Case report - Renal and visceral
Superior mesenteric artery branch – jejunal artery aneurysm

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Abstract

Visceral artery aneurysm (VAAs) is a relatively uncommon vascular disorder and it shows some vague symptoms. Therefore, the clinical diagnosis is difficult and these aneurysms are discovered and diagnosed only after rupture in many cases. This case report describes the history of a woman who had a superior mesenteric artery (SMA) branch aneurysm. A 62-year-old woman presented with fatigue and moderate to severe epigastric and mid-back pain. A computed tomography of the abdomen and pelvis demonstrated a partially thrombosed aneurysm (38 x 40 mm) rising from the jejunal branch of the SMA. The aneurysm which contains mural thrombus is resected, and a saphenous vein graft interposition was performed between the ends of the same jejuno-jejunal artery. The patient’s recovery was unremarkable, and she was discharged on postoperative day 7. Rapid diagnosis, localization, and surgical or endovascular interventions are necessary to avoid devastating consequences in VAAs. Saphenous vein graft interposition is a good choice for surgical intervention for patients not suitable for endovascular treatment.

Keywords: Visceral artery aneurysm; Jejunal artery; Saphenous vein

1. Introduction

An aneurysm of the abdominal splanchnic artery is a relatively uncommon vascular disorder [1] which shows few and vague specific symptoms. Therefore, the clinical diagnosis is difficult and, in many cases, the aneurysm is discovered and diagnosed only after rupture of some of which result in death. This report describes the case of a woman who had a superior mesenteric artery (SMA) branch aneurysm.

2. Case report

A 62-year-old female presented with fatigue and moderate to severe epigastric and mid-back pain. Past medical history included cataract surgery, lumbar degenerative disc disease treated with posterior instrumentation of the spine and chronic constipation. At initial presentation, vital signs were normal except for a blood pressure of 178/100 mmHg. The physical exam revealed moderate epigastric tenderness without rebound or guarding. No obvious external injury could be seen in the abdominal region. Laboratory findings were unremarkable, and the hemoglobin was 10.3 g/dL. A computed tomography (CT)-scan of the abdomen demonstrated an aneurysm (38 x 40 mm) rising from the jejunal branch of the SMA (Fig. 1) and additionally the wall of the distal sigmoid colon was thickened and collapsed. Elective surgery was performed the next day.

An exploratory laparotomy revealed an intraperitoneal aneurysm arising from the jejunal artery branch close to the aorta, superior mesenteric vein and duodenum. On systematic abdominal exploration no active bleeding was noted. The sigmoid colon appearance and motility was normal. The aneurysm size of 45 x 40 mm was exposed through the mesojejunum (Fig. 2a) dissected and resected completely with its mural thrombus inside and a saphenous vein graft interposition was performed (Fig. 2b). The patient’s recovery was unremarkable, and she was discharged on postoperative day 7. The patient was included in a survey program including a whole body CT-scan to detect atypical and other aneurysmal lesions. However, no additional lesion was found.

3. Discussion

Unlike aortic aneurysms, visceral artery aneurysms (VAAs) are very rare, and potentially lethal vascular disease with an estimated incidence of 0.1–2.0% [2]. VAAs occur equally among men and women [3]. Splenic (60%), hepatic (20%), superior mesenteric (5.5%), celiac (4%), and gastroduodenal artery aneurysms (4%) account for 95–98% of VAAs. The remaining 2–5% involve smaller mesenteric branch arteries, such as the gastric, pancreaticoduodenal, jejunal, ileal, and colic arteries [3, 4]. Although the number of case reports of splanchnic artery aneurysms have increased because of the availability of tomographic methods, reports concerning aneurysms of the jejunal artery have remained few and sporadic [2]. In addition, the size (45 x 40 mm) of
this particular aneurysmal lesion was uncommon and was as extended as a native abdominal aortic aneurysm (Fig. 1).

VAAs arise in response to several disease processes. Inflammation (pancreatitis or peptic ulcer disease) and infection are responsible for 35% of all VAAs. The remainder is associated with atherosclerosis, fibromuscular dysplasia, mycotic embolization, congenital anomalies, spontaneous dissection, collagen vascular disease, and various autoimmune disorders. In contrast to the general etiologic knowledge in the literature, histological examination revealed the atherosclerotic cause of the aneurysm in our patient. This case reminds us that atherosclerosis may produce common and also rare and atypical aneurysmal lesions.

Since most patients present with few, if any, signs and symptoms, VAAs are usually discovered roentgenographically. The abdominal roentgenogram may reveal a curvilinear calcification. In our case, the aneurysm was not calcified. We suspected such a lesion from the abdominal roentgenogram as the lesion was partly calcified. Retrospectively, we checked such possibility.

This exceptional lesion reminds us that the risk of rupture is very high. We believe that this patient was very lucky since her life was saved by the CT-scan. As we report, specific symptomatology does not really exist and clinical symptoms do not provide enough information to reach a diagnosis. In spite of its rarity, this lesion should be suspected and an indication on a CT-scan should be widely used. The CT-scan easily demonstrates its accuracy as in this case the jejunal branch aneurysm was much larger than the native abdominal aorta.

Several factors, such as its presentation, aneurysm diameter, location, aneurysm morphology, type of arterial involvement, patient’s age and gender should be considered for the ideal treatment of VAAs. Generally, therapeutic intervention is required for asymptomatic splanchic aneurysm diameter of >2 cm, because of the high morbidity and mortality associated with rupture. Considering the location and dimensions of the aneurysm in our case we can consider that the risk of rupture was imminent and particularly high. One can imagine the prognosis of the patient if she had had to be operated in an emergency for a ruptured aneurysm. Because of the resulting hemodynamic shock, it is possible that the interpretation of the CT-scan in emergency conditions would have ended in a ruptured aortic aneurysm. Imagine the surprise of the surgeon during the operation if a normal abdominal aorta with a hemorrhagic mesenter full of blood had been found making the exposition of the lesion much more difficult and consequently their difficulty in understanding the mechanism of the hemorrhage. This problem is much more evident in emergency conditions.

There is a general agreement in the literature for the treatment of asymptomatic aneurysm >2 cm and symptomatic patient’s aneurysms regardless of the size. Symptomatic or ruptured splanchic artery aneurysms may be managed by endovascular, laparoscopic, or open surgical procedures. Elective repair or ligation is generally advocated for any mesenteric branch artery aneurysms, as 40–80% of these lesions rupture without prodromal signs, and are associated with significant mortality rate of approximately 10–35% according to some reports. Open surgical repair has long been considered the gold standard for VAA intervention; however, endovascular techniques have
emerged as comparable alternatives to surgery [8] and are particularly useful in patients who are poor surgical candidates. Sachdev et al. retrospectively compared surgical vs. endovascular treatment for VAAs in 59 procedures, and included 14 ruptured VAAs. There were no significant differences in mortality, complications, or the need for reintervention between the groups, but elective endovascular management has reduced the hospital stay [9]. We preferred surgical treatment in our case in order to explore sigmoid colon in the same operative session.

4. Conclusion

A rare case of a jejunal artery aneurysm presenting with abdominal pain is reported. Rapid diagnosis, and surgical or endovascular intervention are necessary to avoid devastating consequences and high mortality rates following an emergency operation after rupture. Resection and saphenous vein graft interposition is a good choice for surgical intervention for some aneurysms that are not suitable for endovascular repair.

References