

RENAL INFARCTION FOLLOWING BLUNT ABDOMINAL TRAUMA IN A PATIENT WITH EXTRA-RENAL ARTERY: A CASE REPORT

EMIN UYSAL¹, AHMET KUTUR², MURAT CARUS², SULEYMAN SOLAK¹, SEZGIN SARIKAYA³

¹Emergency Physician, Department of Emergency Medicine, Bagcilar Training and Research Hospital, Istanbul - ²Emergency Resident, Department of Emergency Medicine, Bagcilar Training and Research Hospital, Istanbul - ³Associate Professor, Department of Emergency Medicine, Bagcilar Training and Research Hospital, Istanbul, Turkey

ABSTRACT

***Aim:** Trauma-related renal infarction is a rare condition. In this report, we describe a 49-year-old male case of renal infarction due to a fall from height-induced traumatic renal artery occlusion with a surviving kidney thanks to an extra-renal artery. Emergency medicine specialists should consider the possibility of trauma-related renal infarction, as renal failure may develop in patients with a missed or late diagnosis.*

***Key words:** Trauma, abdominal computed tomography angiography, renal infarction, extra-renal artery.*

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Introduction

Renal infarction is a rare complication of blunt abdominal trauma in emergency department⁽¹⁻³⁾. Renal artery variations are common in the general population with racial and ethnic differences. In recent years, the diagnostic rate of renal infarction has been increasing due to the widespread use of abdominal computed tomography angiography (CTA), which is also highly effective in excluding other conditions⁽⁴⁾. In addition, it is helpful to incidentally detect renal artery variations⁽⁴⁾. In this report, we present a case of renal infarction due to a fall from heights-induced traumatic renal artery occlusion with a surviving kidney thanks to an extra-renal artery. The rare occurrence of this condition was discussed in the light of the critical role of abdominal CTA.

Case report

A 49-year-old male case who fell from six-meter height while he was working at the construc-

tion site one hour ago onto the wooden-covered ground was admitted to our emergency department. The patient history was non-specific. Physical examination revealed normal findings with a blood pressure of 110/70 mmHg, a pulse rate of 108 bpm, respiratory rate of 18 bpm and body temperature of 37°C. His overall condition was good and the patient was conscious. The Glasgow coma score (GCS) was 15/15. There was tenderness to palpation of the left lumbar region with hyperemia (14x20 cm in size). In the abdominal examination, there was no rigidity, rebound or defense. Although the left costovertebral angle tenderness was present, no trauma-related sign was detected in the other systemic examinations. A urinary catheter was replaced without gross hematuria. Complete blood count results were within a normal range. Urinalysis revealed an erythrocyte count of 73/HPF. Biochemistry results were as follows: blood urea nitrogen: 34.2 (20-50) mg/dL; creatinine 1.0 (0.7-1.3) mg/dL; aspartate aminotransferase (AST): 38 (1-40) U/L; alanine aminotransferase (ALT) 39 (1-40) U/L; and lactate dehydrogenase (LDH): 283

(120-240) U/L. At the fourth hour control results, AST: 214 U/L, ALT: 144 U/L and LDH: 1778 U/L increased, but other biochemistry values and hemogram results were normal. Plain X-ray findings were normal. Abdominal contrast-enhanced computed tomography (CT) demonstrated no enhancement in the mid and lower pole of the left kidney with a diffuse hematoma in the left psoas muscle. Abdominal CTA which was performed with a suspected vascular injury showed two renal arteries to the left kidney without an enhancement beyond the mid pole of the main renal artery and in the mid and lower pole of the renal parenchyma. Renal blood flow was existing in extra-renal artery showing an enhancement in the upper pole of the renal parenchyma (Figure 1).



Figure 1: The left main renal artery occlusion (thin black arrow); infarcted areas (black arrow); extra-renal artery (white arrow).

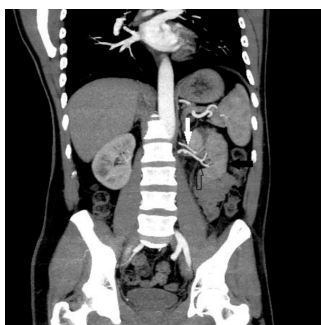


Figure 2: An open left main renal artery (fine black arrow); enhancement in the most part of the kidney (black arrow); extra-renal artery (white arrow).

Because the patient did not require prompt surgery, he was hospitalized in the urology clinic for conservative therapy. Subcutaneous low molecular weight heparin (LMWH) at a dose of 4000 IU/0.4 mL/day (enoxaparin) with intravenous fluid, analgesics and antibiotherapy was initiated. No abnormal finding was observed during a five-day hospitalization. Subsequently, repeated abdominal CTA showed an open main renal artery which was occluded previously with an enhancement in the most part of the kidney (Figure 2). The patient was discharged with scheduled clinical visits.

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Request reprints from:

EMIN UYSAL

Emergency Physician, Department of Emergency Medicine, Bagcilar Training and Research Hospital

Istanbul

(Turkey)