

Hematemese Revealing the Rupture of a False Aneurysm of The Gastroduodenal Artery: A Rare Complication of Gastrectomy

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ABSTRACT

The authors report a rare case of fistula formation between a pseudoaneurysm (false aneurysm) of the gastroduodenal artery and the duodenal stump nine days after partial gastrectomy with D1 lymphadenectomy in 81-year-old male patient who presented antral carcinoma. He has presented hematemese and hemoperitoneum nine day after surgery which led to do abdominal tomography and angiography showing pseudoaneurysm of gastroduodenal artery. He has underwent embolization avec good outcome.

Keywords

Gastrectomy, Hematemese, Hemoperitoneum, Pseudoaneurysm, Gastroduodenal artery, Abdominal tomography and angiography, Embolization.

Introduction

The management of gastric cancer is based on partial or total gastrectomy, most often associated with perioperative chemotherapy. These interventions have a significant complication rate despite improved techniques and the contribution of minimally invasive approaches.

The main complications of gastrectomy are hemorrhages, fistulas, lymphorrhea and functional complications [1]. One of the rare complications of gastrectomy is pseudoaneurysm or arterial pseudoaneurysm, which can rupture and place the patient's vital prognosis at risk. The clinical diagnosis can be suspected on abdominal pain with general signs of bleeding, but also more rarely on hematemesis.

The aim of this work is to report a case of fistula formation between a pseudoaneurysm (false aneurysm) of the gastroduodenal artery and the duodenal stump following partial gastrectomy.

Observation

The patient is an 81-year-old man with a history of high blood pressure, laparoscopic prostatic adenectomy, right hemicolectomy for colon adenocarcinoma, right coronary angioplasty and aortic valve replacement for calcified aortic stenosis. He was diagnosed with an adenocarcinoma of the gastric antrum that required neo-adjuvant chemotherapy followed by partial gastrectomy with D1 – dissection (D1 gastrectomy) and gastrojejunal anastomosis on a Y- jejunal loop.

On post-operative day 9, the patient developed a hematemesis of a moderate amount associated with traces of blood appeared in the abdominal drain that was still in place. Afterward, the patient had a hemorrhagic shock. He was hemodynamically stabilized by intravenous fluid replacement and transfusion of red blood cells. Abdominal CT angiography was performed urgently. It showed a major active bleeding from a false aneurysm of the gastroduodenal artery fistulized into the duodenal stump (Figure 1). An emergency embolization was successfully performed in the interventional radiology operating room (Figure 2). A surgical team was present in the operating room until the end of the procedure. The patient was hospitalized in the intensive care unit for close monitoring. The operative period in the hospital was uneventful and without complications. The patient was then seen a month later at the clinic.

He had a satisfactory clinical condition with acceptable weight regain. There were no clinical or biological signs of duodenal stump fistula.

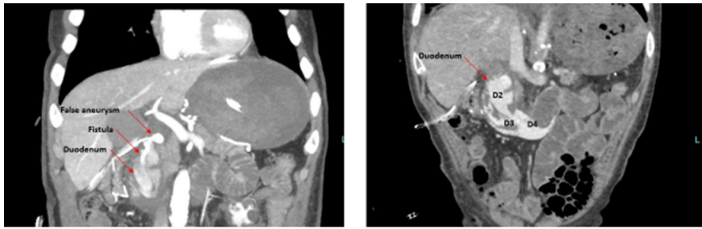


Figure 1: CT angiography showing a fistula between the gastroduodenal artery pseudoaneurysm and the duodenal stump.

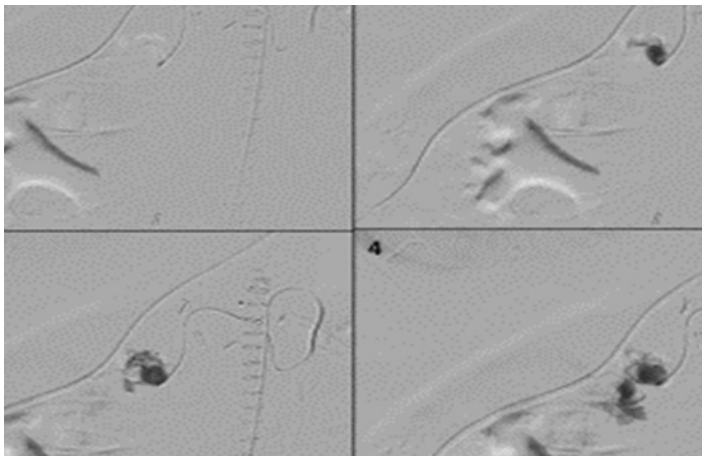


Figure 2: Pictures showing steps of embolisation of the gastroduodenal artery.

Discussion

Pseudoaneurysm or false aneurysm of visceral arteries is rare [2] and their rupture results in mortality that varies between 25 and 70% of cases [3]. Aneurysm of the gastroduodenal artery accounts for 2 to 4% of splanchnic artery aneurysms [4].

The aneurysm of the gastroduodenal artery, like all those of the splanchnic system, has several etiologies such as infection, trauma, pancreatitis and surgical intervention with vascular injury [5-8]. In our case, we talk about an iatrogenic cause, namely a trauma of the gastroduodenal artery during lymph node dissection.

Pseudoaneurysm of visceral arteries, particularly the gastroduodenal artery, may be asymptomatic or may lead to abdominal pain, abdominal compartment syndrome (nausea, vomiting) or pulsatile abdominal mass [8].

The clinical manifestations of visceral artery aneurysm rupture are mainly abdominal pain; digestive hemorrhage (hematemesis, melena); hemoperitoneum, hemopneumoperitoneum, hemobilia or it can present as late hemodynamic shock state [4]. In our case, the revealing signs were hematemesis of a moderate amount and hemoperitoneum exteriorized by the drain causing a state of hemodynamic shock requiring intravenous volume replacement and transfusion. Therefore, an abdominal Coronary CT angiography

(CTA) was performed, allowing to reach the diagnosis. Thus, the definitive diagnosis is established by the imaging represented by CT angiography (CTA) [4,5,8,11]. Its sensitivity is estimated at 100%. In the absence of the contrast enhanced CT, the ultrasound can be helpful in the diagnosis of visceral artery aneurysms with a sensitivity approaching 50% [11].

The management of a pseudoaneurysm rupture of the gastroduodenal artery involves medical, surgical or endovascular means. Exploratory laparotomy is required in cases of hemodynamic instability to allow rapid control of bleeding by ligation of the artery supplying the ruptured arterial aneurysm. This procedure can be difficult, and in the absence of hemodynamic instability the treatment of choice remains the embolization [11]. This intervention must be suggested as the first line therapy, because it is performed percutaneously. It is less invasive and reduces morbidity and duration of hospitalization. Nevertheless, in case of failure of percutaneous embolization, laparotomy remains the second-line approach [11].

Conclusion

The constation of digestive haemorrhage associated more or less with a hemoperitoneum after gastrectomy must make evoke the diagnosis of the rupture of a false aneurysm of digestive artery. The computed tomography must be done before high endoscopy. When the diagnosis is done in a stable patient hemodynamically, embolization remains the treatment of choice.

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