



An unusual vascular complication in ankylosing spondylitis: Isolated thrombosis of the celiac trunk and its branches

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Abstract

A 37-year-old woman with a history of ankylosing spondylitis (AS) presented to the emergency department with acute abdominal pain. Imaging tests including ultrasonography and computed tomography (CT) angiography revealed non-occlusive thrombosis of the celiac trunk and its branches. Laboratory tests showed normal ranges for most parameters, except for mild elevation in white blood cell count and platelet count. No predisposing factors were detected through hematological investigations. The patient was started on heparinization, and surgical intervention was not required. The association between AS and thrombosis is discussed, with chronic inflammation being a possible contributing factor. This case highlights the importance of considering celiac trunk thrombosis as a cause of abdominal pain in patients with inflammatory rheumatic diseases like AS.

Keywords: Celiac trunk; thrombosis; ankylosing spondylitis; computed tomography angiography.

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Introduction

Thrombosis of the celiac trunk and its branches is a rare cause of acute abdominal pain. Inflammatory rheumatic diseases, such as ankylosing spondylitis (AS), are also very rare causes of celiac trunk thrombosis. We report the case of a 37-year-old woman with AS who presented to our emergency department with acute abdominal pain and was diagnosed with non-occlusive celiac trunk thrombosis by ultrasonography and computed tomography (CT) angiography scan.

Case Presentation

A 37-year-old woman presented to the emergency department with sudden onset of abdominal pain. Her medical history revealed that she was diagnosed with HLA-B27 (+) AS and was receiving sulfasalazine treatment. She also had mild abdominal pain from time to time. On clinical examination, the patient appeared pale, painful and had no fever. Pulse rate was 88/minute and blood pressure was 115/65. There was no defence and rebound on abdominal examination. Bowel sounds were normal. Direct abdominal radiography was normal. Laboratory tests revealed a hemoglobin level of 12.1 g/dL, white blood cell count of $7.8 \times 10^9/L$, platelet count of 489,000/mm³, international normalised ratio of 1.20 and activated partial thromboplastin time of 33.21 s (Table 1). Liver function tests, urea, creatinine, troponin, d-dimer, fibrinogen, electrolytes, serum lipase and amylase were within normal limits. Abdominal ultrasonography revealed thrombotic filling defects in the celiac trunk and its branches (Figure 1). CT

angiography of the abdominal aorta showed thrombotic plaques and wall thickening extending from the proximal celiac trunk to the levels of the main hepatic artery and splenic artery without occlusion of the lumens (Figure 2). The left gastric artery originated directly from the aorta and the mesenteric arteries were normal. Upon these findings, echocardiography performed to investigate cardioembolic events was normal. No thrombocytosis, protein S, protein C, antithrombin III deficiency was detected and the patient was not taking oral contraceptives, hormone replacement therapy, tamoxifen or other drugs that may increase the risk of thrombosis. Full heparinisation dose (5000 units bolus and 1000 units per hour continuous infusion) was started after hospitalisation. The hematologist and rheumatologist then saw him and he was switched to enoxaparin and aspirin. He started to tolerate oral feeding without abdominal pain 5 days after admission and was discharged on day 10. Follow-up ultrasound at 1 and 3 months showed a marked regression of the thrombus.

Discussion

The celiac artery, also known as the celiac trunk, is a short blood vessel that arises from the aorta and runs beneath the median arcuate ligament at the T12 vertebral level. It supplies blood to the foregut structures, including the distal esophagus, stomach, the second part of the duodenum, liver, pancreas, gallbladder, and spleen. The celiac artery is typically divided into three major branches: the left gastric artery, common hepatic

Table 1. Laboratory tests

	Results	Normal values
Hemoglobin	12.1 g/dL	12-16 g/dL
White blood cells count	$7.8 \times 10^9/L$	$4-10.5 \times 10^9/L$
Platelets	489,000/mm ³	150-450/mm ³
International normalized ratio (INR)	1.20	0.9-1.1
Activated partial thromboplastin time (aPTT)	of 33.21s	10.1-12.8
Troponin	0.002 ng/ml	<0.04 ng/ml
D-dimer	0.1 mg/mL	<0.5 mg/mL
Fibrinogen	244 mg/mL	193-412 mg/mL

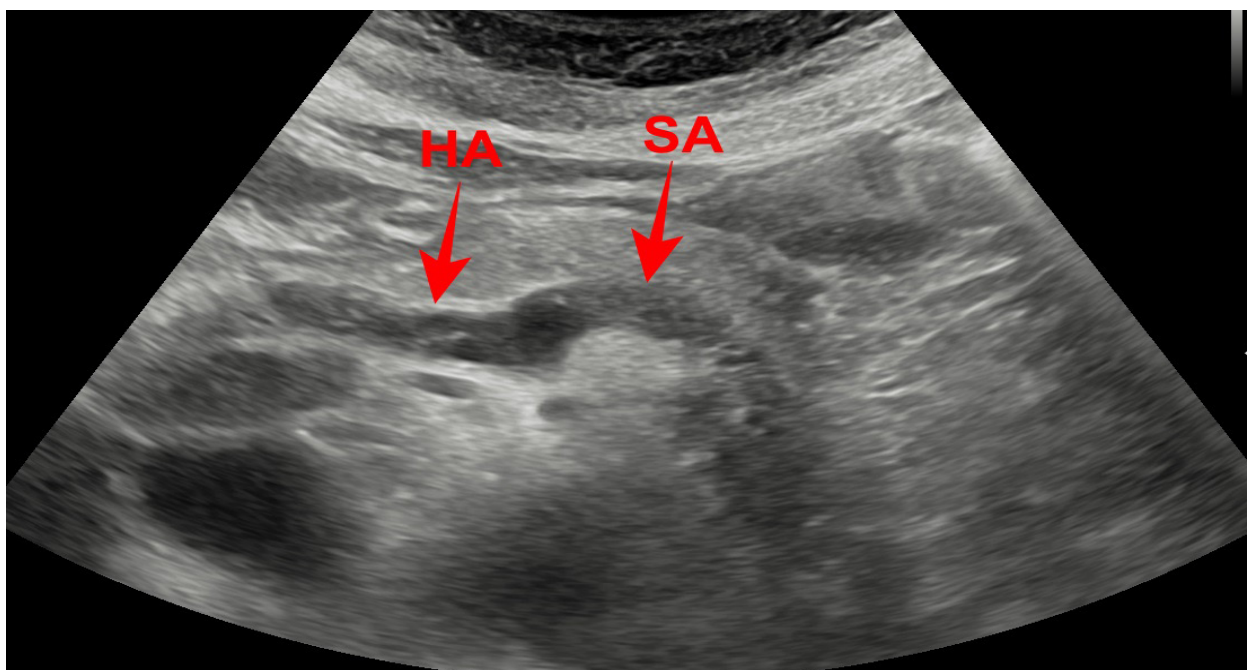


Figure 1. Ultrasonography shows thrombus appearances in the main hepatic artery (HA) and splenic artery (SA).

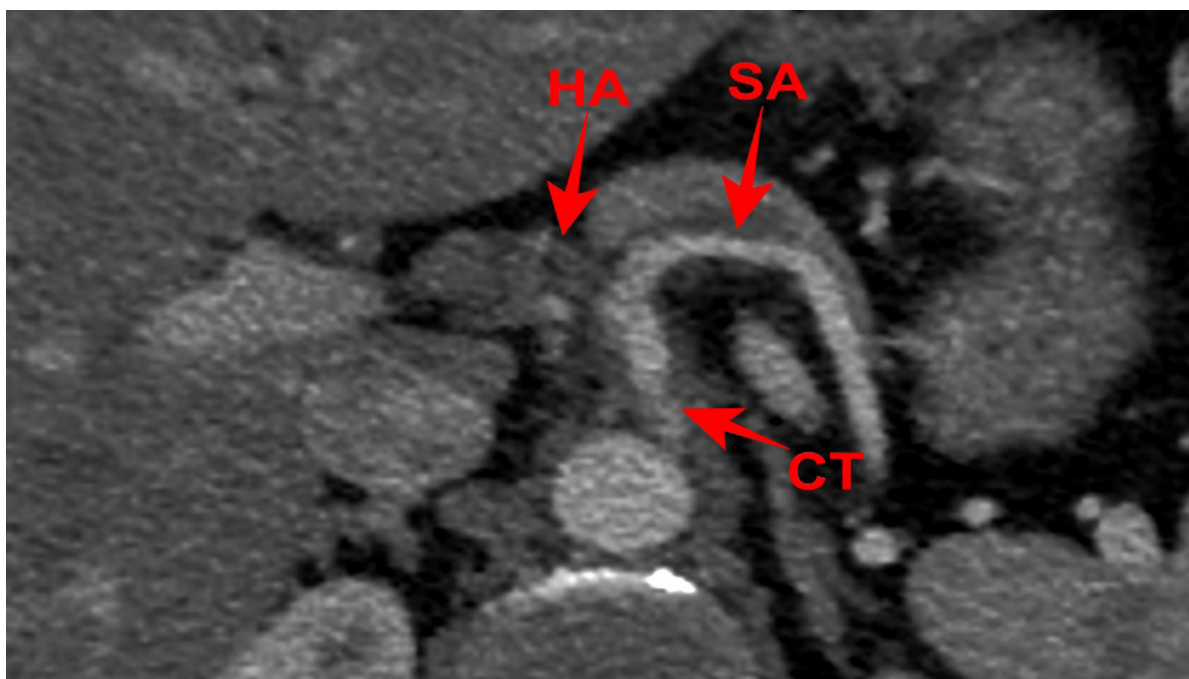


Figure 2. CT angiography of the abdominal aorta showing celiac trunk (CT), main hepatic artery (HA), and splenic artery (SA) demonstrating thrombotic appearances and wall thickening.

artery, and splenic artery [1]. Celiac trunk thrombosis is commonly associated with conditions that increase the risk of blood clotting, such as atherosclerosis, Behcet's disease, thrombocytosis, and deficiencies in proteins S, C, and antithrombin III [2]. Malignancies can also increase the likelihood of celiac artery thrombosis. Other contributing factors may include

acute pancreatitis, antiphospholipid syndrome, the use of oral contraceptives, hypercoagulable disorders, and surgical trauma [3].

AS is a type of chronic inflammatory arthritis that primarily affects the spine but can also involve other joints and organs. Common treatments for AS

typically include a combination of nonsteroidal anti-inflammatory drugs (NSAIDs), sulfasalazine and physical therapy. In some cases, tumor necrosis factor inhibitors (TNF inhibitors) may be considered as first-line treatment. These drugs have traditionally been reserved for cases where standard therapies have been ineffective, but their current role in the management of refractory cases is unclear due to insufficient evidence [4]. A possible association between sulfasalazine and thrombotic events has not been consistently observed in the literature. Recent studies suggest that individuals with AS may be at an increased risk of developing thrombosis, a condition where a blood clot forms inside a blood vessel. The exact mechanisms underlying the association between AS and thrombosis are not fully understood, but it is thought to be related to the chronic inflammation that characterizes AS. Inflammation can lead to damage to the lining of blood vessels, making them more prone to clot formation. Additionally, inflammation can lead to changes in the composition of blood, making it more likely to clot [5, 6]. Very rarely, inflammatory rheumatic diseases such as AS can also cause celiac trunk thrombosis, and celiac trunk thrombosis should be considered as a cause of abdominal pain in these patients.

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