

CAS CLINIQUE / CASE REPORT

SHORT GASTRIC ARTERY APOPLEXY AFTER GAGGING

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ABSTRACT : Abdominal apoplexy, the spontaneous hemorrhage into the peritoneal cavity, is usually caused by a rupture of visceral vessels such as short gastric arteries. Several factors such as pregnancy, hypertension and atherosclerosis have been described in association with abdominal apoplexy. Blunt trauma, inflammatory conditions, aneurysm rupture and rarely vomiting are some predisposing conditions.

We report a very unusual case of a patient who had a spontaneous short gastric artery acute hemoperitoneum caused by forceful gagging during teeth brushing. The patient was treated with blood transfusion, fluids resuscitation, laparotomy, and suture ligation of the bleeder vessel. We also review the medical literature of abdominal apoplexy, a rare etiology of acute abdomen that should be recognized early in the Emergency Department.

INTRODUCTION

Abdominal apoplexy is a rare emergency condition. It is the occurrence of hemorrhage into the peritoneal cavity (hemoperitoneum) caused by the spontaneous rupture of a visceral artery. The first case was reported by Barber in 1909 [1]. The term intra-abdominal apoplexy was coined by Green and Powers in 1931 [2]. Here we describe an unusual case of abdominal apoplexy caused by the rupture of a short gastric artery during a forceful gagging.

CASE REPORT

A 36-year-old alcoholic man presented with an acute onset of severe epigastric pain that happened within few minutes of a forceful gag and nausea while brushing his teeth. The pain increased upon deep inspiration and was associated with left shoulder pain. Physical examination revealed diffuse abdominal tenderness, heart rate of 110 beats per minute, a systolic blood pressure of 95 mmHg, and temperature of 97.7 °F. A computed tomography showed significant amount of blood in the abdominal cavity, surrounding the liver, and extending down to the

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RÉSUMÉ : L'apoplexie spontanée abdominale est une hémorragie dans la cavité péritonéale habituellement causée par une rupture de vaisseaux viscéraux y compris les vaisseaux courts de l'estomac. Plusieurs facteurs, comme la grossesse, l'hypertension et l'athérosclérose ont été décrits en association avec l'apoplexie abdominale. Traumatismes, maladies inflammatoires, ruptures d'anévrisme et rarement des vomissements sont des facteurs prédisposants.

Nous rapportons un cas très inhabituel d'hémopéritoine spontané aigu par apoplexie d'une artère gastrique courte chez un patient causée par un réflexe nauséux exacerbé alors qu'il se brossait les dents. Le patient a été traité par une transfusion sanguine, une réanimation par perfusions, une laparotomie et une ligature du vaisseau rompu. Nous passons en revue la littérature médicale concernant l'apoplexie abdominale, une cause rare d'abdomen aigu qu'il est essentiel de diagnostiquer le plus rapidement possible aux urgences.

pelvis, and adjacent to the spleen and the subdiaphragmatic area (Figure 1). Initial hemoglobin on presentation was 15.7 g/dl. Upon intravenous fluid resuscitation, his hemoglobin dropped to 9.9 g/dl. Blood workup for PT, INR and PTT and platelets count was normal. The patient was taken to the operating room where a laparoscopic exploration of the abdomen was attempted. Upon retrac-

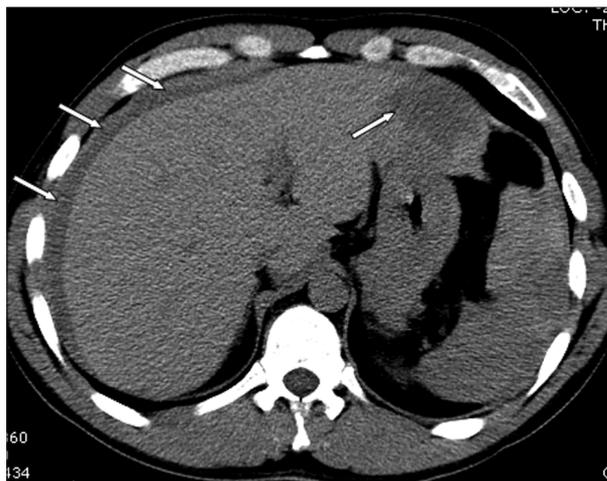


FIGURE 1. CT of abdomen showing blood in the abdominal cavity, and surrounding the liver.

tion of the stomach, bleeding was identified to be coming from the lateral fundus of the stomach near the spleen but without visualization of the exact bleeding vessel. Surgery was converted to an open procedure. About two liters of fresh blood was evacuated and ultimately an arterial bleeder was identified in the superior short gastric vessel high in the lesser sac. The vessel was suture ligated without complications. The patient tolerated the procedure well and had two units of packed red blood cell transfusion. The hemoglobin on discharge was stable at 9.4 g/dl.

DISCUSSION

Abdominal apoplexy is the occurrence of hemorrhage into the peritoneal cavity (hemoperitoneum) caused by the spontaneous rupture of a visceral artery. Possible causes for intra-abdominal hemorrhage include blunt trauma, aneurismal rupture, hepatic or renal malignancy, inflammatory process such as pancreatitis or pancreatic cysts. Defects in tunica media of the arterial wall and miliary aneurysms in splanchnic vessels as causes have been described in the literature [3-4]. It has been mentioned in association with necrotizing arteritis caused by inflammatory erosive processes such as polyarteritis nodosa and rheumatoid arthritis [5-6]. Other etiologies include pregnancy, and labor [1]. Hypertension (33-50%) and atherosclerosis (80-87%) have been commonly found in conjunction with abdominal apoplexy [3, 7]. Idiopathic causes are rare. The splanchnic vessels most commonly involved in descending order are the splenic (56%), hepatic (19%), superior mesenteric (8%), and gastric (5%) [8]. Gastroepiploic artery rupture accounts for 4.5% of spontaneous intraperitoneal bleeding of splanchnic origin [9-10]. Avulsion of the short gastric arteries caused by vomiting has been reported in only three cases in the literature [11-13]. All were young males between 16 and 36 years old. Heavy alcohol consumption indirectly contributed to vomiting in two of these cases [12-13]. Our patient was alcoholic, but he denied vomiting. His abdominal bleeding, however, started within few minutes after a forceful gagging suggesting an association between forceful gagging and short gastric artery abdominal apoplexy. The short gastric arteries originate from the left gastric artery and the left gastroepiploic artery and course through the gastric omentum to provide blood supply to the spleen [14]. Because of this anatomy, we propose that the stomach stretching induced by vomiting or vigorous gagging had likely pulled on the short gastric arteries and caused mechanical avulsion of one of them with subsequent intra-abdominal bleeding.

Clinically, patients with abdominal apoplexy present with a history of abdominal pain that is usually nonspecific. Symptoms of acute hemoperitoneum can probably be divided into three phases: an initial phase of mild to severe abdominal pain, a latent phase lacking any symptoms and lasting from hours to days, and a final phase of rapid progression to severe acute hemoperitoneum [15]. We did not appreciate the presence of these three phases

in our patient who presented immediately to the emergency department with a severe acute hemoperitoneum. Other symptoms include abdominal tenderness, hypotension and tachycardia secondary to acute blood loss [7]. Clues to differentiating apoplexy from other causes of acute abdomen include lack of fever, and progressive drop in hemoglobin. The diagnosis is generally made on exploratory laparotomy though in most patients a preoperative computed tomography (CT) of the abdomen preferably with intravenous contrast will reveal the hemoperitoneum. CT angiography of vessels is also a useful technique to elucidate sites of active intra-abdominal bleeding [16-17]. Treatment of spontaneous intra-abdominal bleeding includes fluids resuscitation and red blood cells transfusions. Surgical treatment involves resection of the aneurysm, or ligation of the ruptured vessel. Without surgery, mortality is almost 100%. Surgery involving ligation with or without resection is the definitive treatment as it reduces mortality to 8.6%. No recurrence is reported after ligation [18].

CONCLUSION

An acute abdomen caused by the rupture of short gastric artery apoplexy after gagging is uncommon presentation. Early recognition of abdominal apoplexy in the emergency department is very important as any delay in treatment may be detrimental to the patient.

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