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Ruptured gastroepiploic artery aneurysm: A case report

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ABSTRACT

INTRODUCTION: Gastroepiploic artery aneurysms are extremely rare, with few reported cases in the literature. The risk of rupture however, is high and thus warrants attention.**PRESENTATION OF CASE:** Here we present a rare case of a woman who presented to the emergency department in shock and was found to have a ruptured gastroepiploic artery aneurysm during surgical exploration. Suture ligation of the aneurysm was completed.**DISCUSSION:** Although rare, gastroepiploic artery aneurysms have up to a 90% rate of rupture and therefore require intervention. A laparoscopic approach has been described however, in cases where rupture has occurred, urgent laparotomy and control of hemorrhage is needed.**CONCLUSION:** We describe a rare case of a ruptured gastroepiploic artery aneurysm that was successfully managed with urgent laparotomy and aneurysmal resection.© 2017 The Author(s). Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Splanchnic artery aneurysms are overall, rare entities most commonly caused by atherosclerotic disease [1]. The most encountered subtypes include splenic, hepatic and superior mesenteric arterial aneurysms with a distribution of 35%, 23% and 19% respectively [2]. Gastroepiploic artery aneurysms (GEAA) make up only 3.5% of splanchnic artery aneurysms and are therefore rarely seen. However, the rate of rupture of GEAA is reported to be as high as 90% and carries a 70% mortality [1–3]. A discussion of the management of these cases is thus warranted.

2. Case presentation

A 44 year old obese woman with a history of extensive vascular disease of unknown subtype presented with an acute onset of diffuse abdominal pain. She had a known, stable type B thoracic aortic dissection and had a previous Bentall procedure along with an endovascular graft for a thoracoabdominal aneurysm. On examination, she was hypotensive and tachycardic with a blood pressure of 90/50 and a heart rate of 120. Peritoneal signs were present. Further, she was found to have a left sided abdominal wall hernia. Initial laboratory studies demonstrated profound anemia. After resuscitation with intravenous fluids, she had a CT scan of the chest, abdomen and pelvis. Imaging demonstrated a moderate volume of

intraperitoneal free fluid and a visceral artery aneurysm thought to be of gastroduodenal origin. No change of the aortic dissection was noted (Fig 1).

She was taken to the OR for an urgent laparotomy. At exploration, approximately 4L of intraperitoneal blood was encountered. A 4 cm ruptured GEAA was identified and was suture ligated proximally and distally (Fig 2). After adequate control of hemostasis, further exploration identified bilateral spigelian hernias (incarcerated omentum on the right, wide neck with no incarceration on the left). The right spigelian hernia was primarily repaired. The patient had an uneventful postoperative course.

3. Discussion

Gastroepiploic artery aneurysms are rare lesions that require attention given their propensity to rupture. Unfortunately, most GEAA are diagnosed once a complication arises [2]. These patients typically present with diffuse abdominal pain and shock relating to intraperitoneal hemorrhage. Other GEAA may be identified incidentally on cross sectional imaging and should be addressed semi-urgently [4].

Previous reports have demonstrated successful ligation and resection of GEAA via both open and laparoscopic approaches in the non-ruptured setting [1,4]. An endovascular approach has also been described [5]. In our case, and in others, when patients present in shock with a suggestion of aneurysm rupture, an urgent laparotomy is required for definitive management [2].

Numerous etiologies are thought to contribute to true GEAA formation with the most common being atherosclerotic disease.

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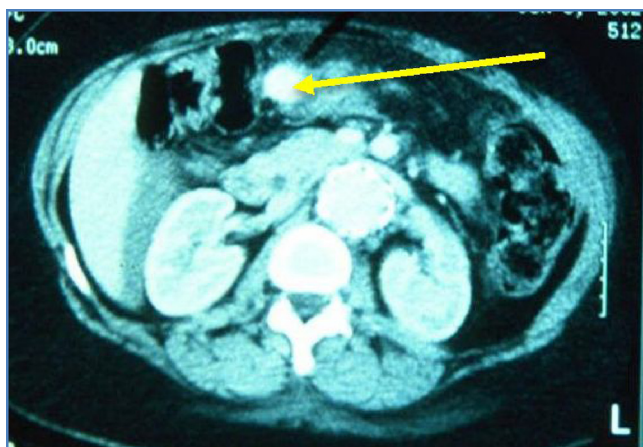


Fig. 1. Computed tomography scan demonstrating an aneurysm.

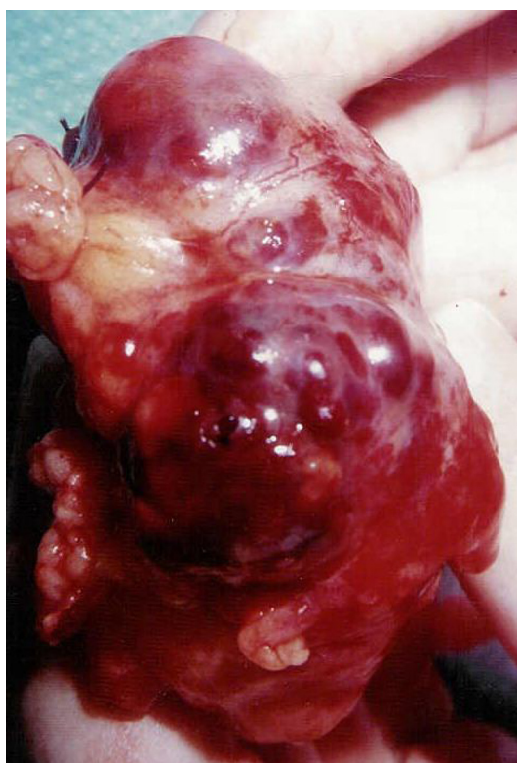


Fig. 2. Resected gastroepiploic aneurysm.

Others include collagen vascular diseases, medial degeneration and fibromuscular dysplasia [6]. Splanchnic pseudoaneurysms can also occur secondary to infectious conditions, vasculitis, iatrogenic interventions or trauma. To definitively differentiate between gastroepiploic artery aneurysms and pseudoaneurysms, pathologic examination is required [1]. In our case, an undifferentiated vasculopathy was likely present given our patient’s propensity of vascular aneurysms and dissections.

In summary, we present a rare case of a 44 year old female with an undifferentiated vasculopathy who had a ruptured GEAA. She underwent an urgent laparotomy for aneurysmal resection and had an uncomplicated postoperative course.

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Conflicts of interest

The authors declare no conflict of interest. This work is in compliance with SCARE guidelines [7]. The procedure was completed by a Canadian trained specialist in General Surgery.

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Ethical approval

Not required for case report.

Consent

Verbal informed consent was obtained from the patient for publication of this Case Report and accompanying images at the time of treatment. Written consent was not attainable as the patient was lost to follow up and can no longer be reached. Thus, all identifying information has been removed from the text and images provided in this manuscript. Please see the attached waiver for conformation.

Author contribution

AA – conceptualized the article, cared for the patient and wrote the manuscript.
 MH – conceptualized the article and wrote the manuscript.
 JY – conceptualized the article and wrote the manuscript.
 AS – conceptualized the article and wrote the manuscript.

Guarantor

Dr. Ahmad Ashrafi.

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References

- [1] H. Ikeda, M. Takeo, R. Mikami, et al., A case of a huge gastroepiploic arterial aneurysm, *J. Surg. Case Rep.* 8 (2015) 1–3.
- [2] B. Faler, D. Mukherjee, Hemorrhagic shock secondary to rupture of a right gastroepiploic artery aneurysm: case report and brief review of splanchnic artery aneurysms, *Int. J. Angiol.* 16 (1) (2007) 24–26.
- [3] S. Chandran, A. Parvaiz, A. Karim, et al., Ruptured left gastric artery aneurysm successfully treated by thrombin injection: case report and literature review, *Sci. World J.* 5 (2005) 20–23.
- [4] Y. Murkami, H. Saito, S. Shimizu, et al., A case of unruptured right gastroepiploic artery aneurysm successfully resected by laparoscopic surgery, *Yonago Acta Med.* 60 (1) (2017) 56–58.
- [5] M. Koganemaru, T. Abe, M. Nonoshita, et al., Follow-up of true visceral artery aneurysm after coil embolization by three-dimensional contrast-enhanced MR angiography, *Diagn. Interv. Radiol.* 20 (2) (2014) 129–135.
- [6] J. Stanley, G. Zelenock, Splanchnic artery aneurysms, in: R.B. Rutherford (Ed.), *Vascular Surgery*, 4th ed., WB Saunders, Philadelphia, 1995, pp. 1224–1239.
- [7] R. Agha, A. Fowler, A. Saeta, et al., The SCARE statement: consensus-based surgical case report guidelines, *Int. J. Surg.* 34 (2016) 180–186.