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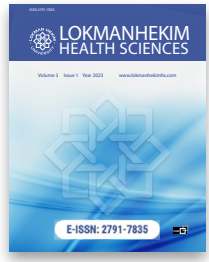

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CASE REPORT

Two Different Clinical Presentations of Splenic Artery Aneurysm: A Report of Two Cases

Splenik Arter Anevrizmasının İki Farklı Klinik Prezentasyonu: İki Olgu Raporu

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Abstract

Introduction: We aimed to report two cases with spontaneous rupture and left upper quadrant pain, which are two separate clinical forms of splenic artery aneurysm (SAA).

Methods: We presented the clinical, radiological, and treatment data of two cases diagnosed with SAA who were admitted to the hospital with different clinical presentations. A 62-year-old female patient was seen in the emergency room with complaints of severe abdominal pain, sweating, nausea, and vomiting that started suddenly and spread to the back.

Results: Pulse was 120 min-1 and blood pressure was 85/55. Contrast-enhanced abdominal computed tomography (CT) evaluation showed a saccular aneurysm sac about 5 cm in diameter on the posterosuperior wall in the middle part of the splenic artery. Aneurysm excision and splenectomy were performed starting from the proximal of the ruptured splenic aneurysm. A 41-year-old female patient was admitted to our center with left upper quadrant pain for 3 days. There was no history of chronic illness, medication, or smoking. Contrast-enhanced upper abdominal CT reveals an area without contrast enhancement extending from the subcapsular area.Laparoscopic splenectomy was performed on the patient due to infarction and SAA. No pathology was detected in the follow-up of the patients at 1, 6, 12, and 18 months.

Discussion and Conclusion: Considering SAA in the differential diagnosis in patients with left upper quadrant pain radiating to the back or in patients presenting with severe abdominal pain with hypotension and appropriate treatment after diagnosis is lifesaving.

Keywords: Aneurysm; Emergency; Rupture; Splenic artery

Aneurysm formation in the visceral branches of the abdominal aorta is a rare but life-threatening disease. A splenic artery aneurysm (SAA) is the most common visceral artery aneurysm. SAA incidence is between 8% and 10% in postmortem studies, and it is four times more common in women. Its cause is thought to be hormonal and hemodynamic changes during pregnancy.[1,2] Incidental SAA diagnosis has increased with the widespread use of ultrasonography (USG) and computed tomography (CT). Although SAA diameter is generally less than 2 cm, cases

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with a diameter of 10 cm have been reported. The risk of SAA rupture increases significantly as the diameter of the aneurysm increases, and mortality is approximately 70%.[3] Although SAA is usually asymptomatic, left upper quadrant pain and pain reflected to the left shoulder can be seen. Approximately 20% of patients experience a double rupture phenomenon. The first rupture is limited to the omentum minus, and hemodynamics are relatively stable, but the subsequent free peritoneal rupture is life-threatening.[4]

In this report, we presented two cases with spontaneous rupture and left upper quadrant pain, which are two separate clinical forms of SAA.

Case Reports

Case 1

A 62-year-old female patient was seen in the emergency room with complaints of severe abdominal pain, sweating, nausea, and vomiting that started suddenly and spread to the back. There was no known chronic disease, drug, smoking, alcohol use, or trauma in her medical history. She had five births. During the physical examination, the body mass index was 41. The abdomen was distended, and there was tenderness in all quadrants and defense in deep palpation. Pulse was 120 min^{-1} and blood pressure was 85/55. Hemoglobin was 7.2 g/dL, and white blood cell was 13 000 μ^{-1}. In the abdominal USG, a hypoechoic solid lesion with an anteroposterior dimension measuring 34 mm was suspicious in the epigastric region. Moderate free mai between small bowel loops and pelvis. Contrast-enhanced abdominal CT evaluation showed a saccular aneurysm sac about 5 cm in diameter on the posterosuperior wall in the middle part of the splenic artery. In the superomedial neighborhood of the defined saccular aneurysm, a thin fistula tract opens into a second aneurysm sac with a septal 3 cm diameter (pseudoaneurysm). Diffuse free fluid was observed in the perihepatic, perisplenic, left perirenal–pararenal area, around the bowel loops, and in the pelvic fossa (Fig. 1). Two units of erythrocyte suspension was given to the patient whose blood type was A Rh +. An informed consent form was signed by the patient. An emergency surgery decision was made with the diagnosis of ruptured SAA. There was about 2 L of hemoperitoneum on laparotomy. Aneurysm excision and splenectomy were performed starting from the proximal of the ruptured splenic aneurysm. The patient became hemodynamically stable. There were no postoperative complications. The patient was discharged on the seventh day after surgery. Pathological examination was compatible with an aneurysm with severe degenerative changes.

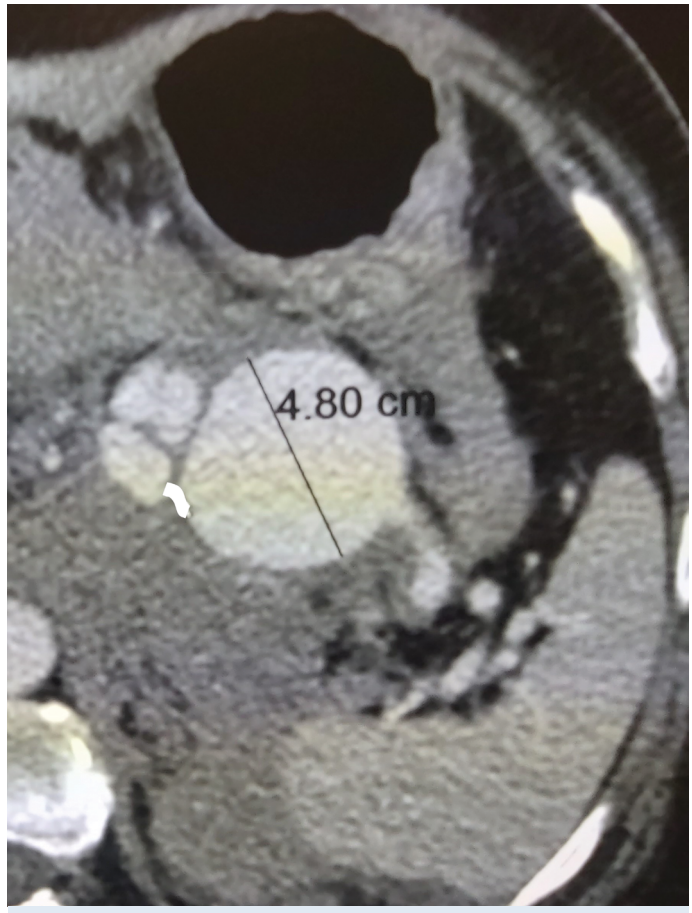

Figure 1. Tomography image of aneurysm rupture.

Case 2

A 41-year-old female patient was admitted to our center with left upper quadrant pain for 3 days. There was no history of chronic illness, medication, or smoking. She had three births. Physical examination revealed tenderness in the epigastric region and left upper quadrant. Pulse was 88 min^{-1} and blood pressure was 130/75. All laboratory parameters were within normal limits. As a result of abdominal USG, the spleen was larger than normal (13 cm), and there was a thrombus in the splenic hilum, 25 × 17 mm in size, causing approximately 70% stenosis in the lumen. Contrast-enhanced upper abdominal CT reveals an area without contrast enhancement extending from the subcapsular area, which starts from the upper anterior of the spleen and extends to the middle zone, reaching 4 cm in its widest part (infarct). There was an aneurysmatic enlargement of approximately 22 × 17 mm in the lumen of the splenic hilum with a hypodense lesion (thrombus), forming an approximately 8 mm diameter filling defect. An informed consent form was signed by the patient. Laparoscopic splenectomy was performed on the patient due to infarction

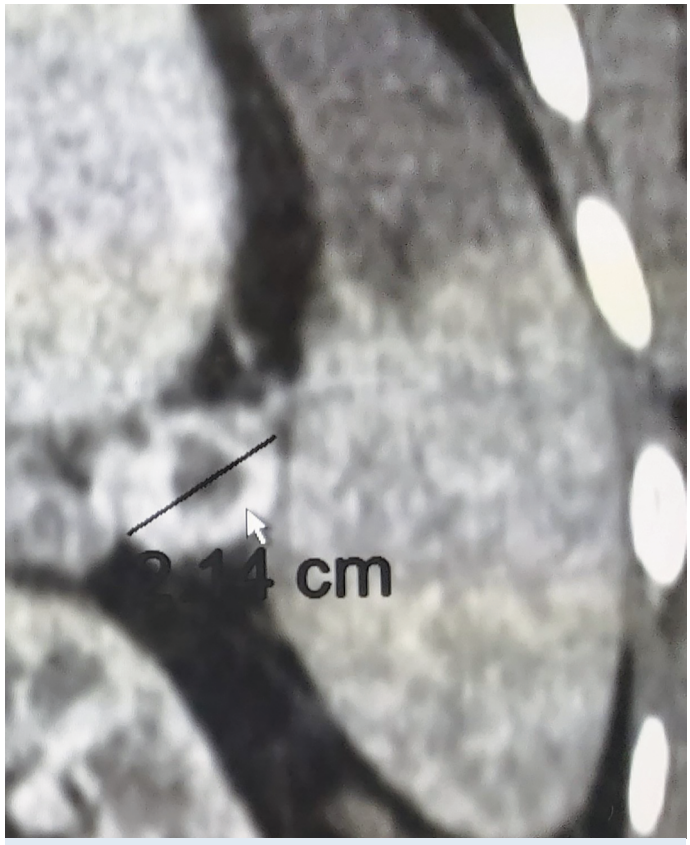

Figure 3. Tomography image of the thrombus within the aneurysm.

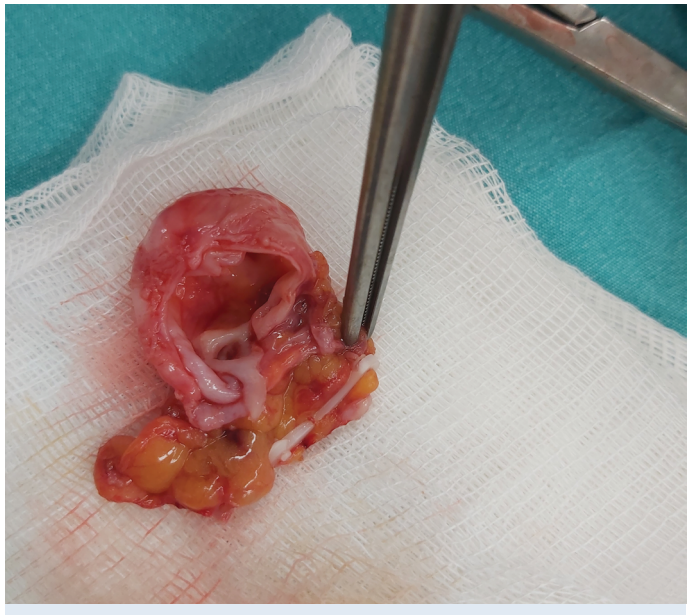

Figure 2. Splenic artery aneurysmatic dilatation.

and SAA (Fig. 2, 3). The pathology result was compatible with the spleen containing hemorrhagic infarction and the splenic artery compatible with aneurysmatic enlargement of the hilus. The patient was discharged on the postoperative fourth day. There were no complications.

Both cases were vaccinated after splenectomy, and penicillin prophylaxis was initiated. Due to reactive thrombocytosis, acetylsalicylic acid (100 mg daily) was started. No pathology was detected in the follow-up of the patients at 1, 6, 12, and 18 months.

Discussion

Due to the high mortality rate, it is important to make the diagnosis of SAA in a timely manner without rupture. Although the cause of SAA is not known clearly, the weakening of the connective tissue in the intima for any reason and its local inability to maintain its integrity in the vessel wall play an important role in the development of SAA. Although arterial aneurysms are more common in men, SAA is more common in women. The reason for this is that hormonal and hemodynamic changes observed during pregnancy, especially in multiparous women, may cause hyperplasia in the splenic artery intima, causing fragmentation in the vessel wall and aneurysm formation. The prevalence of SAA increases significantly in patients with cirrhosis with portal hypertension, and SAA is observed in 7% to 20% of patients with cirrhosis. Other uncommon causes of SAA include muscular dysplasia, infection, trauma, inflammatory processes, and degenerative artery disease.[5,6] The fact that two of our patients are females and multiparous is compatible with the literature.

In Trastek et al.'s[7] study, an aneurysm was seen in the distal 1/3 of the splenic artery in 78 of 100 patients. However, Ouchi et al.[3] stated that in 44 SAA patients, the localization of aneurysms was in the proximal 1/3 of 50%. In our cases, the localization of the aneurysm was in the middle 1/3 in one and the hilus in the other case. Up to 10% of SAA patients presented to the emergency department with rupture manifested by severe abdominal pain and hypotension, especially in the left upper quadrant. However, with the widespread use of effective diagnostic devices such as CT, the rate of rupture has dropped to around 3%. Rupture may occur in the abdominal cavity, stomach, colon, pancreatic duct, or splenic vein. Contrasted CT and selective visceral angiography are the most effective diagnostic methods for SAA.[8] While one of our cases was ruptured into the abdomen, the other case was treated without rupture because of early diagnosis. USG and contrast CT were used as radiological methods.

Open or laparoscopic surgery and endovascular interventional methods are used in the treatment of SAA. Recently, laparoscopic approaches have come to the fore in nonruptured SAA surgery. Aneurysmectomy and end-to-end anastomosis or aneurysmectomy and splenectomy are among the surgical options. With the widespread use of endovascular surgery, coil embolization is currently the

first treatment option in SAA treatment. However, the risk of splenic infarction in this method is around 40%. Stent application reduces the risk of infarction because it does not impair blood flow.[3,9] In symptomatic aneurysms or asymptomatic women with a diameter greater than 2 cm or in women with SAA who are considering pregnancy, SAA should be treated by determining the appropriate method.[10] As one of our cases was ruptured, we operated under emergency conditions and performed splenectomy with aneurysm. Aneurysm was approximately 5 cm in diameter. In the other case, splenic infarction developed due to the presence of a thrombus in the aneurysm. The aneurysm was close to the hilus, and its diameter was 2.2 cm. She was treated with laparoscopic splenectomy and aneurysmectomy.

Conclusions

Considering SAA in the differential diagnosis in patients with left upper quadrant pain radiating to the back or in patients presenting with severe abdominal pain with hypotension and appropriate treatment after diagnosis is lifesaving. In this presentation, we aimed to share two different clinical presentations of SSA and surgical approaches suitable for these presentations.

Peer-review: Externally peer-reviewed.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Authorship Contributions: Concept: ED; Design: ED; Supervision: ED; Materials: ED, EG; Data Collection or Processing: ED, EG; Analysis or Interpretation: EG; Literature Search: ED; Writing: ED; Critical Review: EG.

Conflict of Interest: None declared.

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