



ORIGINAL RESEARCH PAPER

Gastroenterology

HEPATIC ARTERY PSEUDOANEURYSM TREATED BY COVERED STENT GRAFT PLACEMENT- NOVEL TREATMENT OPTION FOR VISCERAL ARTERIAL INJURY.

KEY WORDS: Hepatic artery pseudoaneurysm Stent Graft Covered Stent Embolization

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ABSTRACT Common causes of hepatic artery pseudoaneurysm are pancreatitis, blunt abdominal trauma and iatrogenic. Hepatic artery pseudoaneurysm can be treated by various endovascular techniques and agents. Coil or glue embolization carry the risk of occlusion of parent artery. Placement of stent graft is a minimally invasive technique with low morbidity and preservation of end organ perfusion. If technically feasible, stent graft placement should be considered for pseudoaneurysm of main hepatic artery stem.

INTRODUCTION

Hepatic artery pseudoaneurysm can be treated by various endovascular techniques and agents. Coil or glue embolization carry the risk of occlusion of parent artery. Here we present a case of hepatic artery pseudoaneurysm treated by stent graft placement with preservation of parent vessel.

Case Report

A 59-year-old female patient presented with complaints of hematemesis and melena since 5 days. Patient had history of laparoscopic cholecystectomy 3 months back. Side view endoscopy revealed blood at ampulla.

CT abdomen revealed a large pseudoaneurysm arising from right hepatic artery (Fig 1).

The sac was causing extrinsic compression over CBD. Blood investigations revealed Hemoglobin of 5.9 g/dl, total bilirubin 6.9 mg/dl (direct-5.8), SGOT-505 U/L, SGPT-472 U/L, Alkaline Phosphatase- 612 U/L and GGT-777 U/L.

Patient was transfused and decision of angioembolization was taken. Superior mesenteric artery angiogram revealed replaced right hepatic artery (RHA) with a large pseudoaneurysm arising from main right hepatic artery.

Normally the visceral artery aneurysms are treated by embolization with coils or glue, but with these agents there is risk of sacrificing the feeding vessel. Two factors made our case challenging-

1. Pseudoaneurysm was arising from main RHA (rather than from segmental branch). So, there was a risk of hepatic ischemia during embolization.
2. Pseudoaneurysm sac was large, making it prone to rupture during embolization.

For overcoming above challenges, we decided to go ahead with option of stent graft. Use of stent graft for hepatic artery pseudoaneurysm is described in literature but very less often used, because anatomy is not always favorable and placing stent graft in tortuous visceral arteries is technically difficult.

In our case, relatively straight course of replaced right hepatic

artery made the anatomy favorable for stent graft placement.

We crossed the neck of pseudoaneurysm with 0.014 guidewire and placed the coronary stent graft (3.5 mm x 26 mm) in RHA across neck of pseudoaneurysm. Post placement angiogram revealed complete exclusion of pseudoaneurysm with adequate flow in RHA (Fig 2).

ERCP was done 5 days after embolization, which revealed narrowing in upper CBD (due to compression from thrombosed aneurysmal sac), papillotomy was done with placement of 7F plastic stent in CBD. Patient was discharged in stable condition with no episode of re-bleeding on follow up.

DISCUSSION

Common causes of hepatic artery pseudoaneurysm are pancreatitis, blunt abdominal trauma and iatrogenic. Surgical management used to be main approach for managing visceral aneurysms, but recently endovascular embolization methods have become preferred treatment choice.

Placement of covered stent graft can effectively treat pseudoaneurysms with maintenance of patency of hepatic artery [1].

This is especially helpful in patients where embolization of hepatic artery may lead to serious complications such as liver failure in the presence of liver abscess and other conditions.

Placement of stent graft is a minimally invasive technique with low morbidity and preservation of end organ perfusion. If technically feasible, stent graft placement should be considered for pseudoaneurysm of main hepatic artery stem [2].

CONCLUSION

Stent graft (Covered stent) placement is a safe and effective treatment option for treatment of hepatic artery pseudoaneurysm patients. It is especially useful in patients with compromised liver function or compromised portal circulation as hepatic artery embolization can be catastrophic in such patients.

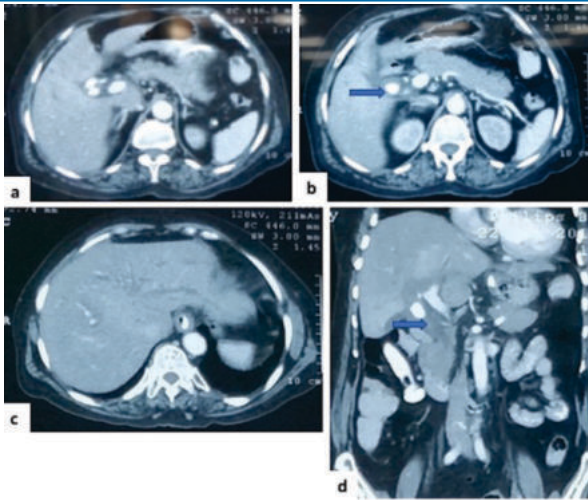


Figure 1- CT abdomen images showing pseudoaneurysm arising from right hepatic artery (arrow in b) causing compression over upper CBD (arrow in d). Bilobar intrahepatic biliary radicles dilatation is seen (c)

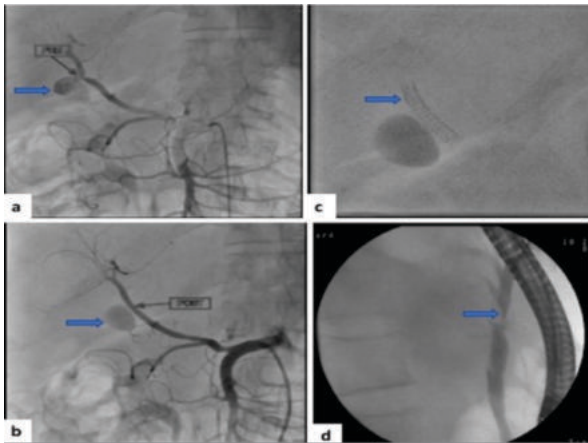


Figure 2- (a) showing replaced right hepatic artery arising from SMA, with pseudoaneurysm arising from hepatic artery. (b) Post stent graft placement angiogram shows complete exclusion of pseudoaneurysm and preserved flow in RHA. Stasis of contrast is seen in excluded sac (arrow in b). (c) Spot fluoroscopic image showing stent graft in situ (arrow in c). (d) ERCP image showing narrowing in upper CBD.

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