

Idiopathic Spontaneous Renal Artery Dissection: A Rare Case

İdiyopatik Spontan Renal Arter Diseksiyonu: Nadir bir Olgu

ABSTRACT

Spontaneous renal artery dissection is a rare and serious event that can result in renal parenchymal injury and severe hypertension. We report a case of a 38-year-old previously healthy man who presented with unilateral flank pain and had a renal artery dissection complicated with renal infarction. Initial laboratory tests and urinalysis were essentially normal. An abdominal CT scan showed isolated right main renal artery dissection with thrombus and infarction. The renal angiography demonstrated a 60-70% stenosis causing dissection with thrombus in the right main renal artery. The patient was treated with renal artery stenting and anticoagulant therapy.

KEY WORDS: Renal artery dissection, Renal infarct, Renal angiography

ÖZ

Spontan renal arter diseksiyonu renal parankimal hasar ve şiddetli hipertansiyona yol açabilen nadir fakat ciddi bir olaydır. Daha önceden sağlıklı olan ve tek taraflı böğür ağrısı ile başvuran bir erkekte renal infarkt ile komplike olan spontan renal arter diseksiyonu vakası sunulmaktadır. Başlangıç laboratuvar testleri ve idrar tetkiki normal olan hastanın batın bilgisayarlı tomografisinde trombus ve infarkt ile komplike sağ ana renal arter diseksiyonu olduğu görüldü. Renal anjiyografide sağ renal arterde %60-70 darlık ve trombus ile birlikte diseksiyon gösterildi. Renal artere stent kondu ve takiben antikoagülan tedavi verildi.

ANAHTAR SÖZCÜKLER: Renal arter diseksiyonu, Renal infarkt, Renal anjiyografi

INTRODUCTION

Arterial dissection is usually associated with pathological states such as malignant hypertension, atherosclerosis, trauma, and Marfan or Ehlers-Danlos Syndromes (1). The most common site of primary dissection concerning peripheral vessels is the renal arteries (2). These dissections lead to disruption of intima to generate a subintimal false lumen. Extension of the false lumen may compromise the true arterial lumen and decrease renal blood flow resulting in renal ischemia, hypertension and renal infarction. Spontaneous dissection comprises less than 25% of all renal artery dissections and most frequently occurs in otherwise healthy males in their fourth and fifth decades of life (3). Herein, we report a case of renal artery dissection in an otherwise healthy, 38-year-old male who is treated with stent implantation. Interestingly the patient,

whose physical examination and laboratory investigations were all normal at admission, presented to our hospital only with mild abdominal pain without any history of trauma or medical disease.

Case

A 38-year-old male was admitted to the emergency room with a mild right flank pain. In his physical examination, pulse rate was 70 beat/minute and arterial blood pressure was 110 / 70 mmHg, with no pathological signs, except a mild discomfort on his right lower abdominal quadrant. His laboratory examination, including liver and renal function tests, amylase, urinalysis and complete blood count, were all in normal ranges. Moreover, abdominal and superficial ultrasounds, which were obtained due to a concern about possible appendicitis or nephrolithiasis, revealed normal findings.

Yeter BAYRAM¹
Faruk TURGUT²
İsmail KIRBAŞ³
Mehmet KANBAY²

- 1 Fatih University School of Medicine, Department of Internal Medicine, Ankara, Turkey
- 2 Fatih University School of Medicine, Department of Internal Medicine, Section of Nephrology, Ankara, Turkey
- 3 Fatih University School of Medicine, Department of Radiology, Ankara, Turkey

Received : 17.05.2010

Accepted : 03.06.2010

Correspondence Address:

Faruk TURGUT
Fatih Üniversitesi Tıp Fakültesi,
Nefroloji Bilim Dalı, Ankara, Turkey
Phone : +90 505 642 17 12
E-mail : turgutfaruk@yahoo.com



Figure 1: Dissection of right renal artery.

On the following second day, his abdominal pain continued with nausea and vomiting; repeated urinalysis revealed 2+ proteinuria and 7-8 red blood cells/high powered field, and inflammatory markers including C-reactive protein (110 mg/dl) and white blood cell count ($15.6 \times 10^9/l$) were increased. A subsequent CT



Figure 2: Digital subtraction angiography; stent in the right renal artery.

scan of the abdomen demonstrated an isolated right main renal artery dissection with thrombus and infarction (Figure 1). The renal angiography demonstrated a 60-70% stenosis causing dissection in the right main renal artery that was starting 1 cm after ostium and continuing till the renal hilus. A stent was placed to the dissection (Figure 2). Anticoagulation with heparin, acetyl salicylic acid, clopidogrel and antihypertensive therapy with nebivolol 5 mg/day and valsartan 160 mg/day was started. The control renal CT angiography after one week demonstrated that there was no restenosis or thrombus in the right main renal artery.

Serological markers were studied in order to find the etiology of this thromboembolic state. Serological examination, including levels of antinuclear antibodies, and perinuclear and cytoplasmic antineutrophil cytoplasmic antibody revealed nothing pathological. His echocardiography obtained to find the origin of thrombus was also normal. He was discharged with the prescription of nebivolol 5 mg/day, valsartan 160 mg/day, acetyl salicylic acid and clopidogrel.

DISCUSSION

Since, isolated spontaneous renal artery dissection is a rare condition, the natural presentation of, etiology of and optimal treatments for this condition have been poorly acknowledged (4). The most common clinical presentation is the sudden onset, severe, persistent hypertension. However, blood pressure was within normal limits in our patient. Precise vascular diseases present only in a few patients and the remaining do not have a clearly known etiology. Isolated renal artery dissection is a diagnosis that should be considered in patients complaining of flank pain that cannot be explained by common causes. In our case, a young-healthy man without any history of trauma and hypertension presented to the hospital with only mild right flank pain. Surgical management, endovascular management or medical treatment has been recommended for acute renal artery dissection patients to save renal function and/or improve hypertension (5-6). To the best of our knowledge, this is the first case report of renal artery dissection in a young adult with no known risk factors and negative immune markers presenting with such a clinical picture, especially without hematuria. This kind of mild pain is a commonly seen symptom in the emergency room and can easily be underestimated.

REFERENCES

1. Alamir A, Middendorf DF, Baker P Nahman NS Jr, Fontaine AB, Hebert LA: Renal artery dissection causing renal infarction in otherwise healthy men. *Am J Kidney Dis* 1997; 30:851-855
2. Foord AG, Lewis RD: Primary dissecting aneurysms of peripheral and pulmonary arteries: Dissection hemorrhage of media. *Arch Pathol* 1959; 68:553-577

3. Lok SY, Chalvardijan A, Common AA: Primary renal artery dissection. *Can Assoc Radiol J* 1995; 1:54-56
4. Ramamoorthy SL, Vasquez JC, Taft PM, McGinn RF, Hye RJ: Nonoperative management of acute spontaneous renal artery dissection. *Annals of Vasc Surg* 2002; 16:157-162
5. Alamir A, Middendorf DF, Baker P, Nahman NS Jr, Fontaine AB, Hebert LA: Renal artery dissection causing renal infarction otherwise healthy men. *Am J Kidney Dis* 1997; 30: 851-855
6. Lee SH, Lee HC, Oh SJ, Park MC, Park KJ, Moon YS, Min JW, Hwang EJ, Baek JE, Jo ES, Jang GJ: Percutaneous intervention of spontaneous renal artery dissection complicated with renal infarction: A case report and literature review. *Catheter Cardiovasc Interv* 2003; 60:335-338