

A giant gastroduodenal artery pseudoaneurysm: Successful treatment with coil embolization

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Abstract: Gastroduodenal artery pseudoaneurysms are a rare but potentially fatal condition. They represent 1.5% of all visceral artery pseudoaneurysms. We are reporting a case of a 36yr old male with history of chronic alcoholism that presented with haematemesis. Patient had no past medical history of pancreatitis. Patient was diagnosed to have a gastroduodenal pseudoaneurysm, which was managed by angiographic coil embolization.

Keywords: gastroduodenal , pseudoaneurysm , angioembolisation.

INTRODUCTION

Gastroduodenal artery pseudoaneurysms are rare, however they represent a potentially life threatening clinical condition. They develop mainly secondary to pancreatitis and atherosclerosis, but other causes such as trauma, iatrogenic injury, mycotic lesions, tuberculosis and connective tissue disease have been described. Dominating symptoms of gastroduodenal artery pseudoaneurysm are symptoms of pancreatitis as a basic pathologic condition, and its rupture is manifested with dramatic clinical manifestation of abdominal bleeding and hemorrhagic shock, which is associated with high mortality rate [1, 8].

CASE REPORT

A 36 year old male patient presented in casualty with history of single episode of haematemesis associated with pain in upper abdomen since 1 day. Patient gave history of episodic passage of black foul smelling stools since 1 day. Patient was a chronic alcoholic and had history of admission for abdominal pain in past, when he was diagnosed to have alcohol induced esophagitis on upper GI scopy. However patient had no medical history of pancreatitis in past.

On presentation his pulse rate was 100 beats/min with blood pressure of 110/70 mm of Hg. He was clinically pale; and on abdominal examination was found to have a firm, globular, non pulsatile lump about 6 cm x 5 cm just below the left subcostal margin. Rest of the physical examination was unremarkable.

On investigation biochemical parameters including serum amylase and lipase levels were within normal limits, except Hb -8.3g/dl.

USG Abdomen with doppler: 5.1cm x 4.8cm x 6.5cm sized lesion showing internal blood flow in yin-yang pattern with eccentric thrombus in its wall noted in sub-hepatic region adjacent to segment V of liver and head of pancreas and appears to be supplied by a branch of common hepatic artery suggestive of pseudoaneurysm from common hepatic artery.

OGD scopy: large extrinsic bulge near the pylorus. [Fig-1]

CT Angiography: 6 cm x 6.2 cm x 6.3 cm sized oval, well defined lobulated, heterogenous lesion with central hypodense area with hyperdense peripheral rim is seen in the region of the pancreatic head. The lesion shows marked contrast enhancement in its central part measuring 3.2 x 3 cm, in the arterial phase. A communication with the gastroduodenal artery measuring 2 mm is seen suggestive of pseudoaneurysm formation. [Fig-2]

Patient underwent angiographic coil embolization via Trans femoral catheterization. Diagnostic shoots showed leak of contrast into pseudoaneurysm of gastroduodenal artery [Fig 3b]. Cook coil 6mm x 5 mm threaded over 5F SIM catheter with the help of a guidewire [Fig 3c]. Check shoot taken after an interval of 5 min to confirm success of coil embolisation showed no residual flow in the pseudoaneurysm [Fig 3d]. Procedure was uneventful.

Post procedure patient was stable and discharged two days later.

Doppler USG performed 4 weeks after discharge showed complete thrombosis of the pseudoaneurysm.



Fig-1: Endoscopic view showing extrinsic bulge in the stomach.

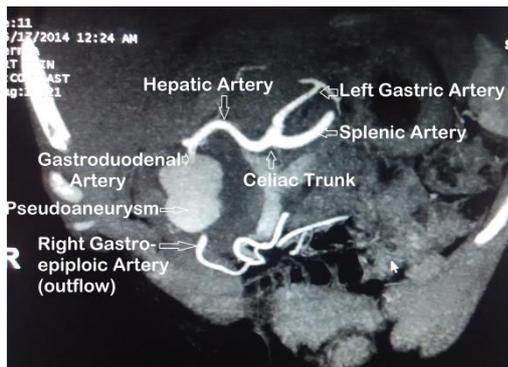


Fig-2: CT picture showing central contrast enhancement in the arterial phase

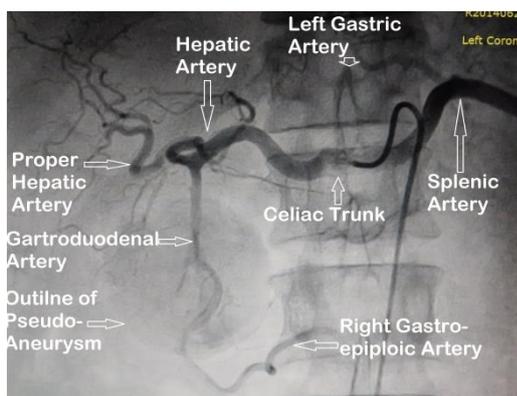


Fig-3A: Angiography showing inflow and outflow vessels

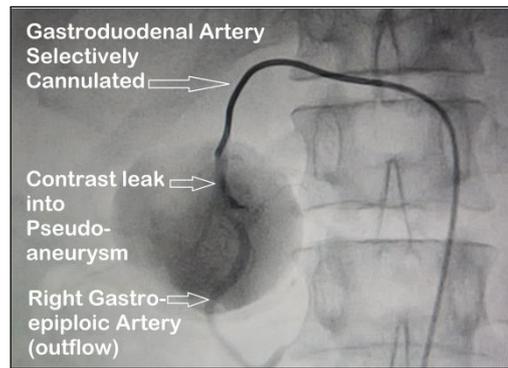


Fig-3B: Contrast leak into pseudoaneurysm

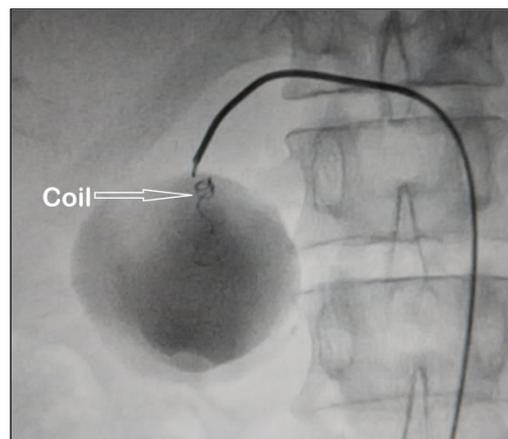


Fig-3C: Deployment of cook coil into the pseudoaneurysm

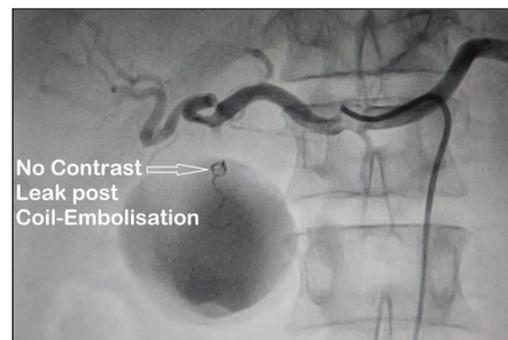


Fig-3D: Check shoot showing no residual flow in the pseudoaneurysm.

DISCUSSION

Pseudoaneurysms are mostly a condition of the middle age and are most commonly found between 50 and 58 years of age. The male/female ratio is 4.5:1 and the mean size 3.6 cm [2, 4].

Those involving the gastroduodenal artery comprise only 1.5% of all reported VAA [3, 4].

Visceral artery pseudoaneurysm most often occurs as a complication in both acute and chronic pancreatitis. Inflammatory attacks can provoke erosion of peri-pancreatic blood vessels, and in case of pancreatic pseudocyst coexistence, they can cause

rupture into the pseudocyst with consequent aneurysm or pseudoaneurysm formation [3]. Pancreatic pseudoaneurysms have been reported in 3.5–10% of patients with chronic pancreatitis. Their symptoms are usually covered by symptoms of chronic pancreatitis, and as soon as they rupture into gastrointestinal tract, biliary tree, peritoneal cavity or retroperitoneum, they manifest with dramatic clinical symptoms of hemorrhagic shock with consequent high mortality rate [4].

The gold standard diagnostic test is visceral 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 [4,5]. When performed in a patient with pancreatitis, CT scan can reveal a homogeneously enhancing structure within or adjacent to a pseudocyst which is highly suggestive of an associated pseudoaneurysm. Doppler sonography shows a mass that generally has a well defined solid peripheral component composed of a thrombus and a central anechoic area of varying size. This cavity fills on color Doppler imaging and produces the typical “yin-yang” pattern of pseudoaneurysms elsewhere in the body [6].

Therapy for visceral pseudoaneurysms includes selective transcatheter arterial embolization, thrombin injection, surgical repair and stent graft placement. Surgical treatment is associated with higher mortality rate (12-16%) and increased complications, including sepsis and abscess formation [6, 7].

Transcatheter arterial embolization involves the precise location of the pseudoaneurysm using angiography followed by the elimination of the lesion by placement of occlusive microcoils at inflow and outflow sites. Organ infarction is generally avoided because of presence of collateral circulation within the viscera. Complication rates are low and include occlusion of an unintended vessel, dislodgement of the microcoil and formation of a pseudoaneurysm at the site of catheter entry. TAE is the treatment of choice with success rates of 70-100% [7]. Unsuccessful embolization is usually followed by repetition of the procedure, with surgery being a last resort or reserved for cases involving inaccessibility [6, 7].

CONCLUSION

Gastroduodenal artery pseudoaneurysm rupture can be life threatening. It is important to diagnose this complication of pancreatitis and immediately intervene. As in our case this may be the first clinical presentation of pancreatitis. Transcatheter

Angiographic Embolisation is a relatively safe procedure with high success rate.

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