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# Management of Splenic Infarction: A Case Report

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**Abstract** | **Case Report**

Splenic infarction is a rare clinical condition, most often diagnosed by computed tomography. The etiologies are multiple and frequently determine the therapeutic strategy. However, there is no clear consensus regarding the extent of etiological investigations. We report the case of a 66-year-old woman who presented with left hypochondrial pain associated with vomiting and fever. Computed tomography confirmed the diagnosis of splenic infarction. A splenectomy was performed. The aim of this report is to describe the diagnostic and therapeutic management steps in a case of splenic infarction.

**Keywords:** Splenic Infarction, Splenic Artery Occlusion, Non-Traumatic Splenectomy, Splenic Infection.



## INTRODUCTION

Splenic infarction is caused by reduced or interrupted blood supply to the spleen, secondary to occlusion of the splenic artery or one of its branches.

Although splenic infarction typically presents with left upper quadrant abdominal pain, fever, chills, and nausea, asymptomatic cases may also occur. With the improved availability of contrast-enhanced computed tomography (CT), splenic infarction is now frequently detected incidentally in acute clinical settings [1].

Acute splenic infarction is a heterogeneous condition regarding its clinical presentation, etiology, and associated venous or arterial thrombosis [2]. It most commonly occurs in patients with an underlying disorder, including myeloproliferative diseases, malignancy, atrial fibrillation, and other prothrombotic conditions [3].

## CASE REPORT

A 61-year-old woman with a medical history of type II diabetes mellitus and prior cholecystectomy presented with acute abdominal pain and bilious vomiting. Fever was absent at symptom onset. The symptoms had begun a few hours earlier.

On physical examination, the patient was hemodynamically stable but presented with tenderness and guarding in the left hypochondrium, with a recorded temperature of 39°C.

Laboratory tests revealed a prothrombin time of 55%, white blood cell count of 33.8 $\times 10^3/\mu L$ (reference 4,000–10,000), hemoglobin level of 6.9 g/dL (11–16), ferritin level of 9.77 ng/mL (13–150), platelet count of 980,000/µL, C-reactive protein of 248 mg/L, and creatinine level of 7 mg/dL [5–12].

Abdominal ultrasound showed a spleen of normal size with significant bowel gas. Contrast-enhanced abdominal CT scan demonstrated a spleen of normal size with heterogeneous density due to multiple non-enhancing hypodense triangular areas, based peripherally and apex directed toward the hilum, involving more than 50% of the splenic parenchyma. The scan also revealed a non-obstructive atheromatous plaque of the suprarenal abdominal aorta, with good opacification of the celiac trunk and the superior mesenteric artery.

Medical treatment was initiated, including antibiotics (ceftriaxone, metronidazole, and gentamicin) and therapeutic-dose anticoagulation. Forty-eight hours later, a repeat CT scan revealed complete splenic

infarction due to occlusion of the distal third of the splenic artery. The splenic vein was of normal caliber with preserved opacification.

A splenectomy was performed via laparotomy. The postoperative course was initially favorable. However, on postoperative day 6, the patient developed fever and hyperleukocytosis. CT imaging revealed a 7-cm collection in the splenic bed, which responded well to medical treatment.

The patient was subsequently transferred to the hematology department for further evaluation of a suspected myeloproliferative disorder.

## DISCUSSION

Splenic infarction is frequently overlooked in acute clinical settings and remains underdiagnosed, partly due to limited high-quality evidence regarding its pathophysiology [1].

The etiologies of splenic infarction are diverse. The most common causes are hematologic disorders associated with hypercoagulable states, including myeloproliferative syndromes, leukemia, sickle cell disease, protein C or S deficiency, and lupus anticoagulant, among others [4, 5]. Other malignancies and splenic infections (such as infectious mononucleosis or cytomegalovirus infection) may also increase thrombotic risk [4]. Embolic causes, including infective endocarditis and atrial fibrillation, can generate systemic thromboemboli leading to splenic infarction [5]. Splenic trauma compromising vascular supply may also result in impaired splenic perfusion. In our case, the infarction was ultimately attributed to an underlying hematologic malignancy, with suspected myeloproliferative disease.

In a retrospective multicenter study by Yen *et al*., including 130 patients with splenic infarction presenting to emergency departments [6], 45.4% of patients were older than 65 years. Splenic infarction is therefore more likely to occur in elderly populations. Our patient was 61 years old at diagnosis.

Regarding clinical presentation, approximately half of the patients in reported series presented with abdominal pain, while the remainder were asymptomatic [1]. In our case, abdominal pain was the initial and leading symptom.

Fever has been variably reported. In the studies by Weber *et al*., and Yen *et al*., fever was observed in 16.4% and 10.8% of patients, respectively. In contrast, more than half of our patients presented with fever. In our case, fever was not present initially but developed a few hours after symptom onset.

Diagnosis relies primarily on clinical findings and imaging. Laboratory tests are non-specific. Abdominal ultrasound may show wedge-shaped, hypoechoic, well-defined lesions. However, contrast-enhanced computed tomography remains the diagnostic modality of choice [7]. In our patient, contrast-enhanced CT scan confirmed the diagnosis.

Management is mainly conservative, including analgesia and close monitoring. Investigation and treatment of underlying causes are essential. Surgery is reserved for complications such as hemorrhage, pseudocyst formation, or large abscesses [7]. In our case, medical treatment was ineffective, and splenectomy was indicated to prevent progression to septic shock.

## CONCLUSION

Splenic infarction is a rare condition. It should be suspected in patients presenting with left upper quadrant abdominal pain. It can be caused by several underlying disorders, particularly myeloproliferative syndromes. Contrast-enhanced computed tomography is the gold standard for diagnosis. Surgical management is indicated in cases of failure of medical treatment or in the presence of complications.

**Conflicts of Interest:** none related to this article.

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