Ruptured Gastroepiploic Artery Aneurysm as an Unusual Cause of Hemoperitoneum

S.J. Go a, S.G. Lee a, M.-S. Lee a, b, B.S. Cho a, M.K. Lee a, Y.J. Choi a, C.N. Kim a, Y.J. Kang a, J.S. Park a, H.Y. Han b

a Department of Surgery, Eulji University Hospital, 1306 Dunsan-dong, Seo-gu, Daejeon, South Korea
b Department of Radiology, Eulji University Hospital, Daejeon, South Korea

Introduction: There are few reports in the literature of gastroepiploic artery aneurysm (GEAA). Therefore, there are still no established guidelines for its management.

Report: A 55-year-old woman presented to the emergency department with abdominal pain. Computed tomography revealed a large hematoma around the stomach with contrast extravasation at the right GEAA. An emergency laparoscopic aneurysmectomy was performed.

Discussion: We report our experience of successful laparoscopic aneurysmectomy for a ruptured GEAA.

© 2014 European Society for Vascular Surgery. Published by Elsevier Ltd. All rights reserved.
Article history: Received 23 December 2013, Accepted 1 May 2014

Keywords: Gastroepiploic artery aneurysm, Laparoscopic aneurysmectomy

INTRODUCTION
Splanchnic artery aneurysms (SAAs) are uncommon. In particular, gastroepiploic artery aneurysms (GEAAs) have an extremely rare incidence of approximately 0.2–0.4% of all SAAs. Therefore, because of their rarity there are still no established guidelines for their management. This report details a ruptured GEAA successfully treated by laparoscopic aneurysmectomy, and presents it as an option for surgical treatment based on the presentation of the patients, as well as their comorbidities and risk factors.

REPORT
A 55-year-old woman presented with abdominal pain with nausea and chill that occurred 30 minutes prior. The patient had experienced dyspepsia-like abdominal discomfort for 2 days, and had no history of trauma or other specific past medical history. Immediately after admission, the patient had hypotension, with a systolic blood pressure of 57 mmHg and a serum hemoglobin concentration of 6.4 g/dL. After fluid resuscitation, including transfusion of packed red blood cells, the patient’s blood pressure returned to normal. An abdominal computed tomography scan (CT) showed a large hematoma along the greater curvature of the stomach with contrast extravasation from a right gastroepiploic artery aneurysm (Fig. 1). Laparoscopic exploration was planned because the patient’s vital signs had been stable since resuscitation and the active bleeding focus of the aneurysm had been localized by the CT. Laparoscopic aneurysmectomy was performed through four trocars: one 12-mm trocar and one 5-mm trocar were placed in the right upper quadrant, one 5-mm trocar and one 12-mm trocar were placed in the left upper quadrant, one 5-mm trocar and one 12-mm trocar were placed in the left upper quadrant, one 5-mm trocar and one 12-mm trocar were placed in the right upper quadrant (Fig. 2A). After dissecting between the greater curvature of the stomach and the omentum using laparoscopic coagulation shears (Ethichon Endosurgery, Cincinnati, OH, USA), the proximal and distal ends of the right gastroepiploic artery were freed and taped. The aneurysm was excised and the remnants of the gastroepiploic artery ligated at both ends. The pathologic findings were an 18.0 × 5.5 × 3.5-cm-sized aneurysmal sac with a mural thrombus (Fig. 2B). The patient was discharged 7 days after surgery without postoperative complications.

DISCUSSION
There are few reports of GEAAs in the literature, and rupture rates of GEAAs of about 75% have been reported. The mortality after rupture of these aneurysms has been reported to be as high as 70%, so it is recommended that
they be treated as soon as possible after they have been identified.3
In recent years, advances in, and widespread use of, abdominal imaging techniques such as CT or ultrasonography have led to an increase in the incidental detection of GEAAs. These asymptomatic patients can choose nonsurgical treatment as a first option, such as transcatheter arterial embolization (TAE).

But patients presenting with aneurysmal rupture require urgent surgery (laparotomy in most cases) because of severe hemorrhage with hypotension. Depending on the patient’s vital signs, the relatively easy exposure of GEAAs with their superficial location compared with other SAAs, can permit laparoscopic surgery, which has been performed with success.4 In addition, laparoscopic surgery of GEAAs could be considered in patients with long and overly tortuous vessel anatomy for whom TAE would be difficult.

The treatment strategy for GEAAs depends on the presentation of the patient and the location and type of the aneurysm, as well as the overall condition of the patient with regard to age and comorbidities.5 TAE is an effective treatment for patients with an SAA, but laparoscopic surgery can be an alternative to open surgical treatment in certain types of aneurysm, such as GEAAs.

**FUNDING**
None.

**CONFLICT OF INTEREST**
None.

**REFERENCES**