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Primary Aortoenteric Fistula: Case Report

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Rezumat

Fistulă primitivă aortoenterică: caz clinic

Prezentăm cazul unei paciente in vârstă de 81 de ani, care a fost internată în clinică pentru hematemeză, hematochezie şi dureri la nivelul abdomenului inferior. Examinarea echografică şi tomografia computerizată au identificat o fistulă primitivă aortoenterică între un anevrism aortic abdominal şi a doua porțiune a duodenului, ceea ce reprezintă o localizare rară. Sunt discutate aspecte de patologie, diagnostic şi management chirurgical.

Cuvinte cheie: fistula aortoenterică, hemoragie gastrointestinală, anevrism aortic abdominal

Abstract

We report the case of an elderly woman, 81 years old, who was admitted in our department for hematemesis, hematochezia and lower abdominal pain. The abdominal ultrasound and the CT scan diagnosed a primary aortoenteric fistula between an abdominal aortic aneurysm (AAA) and the second part of the duodenum, which is a very rare localization regarding this condition. Surgical pathology, diagnosis and management are discussed.

Key words: aortoenteric fistula, gastrointestinal bleeding, abdominal aortic aneurysm

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Introduction

Aortoenteric fistula (AEF) is a rare but potentially fatal condition causing massive gastrointestinal bleeding. This condition can be primary or secondary to aortic surgery. Primary aortoenteric fistula is rare, with an incidence rate of 0.1% to 0.8% out of AEF (1,2). Aortoenteric fistulas are associated with a high rate of mortality (65–100%). Most frequent symptoms are gastrointestinal blood loss (acute or chronic), abdominal pain, pulsating abdominal mass (3).

Case report

We report the case of an elderly woman, 81 years old, who was admitted in our department with hematemesis, hematochezia and lower abdominal pain. Two weeks before, this patient was admitted in a different hospital with the same symptoms and was diagnosed with left colon diverticulosis and abdominal aortic aneurysm (AAA). The upper endoscopy detected no lesions at the level of the stomach and duodenum. The symptoms resolved with conservative treatment and the patient was discharged. She was on chronic treatment with Plavix for atrial fibrillation; two years prior to this an ischemic stroke was diagnosed.

At current admission blood values showed: Hb = 5.6g/dl; WBC = 11000/l; PLT = 297000/l; INR = 1.4; AP = 62%. Blood pressure and the pulse at presentation were 85/60 mmHg and 66 per minute, respectively.

Clinical examination of the abdomen founded mild tenderness in the left and right lower quadrants. Abdominal ultrasound (Fig. 1) showed aortic abdominal aneurysm with 87 mm length and a diameter of 59/62 mm containing a thrombus (anterior and lateral). Upper endoscopy visualized high volume of blood in the duodenum, but could not identify the bleeding source. Abdominal enhanced CT scan identified a 7.5 cm AAA arising at 1.5 cm under the emergence of the renal arteries, with a 6.5 cm length. There is a secondary dilatation of the common bile duct, gallbladder and Wirsung duct. The stomach and duodenum are distended as well and appear to contain blood. The right side of the AAA bulges into the second part of the duodenum and the pancreatic head; there is lack of continuity of the second part of the duodenum by lack of aortic calcified atheromas visualization. Overall, the CT scan is very suggestive for the aortoduodenal fistula located at the level of the second part of the duodenum. (Figs. 2, 3, 4)

Vascular surgery evaluation was requested. The diagnosis was AAA with primary aortoduodenal fistula and it was decided to transfer the patient in ICU and plan the emergency surgical intervention. The patient was treated conservatively for a few hours, but she died due to massive gastrointestinal bleeding.

Discussion

The most common cause of primary aortoenteric fistula (PAEF) is atherosclerotic aortic aneurysm. The other causes known to be associated with PAEF are tuberculosis, syphilis, infection, cancer, and foreign bodies (4). Primary AEF presents diagnostic and management challenges due to the subtlety of its symptoms and evolution (5). Clinical presentation of PAEF is usually dramatic with massive hematemesis, although the bleeding may be occasionally less severe and cause melena only. Unfortunately the true cause of the bleeding is often misdiagnosed as originating from an ulcer or other condition and therefore adequate measures are not taken to prevent a second and often fatal bleeding. The reasons for this repeated bleeding are not entirely clear but it is likely due to spasm of the duodenal muscle layer in response to the bleed and hypotension secondary to hypovolemia (6). In the majority of cases a free interval of 4–24 hours was observed, but episodes occurring weeks later are described. The most common type of aortoenteric fistula is the communication between the aorta and the third portion of the duodenum (75%) (3).

Commonly used diagnostic methods include CT scanning, upper endoscopy and angiography. However, the detection rates for each of these modalities are 61%, 25%, and 26 %, respectively (7). CT findings suggestive of primary AEF are: air within the aortic wall, focal bowel-wall thickening, disruption of aortic fat cover, and contrast agent penetrating into the bowel (8). Angiography is diagnostic in only a minority of

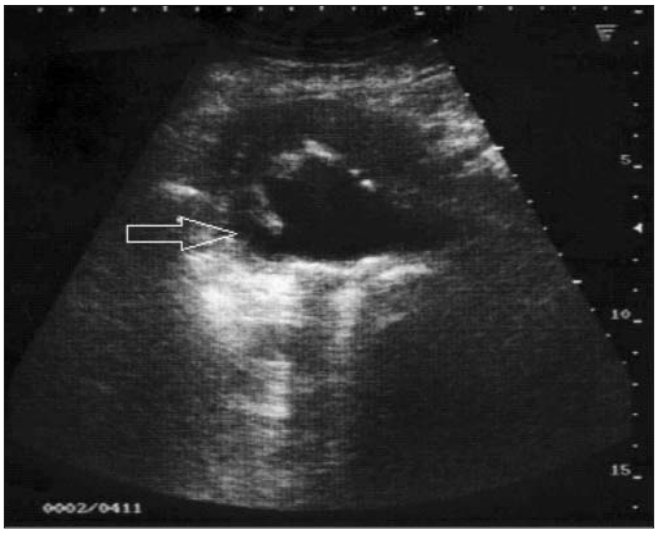

Figure 1. *Abdominal ultrasound: aortic aneurysm with right side expansion to the duodenum*

Figure 2. *Non-enhanced computed tomography: discontinuity of the aortic calcified atheroma on the right convexity of the aneurysm that suggests rupture*

Figure 3. *Contrast enhanced computed tomography: visible true lumen of the aneurysm, intraluminal eccentric thrombus with contrast medium extravasation at the level of the second part of the duodenum (white arrow)*

Figure 4. *CT reconstruction: Expansion of the aneurysm on the right aortic contour with mass effect on the duodenum (white arrow). Note the absence of the calcified atheroma on the right aortic contour that suggests aneurysmal rupture*

cases, as the fistula can be demonstrated only in cases of active bleeding which are rarely stable enough to be subjected to this procedure. Further diagnostic evaluation should be pursued only if the clinical condition of the patient permits it. The main purpose of endoscopy is therefore to rule out other causes of bleeding, but it is rarely diagnostic and direct demonstration of an aortoenteric fistula is a rare event and in most cases the examination is negative or non-diagnostic.

Because of massive and life-threatening bleeding, without surgery, primary AEF leads to 100% mortality, therefore early detection and proper intervention are to be desired. In cases of severe, repeated bleeding the only reasonable measure which can be adopted to save the patient's life is surgical intervention. In the largest published series of 118 cases of aortoduodenal fistula, only 25% of patients underwent surgical repair and only 60% of these survived the operation (2).

Conclusion

Primary aortoenteric fistula is a very rare but often fatal condition. Primary AEF should be strongly suspected in cases of gastrointestinal bleeding associated with aortic aneurysm. Early diagnosis by CT scan and proper treatment are critical.

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