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ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Medical Imaging Quiz – Case 78

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2024, 41(4):566–567

E. Botsa,[1]
I. Thanou,[2]
L. Poulou,[3]
C. Georgokosta,[1]
L. Thanos[3]

[1]First Pediatric Clinic, "Agia Sofia" Children's Hospital, Athens
[2]Department of Radiology, "Agios Georgios" General Hospital, Chania, Crete
[3]Department of Radiology, "IASO" General Hospital, Athens, Greece

A 52-year-old female patient was admitted to the emergency department due to severe abdominal pain. She referred having recurrent episodes of abdominal pain the last three years. Laboratory evaluation revealed none pathological finding; thus, a magnetic resonance imaging (MRI) was performed during her hospitalization and revealed pain's cause (fig. 1).

Comment

Gastroduodenal artery (GDA) aneurysms are rare but a potentially fatal condition if rupture occurs. They represent about 1.5% of all visceral artery aneurysms (VAA) and are divided into true and pseudoaneurysms depending on the etiologic factors. Pseudoaneurysms are mostly a condition of the middle age (50–58 years old). The male/female ratio is 4.5:1 and the mean size 3.6 cm.

They have been reported in almost all the visceral arteries but are most commonly seen in the splenic artery (46%), followed by the renal artery (22%), the hepatic artery (16.2%) and the pancreaticoduodenal artery (1.3%). True aneurysms in the pancreaticoduodenal and gastroduodenal arteries are extremely rare and represent only 3.5% of all VAA. Most common condition associated with gastroduodenal artery aneurysm is pancreatitis (47% of all cases), followed by ethanol abuse (25%), peptic ulcer disease (17%) and cholecystectomy (3%). Other causes include congenital abnormalities (such as Marfan syndrome and Ehlers-Danlos syndrome), liver cirrhosis, other vascular abnormalities such as fibro-muscular dysplasia, polyarteritis nodosa and predisposing events such trauma and septic embolism.

Trauma, hypertension and atherosclerosis have been cited as potential risk factors for true aneurysms. Most common clinical presentation is gastrointestinal hemorrhage due to rupture of the aneurysm (52%), while only 7.5% of GDA aneurysms remained asymptomatic. Abdominal pain is the second most common symptom and occurs in 46% of cases. Prior to the era of sophisticated

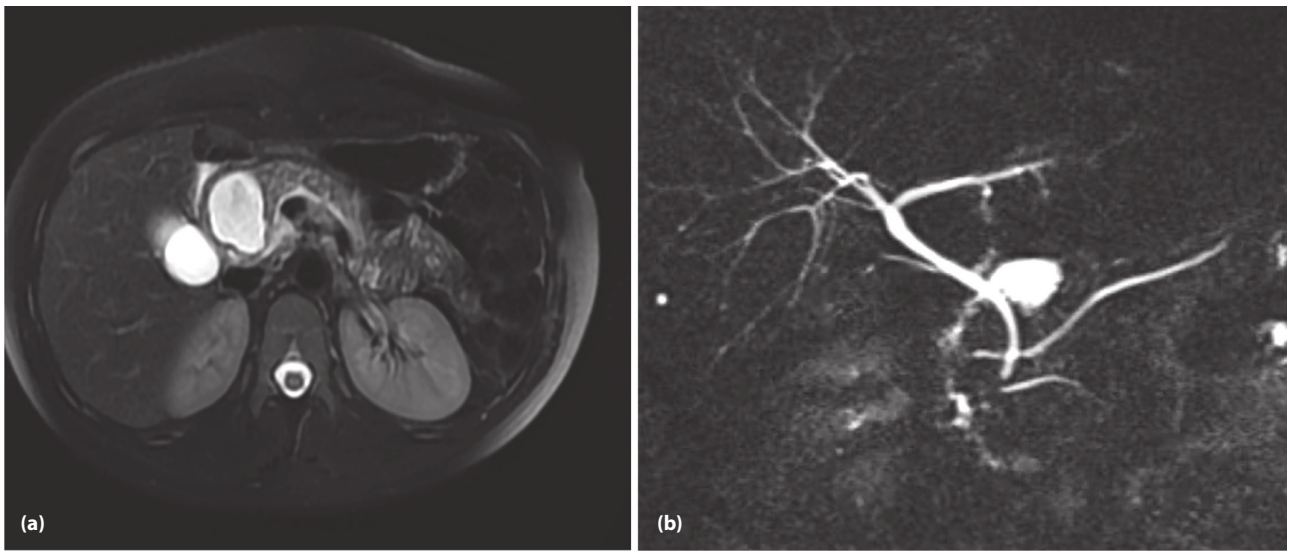

Figure 1. Abdominal magnetic resonance imaging (MRI) (a) and angiography (b) revealed gastroduodenal artery aneurysm.

imaging modalities, the majority of cases of GDA aneurysms were undiagnosed until rupture occurred. Currently with the various imaging studies available, an increasingly larger number of cases are being incidentally detected in asymptomatic patients.

The gold standard diagnostic test is angiography and it serves both diagnostic and therapeutic purposes by delineating the arterial anatomy and allowing therapeutic intervention. It has the highest sensitivity (100%) followed by computed tomography (CT) (67%) and ultrasonography (US) (50%). CT scan has the advantage of being non-invasive and localizing the aneurysm with its relations to surrounding structures. Magnetic resonance angiography or multi-detector row CT have been reported to be as effective as visceral angiography in the diagnosis of abdominal vascular lesions. Once diagnosed, a GDA must be definitively treated even if small or asymptomatic due to its risk to rupture independently of its size. The optimal management approach depends on the mode of presentation and hemodynamic status of the patient. In asymptomatic patient or in the "bleeding but stable" patient, an endovascular approach through coil embolization or stent grafting offers the best chance for the patient due to its overall low morbidity and mortality. Failed intervention or unstable patient requires emergency laparotomy, exclusion of the aneurysm by vessel ligation or aneurysm resection with or without vascular reconstruction through end-to-end anastomosis.

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Corresponding author:

L. Thanos, Department of Radiology, "IASO" General Hospital, Athens, Greece
e-mail: loutharad@yahoo.com