ISSN: 2584-0355
DOI: doi.org/10.51219/MCCRJ/Catarina-Coelho/449

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Medical & Clinical Case Reports Journal

https://urfpublishers.com/journal/case-reports

Vol: 4 & Iss: 1

Case Report

Unusual Case of Multiple Splenic Lesions

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Citation: Coelho C, Barrigas M, Pinheiro D, Magalhães R, Exposito B. Unusual Case of Multiple Splenic Lesions. *Medi Clin Case Rep J* 2026;4(1):1628-1630. DOI: doi.org/10.51219/MCCRJ/Catarina-Coelho/449

Received: 14 February, 2026; **Accepted:** 26 February, 2026; **Published:** 02 March, 2026

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A B S T R A C T

Splenic abscesses are an uncommon but potentially life-threatening condition, most frequently resulting from hematogenous dissemination. Their diagnosis is often delayed due to nonspecific clinical manifestations. We present the case of a 64-year-old immunocompetent man who presented to the ED with a 15-day history of supramesocolic abdominal pain associated with anorexia, nausea and significant weight loss. Physical examination revealed left upper quadrant tenderness without peritoneal signs. Laboratory evaluation demonstrated marked leucocytosis, thrombocytosis, anaemia and elevated inflammatory markers. Contrast-enhanced CT showed heterogeneous splenomegaly with multiple hypodense splenic lesions of uncertain etiology. Blood cultures grew Escherichia coli, supporting a bacteraemia origin. Despite broad-spectrum intravenous antibiotic therapy, follow-up MRI revealed enlarging and confluent splenic collections. An attempt at image-guided percutaneous drainage was complicated by an iatrogenic pneumothorax, preventing further minimally invasive management. Given the size of the lesions and the persistent risk of rupture, splenectomy was performed successfully. Microbiological analysis of peritoneal fluid confirmed E. coli infection. This case emphasizes the diagnostic challenges of splenic abscesses and highlights the importance of early imaging, appropriate antimicrobial therapy and timely surgical intervention when conservative or percutaneous approaches fail, even in immunocompetent patients.

Keywords: Splenic abscesses; Escherichia coli; Clinical manifestations

Introduction

Splenic abscesses are a rare clinical entity, although the number of published reports has increased in recent years due to improved imaging and diagnostic techniques[1-3]. They are most caused by hematogenous spread from a distant infectious focus, particularly in the setting of bacteraemia or infective endocarditis[2,4]. This condition can lead to severe complications, including rupture and sepsis and is associated with significant mortality if not promptly diagnosed and treated[1,3,5]. Most reported cases occur in individuals with underlying immunosuppression, such as diabetes mellitus, malignancy or chronic illness[3,6]. The aim of this article is to report the case of a patient without evidence of immunosuppression who was diagnosed with multiple splenic lesions.

This case highlights an uncommon presentation of multiple splenic abscesses in an immunocompetent patient, emphasizing

the importance of considering this diagnosis even in the absence of classic risk factors[7,8].

Case Presentation

We present the case of a 64-year-old Portuguese man with a medical history of type II diabetes mellitus, managed with oral antidiabetic medication. His surgical history included a cholecystectomy performed 15 years ago in France. He was an active smoker (40 pack-years). He presented to the ED with a 15-day history of supramesocolic abdominal pain, associated with anorexia, nausea and significant weight loss. He denied any changes in bowel habits, vomiting, gastrointestinal bleeding or urinary symptoms.

On physical examination, the patient was febrile (temperature, 38.9°C) and had tenderness on palpation of the left upper quadrant, with a deep palpable mass, but no signs of peritoneal irritation. He was hemodynamically stable, with a blood pressure of 136/76 mmHg and a heart rate of 101 beats per minute.

Initial laboratory workup in the ED revealed normocytic/normochromic anaemia (haemoglobin, 10.6 g/dL), leucocytosis (32.25 × 10^3/µL), neutrophilia and thrombocytosis (platelets, 853 × 10^3/µL). C-reactive protein was elevated at 10.01 mg/dL. The patient underwent a sepsis screening, as illustrated in **(Table 1)**.

Table 1: Completed analytical study.

Test	Result	Reference range
Red blood cells	3.38 × 10^6/µL	4.4-6.0 × 10^6/µL
Hemoglobin	10.6 g/dL	13.0-18.0 g/dL
MCV	93.9 fL	43-55 fL
MCH	31.2 pg	27-33 pg
RDW	14.20%	11-16%
Leukocytes	32.25 × 10^3/µL	4.0-11.0 × 10^3/µL
Neutrophils	92.0%	53.8-69.8%
Eosinophils	0.0%	0.6-4.6%
Basophils	0.0%	0.0-1.5%
Lymphocytes	4.0%	25.3-47.3%
Monocytes	4.0%	4.7-8.7%
Platelets	853 × 10^3/µL	150-400 × 10^3/µL
Glucose	116 mg/dL	82-115 mg/dL
Urea	15 mg/dL	<50 mg/dL
Creatinine	0.40 mg/dL	0.7-1.4 mg/dL
Sodium	135 mEq/L	135-147 mEq/L
Potassium	3.9 mEq/L	3.7-5.1 mEq/L
ALP	124 U/L	40-130 U/L
Gamma-GT	111 U/L	0-49 U/L
AST	13 U/L	<40 U/L
ALT	4 U/L	<41 U/L
C-reactive protein	10.01 mg/dL	<0.5 mg/dL
INR	1.27	<1.2
APTT	34.7 seconds	24-35 seconds
APTT ratio	1.2	<1.2
Blood cultures	Gram-negative bacilli: Escherichia coli (four bottles: two aerobic and two anaerobic)	-
Antibiotic susceptibility test	Resistant only to ampicillin and ticarcillin	-

Blood cultures were collected using four bottles: two aerobic and two anaerobic.

ALP, alkaline phosphatase; ALT, alanine aminotransferase; APTT, activated partial thromboplastin time (seconds); AST, aspartate aminotransferase; gamma-GT, gamma-glutamyl transferase; INR, international normalized ratio; MCH, mean corpuscular haemoglobin; MCHC, mean corpuscular haemoglobin concentration; MCV, mean corpuscular volume; RDW, red cell distribution width

(Figure 1A, 1B) shows contrast-enhanced abdominopelvic CT scans revealing heterogeneous splenomegaly with multiple hypodense, poorly enhancing parenchymal lesions, suggestive of splenic infarctions or collections of indeterminate nature.

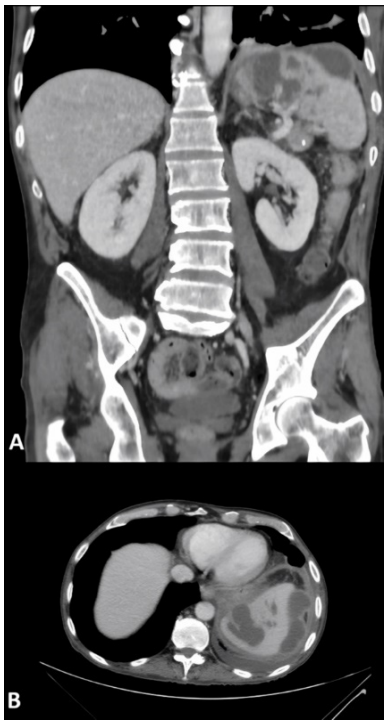

Figure 1: Splenic lesions observed on CT scan.

Hospitalization in the surgery department was recommended, with empirical antibiotic therapy (piperacillin-tazobactam and metronidazole).

Results of the three blood cultures revealed Gram-negative bacilli (Escherichia coli), resistant only to ampicillin and ticarcillin. Transthoracic echocardiography excluded findings suggestive of vegetations, with a left ventricular ejection fraction of 54% and no wall motion abnormalities, as illustrated in **(Figure 2)**.

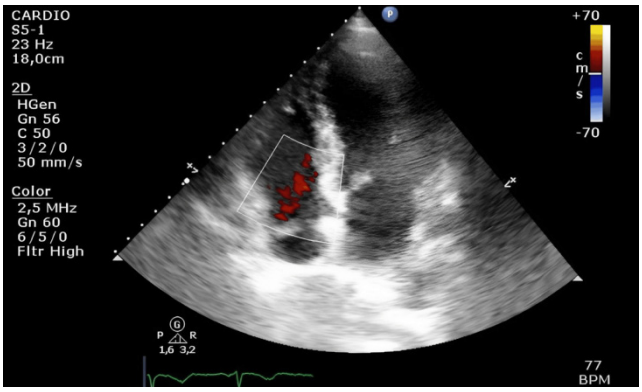

Figure 2: Transthoracic echocardiogram.

On the sixth day of hospitalization, a follow-up abdominal MRI showed confluence of some collections in the upper pole, measuring 6 and 8 cm in length, with no evidence of perisplenic abscess formation **(Figure 3A, 3B)**.

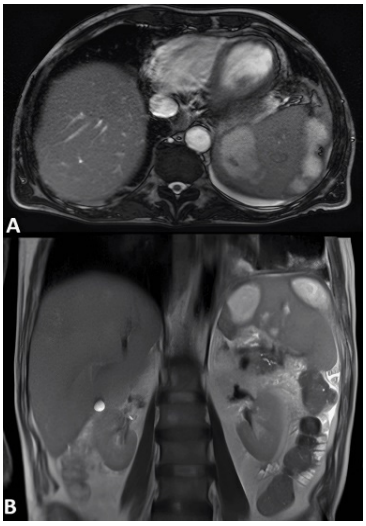

Figure 3: Abdominal MRI.

Percutaneous drainage by interventional radiology was proposed[5-8] but could not be performed due to an iatrogenic pneumothorax during the procedure **(Figure 4A, 4B)**.

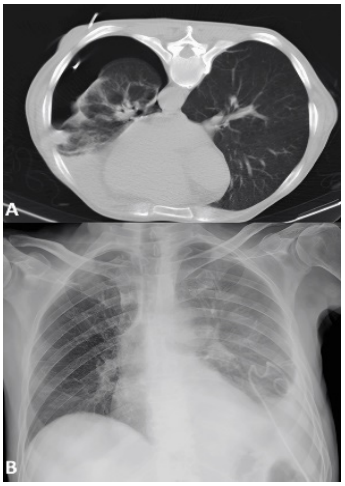

Figure 4: Complications of percutaneous drainage.

Discussion

Splenic abscesses are a rare but potentially life-threatening condition, with reported incidence and mortality significantly reduced in the modern imaging era[1-10]. They are most commonly associated with hematogenous dissemination from bacteraemia or infective endocarditis. Clinical presentation is frequently nonspecific, which may delay diagnosis and increase the risk of complications such as rupture and sepsis. In this case, the presence of persistent fever, leucocytosis and left upper quadrant pain raised suspicion for splenic pathology, later confirmed by imaging.

Contrast-enhanced CT is the diagnostic modality of choice, although differentiation from splenic infarction, hematoma or neoplastic lesions may be difficult. In our patient, MRI helped clarify the diagnosis by demonstrating confluent collections consistent with abscesses. Blood cultures grew E. coli, supporting a bacteraemia origin, despite the absence of an identifiable primary focus or evidence of infective endocarditis.

Management of splenic abscesses requires both antimicrobial therapy and adequate source control. While image-guided percutaneous drainage is a spleen-preserving option in selected cases, it is less effective in large, multiloculated or multiple abscesses and is associated with procedural risks. In this patient, drainage was complicated by pneumothorax and the persistence of large collections (>7 cm) increased the risk of rupture, making splenectomy the most appropriate therapeutic option.

This case highlights an uncommon presentation of E. coli sepsis manifesting solely as multiple splenic abscesses in an immunocompetent patient, emphasizing the need for a high index of suspicion and timely definitive management.

Conclusions

This case illustrates a rare presentation of E. coli bacteraemia manifesting as multiple splenic abscesses in an immunocompetent patient without an identifiable primary source. It highlights the importance of considering splenic abscess in patients presenting with prolonged fever, leucocytosis and left upper quadrant abdominal pain. Early imaging, prompt antimicrobial therapy and timely escalation to definitive surgical management when conservative or percutaneous approaches fail are essential to prevent life-threatening complications and achieve favourable outcomes.

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