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Case Report

A rare case of gastroduodenal artery aneurysm in a highly active antiretroviral therapy induced acute pancreatitis case presenting with lump in abdomen

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ABSTRACT

Gastroduodenal artery (GDA) aneurysm is a rare but potentially fatal vascular disease, with chronic pancreatitis being reported as the commonest etiological factor. Rupture, which is not uncommon, carries a high risk of mortality. The typical patient with palpable epigastric mass, upper gastrointestinal bleeding and pain, may not present in the emergency and the lesion is often picked up incidentally on abdominal ultrasound or a computed tomography. We describe a critical case presenting with lump in abdomen which was found out to be gastroduodenal artery aneurysm on scanning, developing in a patient with recurrent highly active antiretroviral therapy (HAART) induced pancreatitis managed with transfemoral catheter embolization. The patient in question succumbed due to post procedure hepatic failure. The management of aneurysms since historic times have been challenging, the open procedures are being gradually replaced by endovascular techniques, which are yielding better results.

Keywords: Acute pancreatitis, Endovascular, Gastroduodenal artery aneurysm, HAART induced, Lump in abdomen, Transfemoral aneurysm coiling

INTRODUCTION

Gastroduodenal artery (GDA) aneurysm is a rare but potentially fatal vascular disease, with chronic pancreatitis being reported as the commonest etiological factor.[1] They represent about 1.5% of all visceral artery aneurysms and are divided into true and pseudoaneurysms depending on the etiologic factors underlying their development.[2] Atherosclerosis and pancreatitis are the two most common risk factors. Rupture, which is not uncommon, carries a high risk of mortality. Clinical suspicion aided by advanced imaging should lead to a timely diagnosis that may prevent such a catastrophe. The typical patient with palpable epigastric mass, upper gastrointestinal bleeding and pain, may not present in the emergency and the lesion is often picked up incidentally on abdominal ultrasound or a computed tomography.

Highly active anti-retroviral therapy (HAART), lifesaving as it is in people living with HIV, has acute pancreatitis as a complication of the first line non-nucleoside reverse transcriptase inhibitors.[3] We describe a case of gastroduodenal artery aneurysm developing in a patient with recurrent HAART induced pancreatitis managed with transfemoral catheter embolization. The patient in question succumbed due to post procedure hepatic failure. A brief report with a review of literature is presented. A minimally invasive approach to these lesions has gained acceptance with the advent of interventional radiology.

CASE REPORT

A 48 year old male patient, seropositive for HIV-1, on first line ART including zidovudine, lamivudine and nevirapine since the last 12 years, presented to the emergency 1 month back with multiple episodes of vomiting, followed by severe pain in abdomen and melaena, for which he got admitted in a primary care facility. An abdominal ultrasound at the time revealed a fairly well defined heterogenous lesion involving the pancreatic head and body with a few cystic areas, which showed bidirectional flow on colour Doppler.

Patient was treated as a case of acute pancreatitis and asked to follow up at a higher center. He went home and resumed daily activities. Over the next month, he developed a lump in epigastric region for which he presented to the surgical outpatient department. There was no other significant medical or surgical history. On evaluation, he was vitally stable. There was a palpable mass in the epigastric legion which was pulsatile in nature. An abdominal CT revealed a large relatively well defined thin walled mixed attenuation lesion measuring 10×11×10 cm with areas of blood attenuation in relation to the head and neck of pancreas which were compressed by the lesion. There was a central well defined hypodense component of size 4.4×5×5.8 cm with arterial phase contrast enhancement, supplied by the gastro-duodenal artery. The mass was further compressing the distal common bile duct with dilatation of the proximal common bile duct and intrahepatic biliary radicles. There was a calcified pancreatic tail, significant peripancreatic fat stranding and multiple collaterals in the periportal, perisplenic, peri pancreatic and peri gastric regions.

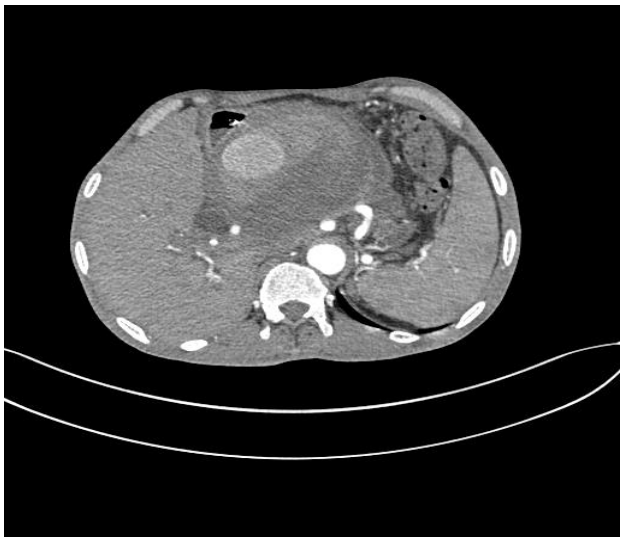

Figure 1: Contrast enhanced CT abdomen.

The diagnosis of gastroduodenal artery aneurysm with chronic pancreatitis was made. A digital subtraction angiogram of the celiac trunk was performed which revealed a giant psudoaneurysm in the common hepatic artery.

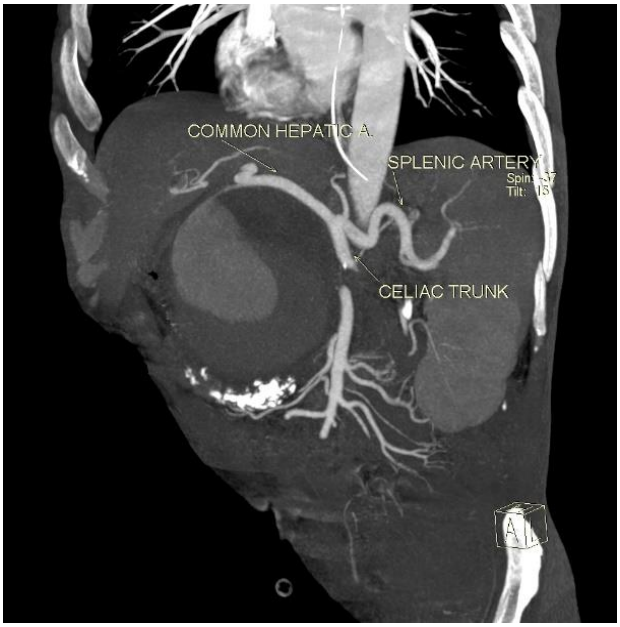

Figure 2: 3D reconstruction of the same scan.

Transfemoral catheter embolization of the common hepatic artery was done using coils and glue in the same setting. The patient deteriorated subsequently with direct hyperbilirubinemia (direct bilirubin 15) and hepatic encephalopathy. A fresh CT abdomen revealed the now thrombosed pseudoaneurysm compressing the common bile duct with multiple cholangitic abscesses in the liver. Endoscopic retrograde cholangiopancreatography (ERCP) guided stenting of the CBD was done to relieve obstruction. However, despite anti encephaloathy measures, the patient spiraled into grade 4 hepatic encephalopathy and subsequently succumbed on day 12 of admission.

Figure 3: Post endovascular coiling.

DISCUSSION

As HAART and advanced medical and surgical care gains momentum against the HIV pandemic, the increased life expectancy also unmasks fresh morbidities and complications, both inherent to the disease process and related to therapy. A recent study puts the incidence of ART induced pancreatitis at 6.7 cases per 1000 person years.[4] Nucleoside reverse transcriptase inhibitors are most commonly implicated followed by protease inhibitors.

Pseudoaneurysms most commonly involve the splenic artery (46%), the renal artery (22%), the hepatic artery (16.2%) and the pancreaticoduodenal artery (1.3%).[5] They are formed due to inflammation of the vessel wall, most commonly as a result of pancreatitis. The gastroduodenal artery is involved rarely, in upto 1.5% of all reported visceral artery aneurysms.[2] The most common presentation is gastrointestinal haemorrhage secondary to rupture of the aneurysm followed by abdominal pain.[2] Very rarely may an aneurysm reach sizes that result in presentation as a lump in abdomen as in present case. Our patient had a pseudoaneurysm of size 10×11×10 cm. There is a very high mortality associated with rupture into the duodenum and depends on the site of bleed, the speed and severity of bleed.[6]

In today's era of imaging, a visceral arterial angiogram is considered the investigation of choice to diagnose this condition though a CT of the abdomen is also informative.[7] In the context of pancreatitis, the CT may reveal a homogenously enhancing mass adjacent to the pancreas signifying a pseudoaneurysm. An arterial angiogram offers the added benefit of concurrent therapeutic intervention.

The management of aneurysms of the pancreaticoduodenal arcade of vessels could be surgical or endovascular. The open surgical approach involves revascularization, ligature and aneurysmal sac excision. The recent advance in the field comes from endovascular approach by transcatheter ablation, coil or stent placement. A recent study found that endovascular procedures, while being comparable in outcome, were associated with significantly lesser blood loss, lesser operative time and lesser length of stay in the hospital.[8] The same study concluded that perioperative morbidity was significantly higher in open surgical management. Our patient however succumbed inspite of timely endovascular intervention. The massive size of the pseudoaneurysm and pre-existing medical conditions including immunocompromised status were probably contributory.

CONCLUSION

To conclude the author want to emphasize, to keep the differential diagnosis of GDA aneurysm in a HAART patient who can present with just a lump in abdomen in a critical state. And to intervene fast with the help of the endovascular techniques and to monitor the patient continuously as they can land in multi-organ failure despite giving the standard line of treatment. Though endovascular techniques have proven time and again to be better than open techniques, but still more studies and ideas are still needed to combat the limitations of the endovascular techniques, like how to prevent the compressive effects of the mass even after coiling, removing the hematoma as it can be a cause for sepsis, etc. in dealing with a large aneurysm like the one presented in this case report.

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