

A Rare Cause of Severe Flank Pain : Renal Infarction

Mehmet Can Ugur^{1*}, Ercan Ersoy¹, Merter Alanyali², Hulya Colak³ and Harun Akar¹

¹Department of Internal Medicine, Izmir Tepecik Training and Research Hospital, Konak, Izmir, Turkey

²Department of Family Medicine, Izmir Tepecik Training and Research Hospital, Konak, Izmir, Turkey

³Department of Family Medicine, Izmir Tepecik Training and Research Hospital, Nephrology, Konak, Izmir, Turkey

*Corresponding author: Mehmet Can Ugur, Department of Internal Medicine, Izmir Tepecik Training and Research Hospital, 5th floor, Konak, Izmir, Turkey, Tel: 905058861126; E-mail: med.can@hotmail.com

Rec date: Jan 29, 2015, Acc date: Feb 8, 2015, Pub date: Feb 20, 2015

Copyright: © 2015 Ugur MC, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Renal infarction is a common clinical problem and often misdiagnosed because the symptoms are subtle. We are presented our patient who applicant with left flank pain and diagnosed renal infarction. 49-year-old male patient has come with 2 days of severe left flank. Pathologic were; left costovertebral angle tenderness, creatinine: 1.3 mg/dL, C reactive protein: 11.4 mg/dL. On Computed Tomography Angiography renal arteries there was no contrast matter transmission to left arcuat artery distale and there were ischemic regions. With renal infarction diagnose, patient was hospitalized. Organized thrombosis seen inside apical left ventricular aneurysm with transesophageal ecocardiography Patient was discharged from hospital with plannings of policlinic controls for INR follow-ups. We want to emphasize that it should be kept in mind that the diagnosis of renal infarction in the clinical management of patients with flank pain.

Keywords: Thromboembolism; Renal Infarction; Angiography

Introduction

One of the most common cause of renal artery thrombosis is thromboembolic events originated from heart or aorta. Spontaneous renal artery thrombosis is quite rare. Renal artery thrombosis are generally due to blunt abdominal trauma and atherosclerotic lesions from renal arteries [1]. Case reports related with renal infarctions were reported in the literature such as possibly connected with polisitemia vera, pregnancy, hypercoagulability, renal transplants, intraabdominal balloon insertion, renal angiography, oral contraceptives, intravenous cocaine usage, nephrotic syndrome, systemic lupus erythematosus, renovascular hypertension, infective endocarditis, Ehler-Danlos syndrome and renal surgery [2-8]. The diagnosis of renal infarction as a rarely seen clinical problem can be difficult. Renal infarction must be kept in mind as a differential diagnosis in the cases presented with severe flank pain. The most important issue is to think this entity. Herein, we are aimed for to present our case presented with severe flank pain and diagnosed as renal infarction.

Case Report

When 49-year-old male patient has been admitted to emergency room with 2 days of severe left flank pain and internal medicine clinic was consulted. There were no diabetes mellitus, hypertension, dyslipidemia, heart failure, atrial fibrillation or hypercoagulability syndrome in his history. Vital findings were normal in the physical examination except left costovertebral angle tenderness. Pathological laboratory findings were; creatinine: 1.3 mg/dL, C reactive protein: 11.4 mg/dL. There was no leucocytosis. Lactate dehydrogenase (LDH) levels and coagulation parameters were in normal ranges. In urinary tests, there were no haematuria or proteinuria. Electrocardiogram was in normal sinus rhythm. There were no renal stone or obstructive uropathy in abdominal ultrasonography. Posterior-anterior chest X-

ray was normal. There were ischemic regions on upper pole of left kidney related to renal infarction in the contrasted abdominal computed tomography scan. Renal arteries were open in Computer Tomography Angiography but there was no contrast material transmission to distale part of the left arcuat artery (Figure 1).

Patient was hospitalized with the diagnosis of renal infarction. Searching the etiology and anticoagulant treatment were planned. Ceftriaxone antibiotherapy, low molecule density heparine (LMDH) and warfarine had started. There was regional movement defect in left ventricul of anterior and septum with transthoracic echocardiogram. Left ventricul ejection fraction was %50. Other transthoracic echocardiographic findings were normal but there were an organized thrombosis inside the apical left ventricular aneurysm in the transesophageal echocardiography.

Anti nuclear antibody, perinuclear anti neutrophil and cytoplasmic anti neutrophilic antibody, protein C and protein S levels, Factor V Leiden mutation, anticardiolipine antibody IgM and IgG, antithrombine 3 activity, B12 vitamine, folic acid, homocysteine levels were all in normal ranges. Lower and upper extremities' arteriovenosus Doppler ultrasonography had been found normal.

We aimed to be INR range 2.0 to 3.0 for treatment. LMDH was stopped when INR reached to effective levels in terms of consequent. Reperfusion was seen after 7 days of the treatment by computed tomographic angiography (CT angiography) on renal infarction regions (Figure 2). The patient had no pain and serum creatinine level was lower to 1.2 mg/dL at that time. Regular INR follow-ups were planned per week and patient was discharged.



Figure 1: Left renal infarct region on CT angiography.

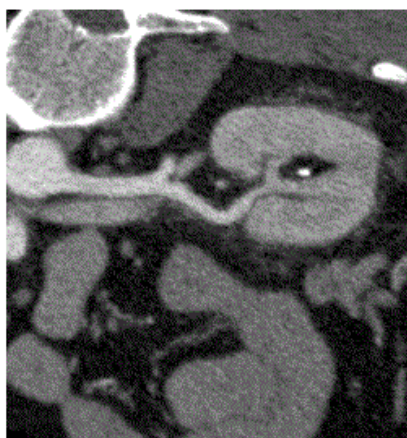


Figure 2: Reperfusion after 7 days on follow-up CT angiography.

Discussion

Renal artery thrombosis is usually seen at the age of 30-50's. Incidence is 0.01% in Europe and Asia [9,10]. Atrial fibrillation, heart valve replacement, renal artery injury, mitral stenosis and tobacco usage are common risk factors for renal infarction [11]. Patients are usually presented by rapidly started colic pain in upper abdomen or flank region. Leucocytosis, haematuria and proteinuria can be seen with symptoms like fever, nausea and vomiting. Although, laboratory findings such as LDH elevation and leucocytosis were not found in our case. renal infarction were still exist in our list of differential diagnosis and we had tried to image the renal artery tree by CT angiography. This diagnose would be confirmed with Magnetic Resonance Imaging along with Computed Tomography [12]. Also, contrast-enhanced ultrasound (CEUS) would be used instead of CT angiography [13].

Severe acute abdominal or flank pain algorithm is seen on Schema 1 [14]. Computed tomography together with CT angiography can be useful in the diagnosis renal infarction presented with acute abdomen.

Our case was also different from the most cases in the literature which were usually seen with elevated LDH levels [15]. In our case

despite of a large infarction area, LDH levels were not elevated. Therefore, normal LDH levels may not exclude renal infarction.

We had a good result with a rapid diagnosis and treatment. Reperfusion was achieved by anticoagulant therapy.

In cases with renal infarction, it is important that diagnosis must be configured rapidly and treatment must be started as soon as possible to avoid irreversible renal damage [16]. Thrombolytic treatment is recommended to start within first 6 hours of the pain. In new treatment modalities, there are specific treatment approaches like low dose of intraarterial streptokinase injection and percutaneous transluminal angioplasty [17,18]. If there is a delay on diagnosis and if thrombolytic/anticoagulant therapy is not started on time, there will be surgical options leading to nephrectomy [19].

For those cases presented with severe abdominal, lumbal or flank pain, renal infarction must be kept in mind in the differential diagnosis.

References

1. Cosby RL, Miller PD, Schrier RW (1986) Traumatic renal artery thrombosis. *Am J Med* 81: 890-894.
2. Chagnac A, Zevin D, Weinstein T, Gafer U, Korzets A, et al. (1990) Erythrocytosis associated with renal artery thrombosis in a patient with polycystic kidney disease on hemodialysis. *Acta Haematol* 84: 40-42.
3. Dimitroulis D, Bokos J, Zavos G, Nikiteas N, Karidis NP, et al. (2009) Vascular complications in renal transplantation: A single-center experience in 1367 renal transplantations and review of the literature. *Transplant Proc* 5: 1609-1614.
4. Baciewicz FA Jr, Kaplan BM, Murphy TE, Neiman HL (1982) Bilateral renal artery thrombotic occlusion: A unique complication following removal of a transthoracic intraaortic balloon. *Ann Thorac Surg* 33: 631-634.
5. Golbus SM, Swerdlin AR, Mitas JA 2nd, Rowley WR, James DR (1979) Renal artery thrombosis in a young woman taking oral contraceptives. *Ann Intern Med* 90: 939-940.
6. Wohlman RA (1987) Renal artery thrombosis and embolization associated with intravenous cocaine injection. *South Med J* 80: 928-930.
7. Tsugawa K, Tanaka H, Kudo M, Nakahata T, Ito E (2005) Renal artery thrombosis in a pediatric case of systemic lupus erythematosus without antiphospholipid antibodies. *Pediatr Nephrol* 20: 1648-1650.
8. Liao WB, Bullard MJ, Liaw SJ (1995) Widespread embolism in a patient with infective endocarditis: A case report. *Changcheng Yi Xue Za Zhi* 18: 82-87.
9. Domanovits H, Paulis M, Nikfardjam M, Meron G, Kırkcıyan I, et al. (1999) Acute renal infarction. Clinical characteristics of 17 patients. *Medicine (Baltimore)* 78: 386-394.
10. Huang CC, Lo HC, Huang HH, Kao WF, Yen DHT, et al. (2007) ED presentations of acute renal infarction. *Am J Emerg Med* 25: 164-169.
11. Bolderman R, Oyen R, Verrijcken A, Knockaert D, Vanderschueren S (2006) Idiopathic renal infarction. *Am J Med* 119: 356 e9-12.
12. Yamanouchi Y, Yamamoto K, Noda K, Tomori K, Kinoshita T (2008) Renal infarction in a patient with spontaneous dissection of segmental arteries: Diffusion-weighted magnetic resonance imaging. *Am J Kidney Dis* 52: 788-791.
13. Ciccone MM (2011) The clinical role of contrast-enhanced ultrasound in the evaluation of renal artery stenosis and diagnostic superiority as compared to traditional echo-color-Doppler flow imaging. *Int Angiol* 30: 135-139.
14. LamÃ©ris W, van Randen A, van Es HW, van Heesewijk JP, van Ramshorst B, et al. (2009) Imaging strategies for detection of urgent conditions in patients with acute abdominal pain: diagnostic accuracy study. *BMJ* 338: b2431.

-
15. Huang CC, Kao WF, Yen DH, Huang HH, Huang CI, et al. (2006) Renal infarction without hematuria: two case reports. *J Emerg Med* 30: 57-61.
 16. Lessman RK, Johnson SF, Coburn JW (1978) Renal artery embolism: clinical features and long-term follow-up of 17 cases. *Ann Intern Med* 89: 477-482.
 17. Salam TA, Lumsden AB, Martin LG (1993) Local infusion of fibrinolytic agents for acute renal artery thromboembolism: report of ten cases. *Ann Vasc Surg* 7: 21-26.
 18. Boyer L , Ravel A, Boissier A (1994) Percutaneous recanalization of recent renal artery occlusions: report of 10 cases. *Cardiovasc Intervent Radiol* 17: 258-263.
 19. Singh S, Wang L, Yao QS, Jyotimallika J, Singh S (2014) Spontaneous renal artery thrombosis: an unusual cause of acute abdomen. *N Am J Med Sci* 6: 234-236.