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Case Report

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Idiopathic Renal Artery Thrombosis, as a Unique Entity

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ABSTRACT

Spontaneous thrombosis of the renal artery is extremely rare. It presents as an acute abdomen and is often underdiagnosed. Clinicians need to be aware of this rare disease for timely diagnosis and treatment. We present a case of a 60-year-old male without previous health conditions presenting with unremitting acute pain abdomen, nausea, and vomiting. Ultrasonography was reported unremarkable. A contrast-enhanced Computed Tomography (CT) scan of the abdomen demonstrated a thrombosed right renal artery with a right renal infarct. The purpose of this case report is to put forth this rare entity as a cause of acute abdomen to provide a timely diagnosis and treatment for such patients.

Introduction

Most Renal Artery Thrombosis (RAT) cases are thromboembolic, primarily cardiac in origin. Primary thrombosis of the renal artery is rare. The most common causes of primary thrombosis are blunt trauma abdomen [1] and atherosclerotic renal artery lesions. There are case reports of prior renal thrombosis associated with a hypercoagulable state, pregnancy, renal transplantation, renal angiography, oral contraceptives [2], renal surgeries, and polycythemia vera [3]. However, spontaneous renal artery thrombosis, sometimes referred to as idiopathic renal artery thrombosis, is extremely rare.

Case Presentation

A 60-year-old male presented to the emergency department with unremitting right flank pain of 3 days associated with nausea and vomiting. There was no histo-

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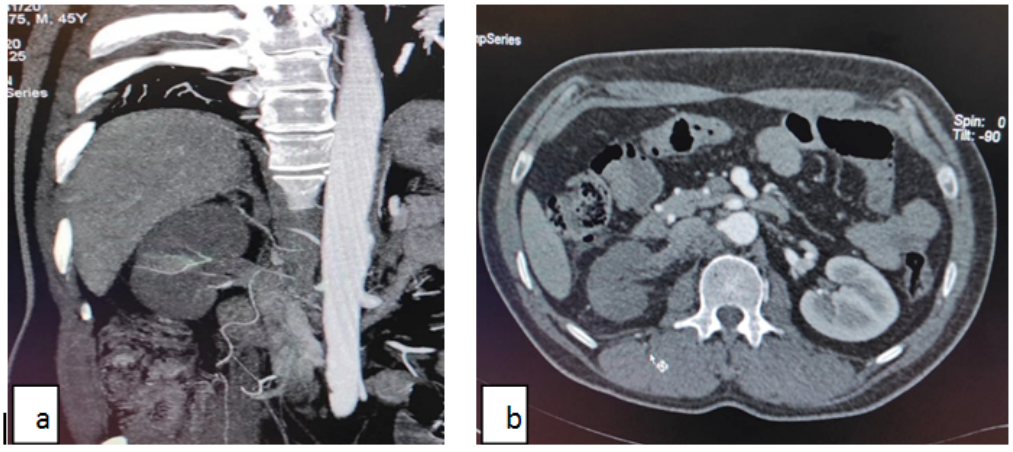

Figure 1. Coronal (a) and Axial (b) contrast-enhanced CT images

Exhibiting non-enhancement of right kidney with an abrupt cut-off of right renal artery at its origin.

ry of trauma. No previous significant medical or surgical history was present. He reported no history of diabetes, hypertension, or heart disease.

On examination, the patient was afebrile to touch, normotensive, and in normal sinus rhythm; on abdominal examination, there was tenderness and guarding in the right flank area. Initial ultrasonography in the emergency department was reported as being normal. Given the unremitting pain and tenderness, a Contrast-enhanced CT scan of the abdomen and pelvis revealed a thrombus at the origin of the right renal artery, with complete infarction of the right kidney, a normal caliber aorta no evidence of any aortic atherosclerotic plaques (Figures 1 and 2). Echocardiogram was normal. Complete blood count and platelets were normal. Lactate Dehydrogenase (LDH) in blood analysis was borderline (300U/L). The patient underwent exploration and nephrectomy as the entire kidney was infracted. Gross pathology revealed a large occlusive thrombus blocking the main renal artery and infracted renal tissue.

Discussion

RAT usually occurs in adults aged 30-50 years; however, it can also occur in other age groups. Most patients land up with unremitting severe pain in the flank—symptoms like nausea, vomiting, fever, and leukocytosis [4]. Hematuria and proteinuria can also be present.

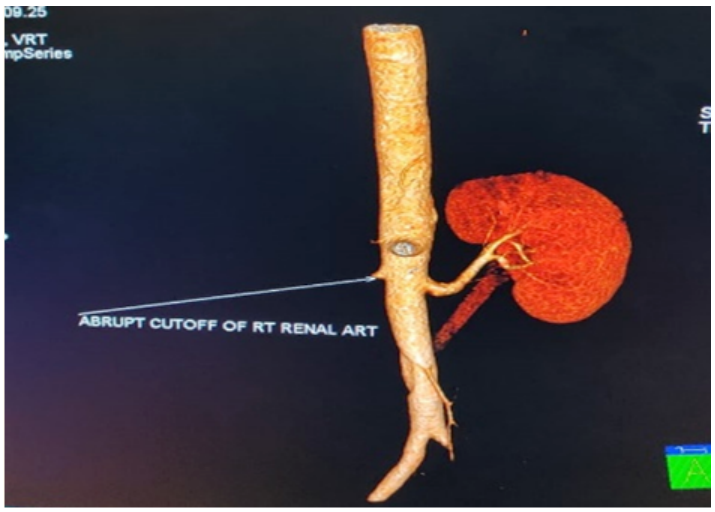

Figure 2. VRT image showing abrupt cut-off of the right renal artery with non-enhancing right kidney

There is a normal enhancement of the left kidney and left renal artery.

Renal artery thrombosis is illustrated in the literature; however, it is usually associated with other causes like vasculitis, instrumentation, sepsis, transplant, sickle cell disease [5], and coagulation disorders. This case is unique as no underlying disease process triggers thrombus formation in the renal artery. This patient has an unremarkable history, without a history of trauma, atherosclerotic disease, or any other disease that triggers thrombus formation. This diagnosis is under-reported mainly because there are no specific symptoms, signs, or tests to suspect this disease. In our case, the diagnosis was also considered only when the thrombus was seen on the CT imaging study done as part of the workup for the acute abdomen. Besides CT imaging, magnetic resonance imaging can confirm the diagnosis but is time-consuming, costly, and usually not available on an emergent basis [6].

Our case is also unique because it does not conform to the commonly held belief that LDH is elevated in patients with renal infarction [7]. Our patient had a sizeable renal infarction; however, the LDH was borderline. Thus, normal or borderline LDH cannot be relied upon to rule out renal infarction. A similar case was reported by Singh et al. [8]. They reported a case of spontaneous renal infarct with normal LDH levels. Raghavendran et al. also reported another case of spontaneous renal artery thrombosis [9].

The purpose of this case report is to make the radiologists and the physicians aware of this rare entity of spontaneous renal thromboembolism as a differential in patients of acute abdomen. When the index of suspicion is high in such a patient, a Cect- Contrast enhanced Computed Tomography (CECT) abdomen should be done to establish the diagnosis.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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Conflict of interest

The authors declared no conflict of interest.

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