

Case Report

Spontaneous rupture of a left omental artery aneurysm treated by transcatheter arterial embolization: A case report

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ARTICLE INFO

Keywords:

Left omental artery aneurysm
Splanchnic artery aneurysm
Arterial embolization
Interventional radiology
Case report

ABSTRACT

Background: Omental artery aneurysms are extremely rare. Their rupture is related to high mortality and often treated by open surgery. We describe a case of a spontaneous rupture of a left omental artery aneurysm (OAA) that was successfully treated by transcatheter arterial embolization (TAE).

Case presentation: A 68-year-old man presented with acute abdominal pain. On examination, he was hypotensive and tachycardic with a blood pressure of 90/50 mm Hg. He had diffuse abdominal distension and tenderness. An abdominal enhanced computed tomography scan (CT) showed a rupture of the left OAA responsible for moderate hemoperitoneum. We performed a successful TAE.

Conclusion: Ruptured OAA causes high mortality. OAA represents the rarest form of splanchnic artery aneurysms. Interventional radiology permits to avoid unnecessary surgery.

TAE is a safe procedure to control ruptured OAA. We highlight the importance of a rapid embolization if the patient is hemodynamically stable.

1. Background

Splanchnic artery aneurysms (SAAs) are uncommon. Omental artery aneurysms (OAA) are extremely rare, with few reported cases in the literature [1]. They are associated with intraperitoneal hemorrhage and high mortality rates [2]. Because of their rarity, there are still no established guidelines for their management. We describe the case of a ruptured left OAA that was successfully treated by transcatheter arterial embolization (TAE).

This case report has been reported in line with the SCARE 2020 Criteria [3].

2. Case presentation

A 68-year-old man presented to the emergency with acute onset of abdominal pain. He had a history of hypertension and pacemaker implantation eight years ago.

On examination, he was hypotensive and tachycardic with a blood pressure of 90/50 mm Hg. He had diffuse abdominal distension and tenderness.

Laboratory investigations showed a hemoglobin level of 11 g/dl and normal renal function.

After fluid resuscitation, the patient's blood was normalized.

An abdominal enhanced computed tomography scan (CT) showed a rupture of left OAA responsible for moderate hemoperitoneum (Fig. 1). Considering hemodynamic stability after fluid resuscitation, we opted for TAE.

Angiography of the mesenteric circulation was performed, obtaining arterial and venous phases. It showed a 2 cm distal ruptured left OAA which is a branch of the left gastroepiploic artery (Fig. 2). Through a 5.5-French (Fr) placed in the celiac artery, a 2.2-Fr Progreat microcatheter was inserted into the distal part of the left OAA. Embolization was performed using 5 Vortex coils. The postembolization angiogram revealed no OAA filling (Fig. 3).

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<https://doi.org/10.1016/j.amsu.2022.104704>

Received 4 August 2022; Received in revised form 5 September 2022; Accepted 9 September 2022

Available online 15 September 2022

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Fig. 1. Enhanced abdominal CT scan showing a rupture of left OAA (white arrow).

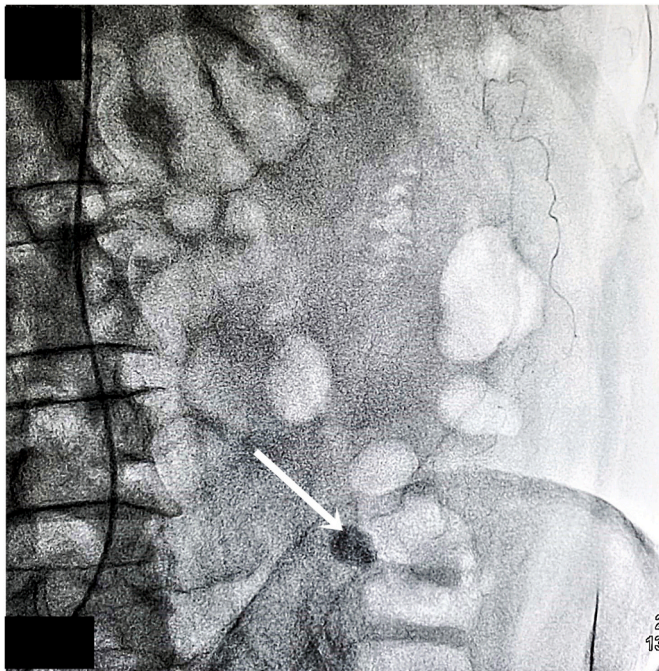


Fig. 2. Angiography picture showing the rupture of left OAA (white arrow).

The patient had an uneventful recovery with a follow-up of two months.

3. Discussion

We reported a successful TAE for a rupture of the left OAA after a rapid resuscitation. This is one of the rare cases in the literature of successful embolization for OAA rupture.

One of the strengths of our work is the disponibility of interventional radiology allowing timely embolization. The main weakness is the short follow-up period of two months.

Splanchnic artery aneurysms are uncommon with an incidence of less than 2%. Splenic artery aneurysms are the most frequent (60%), followed by hepatic artery aneurysms (20%), superior mesenteric artery aneurysms (5.5%), those of the celiac artery (4%), and aneurysms of the gastric and gastro-epiploic arteries (3%) [4].

OAA represents an extremely rare subset of splanchnic artery

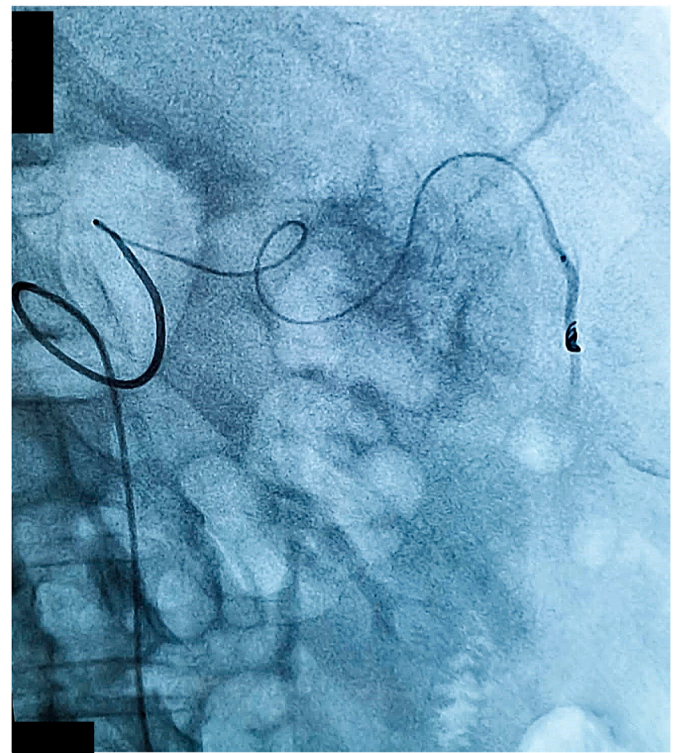


Fig. 3. Angiography picture post-embolization.

aneurysms that frequently rupture and result in intraperitoneal hemorrhage [5].

The main etiologies are atherosclerosis, trauma, surgery, vasculitis, and congenital anomalies, [6,7].

The clinical presentation is not specific. Patients appear with atypical abdominal pain, anemia, or hemorrhagic shock.

An enhanced abdominal CT scan is essential to confirm the diagnosis [8].

The treatment of omental bleeding consists of laparotomy, laparoscopy, or TAE [9–16].

There are no established guidelines for therapeutic management. Surgical treatment is the best option in presence of hemodynamic instability.

The success rate of TAE is 80% using micro coils or a combination of micro coils and a gelatin sponge, with a reperfusion rate approaching 10% due to incomplete coil-packing or migration coil [17].

It is recommended that a CT scan or Doppler ultrasound should be performed after 6 months to ensure that the aneurysm remains thrombosed [18].

We recommend TAE when vital signs are stable to avoid unnecessary surgery.

In summary, we present a rare case of a 68-year-old male who had a spontaneous rupture of a left OAA. We performed a rapid and successful TAE allowing to control the hemorrhage. Future multicentric prospective studies with a larger sample size are essential to establish clear therapeutic guidelines.

4. Conclusion

TAE is a safe and efficient procedure to control ruptured OAA. We highlight the importance of a rapid embolization if the patient is hemodynamically stable. Otherwise, surgery should be performed with no delays.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Ethical approval

Not required.

Sources of funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Author contributions

Houcine Maghrebi, Asma Zaiem, and Hazem Beji did the conception and design of the work, the data collection, the data analysis and interpretation, and the writing of the manuscript. Bedis Jeribi, Anis Hadded, Seif boukriba, and Wassim Frikha participated in the writing of the manuscript. Selim Hamissa, Mohamed Jouini, and Montasser Kacem did the critical revision of the article and the final approval of the version to be published.

Registration of research studies

1. Name of the registry:
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Guarantor

Dr. Houcine Maghrebi.
Dr. Hazem Beji.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Declaration of competing interest

No conflicts of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2022.104704>.

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