

Splenic Artery Aneurysm Case Report

Reza Asghari¹, Susan Mohammadi², Fardin Fathi³, Nastaran Hesam Shariati⁴, Mohammad Sadegh Gholami Farashah⁵,
Mohammad Bakhtiar Hesam Shariati⁶

¹ Human Genetic Research Center, Baqiyatallah University of Medical Sciences, Tehran, Iran

² Department of Radiology, School of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran

³ Cellular and Molecular Research Center, Research Institute for Health Development, Kurdistan University of Medical Sciences, Sanandaj, Iran

⁴ School of Medical Sciences, Faculty of Medicine and Health, University of Sydney, Camperdown, Australia

⁵ Department of Anatomical Sciences and Histology, School of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran

⁶ Department of Anatomical Sciences, School of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran

Received: 11 Dec. 2019; Accepted: 27 Apr. 2020

Abstract- Splenic artery aneurysm (SAA) is rare, often with no sign patient, discovered accidentally in ultrasonography and imaging studies. A healthy 45-year-old woman was referred to us by abdominal pain in the epigastric region-imaging showed a large mass located between the spleen, stomach, and pancreas. CT scan showed two true aneurysms of a 4 mm and 12 mm diameter in the middle third and distal part of the splenic artery. SAAs that are lesser than 2cm can be controlled; however, our patient was given an open surgery, and splenectomy with the removal of the aneurysm has done.

© 2020 Tehran University of Medical Sciences. All rights reserved.

Acta Med Iran 2020;58(5):243-245.

Keywords: Splenic artery; Anatomic variation; Aortic arch; Case report; Multidetector computed tomography; Aneurysm

Introduction

Splenic artery aneurysm (SAA) is an uncommon, mostly with no sign patient, discovered randomly in imaging studies, ultrasonography and endoscopic (1,2). Sometimes, the discovery of SAA may also be accomplished in dissection studies and arteriography studies, Although this is very uncommon in these instances (3). SAA is the third usual intra-abdominal aneurysms, and the occurrence of SAA in females is four times the rate in males. Nausea, ambiguous abdominal pain in the epigastric region or left upper quadrant, and gastritis are common signs of arterial aneurysm. In recent years, splenic artery tear has been reported in SAAs, but a tear is seen in 10% of these patients. The rupture happens in gestation and when its dimensions are rather than 2 cm. Upper abdominal discomfort is the most generally reported sign for ruptured SAAs (1,3).

The aneurysm was treated by endovascular embolization, and this therapy should be considered as the first method of treatment more than surgery (4). In our patient, we reported at least two aneurysms of the size of 4 mm in the middle segment of the splenic artery

and the other with dimensions of 12 mm in the distal part of this artery, and finally, we removed it with a splenectomy surgical method.

Case Report

A healthy 45-year-old Iranian woman was referred to one of the hospitals in Sanandaj vague abdominal discomfort in the epigastric region. Our patient did not have a previous medical history, and her physical examination, such as; body temperature, blood pressure, and heart rate, was normal, and her pregnancy test was negative. Thoracic auscultation and abdominal palpation revealed only slight epigastric pain.

Abdominopelvic spiral CT scan without and with contrast CT scan images showed a relatively large mass without enhancement that began around the spleens navel and continued to be below abdominal aortic bifurcation. This mass was located on the posterior part of the stomach and moved it to the anterior.

Actually, this mass located between the spleen, stomach, and pancreas, in which the tail of the pancreas has also been moved to the anterior. CT scan showed at least two true aneurysms of a 4 mm and 12 mm diameter

Corresponding Author: M.B. Hesam Shariati

Department of Anatomical Sciences, School of Medicine, Kurdistan University of Medical Sciences, Sanandaj, Iran
Tel: +98 9188716993, Tel: +98 8733664252, E-mail address: b.hesamshariati@gmail.com

Splenic artery aneurysm

in the middle third and distal part of the splenic artery (Figure 1). Small amounts of free peritoneal fluid were detected around the spleen. The liver, kidneys, and uterus in the images had a normal appearance, and no significant pathological findings were observed in them. Also, a simple cortical cyst of 31 mm in the right kidney was observed.

SAA that are lesser than 2 cm can be controlled; however, our patient was given an open surgery, and splenectomy with the removal of the aneurysm has done. The patient was asymptomatic after surgery.

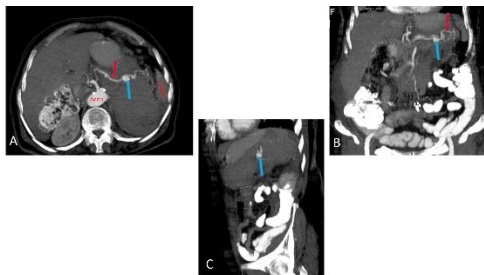


Figure 1. Axial, Sagittal and Coronal without contrast computed tomography (CT) image exposed a splenic artery aneurysm (SAA).

The anterior branch of the splenic artery (red arrow), The true aneurysm (blue arrow)

Discussion

SAA are usually placed on the original branch of the splenic artery before its bifurcation, rarely on one of the branches of the arteries. Sometimes, in small branches also happen aneurysmally, in which case, multiple aneurysms happen, which is the case in our patient. In up to 75% of instances, they are located in the distal third of the arterial body, followed by the middle third of the artery (in up to 20% cases) (5). This vascular deformity is rarely 3 cm in diameter, and in some cases (in 14% cases), SAAs are associated with other visceral aneurysms. If all the three layers of the arterial wall are affected, the SAA is right, and if one or rather vessel's layer deficiency, the SAA is pseudoaneurysm (6).

Some of these patients have no notable complaints, and others complain of ambiguous pain in the left hypochondria and Epigastric patients, but the reason for the development of splenic artery aneurysm consists of arterial or portal hypertension, cirrhosis, liver transplantation and pregnancy (7).

While arterial aneurysms have long been unmarked, they might be by chance discover during CT imaging (8). In cases of abdominal pain, it can Be diagnosed that the patient has an arterial aneurysm.

It may also occur following rupture aneurysm that

way where at that moment, the patient presents acute abdominal pain and hemodynamic shock (9,10). In 25% of cases, tears happen, a fatality has also been reported. In the common case, the rupture of spleen arrhythmia is more likely to happen when it is bigger than 2 centimeters or in a person who is pregnant, and care should be taken to treat these individuals (11).

At present, the favored technique of treatment is embolization; moreover, embolization might fail in cases presenting tortuous splenic arteries, and there is no little follow-up information for this method, and recurrence is a possible long-term hazard. While embolization is contraindicated or complicated to do, open surgery, or laparoscopy or splenectomy is performed by removing aneurysm (12).

Patients with Splenic artery aneurysm represent a wide spectrum of abnormalities, including abdominal vessels. Splenic artery aneurysm (SAA) is a rare, often asymptomatic patient, discovered accidentally during ultrasonography and imaging studies. However, our patient was given an open surgery, and splenectomy with the removal of the aneurysm has done.

Compliance with ethical standards

This research has been confirmed by the Research Center of Kurdistan University of Medical Sciences with the file number IR.MUK.REC.1399.086.

References

1. Appak Y, Baran M, Avci E, Karakoyun M, Ergun O. Mass Image in Stomach: A Case of Splenic Artery Aneurysm. *Chin Med J* 2018;131:1630.
2. Le Conte P, Trewick D, Pes P, Frampas E, Batard E. Acute fissuration of a giant splenic artery aneurysm detected by point-of-care ultrasound: case report. *Crit Ultrasound J* 2018;10:5.
3. De Silva W, Gamlaksha D, Jayasekara D, Rajamanthri S. A splenic artery aneurysm presenting with multiple episodes of upper gastrointestinal bleeding: a case report. *J Med Case Rep* 2017;11:123.
4. Tessier DJ, Stone WM, Fowl RJ, Abbas MA, Andrews JC, Bower TC, et al. Clinical features and management of splenic artery pseudoaneurysm: case series and cumulative review of literature. *J Vasc Surg* 2003;38:969-74.
5. Bacalbasa N, Balescu I, Tanase A, Pautov M, Brezean I, Vilcu M, et al. Spleno-pancreatectomy En Bloc with Parcelar Gastrectomy for Splenic Artery Aneurysm—A Case Report and Literature Review. *in vivo* 2018;32:915-

- 9.
6. Abbas MA, Stone WM, Fowl RJ, Gloviczki P, Oldenburg WA, Pairolero PC, et al. Splenic artery aneurysms: two decades experience at Mayo clinic. *Ann Vasc Surg* 2002;16:442-9.
7. Lee PC, Rhee RY, Gordon RY, Fung JJ, Webster MW. Management of splenic artery aneurysms: the significance of portal and essential hypertension1. *J Am Coll Surg* 1999;189:483-90.
8. Farashah MSG, Shariati NH, Asghari R, Mohamadi S, Dolatkah MA, Shariati MBH. Pulmonary Sequestration: A Case Report. *Acta Medica Iranica*. 2019;57(6):398-401.
9. Khan HR, Low S, Selinger M, Nelson N. Splenic artery aneurysm rupture in pregnancy. *J Coll Physicians Surg Pak* 2004;14:298-9.
10. Sadat U, Dar O, Walsh S, Varty K. Splenic artery aneurysms in pregnancy—a systematic review. *Int J Surg* 2008;6:261-5.
11. Maharaj R, Raghunanan B, Mohammed W, Rambally R, Sookdeo VD, Harnanan D, et al. A rare case of massive lower gastrointestinal bleeding from a ruptured splenic artery aneurysm. *J Surg Case Rep* 2018;2018:rjy003.
12. Dobbie H, Lanham J, Unwin R. Morphea presenting as widespread oedema. *J R Soc Med* 2002;95:459-60.