Case Report

Coeliac Artery Aneurysm

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Abstract

Aneurysms of coeliac artery are extremely rare and account for less than 4% of all splanchnic aneurysms. The detection of such aneurysms, which are often asymptomatic, is mostly occasional. Approximately 15% to 20% of the cases may get complicated by rupture with a mortality rate of around 80%. A reported case of a 55 year old male, who presented with pain and palpable mass in left upper abdomen was diagnosed to have coeliac artery aneurysm. Diagnosis was made on CT scan with selective visceral angiography. Simple ligation with partial excision of the coeliac artery aneurysm was performed.

Introduction

Aneurysms of coeliac artery are extremely rare and account for less than 4% of all splanchnic aneurysms.[1] Since

1958, when Schumaker reported the first case that was successfully treated surgically, only 69 cases have been reported in the international literature.[2] The detection of such aneurysms, which are often asymptomatic, is mostly occasional. Approximately 15% to 20% of the cases may get complicated by rupture with a mortality rate of around 80%.[2] Twenty-one cases have been reported in Japan only of these uncommon aneurysms.[3]

We report the case of a 55 year old male, who presented with pain and a palpable mass in left upper abdomen. He was diagnosed to have coeliac artery aneurysm on CT scan with selective visceral angiography. Simple ligation with partial excision of the coeliac artery aneurysm was performed. Patient had an uneventful recovery with no major complications post-operatively.

Case Report

A 55 year-old male presented to the surgery clinic with pain and a slowly expanding mass in the left upper quadrant of the abdomen for the last nine months. There was no history of trauma, fever, altered bowel habits, abdominal or chest infections. He was a known smoker for the past ten years. He had hypertension and was a known patient of ischaemic heart disease and had myocardial infarction twice in the recent past. At the time of presentation, the patient was afebrile with a blood pressure of 130/90 mm Hg and a heart rate of 80/min. Abdominal examination revealed a large pulsatile mass in the left hypochondrium. Rest of the general physical examination was unremarkable. Routine laboratory investigations were within normal limits. X-ray abdomen did not reveal any abnormality. An aneurysm of 8.7 x 6.3 cm size, most probably originating from splenic artery was found on abdominal ultrasound. A contrast enhanced computed tomography confirmed the ultrasonographic findings. A selective splanchnic angiogram (Figure 1 & 2) was performed which showed that aneurysm was originating from coeliac trunk with rapid and turbid flow in it. Due to the patient's poor cardiac status angiographic embolisation was planned. This procedure failed because of the broad neck of aneurysm with turbulent flow of blood and surgical intervention was planned. Operatively, the aneurysm was found separate from spleen and splenic artery and was adherent posteriorly with the pancreas. Simple ligation with partial excision of coeliac artery aneurysm was performed. Histologically, it showed degeneration and loss of elastic fibers and atherosclerotic lesions. Post-operative recovery was uneventful.

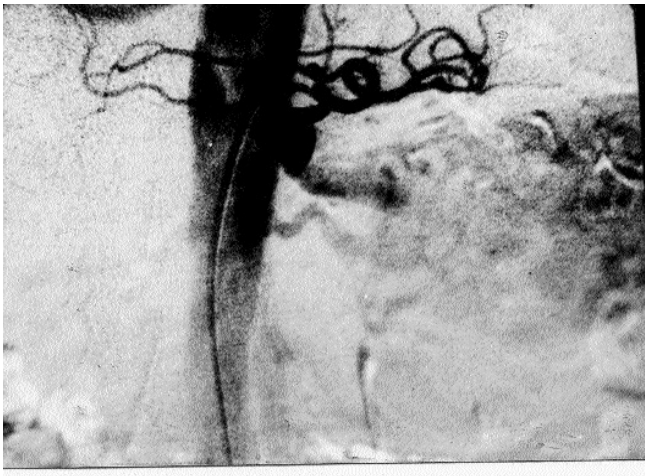

Figure 1: A selective splanchnic angiogram showing the aneurysm originating from the coeliac trunk.

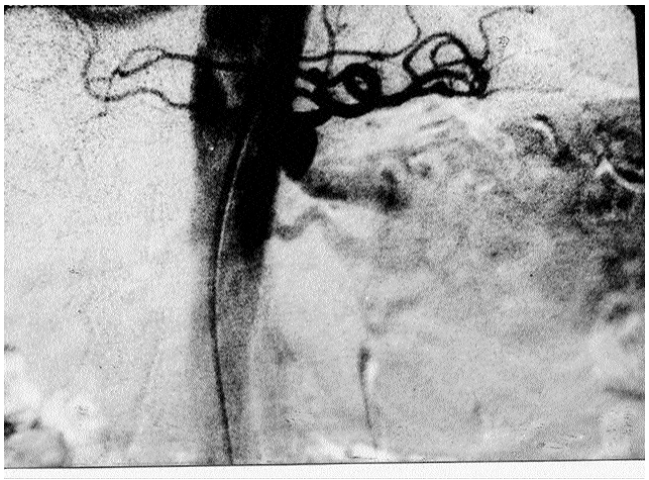

Figure 2: Magnified image of the aneurysm.

Discussion

Aneurysms of the coeliac trunk are the rarest forms of aneurysms of visceral arteries. Due to an increased use of sonography, computed tomography and arteriography more and more cases have been diagnosed in recent past,[4] and in 1985 only, 108 cases were reported in the literature.[5]

Association of coeliac artery aneurysm with other splanchnic aneurysms is well documented in the literature. Associated aortic aneurysms are noted in 18% of the patients with coeliac artery aneurysms, while other splanchnic artery aneurysms affected 38% of these patients.[1] Saliou et al[6] have reported a case of coeliac artery aneurysm associated with multiple splanchnic artery aneurysms involving the gastroepiploic and hepatic arteries. The coeliac artery was ligated and the liver revascularized by direct anastomosis of the common hepatic artery to the aorta, by laparotomy.

D' Ayala et al[7] have reported an unusual case of a large coeliac artery aneurysm in a patient with associated visceral occlusive disease. A coeliac artery aneurysm associated with Behçet's disease is extremely rare. Maeda et al[8] presented a case

of successful surgical treatment for an impending rupture of a large coeliac artery aneurysm with a wide proximal neck in a patient associated with Behçet's disease.

Arteriosclerosis and medial degeneration are the most common pathological changes that are observed in celiac artery aneurysms.[1] Traumatic aneurysms due to penetrating injuries are uncommon. Post-stenotic dilatation occasionally progress to frank aneurysmal change and is an uncommon cause of these lesions. Mycotic coeliac artery aneurysms are also very rare. Most coeliac artery aneurysms are asymptomatic with no sex predilection. Abdominal discomfort localised to the epigastrium accompanies in more than 60% of symptomatic coeliac artery aneurysms. These lesions are apparent as pulsatile abdominal masses in nearly 30% of the cases.[1]

The most serious complication of coeliac artery aneurysmal disease is rupture. Although, aneurysmal disruption is most often associated with intra-peritoneal haemorrhage, communication with gastro-intestinal tract can occur, or rarely may present as haemoptysis and haemothorax.[9] Mortality in operative treatment of patients with ruptured coeliac artery aneurysms is 40% compared with only 5% for those with non-ruptured coeliac artery aneurysms.[1]

Surgical treatment of these lesions is warranted except when operative risks contraindicate any abdominal operation.[1,10] Aneurysmectomy with arterial reconstruction accounts for 50% of reported operations, while coeliac axis ligation with interruption of antegrade blood flow through the common hepatic, left gastric and splenic vessels has been undertaken in 35% of reported operations.[5] Ranica et al[11] described a case of aneurysm of coeliac trunk dealt with aneurysmectomy and reconstruction by means of graft. The aneurysmectomy and the reconstruction have been executed by means of a prosthetic graft finish-terminal in Dacron, succeeding in preserving the three arteries originating from the coeliac trunk (left gastric, hepatic, splenic arteries). Ghoddousi et al[12] reported a case of coeliac artery aneurysm treated electively by resection and graft replacement between the aorta, common hepatic artery and superior mesenteric artery. Although excision with arterial reconstruction is usually recommended, endoaneurysmorrhaphy can also be considered in selected cases as Gupta[13] and colleagues described a case of coeliac artery aneurysm treated successfully by endoaneurysmorrhaphy.

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