

SPONTANEOUS DISSECTING ANEURYSM OF THE RENAL ARTERY: A CASE REPORT

*Chin-Ming Su, Wen-Jen Wu, Yung-Chin Lee, Hung-Lung Ke, Yii-Her Chou,
and Chun-Hsiung Huang*

Department of Urology, Kaohsiung Medical University, Kaohsiung, Taiwan.

Primary dissecting aneurysms of the renal artery are exceedingly rare. The triad of flank pain, hematuria, and hypertension of acute onset in the absence of urinary obstruction should suggest this rare condition. We report a case of spontaneous dissecting aneurysm of the renal artery treated using conservative medical treatment. The diagnosis, therapeutic management, and outcome are discussed.

Key Words: dissecting aneurysm, renal artery
(*Kaohsiung J Med Sci* 2004;20:609–11)

Isolated renal artery dissections unrelated to trauma are rare. There are various degrees of clinical manifestation, although the triad of recent onset of hypertension, hematuria, and flank pain are most commonly noted [1].

Traditionally, treatments for primary renal artery dissection include surgical repair of vascular lesions and even nephrectomy. Conservative management has also been tried for relatively small lesions. We present the case of a normotensive 41-year-old man with sudden onset of flank pain and hypertension due to spontaneous renal artery dissection. His blood pressure was controlled and, most importantly, residual renal function was preserved using only conservative medical treatment.

CASE PRESENTATION

A relatively healthy 41-year-old male patient was suffering from sudden onset of severe right flank pain with radiation to the right groin. There was no hematuria, trauma history, or fever. His blood pressure was 180/100 mmHg. There were no abnormal findings on urinalysis. Blood urea nitro-

gen, serum creatinine, and electrolytes were all within normal ranges. Roentgenography of the kidney, ureter, and bladder demonstrated no evidence of stones. Abdominal computerized tomography (CT) revealed infarction in the posterior aspect of the right kidney (Figure 1). Under the impression of renal artery infarction, the patient was admitted for further evaluation. Angiography demonstrated right renal artery dissection from the main portion to the posterior division branch (Figure 2).

Due to the small size of the aneurysm and the low risk of rupture, conservative treatment was attempted first. A combination of an analgesic agent, antihypertensive drug,

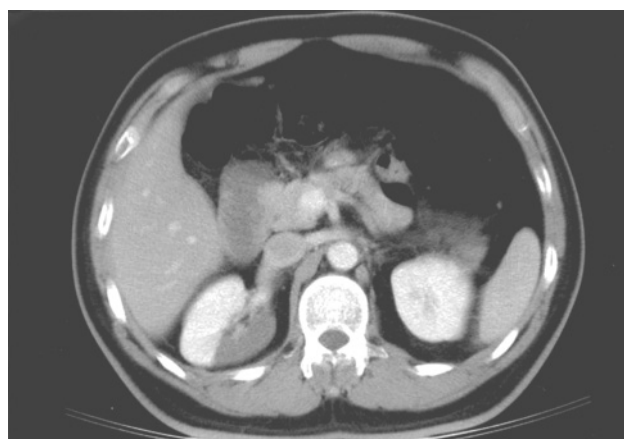


Figure 1. Abdominal computerized tomography reveals infarction in the posterior aspect of the right kidney.

Received: May 31, 2004

Accepted: August 16, 2004

Address correspondence and reprint requests to: Dr. Yung-Chin Lee, Department of Urology, Kaohsiung Medical University Chung-Ho Memorial Hospital, 100 Tzyou 1st Road, Kaohsiung 807, Taiwan. E-mail: leeyc12345@yahoo.com.tw



Figure 2. Angiography demonstrates right renal artery dissection from the main portion to the posterior division branch.

and complete bed rest were prescribed. The flank pain subsided by day 3 after the start of the medication and, by day 7, blood pressure was within normal limits. The patient was discharged from hospital with an antihypertensive prescription. Abdominal CT, renal scan, and angiography 3 months later showed no progression of the aneurysm and no infarction.

DISCUSSION

Dissecting aneurysm of the major arterial vessels is much more common than that of peripheral arteries without aortic involvement. In peripheral arteries, the dissecting aneurysm is usually localized to the renal artery and less often involves other vessels (such as carotid, coronary, pulmonary, splenic and superior mesenteric arteries) [2]. Renal artery dissection usually originates from aortic dissection. However, on rare occasions, isolated dissection of the renal artery can occur. There are several underlying mechanisms for renal arterial dissection, including spontaneous, traumatic, or non-traumatic etiology. With non-traumatic or spontaneous dissections, there are many predisposing factors such as fibromuscular dysplasia,

arteriosclerotic disease, medial degeneration, and abnormalities involving the vasa vasorum [1].

It has been proposed that some arteriographic features are specific to renal artery dissection: irregularity in caliber with wide segment due to aneurysmal dilatation, or filling of a dissection sac, with segment narrowing; a tendency for the irregularity to extend distally from about the first division of the renal artery with less evidence of proximal extension; local narrowing or "cuffing" at branch orifices, similar to a sign already described in aortic dissection; and some degree of reversibility of changes in follow-up studies [3,4].

Various treatments, such as conservative medical management, vascular repair, partial nephrectomy, and nephrectomy, have been used to control the hypertension. Surgical intervention is indicated if symptoms persist and there is continuous deterioration of renal function. However, if renal function is stable and the risk of rupture of the renal artery is low, therapy should be focused on controlling the blood pressure by medication based on previous effective conservative management [1].

In this case, the posterior division branch of the renal artery infarction may have been due to an embolus from the main portion of the renal artery dissection. The size of the renal artery aneurysm from the angiogram was about 2 cm. Hence, we considered it a mild risk for rupturing. The conservative treatment was effective, correcting blood pressure and renal function by 3 months. Although conservative treatment can prevent major surgical complications, long-term medical treatment may be necessary. Regular outpatient follow-up is necessary for early detection of disease progression.

REFERENCES

1. Banitt PF, Clark CW. Isolated dissecting aneurysm of the renal artery. *J Urol* 1986;135:998-9.
2. Mathieu D, Abbou C, Meunier S. Primary dissecting aneurysm of the renal artery. *Urol Radiol* 1983;5:17-21.
3. Hare WSC, Kincaid-Smith P. Dissecting aneurysm of the renal artery. *Radiology* 1970;97:255-63.
4. Hare WS. Dynamic CT diagnosis of primary dissecting aneurysm of the renal artery. *Urol Radiol* 1985;7:106-8.

原發性腎動脈瘤剝離 — 病例報告

蘇進明 吳文正 李永進 柯宏龍 周以和 黃俊雄

高雄醫學大學 泌尿科

原發性腎動脈瘤剝離相當少見。病人若發生突發性高血壓、腰痛及血尿且沒有合併泌尿道阻塞的情形，診斷上可能要考慮是否為少見的原發性腎動脈瘤剝離。我們提出一個少見的自發性腎動脈瘤剝離的病例，以保守治療方式，成功的控制血壓以及完全的保留剩餘的腎功能，並討論此疾病的診斷及治療。

關鍵詞：動脈瘤剝離，腎動脈

(高雄醫誌 2004;20:609—11)

收文日期：93 年 5 月 31 日

接受刊載：93 年 8 月 16 日

通訊作者：李永進醫師

高雄醫學大學泌尿科

高雄市自由一路 100 號