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Fortuitous Discovery of Splenic Artery Aneurysm: About Two Cases

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Abstract

Incidental findings of splenic artery aneurysms during imaging studies have underscored the importance of medical imaging in diagnosing and managing such conditions. We present two cases where splenic artery aneurysms were fortuitously discovered through imaging, highlighting the significance of imaging modalities in these cases.

Keywords: splenic artery aneurysm, computed tomography, ultrasound

1. Case Reports

Case 1: A 65-year-old female with a history of Sjogren's syndrome. At no point did she have any symptoms or signs of the aneurysm, such as abdominal pain or an abdominal mass. An abdominal ultrasound performed as part of the diagnostic workup incidentally revealed a splenic artery aneurysm (Figure 1). Subsequent imaging studies using computed tomography angiography (CTA) confirmed the diagnosis (Figure 2).

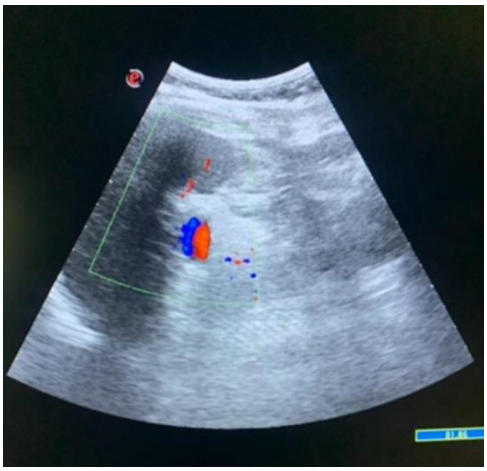

Figure 1. Abdominal Color Doppler Ultrasond showing a blood flow within the splenic artery aneurysm

Figure 2. There is a well-defined rounded peripheral lesion in the pancreatic tail, which shows contrast opacification parallel to the splenic artery and appears to be connected to it, consistent with a splenic artery aneurysm, measuring approximately 15mm.

Case 2: A 43-year-old female underwent computed tomography angiography for evaluation of abdominal pain. During the imaging study, an incidental finding of a splenic artery aneurysm was observed. The aneurysm was further characterized using CTA, confirming the diagnosis (Figure 3).

Figure 3. There is a well-defined rounded peripheral lesion in the splenic hilum, which shows contrast opacification parallel to the splenic artery and appears to be connected to it, consistent with a splenic artery aneurysm, measuring approximately 11mm.

2. Introduction

Medical imaging techniques have revolutionized healthcare by enabling non-invasive visualization and diagnosis of various diseases and conditions. In some instances, imaging studies conducted for unrelated reasons lead to the fortuitous discovery of unexpected abnormalities. This article discusses the serendipitous detection of splenic artery aneurysm during imaging and highlights the importance of imaging modalities in such cases.

3. Discussion

Splenic artery aneurysm (SAA) refers to the abnormal dilation or bulging of the splenic artery, which supplies blood to the spleen. Although relatively rare, splenic artery aneurysms can pose significant health risks if left undetected or untreated.

The incidence of SAA is estimated to be 0.7% in the population, but autopsy studies have reported rates as high as 10%. The incidence of SAA in females is four times higher than in males. This gender difference, attributed to hormonal and hemodynamic changes associated with pregnancy, is not observed with other visceral artery aneurysms. SAA is the second most common intra-abdominal aneurysm after aortoiliac aneurysms, and most

cases are asymptomatic, with only 27% presenting with abdominal pain.

Incidental diagnosis of SAA is increasingly frequent due to the growing use of angiograms, CT scans, and ultrasonograms for investigating other conditions. The peak age of detection is in the sixth decade of life. The exact cause of these aneurysms is uncertain, but increased blood flow through the splenic artery may be a contributing factor. Portal hypertension with large portasystemic shunts leads to an increase in portal blood inflow volume, which is believed to increase the aneurysmal propensity of the splenic artery. Arteriosclerosis is the most common pathological finding and is likely a post-aneurysmal phenomenon rather than a primary cause of the aneurysm. Half of the ruptures occur in pregnant women, with a mortality rate of 70-90%.

Ultrasonography is often the initial imaging modality used for evaluating abdominal conditions. It provides real-time imaging of the splenic artery and helps identify aneurysmal changes. Color Doppler ultrasound can assess blood flow within the aneurysm, aiding in determining its size and potential complications.

CT angiography (CTA) is particularly valuable in detecting and characterizing splenic artery aneurysms. It offers a three-dimensional view of the aneurysm, providing precise information about its location, size, and morphology.

MRI utilizes a powerful magnetic field and radio waves to generate high-resolution images of the body's internal structures. Magnetic resonance angiography (MRA) can be used to visualize the splenic artery and identify aneurysmal changes. MRI/MRA is particularly beneficial in assessing the relationship of the aneurysm with surrounding structures.

In many cases, splenic artery aneurysms are incidentally discovered during imaging studies performed for unrelated reasons. This serendipitous finding can have significant clinical implications. Early detection of splenic artery aneurysms allows for timely intervention and management, preventing potentially life-threatening complications such as rupture and hemorrhage. Treatment options include surgical repair, endovascular techniques such as coil embolization, and close monitoring in selected cases.

For patients over 60 years of age with no symptoms and aneurysms less than 20 mm in diameter, conservative management with CT scans every six to twelve months is advocated. Treatment is indicated for aneurysms causing symptoms, those larger than 30 mm in diameter, and those detected in pregnant or of childbearing age women, as they are at increased risk of rupture. There is no clear guidance on managing aneurysms between 20 and 30 mm.

At present, embolization is the preferred method of treatment. However, long-term recurrence is a potential hazard, and follow-up information for this method is limited. When embolization is challenging or contraindicated due to the proximity of the aneurysm to the spleen (with a risk of splenic infarction), open or laparoscopic surgery options include splenic artery ligation, excision of the aneurysm with reanastomosis of the artery, or splenectomy with aneurysm removal.

4. Conclusion

The fortuitous discovery of splenic artery aneurysms through imaging underscores the importance of these diagnostic tools in identifying unexpected abnormalities. Ultrasonography, CT angiography, and magnetic resonance angiography play crucial roles in detecting and characterizing splenic artery aneurysms, facilitating timely intervention and management. As imaging techniques continue to advance, the serendipitous detection of such anomalies is likely to increase, ultimately leading to improved patient outcomes.

Conflict of Interest: The authors declare that there is no conflict of interest.

References

Agarwal PP, Ichikawa T, Chalasani N, et al, (2010). CT and MRI of extracardiac findings in patients with congenital cardiovascular disease. *Radiographics*, *30*(4), 1069-1094.

Avgerinos ED, Go C, Gupta AK, et al, (2019). Contemporary Management of Splenic Artery Aneurysms: A Systematic Review and Meta-analysis. *Annals of Vascular Surgery*, *58*, 259-269.

Braga L, Setti J, Silva F, et al, (2021). Splenic artery aneurysm: an incidental finding on multiphase computed tomography angiography. *Radiologia Brasileira*, *54*(5), 330-331.

de Barros SA, Romano CC, Bacelar TS, et al, (2019). Incidental Splenic Artery Aneurysm: Case Report and Review of the Literature. *Revista da Associação Médica Brasileira*, *65*(3), 433-436.

Fink HA, Lederle FA, Roth CS, Bowles CA, Nelson DB, Haas MA, (2000). The Accuracy of Physical Examination to Detect Abdominal Aortic Aneurysm. *Archives of Internal Medicine*, *160*(6), 833-836.

Hoenig DM, Katz DS, Mellnick VM, Raptopoulos V, (2019). Splenic Artery Aneurysms: Two Decades'

Experience with Endovascular Management. *Journal of Vascular and Interventional Radiology*, *30*(4), 558-564.

Kluger MD, Chiricolo A, Deipolyi AR, et al, (2020). Contemporary management of visceral artery aneurysms. *Journal of Vascular Surgery*, *72*(6), 2078-2088.

Pang TC, Maher R, Gananadha S, et al, (2011). Systematic Review of the Diagnosis and Management of Splenic Artery Aneurysms. *Journal of Gastrointestinal Surgery*, *15*(3), 436-448.

Reardon RF, Davis P, (2009). Splenic Artery Aneurysms: Methods of Diagnosis and Treatment. *Seminars in Interventional Radiology*, *26*(3),196-203.

Singh M, Venkatesh SK, Wang ZJ, et al, (2020). Splenic artery aneurysms: Diagnosis, management, and follow-up. *Abdominal Radiology*, *45*(1), 56-68.