http://dx.doi.org/10.1016/j.ijcard.2014.03.159
0167-5273/© 2014 Elsevier Ireland Ltd. All rights reserved.

Endovascular management of splenic arterial aneurysms

Konstantinos Marmagkiolis [a,*], Freij Gobal [b], David Mego [b], Mehmet Cilingiroglu [b], William Rollefson [b]

[a] Citizens Memorial Hospital, Heart and Vascular Institute, Bolivar, MO, United States
[b] Arkansas Heart Hospital, University of Arkansas for Medical Sciences, Little Rock, AR, United States

A R T I C L E I N F O

Article history:
Received 7 February 2014
Accepted 22 March 2014
Available online 29 March 2014

Keywords:
Endovascular
Splenic
Aneurysm

Splenic artery aneurysms are the third most common arterial aneurysms ranging from 0.6 to 30 cm in diameter. They are most commonly found women and in patients with cirrhosis and portal hypertension. The majority of patients are asymptomatic [1]. The causes of splenic artery aneurysm formation remain unknown. Atherosclerosis, focal arterial inflammation, pancreatitis, hypersplenism, portal hypertension, trauma, and hormonal and hemodynamic changes due to pregnancy have been proposed as contributing mechanisms [2]. Ultrasound is the first screening imaging modality, while computed tomography (CT) and magnetic resonance imaging (MRI) angiography allow the accurate description of the morphology and location of the aneurysm along with possible adjacent anatomic pathologies. Overall, the life-time risk of rupture is 2–10% with an associated mortality of up to 25%. The risk of rupture is approximately three times more in men and in smokers [1,3]. Currently, there is no data describing risk factors for splenic artery aneurysm rupture, even in relation to the lesion location or size.

Smaller, incidentally identified splenic aneurysms are benign with minimal risk of symptom development, enlargement or rupture. According to the ACC/AHA guidelines open or percutaneous management of such aneurysms is recommended for visceral aneurysms measuring 2.0 cm in diameter or larger [4]. Options include open surgical, laparoscopic and endovascular approach. In the past open laparotomy with aneurysm ligation or splenectomy with potential distal pancreatectomy was the gold standard for the treatment of SAA [5,6]. However, surgical or laparoscopic management may be technically difficult in patients with arterial anomalous variations (especially retro-pancreatic course of the SAA), severe anemia or Jehovah witnesses [5]. Emergent open surgery carries a high peri-operative mortality of 20–40% especially in patients with portal or systemic hypertension, while in elective cases it is approximately 5% [7].

Coil embolization is currently the most common endovascular technique to occlude the aneurysmal sac in SAAs with narrow necks. With optimal patient selection it appears to be simple, safe with low rates of recurrence [5,8]. Need for reintervention or major splenic infarction occurs in less than 10% of the cases in patients with normal hepatosplenic function, while complication increases in patients with portal hypertension [8]. Gelfoam, glue, thrombin or the Amplatzer vascular plug (AVP) embolization have also been successfully tried [9–12]. In larger vessels with complex wide-neck aneurysms, covered stents or stent assisted coil embolization (cage–coil technique: self-expanding stent placement and delivery of the coils to the aneurysmal sac through the stent struts) has been successfully tried [13–16]. When collateral circulation is well developed the "sandwich technique" involves complete occlusion of the splenic artery with coiling of the efferent and the afferent vessel [17,18]. Pappy et al. have described a unique "modified neck remodeling technique" for large wide-neck aneurysms with temporary balloon inflation at the efferent splenic artery during coil embolization, in order to decrease the intra-aneurysm pressure and prevent distal non-target coil embolization [19].

A 65-year-old gentleman with prior history of hypertension, and chronic bronchitis was referred with a 2.7 cm narrow neck splenic artery aneurysm for endovascular management (Figs. 1, 2).

The procedure was performed in the catheterization laboratory under conscious sedation. A short 6-French hydrophilic sheath was placed in the left radial artery. A Tiger catheter (Terumo Interventional Systems) was positioned at the origin of the celiac artery where selective angiography was performed (Fig. 3). A 4F Glidecath (Terumo Interventional Systems) was advanced into the aneurysm sac with the assistance of a 0.018-inch guidewire. Angiography was performed through the Glidecath to accurately describe the aneurysm location and morphology. Four AZUR peripheral hydrocoils (Terumo Interventional Systems) were delivered in the aneurysm sac. Post-intervention angiography confirmed optimal

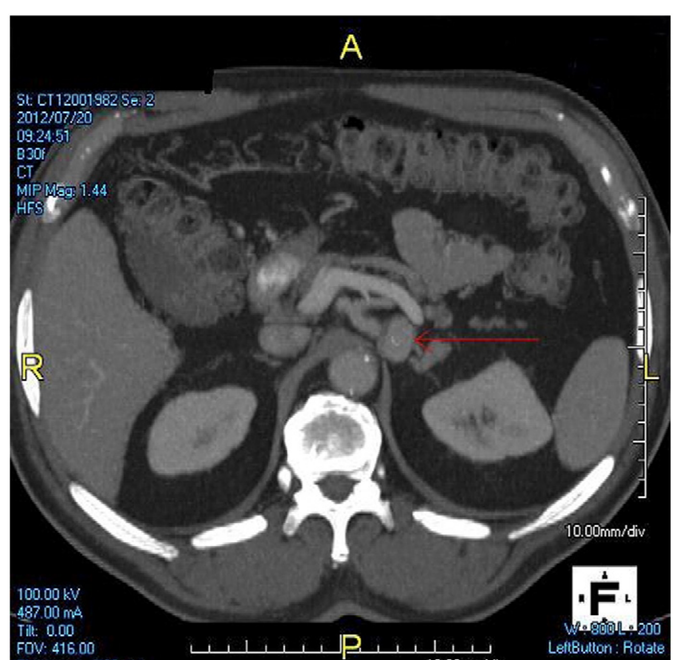

Fig. 1. CT angiogram of the splenic arterial aneurysm.

* Corresponding author at: FSCAI Citizens Memorial Hospital, Heart and Vascular Institute 1500 N Oakland RdBolivar MO 65613 United States.

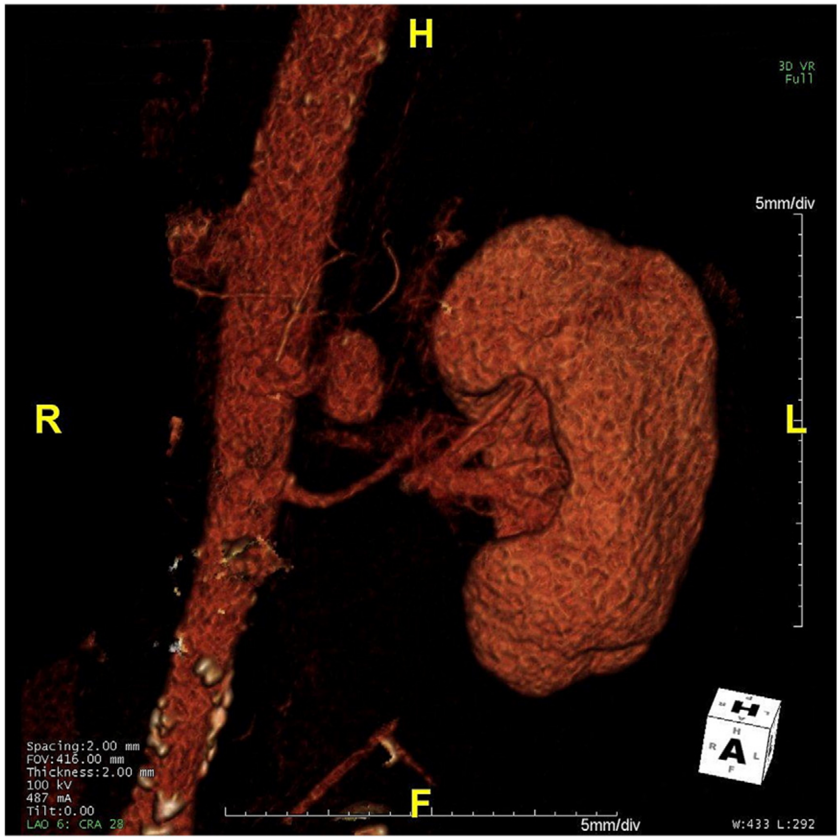

Fig. 2. CT angiogram with 3D reconstruction demonstrating the splenic arterial aneurysm.

filling of the sac with absence of flow (Fig. 4). In-hospital course was uneventful, and the patient was discharged home the same day. At 1-month follow-up, the patient remained asymptomatic, and a repeat CT angiogram showed excellent sealing of the splenic artery aneurysm (Figs. 5, 6).

Splenic arterial aneurysms are still considered a "surgical" disease and they are rarely referred to interventional cardiologists or radiologists. Open surgery even for elective cases still carries mortality of up to 5% with increased morbidity and longer hospital stays. Experience over the last years has demonstrated that

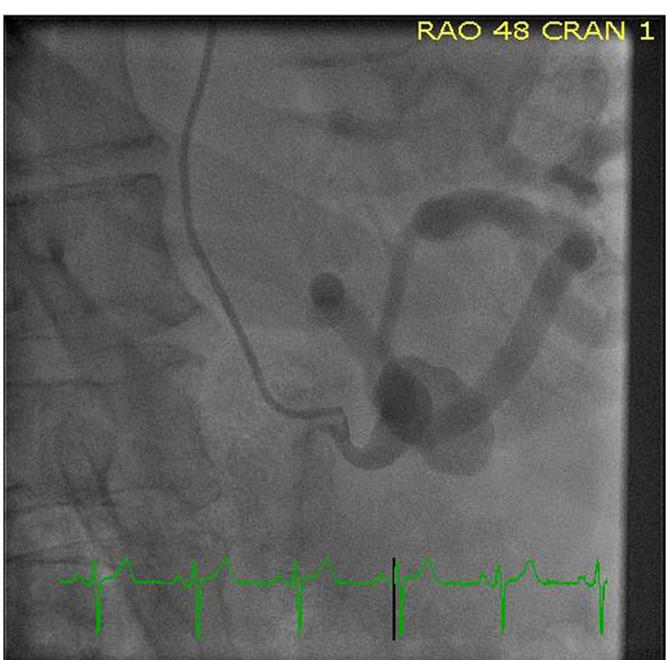

Fig. 3. Selective angiogram of the celiac artery.

Fig. 4. Selective angiogram of the celiac artery after coil embolization.

Download English Version:

https://daneshyari.com/en/article/5971381

Download Persian Version:

https://daneshyari.com/article/5971381

Daneshyari.com