

# POSTER PRESENTATION

**SECOND EVSS**  
Regional Conference

Leading Vascular Science

May 3-5, 2024  
Intercontinental Hotel, Dubai

## ACUTE THROMBOSIS OF THE SUPERIOR MESENTERIC ARTERY IN A 34-YEAR-OLD MALE WITH IDIOPATHIC HYPERCOAGULABILITY STATE: A CASE REPORT

Tabish Wajih Siddiqui, Raqshan Wajih Siddiqui, Asma Abdullah Bin Humaidan Alzaabi, Fatema Marwan Alzaabi, Hajir Maher Mohammed, Elshaffie Emadadin Abdelrohman Elhusain

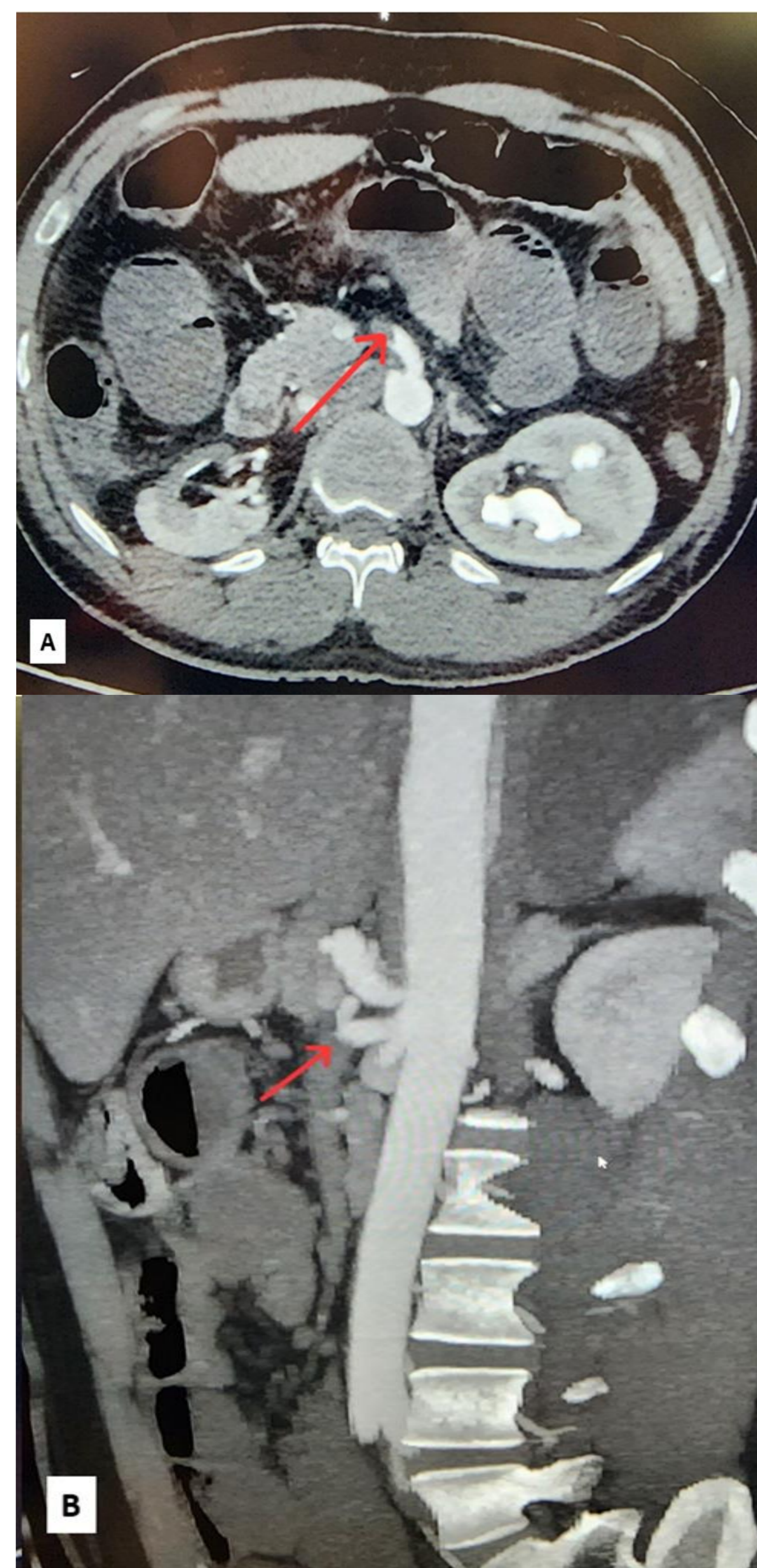
### INTRODUCTION

Hypercoagulability state, marked by extensive formation of blood clots within the vascular system poses a formidable peril, leading to loss of circulatory integrity and systemic well-being. This can manifest in different regions of the body, such as the deep veins of the legs (known as deep vein thrombosis or DVT), arteries, or critical organs like the heart and brain. Superior mesenteric artery (SMA) thrombosis is a serious medical disorder characterized by the obstruction of the arterial blood flow to the gastrointestinal tract, which is associated with significant morbidity and mortality. The condition has a plethora of etiological causes, including conditions such as atherosclerotic occlusion, embolic occlusion, thrombophilia, hypercoagulable states, infections, vasculitis, mesenteric dissection, or the development of a mycotic aneurysm. Vague abdominal pain is a common clinical manifestation, and there is a very high mortality rate.

### CASE PRESENTATION

A 34-year-old Pakistani male, with a medical history significant for left nephrolithiasis, presented to the Emergency Room (ER) with sudden onset of severe, progressively worsening epigastric pain lasting for 10 hours. Subsequently, the pain diffused throughout the abdomen and was accompanied by nausea and four episodes of vomiting. Clinical examination revealed elevated blood pressure (174/93 mmHg), while other vital signs remained within normal limits. Abdominal examination findings were inconclusive compared to the patient's severe abdominal pain complaint. Contrast-enhanced CT scan indicated a large thrombus in the superior mesenteric artery with radiological features suggestive of intestinal ischemia. The patient was commenced on treatment with high-dose enoxaparin (60 mg BID) and a heparin infusion (1000 units/hour) for anticoagulation. Subsequently, a diagnostic laparoscopy was performed, revealing evidence of ischemic bowel extending from the DJ flexure to the mid transverse colon. The procedure was converted to an open laparotomy, involving the excision of the non-viable necrotic small and large bowel sections, followed by side-to-side bowel anastomosis between the transverse colon and the 4th part of the duodenum. On the fifth postoperative day, the patient developed right leg pain, erythema, and edema, with non-palpable pulses in the dorsalis pedis and popliteal arteries. CT angiogram revealed complete blockage of the right internal iliac artery and occlusion of the distal segment of the right superficial femoral artery, leading to acute compensated right lower limb ischemia, treated conservatively with high-dose anticoagulant therapy. Within days, anastomotic leak developed, requiring multiple surgeries. Eventually, the patient progressed to septic shock, followed by multiorgan failure, leading to refractory hyperkalemia culminating in a fatal cardiac arrest.

CT Abdomen w/ contrast demonstrating occlusion at the Superior Mesenteric Artery



CT Angiography demonstrating occlusion of the right Superficial Femoral Artery



### DISCUSSION

The patient's young age made atherosclerosis implausible, and echocardiography revealed no abnormalities. The hematological data for our patient indicated normal platelet counts, and other hematological profiles were also normal. The presence of normal hemoglobin and hematocrit levels in our patient made polycythemia rubra vera unlikely. Additionally, essential thrombocythosis was ruled out because the JAK2 V617 mutation test results were negative. Antiphospholipid syndrome was ruled out by the negative results of anticardiolipin, anti-beta2-glycoprotein, and lupus anticoagulant antibodies. Since the levels of Antithrombin III, Protein C, and Protein S were likewise normal, it was determined that these inadequacies were not the cause of the extensive thrombosis. Rapid Plasma Reagin (RPR), done to rule out syphilis (as a cause of aortitis) was also non-reactive. Surgical pathology report also revealed evidence suggestive of infarctive gangrene of the bowel wall consistent with arterial thrombosis, with no atherosclerotic changes in the vessel walls and no evidence of vasculitis, ruling both these diagnoses out. The reported case is intriguing because of the involvement of multiple large arteries throughout the body without any plausible cause and without any identifiable risk factors. This is one of the few, if any such reported cases

### CONCLUSION

Despite the fact that acute mesenteric ischemia (AMI) is a rare abdominal emergency (incidence being 6.2/100,000 persons), it has a significant mortality rate (between 59% to 93%). Since cases of massive thrombosis, including acute mesenteric ischemia (AMI) and acute limb ischemia (ALI) in the younger population are uncommon, inquiries into the underlying cause should be made. An intricate, multidisciplinary team is required to diagnose and treat unexplained arterial thrombosis, while maintaining a high suspicion index to reach the diagnosis early and prevent the catastrophic complications. It is necessary to conduct an evaluation in a methodical manner, taking into account both common etiologies and unusual ones. Management is based mostly on patient preference and patient-specific thrombotic and bleeding risk, and therefore necessitates a review of the literature that is currently accessible for certain vascular areas or disorders. It is also crucial to maintain continuous monitoring and to regularly reevaluate the treatment plan because new information or symptoms may emerge over time, as well as new risk factors for bleeding and thrombosis. Clinical protocols and indications must be followed when doing medical therapy and revascularization techniques.

### BIBLIOGRAPHY

- Alfirević Z, Alfirević I. Hypercoagulable state, pathophysiology, classification and epidemiology. *Clinical Chemistry and Laboratory Medicine*. 2010 Jan 1;48.
- Shaikh H, Wehrle CJ, Khorasani-Zadeh A. *Anatomy, Abdomen and Pelvis: Superior Mesenteric Artery*. 2024.
- Bala M, Kashuk J, Moore EE, Kluger Y, Biffl W, Gomes CA, et al. Acute mesenteric ischemia: guidelines of the World Society of Emergency Surgery. *World Journal of Emergency Surgery*. 2017 Dec 7;12(1):38.
- Tamme K, Reintam Blaser A, Laisaar KT, Mändul M, Kals J, Forbes A, et al. Incidence and outcomes of acute mesenteric ischaemia: a systematic review and meta-analysis. *BMJ Open*. 2022 Oct 25;12(10):e062846.
- Franca E, Shaydakov ME, Kosove J. *Mesenteric Artery Thrombosis*. PubMed. Treasure Island (FL): StatPearls Publishing; 2022.
- Moiz B, Muslim Z, Siddiqui ZF, Zafar H. Acute Mesenteric Thrombosis: A Hematologist Perspective. *Clinical and applied thrombosis/hemostasis: official journal of the International Academy of Clinical and Applied Thrombosis/Hemostasis*. 2020;26:1076029620932999.
- Björck M, Acosta S, Lindberg F, Troëng T, Bergqvist D. Revascularization of the superior mesenteric artery after acute thromboembolic occlusion. *British Journal of Surgery*. 2002 Nov 5;89(7):923-7.