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Case Report

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Renal colic-like presentation of splenic artery aneurysm rupture: a case report

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ABSTRACT

This report describes a rare case of a ruptured splenic artery aneurysm (SAA) presenting with symptoms indistinguishable from renal colic. A 43-year-old male patient presented with acute left-sided abdominal pain, radiating to the flank, and hematuria, initially suggesting renal colic. While the diagnosis was being evaluated, the patient's vital signs rapidly deteriorated, prompting a more aggressive diagnostic approach that revealed the ruptured SAA. The patient was successfully treated with emergency surgery. This case emphasizes the importance of considering unusual diagnoses when faced with atypical presentations and highlights the diagnostic challenges associated with such rare conditions.

Keywords: Aneurysm, ruptured, splenic artery, renal colic, hemorrhagic shock

INTRODUCTION

One of the most common reasons for emergency department visits is abdominal pain.[1] Among all the causes of abdominal pain, splenic artery aneurysm (SAA) is seen in less than 1% of cases.[2] A splenic artery diameter greater than 1 cm is considered an aneurysm.[3] It is the third most common type of intra-abdominal aneurysm.[2] It is usually asymptomatic, with the main risk factors including pregnancy, trauma, fibromuscular dysplasia, atherosclerosis, hepatobiliary system inflammation, and portal hypertension.[4,5] SAA is generally not the first diagnosis considered in patients presenting with abdominal pain in the emergency department.[1] With the widespread use of modern diagnostic methods, the diagnosis of SAA and SAA rupture has become more common.[6] SAA rupture can lead to hemorrhagic shock and has a high mortality rate.[7]

CASE

A 43-year-old male with no significant medical history presented to the emergency department with sudden-onset left flank pain, which had started 1-2 hours earlier. His general condition was stable, with a blood pressure of 160/100 mmHg, a pulse of 102 beats per minute, and other vital signs within normal limits. On initial physical examination, bowel sounds were normal, and there was tenderness in both the left upper and lower quadrants, as well as the left costovertebral angle, without signs of guarding or rebound tenderness. Laboratory findings revealed leukocytosis (11.470/ µL), normal hemoglobin levels (14.4 g/dl), and a normal platelet count (187.000/µL), along with normal biochemical test results, including blood glucose, kidney function tests, liver function tests, and electrolyte values. A complete urinalysis revealed leukocytes (8 HPF) and erythrocytes (9 HPF). The initial diagnosis was renal colic, and a renal ultrasound was considered for further evaluation.

However, within the next few hours, the patient's condition worsened. Approximately 2 hours after presentation, the pain intensified, and he developed restlessness and cold sweats. The abdominal pain migrated to the epigastric area, followed by tachycardia and hypotension. As signs of shock became more pronounced, an immediate reevaluation was conducted.

At around the 3-hour mark, in light of the new clinical developments and the possibility of an aortic aneurysm, an abdominal aorta computed tomography (CT) angiography was performed. This revealed a ruptured SAA, with a hematoma measuring 120x130 mm in the perisplenic area (Figure 1a) and active contrast extravasation (Figure 1b). The patient was promptly referred to the general surgery department for further management.

Emergency laparotomy was performed, during which the spleen and left adrenal gland were surgically removed. Post-operatively, the patient spent 2 days in the intensive care unit and 3 days on the surgical ward before being discharged in good health.

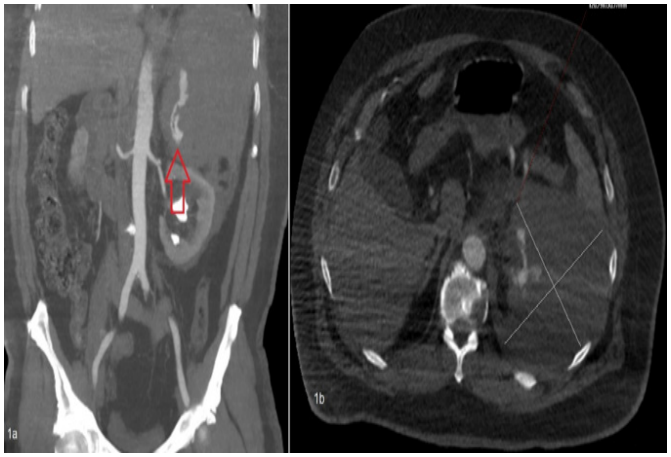

Figure 1a. Red arrow: Abdominal aorta CT angiography showing active contrast extravasation **1b.** The dimensions of the intra-abdominal hematoma due to splenic artery aneurysm rupture

DISCUSSION

This case represents a rare presentation of a ruptured SAA detected in a male patient with no known medical history. In large case series, it has been reported that SAAs are four times more common in women than in men.[8] The most common presenting symptoms in symptomatic patients are left upper quadrant abdominal pain and epigastric pain. In the case of rupture, diffuse abdominal pain, hemorrhagic shock, and an acute abdomen may be observed due to hematoma. However, the majority of patients are asymptomatic, and rupture may occur without prior symptoms, making it the first clinical manifestation in some cases.[4] This case, however, differs from others as it presents with localized, sudden pain in the left flank. Initially presenting with findings such as microscopic hematuria and costovertebral angle tenderness, the patient was assessed as having renal colic but required re-evaluation due to the worsening pain and its spread to the abdomen, followed by the development of shock.

In the diagnostic process, ultrasound is recommended as the first choice due to the absence of radiation exposure, especially in pregnant patients, and its bedside applicability, though it is highly operator-dependent.[9] CT angiography is considered the most suitable diagnostic method for SAA, but the gold standard remains endovascular angiography.[10] In this case, the initial diagnosis of renal colic led to consideration of renal. However, given the patient's rapid deterioration, a more aggressive diagnostic approach was initiated, leading to CT angiography, which confirmed the diagnosis.

For aneurysms smaller than 2 cm that are asymptomatic or non-ruptured, close monitoring is recommended. However, for aneurysms larger than 3 cm, whether symptomatic or asymptomatic, endovascular treatment has shown great success. In cases of rupture, emergency surgery is recommended.[11] In this case, emergency surgery was performed after the rupture resulted in the onset of shock. This case emphasizes the importance of using aggressive radiodiagnostic methods to identify the etiology of shock in patients who present with atypical symptoms and hemodynamic instability.

CONCLUSION

Spontaneous SAA rupture is a serious surgical emergency, often presenting with atypical clinical findings and a high mortality rate due to hemorrhagic shock. Early recognition and increased awareness of this condition are essential for timely diagnosis and intervention in the emergency department.

In our case, a male patient with no known risk factors for SAA presented with an atypical emergency presentation of sudden left-sided abdominal pain. As his symptoms worsened, he was diagnosed with a ruptured SAA and underwent life-saving surgery.

ETHICAL DECLARATIONS

Informed Consent

The patient signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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