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Case Report

Rare Life-threatening Pain Abdomen

Gaurav Chauhan[1], Hemant Kumar Rathi[2], Kishalay Datta[3], Arun Kaushik[4]

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ABSTRACT

Abdominal pain is a frequently encountered symptom in clinical settings and can be associated with a wide range of conditions, from minor ailments to serious, life-threatening disorders. Recent advancements in diagnostic technology have providedthe healthcare professionalswith better equipped strategies to detect rare but critical conditions. One such uncommon and often overlooked vascular disorder is spontaneous isolated dissection of the celiac artery (SICAD), which remains relatively unfamiliar to many clinicians. In this case report, we discuss the challenging condition of in diagnosis of SICAD, the presentation and the therapeutic challenges faced in the management of a patient presenting to our emergency medicine department with a simple abdominal pain.

KEYWORDS

• Pain abdomen• SICAD• Spontaneous Isolated Celiac• Artery Dissection

INTRODUCTION

Abdominal pain is among the most frequent reasons patients seek care in the emergency department (ED)[1]. It encompasses a wide spectrum of possible conditions, ranging from mild and self-limiting to severe and potentially fatal. This variability makes it a complex clinical presentation, particularly because symptoms often overlap and physical examination alone may not reliably pinpoint the underlying issue.

Consequently, a thorough diagnostic approach involving lab tests, imaging, and clinical assessment is often necessary. Patients often arrive with a sudden onset of pain in

Author's Affiliation:

[1] PGY-2, Department of Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India.

[2] Resident PGY-2, Department of Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India.

[3] HOD and Director, Department of Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India.

[4] Associate Consultant, Department of Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India.

Corresponding Author:

Hemant Kumar Rathi, Resident PGY-2, Department of Emergency Medicine, Max Super Speciality Hospital, Shalimar Bagh, New Delhi, India.

E-mail: hemantrathi14@gmail.com

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the upper abdominal or flank region. The approach to management depends on various factors like severity of pain, the patient's vital signs (heart rate and blood pressure) and end-organ damage. In recent years, there has been a notable rise in the use of computed tomography (CT) to assist with diagnosis of such complex cases[2]. Although CT (contrast or plain) imaging carries risks of radiation exposure, contrast-related kidney injury, and ultimately, the increase in healthcare costs, it has also enhanced the detection of conditions that were once only identifiable during surgery or at autopsy. One such rare but serious condition is spontaneous dissection of a visceral artery. This report highlights a case involving a 52-year-old male who came to the ED with abdominal pain and was diagnosed with a spontaneous isolated celiac artery dissection (SICAD). He was successfully treated with blood pressure control, anticoagulation, and close monitoring.

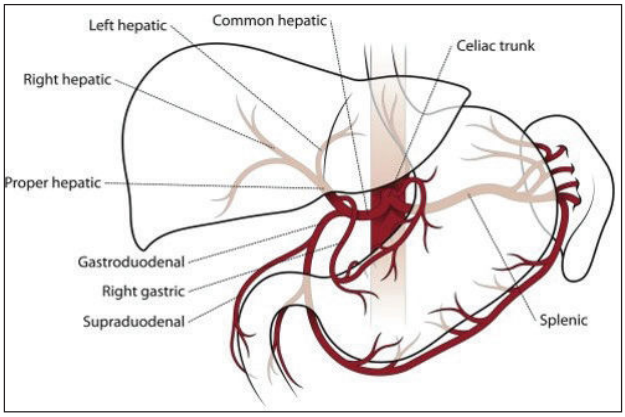


Image source: Jessica R. Hoglund, Josheph H. Blackwell, Michael A. Gibbs, Spontaneous celiac artery dissection, The American Journal of Emergency Medicine, Volume 38 Issue 7, 2020

CASE

A 52-year-old male patient, known hypertensive, came to the emergency department of our hospital with complaints of sudden onset of sharp abdominal pain around 30 minutes prior to the arrival to the emergency medicine department. His pain was radiating to the back, associated with dyspnoeaon sitting upright. His initial vitals were stable in the emergency department (pulse rate – 104/min, BP – 180/100 mmHg, RR – 16/min, Spo2 – 98% on room air, Temperature – 101 * F, RBS – 157mg/dL, pain score – 6/10). Patient was immediately started on analgesics as the patient was in severe pain. Abdominal examination revealed tenderness in the umbilical and epigastric region. He had a normal electrocardiogram finding. Laboratory tests were sent for troponin I, serum amylase, serum lipase along with other routing lab investigations. An urgent 2-D bedside echocardiogram was done which was normal. Ultrasound whole abdomen was done which was normal, raising the suspicion as the pain still not improved with analgesics. Patient was taken on opioid analgesics and urgent contrast CT chest and whole abdomen was planned.



Image Source: Department of radiodiagnosis, Max Super Speciality Hospital, Shalimar Bagh, New Delhi

CECT whole abdomen showed dissection in the celiac artery after its origin (figure). Immediate vascular surgeon opinion was taken and patient was admitted in intensive care unit for further management. Meanwhile, the patient was started on antihypertensive esmolol (**Injection Esmolol**: loading dose – 500mcg/kg bolus stat followed by 50mcg/kg/min infusion). After discussion with vascular surgery team and review of literature, patient was planned to be started on anticoagulation therapy (**Injection Heparin:** loading dose 100IU/kg stat followed by 4IU/kg/hr) with close monitoring of aPTT profile.

The patient was planned for conservative management with antihypertensives and anticoagulants along with symptomatic management for pain, parenteral therapy for nutrition. Patient was closely monitored for signs of bleeding, increase in pain and symptomatic resolution of symptoms. Our patient was managed conservatively during the in-hospital stay. After 5 days of hospitalisation, patient was discharged home.

During the follow-up's, patient was kept on antihypertensives and anticoagulation was slowly tapered off. Patient did not show

any signs of recurrence and was managed conservatively successfully.

DISCUSSION

Spontaneous isolated celiac artery dissection (SICAD) is an uncommon but potentially serious condition.[3] Spontaneous isolated celiac artery dissection (SICAD) is an uncommon vascular condition that remains underreported, and data regarding its optimal management are limited.[3,4] It ranks as the second most frequent form of visceral artery dissection, following spontaneous isolated superior mesenteric artery dissection. First described in 1947, these dissections were historically considered fatal, with early cases only identified during postmortem examinations before the advent of advanced imaging techniques. The widespread use of CT angiography has significantly improved the ability to detect these cases earlier and more accurately.[7] Clinical presentations can vary widely, ranging from incidental, asymptomatic discoveries to severe abdominal pain associated with complications such as bowel ischemia and peritonitis. As such, clinicians must maintain a high index of suspicion. This case report describes the valuable insights into the clinical features and treatment outcomes of SICAD.

Although the exact causes and risk factors of SICAD remain unclear, it is more frequently seen in middle-aged men and is commonly associated with hypertension, smoking, and hyperlipidaemia,[5,8-10] though it can occur in patients without these risk factors.[8-10] Abdominal pain is the most reported symptom, though clinical presentations are often non-specific, making diagnosis challenging.[5,6] In literature available online, many cases were initially misdiagnosed, underscoring the importance of early CT angiography for accurate identification.

In general, conservative treatment is preferred in the absence of bowel ischemia, though there is no universally accepted treatment protocol.[7-9] Common management strategies include bowel rest, nutritional support via parenteral routes, pain management, and control of blood pressure.[5] While anticoagulation is sometimes used, studies have not demonstrated improved outcomes compared to observation alone.[8-10]

There is currently no universally accepted treatment protocol for symptomatic SICAD, as the condition varies in its progression and severity. In our case, the patient responded well to conservative therapy typically involving fasting, nutritional support, pain management, blood pressure control and anticoagulation. The use of anticoagulants and antiplatelet agents is debated, with some studies finding no significant benefit over observation alone. Endovascular intervention is generally reserved for patients who fail conservative therapy or present with complications such as ischemia, refractory pain, aneurysmal changes, or dissection progression.[9,10]

CONCLUSION

SICAD is a rare but life-threatening medical emergency which required prompt response and sound clinical knowledge of the emergency physician to diagnose and manage the condition before it turns fatal. Our patient was managed conservatively with intravenous esmolol for blood pressure management and heparin as per the literature. He was admitted for monitoring and transitioned to oral antihypertensive and anticoagulation therapy once his symptoms improved. He did not require surgical or endovascular intervention and was discharged in stable condition after 7 days.

Abbreviations:

Spontaneous Isolated Celiac Artery Dissection – SICAD

Emergency Department: ED

Computed Tomography: CT

Contrast Enhanced Computed Tomography - CECT

Intensive Care Unit: ICU

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