



A Rare Case of Spontaneous Rupture of an Inferior Pancreaticoduodenal Artery Aneurysm Treated with Endovascular Procedure

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Abstract

Aneurysms of the pancreaticoduodenal arteries are very rare. The treatment of choice is the embolization of the aneurysm sac. The following is a case that depicts a rare case of spontaneous rupture of an inferior pancreaticoduodenal artery aneurysm that was diagnosed in a 55-years old male patient during investigation of gastrointestinal symptoms. The treatment provided was endovascular embolization, with complete exclusion of the aneurysm and a good clinical course.

Keywords: Endovascular treatment; Pancreaticoduodenal artery aneurysm; Tomography

Introduction

Aneurysms of the pancreaticoduodenal arteries are rare, accounting for about 2% of all splanchnic aneurysms [1]. Usually, diagnosis is made in emergency conditions due to complications such as rupture, which is associated with high mortality rates (21% to 26%) [2]. The treatment of choice is the embolization of the aneurysm sac, because of its high efficacy and lower mortality [2]. The following is a case that depicts a rare case of spontaneous rupture of an inferior pancreaticoduodenal artery aneurysm that was diagnosed during investigation of gastrointestinal symptoms. The treatment provided was endovascular embolization, with complete exclusion of the aneurysm and a good clinical course.

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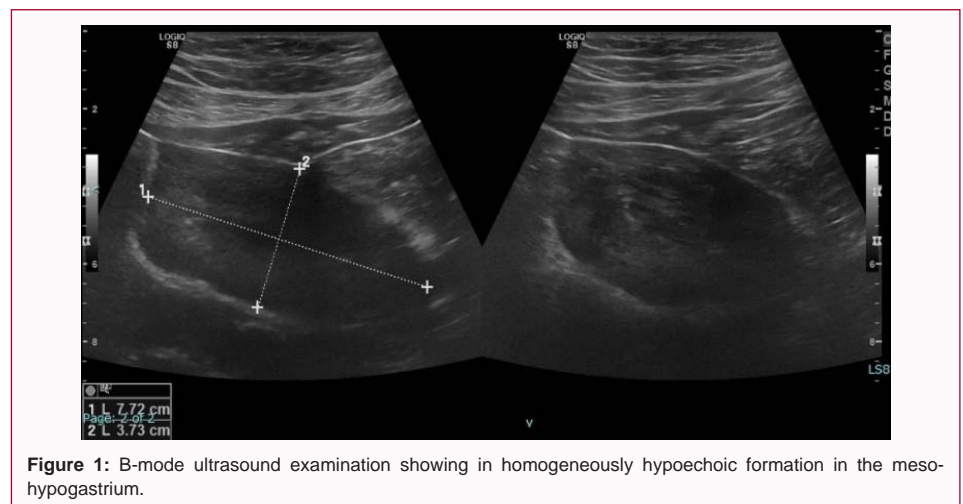
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Case Presentation

Male patient, 55 years old, comes to our PS referring to widespread abdominal pain and constipation; no previous pathology. Blood tests (Hb 12, neutrophils 82%, Lymphocytes 13.6%) P.A. 120/75 mmHg, fc 105 bpm, diuresis 1200 cc, T.C 38°C, open alvus with swollen and painful abdomen. Urgent abdominal ultrasound examination is performed, which shows a non-homogeneous hypoechoic formation in the meso-hypogastrium (Figure 1) and some slightly thickened intestinal loops, but it is not conclusive. We proceed to hydration and start antibiotic therapy. Due to the persistence of the symptoms and the drop in Hb values (8.4), the patient is then subjected to



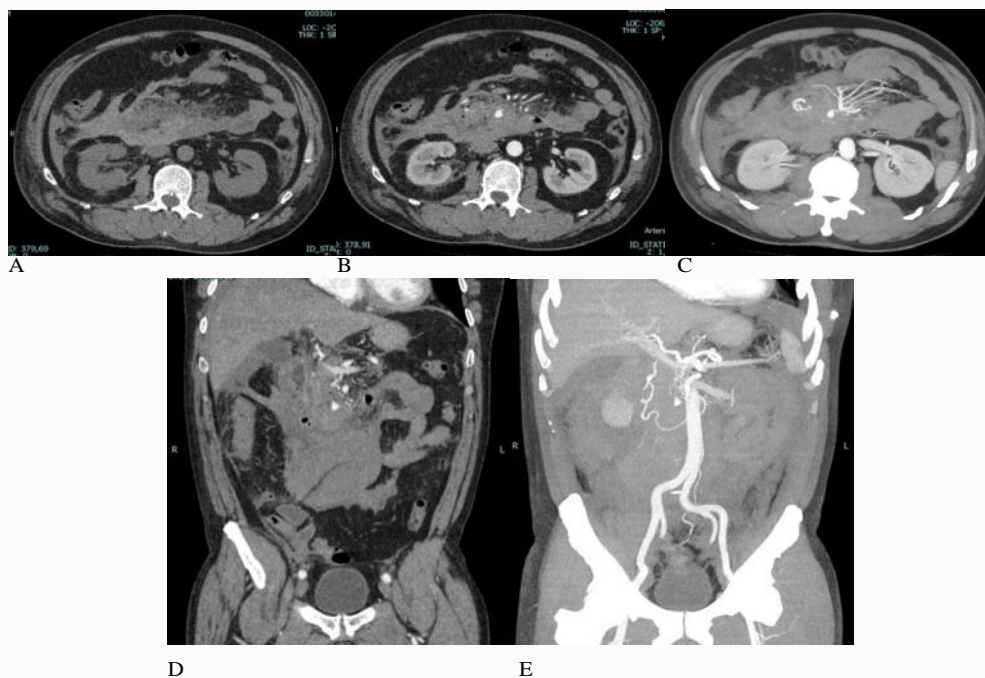


Figure 2: CT examination axial scans. A) baseline examination showing massive retroperitoneal hematoma. B) arterial phase of post-contrast study which shows in the context of the vast hematoma an aneurysm of the pancreaticoduodenal artery. C) MIP reconstruction. D, E) CT examination coronal scans.



Figure 3: Angiographic examination that documents aneurysmal dilatation of the proximal tract of the first collateral branch of the inferior pancreaticoduodenal artery.

a CT examination of the abdomen with intravenous contrast which shows, in the median mesenteric region, extensive retroperitoneal hematoma with evidence of aneurysm of the pancreaticoduodenal artery without active spreading in the arterial phase or in the venous phase (Figure 2). The patient is then urgently transferred to another hospital to undergo angiography that documents acute stenosis of the celiac tripod and aneurysmal dilatation of about 11 mm of the proximal tract of the first collateral branch of the inferior pancreaticoduodenal artery (Figure 3). The patient requires an endovascular treatment with embolization of the efference, the sac and the afference with complete exclusion of the aneurysm (Figure 4).

Discussion

Visceral artery aneurysms are infrequent and in order those of the splenic artery account for about 50% followed by aneurysms of the hepatic artery (20%), mesenteric superior artery (8%) and pancreaticoduodenal artery (2%) [3,4]. Pancreaticoduodenal artery aneurysms are extremely rare but are probably little known because



Figure 4: Angiographic control after embolization of the efference, the sac and the afference with complete exclusion of the aneurysm.

the symptoms are non-specific and heterogeneous as there may be mesogastric pain, dyspepsia, nausea, jaundice, digestive bleeding or an acute bleeding event [5]. The incidence is the same in both sexes [2] and usually at diagnosis the average age is 60 years [6]. They can be classified into true aneurysms or pseudoaneurysms [7]; the pseudoaneurysms are secondary to trauma, infectious and inflammatory diseases [7] while true aneurysms are secondary to celiac trunk stenosis, atherosclerotic disease, or fibromuscular dysplasia [7]. They have a high risk of rupture independently of the diameter [7]. In our case, the patient presented with a true aneurysm, as there were no other possible etiologies and arteriography showed a reduction in the caliber of the celiac trunk at the origin. Aneurysmal rupture occurs with a frequency between 59 and 69% giving rise to a retroperitoneal hematoma [7]. The diagnostic gold standard is contrast-enhanced CT [2]. The treatment options are conventional

surgical treatment and endovascular approaches [2]. Conventional surgery is indicated in hemodynamically unstable patients and in cases of aneurysms in territories that are inaccessible to endovascular procedures or after failure of embolization [2,8,9]. Angiographic embolization is indicated regardless of the size of the aneurysm and is the treatment of choice for its high efficacy (67% to 100%), low mortality (2.7%), low risk of rupture, low postoperative pain and limited post-procedural hospitalization time [2,10]. In our case, after right common femoral arterial access, the selective catheterization of the celiac tripod was not possible due to emergency stenosis and therefore selective catheterization of the superior and super-selective mesenteric artery of the inferior duodenal pancreatic artery and subsequent aneurysmatic embolization was proceeded; the patient had no peri and post procedural complications.

Conclusion

Aneurysms of the duodenal pancreatic artery are rare and present with non-specific symptoms; the diagnosis, made by CT examination of the abdomen with intravenous contrast, is incidental and considering the high mortality rate they must be included among the diagnostic hypotheses in the case of a patient presenting with abdominal pain and anemia. Treatment must be prompt by selective endovascular embolization.

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