoaneurysm was caused by the patient's fall, since there was no evidence of any vascular abnormality or vasculitis on CT scan 3 months prior.

Pseudoaneurysm of the arteries in the gastric circulation is rare (< 4%). Prompt diagnosis and management are necessary because mortality is nearly 70–80% due to massive intra-abdominal hemorrhage [2,6,7]. There is no consensus as to the best treatment



**Fig. 3.** A: Angiography showed multiple pseudoaneurysms with extravasation of the left gastric artery. B: Postembolization angiography with microcoil. No residual pseudoaneurysm or extravasation was seen. C, D: Follow-up CT showed no evidence of contrast leakage or aneurysm on celiac trunk and left gastric artery.

option, due to the paucity of case reports [2], but the primary goal of treatment for these cases of intra-abdominal bleeding is to control the hemorrhage by ligating or repairing the involved vessels [5]. Treatment can be done by either surgery or endovascular treatments [2]. In a state of shock, when the risk associated with surgery is extremely high, endovascular treatment is currently recommended to treat pseudoaneurysms of the visceral arteries as the first-line therapy [6]. Endovascular treatment includes deployment of coils, glue, and thrombin [2,6]. Angiographic embolization was initially planned for this patient, revealing no evidence of active bleeding from the celiac trunk, gastroduodenal artery, and left gastric artery on angiography. No recurrence or complication was noted after the procedure.

## Conclusion

This is the first report of the delayed presentation of the left gastric artery pseudoaneurysm occurring after blunt trauma, which was successfully treated using endovascular treatment. A pseudoaneurysm of the gastric circulation should always be kept in mind as a possible cause of delayed hemoperitoneum.

**Table 1**  
Post-traumatic pseudoaneurysms of the left gastric artery.

Author (Year)	Age/Sex	Etiology	Interval from trauma to diagnosis	Methods of diagnosis	Associate injuries	Methods of treatment	Outcomes & results
Varela et al. (2006)	43/Male	Blunt trauma (motor vehicle collision)	0 day	CT scan Angiography d/t liver laceration with active bleeding	Liver laceration Rib Fx L5 trans proc. Fx Acetabular Fx	Microcoils followed by a single pledget of gelfoam	Ileus postembolization day #3 Diet # 7
Allorto et al. (2009)	19 month/Male	Suspicious non-accidental injury	Unknown	MRI scan Catheter angiography	Large hematoma (initially thought to be within the lobe of the liver)	Four Guglielmi detachable coils	N/A
Nissim et al. (2017)	25/Male	Blunt trauma (motor vehicle collision)	N/A	CT scan	N/A	Coil	Discharge at postembolization #6
Our case	79/Male	Blunt trauma (slip down)	6 days	CT scan	Hemoperitoneum	Microcoil	Good resolved Discharge at postembolization #10

N/A not available.

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