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CASE REPORT

Lower Limb Paralysis: A Vascular Emergency, Not Always Neurological

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ABSTRACT

Acute aortic occlusion (AAO) is an uncommon but critical vascular emergency with high morbidity and mortality. Despite its severity, it remains sparsely documented, primarily through isolated case reports and limited case series. The clinical presentation can vary, making timely diagnosis challenging. Early identification relies heavily on a high index of suspicion and a comprehensive vascular and neurological examination. This case report highlights the case of a patient who arrived at the emergency department with sudden onset paralysis of the lower limbs. Prompt imaging using a computed tomography angiography (CTA) tailored for suspected aortic dissection enabled swift diagnosis of AAO. The patient was immediately treated with anticoagulants followed by surgical thrombectomy. Remarkably, he experienced significant recovery of motor function in his lower extremities. This case underscores the importance of rapid assessment and intervention in suspected AAO to improve functional outcomes and reduce the risk of permanent disability.

KEYWORDS

• Acute Aortic Occlusion • Lower limb paralysis • Morbidity and mortality

INTRODUCTION

Acute aortic occlusion (AAO) is an infrequent but highly fatal vascular emergency that demands immediate recognition and management. Excluding trauma, AAO typically results from either embolic events or in situ thrombus formation. Reported embolic causes include thrombi originating from the left ventricle, valvular abnormalities, thoracic mural thrombi, and intracardiac tumours such as myxomas.[1,2] Thrombotic cases often arise in the context of chronic aortic disease, such as

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abdominal aortic aneurysms, atherosclerosis, or prothrombotic conditions. Hypercoagulable states, including antiphospholipid syndrome, heparin-induced thrombocytopenia, protein C deficiency, and even viral infections, have been implicated.[1-3] Recent literature suggests a shift toward thrombotic over embolic mechanisms, likely due to improved anticoagulation for embolic-prone conditions like atrial fibrillation.[2,3]

Clinically, AAO often affects elderly patients with cardiac comorbidities and presents with a broad spectrum of symptoms including lower limb ischemia, cauda equina-like features, paraplegia, and signs of acute abdomen. Prompt vascular diagnosis is crucial, as misidentification as spinal pathology may delay life-saving revascularization. This report discusses a case of AAO in a patient with minimal comorbidities presenting with signs suggestive of spinal cord compression.

CASE

A 54-year-old male with a known history of hypertension and depression, and A previous remote history of intravenous drug use, brought to the emergency department with sudden onset paralysis of both lower limbs, associated urinary retention, and diffuse abdominal pain. He reported experiencing flu-like symptoms in the days prior to presentation. He denied any history of cardiovascular disease or recent IV drug use.

On examination in the emergency department, the patient was alert and oriented. His initial vital signs in the ED: heart rate 118 beats per minute, blood pressure 132/84 mmHg, respiratory rate 18 breaths per minute, oxygen saturation 98% on room air, temperature 36.7°C, electrocardiogram showing sinus tachycardia. The primary survey for the patient was not significant (ABCDE). Further detailed examination revealed absent rectal tone, mottling of both lower extremities, and absent bilateral femoral pulses. An urgent contrast-enhanced CT angiogram was performed using in suspect of aortic dissection. The CTA revealed complete occlusion of the abdominal aorta beginning at the level of the left renal artery, with near-total hypoperfusion of the left kidney and adrenal gland. The thrombus extended to the bifurcation of both external and internal iliac arteries (Figure 1).

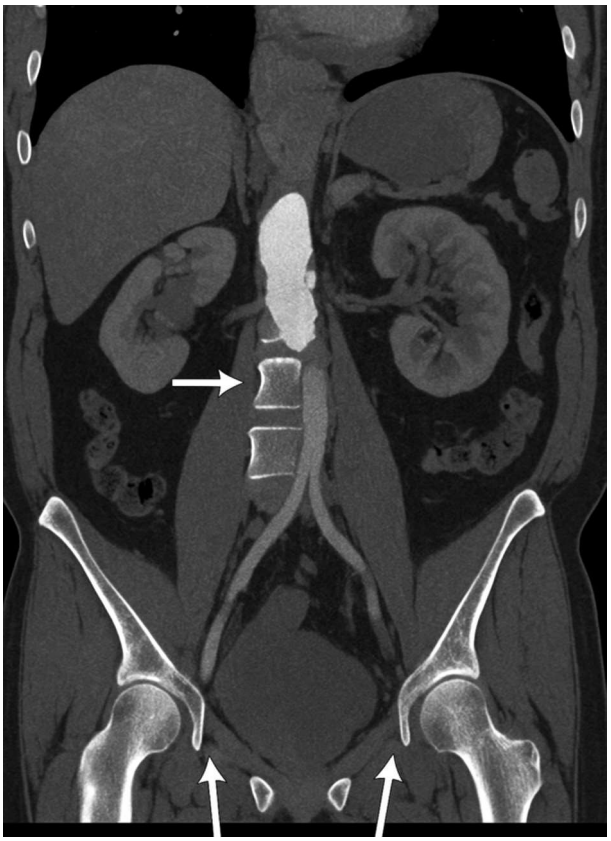

Figure 1: Department of Radio Diagnosis, Max Super Speciality Hispital, Shalimar Bagh, New Delhi

Transthoracic echocardiography identified a mobile, pedunculated thrombus in the apical region of the left ventricle measuring 2.5 × 1.3 cm (Figure 2).

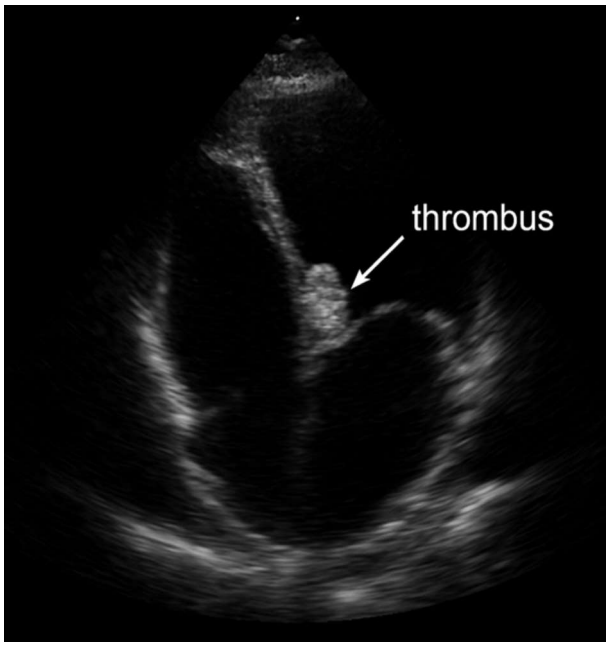

Figure 2: Department of Emergency Medicine, Max Super Speciality Hispital, Shalimar Bagh, New Delhi

He was promptly started on intravenous low molecular weight heparin (Injection Clexane 0.6ml twice a day sub-cutaneously) and underwent emergent thrombectomy performed by vascular surgeon, followed by bilateral iliac catheter-directed thrombolysis. His postoperative ICU stay was uncomplicated. The apical thrombus was resolved with anticoagulation therapy post-revascularization. An oral anticoagulant was initiated during the hospital stay, with a recommendation for lifelong therapy with Tablet Eliquis (Apixaban 2.5mg twice day, tapered to once a day after 14 days).

After 8 days of in-hospital stay, the patient had regained most lower extremity strength by physiotherapy and strength training. There was with residual weakness in right foot dorsiflexion, for which continuous physiotherapy was advised. The post discharge follow-ups were uneventful with slow and steady recovery in bilateral lower limbs.

DISCUSSION

Sudden aortic occlusion represents a critical medical emergency with significant mortality, reported to affect approximately 3.6 individuals per million annually. Mortality rates in such cases range from 25% to as high as 75%, underscoring the urgency of rapid diagnosis and intervention.[2,4,6,7] Prompt recognition of clinical features and swift diagnostic measures are essential for improving outcomes in patients with this life-threatening condition.

The patient in this case had no evident risk factors for thrombus formation related to cardiac or aortic pathology, except for a recent episode of flu-like symptoms and a distant history of intravenous drug use. In the context of current medical practice, microbiological screening becomes relevant, as recent infection is associated with coagulation disturbances leading to a prothrombotic state. Despite comprehensive investigations, no evidence of underlying aetiologies such as endocarditis, structural heart disease, cardiomyopathy, arrhythmias, patent foramen ovale, or inherited thrombophilia's was found.

Timely diagnosis of AAO is often difficult due to its variable presentation. In this patient, a significant thrombus below the renal arteries resulted in compromised blood flow through the artery of Adamkiewicz, leading to spinal cord ischemia. Patients with AAO can present with a broad clinical spectrum, including isolated acute paraplegia. It is imperative for clinicians to conduct a meticulous vascular assessment early in the evaluation to differentiate AAO from primary spinal pathology.[1,2,4,6–8]

Encouragingly, neurological recovery partial or complete is possible in many cases if revascularization is achieved promptly.[1,7,8] Animal studies reinforce that shorter durations of spinal cord ischemia are associated with better neurologic recovery and reduced complications.[8]

CONCLUSION

Acute aortic occlusion (AAO) is a rare but life-threatening vascular emergency that demands urgent attention due to its association with high rates of morbidity and mortality. The clinical outcomes of AAO can vary significantly depending on how swiftly the condition is recognized and managed. In many cases, the severity of complications including irreversible neurological deficits, renal failure, or even death can be minimized with early diagnosis and appropriate intervention. Given the potential for such catastrophic consequences, clinicians must maintain a high index of suspicion when encountering patients with acute symptoms such as lower limb weakness, sudden paraplegia, absent femoral pulses, or features suggestive of spinal cord ischemia.

A comprehensive clinical evaluation plays a pivotal role in identifying AAO early. This begins with obtaining a detailed history that explores risk factors such as thromboembolic disease, hypercoagulable states, atherosclerosis, or recent infections, which are known to contribute to vascular thrombosis. Equally important is a thorough physical examination that includes careful assessment of peripheral pulses, skin perfusion, rectal tone, and neurologic function. Often, the initial presentation of AAO can mimic primary spinal cord pathology, leading to potential misdiagnosis and dangerous delays in treatment.

Prompt recognition followed by immediate imaging most effectively with a CT angiogram and surgical consultation can dramatically alter the course of the disease. Interventions such as anticoagulation, thrombectomy, or

catheter-directed thrombolysis may restore perfusion and prevent permanent damage. Therefore, early suspicion based on a complete history and focused vascular exam is essential for optimizing outcomes in patients with AAO.

Abbreviations:

Acute Aortic Occlusion - AAO

Emergency Department – ED

Electrocardiogram – ECG

Intensive Care Unit – ICU

Computed Tomography Angiogram

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