A Right Gastroepiploic Artery Aneurysm Treated by Surgical Excision

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A 65-year-old male patient was referred to our hospital for postprandial abdominal pain. Computed tomography and angiography revealed 2 aneurysms of the right gastroepiploic artery, which were measured 0.8×1.3 cm and 1.9×3.4 cm. Excision of 2 saccular and fusiform aneurysms by laparotomy was performed. His hospital course was uneventful and symptoms disappeared after surgery. A gastroepiploic artery aneurysm can cause recurrent abdominal pain and surgical resection is warranted in symptomatic aneurysms. (J Korean Surg Soc 2010;78:423-425)

Key Words: Aneurysm, Gastroepiploic artery, Resection

INTRODUCTION

Visceral artery aneurysms (VAAs) are uncommon but clinically relevant lesions. Recently, VAAs are reported more frequently due to liberal use of computed tomography (CT). Splenic artery aneurysms are most common VAA and their natural courses and therapeutic guidelines are well described.(1-3) VAAs that affect other sites are so rare that comprehensive data are lack in the literature, except a few case reports. Gastroepiploic artery aneurysms have an incidence of 0.4%, and there is no established therapeutic guideline because of its rarity.(3) Here we present a case of gastroepiploic artery aneurysm successfully treated by surgical resection with literature review.

CASE REPORT

A 65-year-old man presented to a district hospital with abdominal pain and poor oral intake for 1 month. He had chronic obstructive pulmonary disease with asthma properly managed without recent asthmatic attack.

A CT scan showed 2 aneurysmal masses locating below the duodenal bulb, and measured 0.8×1.3 cm and 1.9×3.4 cm (Fig. 1). He was transferred to our hospital for further workup and surgery. On admission, his vital signs were stable, and no abnormality was noted in the abdomen by physical examination and objective tests including CT and endoscopy. Superior mesenteric artery (SMA) angiography revealed 2 aneurysms of the right gastroepiploic artery which was originated from the SMA (Fig. 2).

Laparotomy was performed through a midline incision. The aneurysms were easily found beneath the peritoneum. There was mild adhesion around the aneurysms. After dissecting between the greater curvature of the stomach and the omentum, the proximal and distal ends of the right gastroepiploic artery were freed and taped, and aneurysms were excised and the remnant gastroepiploic artery was ligated at both ends. The aneurysmal sacs contained mural thrombus. Pathologic examination revealed true aneurysms with no evidence of vasculitis. No organism was found in blood or tissue culture.

Abdominal pain disappeared after surgery and the
Fig. 1. Contrast enhanced CT images. Abdominal enhanced CT finding shows 2 saccular and fusiform aneurysms containing mural thrombus in the right gastroepiploic artery, which were 0.8×1.3 cm and 1.9×3.4 cm in size (white arrow, and double white arrows).

Fig. 2. Selective angiogram of superior mesenteric artery (SMA). (A) On angiogram obtained by cannulating SMA, the right gastroepiploic artery is arising from SMA and has a large fusiform aneurysm. (B) Two aneurysms in line are demonstrated in delayed image.

patient tolerated a full diet. He was released from the hospital 5 days after surgery and has been free of symptoms for 71 months.

DISCUSSION

Aneurysms of the gastric and gastroepiploic arteries account for 4% of VAAs; gastroepiploic artery aneurysms have an incidence of 0.4%. Because of the rarity of this type of aneurysm, little is known about the etiology, presentation, radiologic and surgical findings, and indications for intervention. The etiology of VAAs is known to be different from aneurysms of the peripheral vascular system. VAAs are more likely caused by medial degeneration of undetermined origin or degeneration due to a secondary event, such as fibromuscular dysplasia, gestational alterations, trauma, mycotic embolization, or atherosclerosis, whereas peripheral artery aneurysms are mainly caused by arteriosclerotic degeneration. In this case, there was no histopathologic abnormality other than
aneurysm and no specific predisposing factors such as arteriosclerosis, bacterial endocarditis, collagen disease, or trauma.

Abdominal pain is the most common symptom of VAA. The natural history of most VAAs appears to be expansion and eventual rupture, with life-threatening consequences. (3) Rupture rates of VAAs range from 20% to 70%, with a mortality rate of around 30%. (3-5) Considering the natural history of the VAA and the risk of rupture, there is a general agreement in the literature to treat these lesions when they are symptomatic. However, through the widespread use of CT scans, the detection of asymptomatic VAAs is increasing. Generally, elective surgical treatment of asymptomatic VAAs larger than 2 cm is recommended. (6)

About 30 cases of gastroepiploic aneurysms and pseudoaneurysms are reported to date. (7) The most common symptom of gastroepiploic artery aneurysm is abdominal pain, and asymptomatic aneurysms have not been commonly reported. (7) Most gastric and gastroepiploic artery aneurysms present as vascular emergencies, with rupture in more than 90% of cases, and antecedent dyspeptic epigastric discomfort has been reported in a few patients. (2,3) Thrombotic occlusion of the gastroepiploic artery was relatively uncommon, with only one report found in the literature. (8)

There is no established therapeutic guideline for incidentally found, asymptomatic gastroepiploic artery aneurysms, because the lack of large clinical series makes definitive therapeutic guidelines difficult. However, a careful approach considering surgery for incidentally found gastroepiploic artery aneurysms appears necessary because of the risk of rupture associated with high mortality. (7) Gastroepiploic artery aneurysms can be treated by simple ligation with aneurysmectomy either by an open or laparoscopic method. (7) The relatively easy exposure of gastroepiploic artery compared to other VAAs from its superficial location and durable long-term results makes surgical treatment preferred to endovascular treatment. (6) When feasible, transcatheter arterial embolization can be performed with low procedural risk. (9,10)

In conclusion, though uncommon, rare types of VAAs can be regarded as a cause of vague epigastric discomfort or abdominal pain when other diseases are excluded. Symptomatic gastroepiploic artery aneurysm is known to be associated with a high rupture rate, and surgical resection is warranted.

REFERENCES