

## Clear cell renal carcinoma - an unusual cause of secondary hypertension in a young patient: a case report

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### Keywords:

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### Background:

Secondary hypertension (SH) constitutes 5-10% of hypertension cases. Understanding when to work up secondary causes is important, due to possibly curable underlying conditions. Herein, we report an unusual case of renal cell carcinoma presenting with hypertension which dramatically improved after surgical treatment, requiring only low-dose antihypertensive.

### Case presentation:

A 33-year-old male presented with a 2-month history of hypertension and periodic headaches, with highest blood pressure at 194/100 mmHg. The patient was a nonsmoker, had a sedentary lifestyle, and high salt intake. The initial treatment included amlodipine 10 mg and nebivolol 5 mg, but with partially satisfactory results in controlling blood pressure, necessitating a further escalation of antihypertensive therapy (perindopril/indapamide/amlodipine 5/1.25/5 mg and moxonidine 0.4 mg). Further assessment of presumed SH was done. Renin, TSH, adrenal medulla, and adrenal cortex hormone levels were all within normal limits. CT angiography ruled out a renovascular etiology of SH. However, it revealed a cyst of the left kidney, which required further monitoring. After a repeat CT angiography, due to suspicion of malignancy (Bosniak cyst class III), a left partial nephrectomy was performed and histopathological examination demonstrated clear cell renal cell carcinoma, without evidence of disease dissemination. The postoperative course was uneventful and renal function remained normal. In the follow-up period, the need for antihypertensives decreased consistently, and the patient is currently taking a low-dose ACEi.

### Conclusion:

Renal cell carcinoma (RCC) is a rare cancer with an incidence of 3.4% to 7.5% in young adults. 40% of those with RCC experience hypertension, typically associated with low-grade tumors of clear-cell histology. Some of the possible pathophysiological mechanisms of hypertension are ectopic hormone secretion, parenchymal compression, arteriovenous fistula, and polycythemia. In this case, routine laboratory investigations did not reveal hormonal excess that could explain the etiology of SH. In conclusion, conventional imaging modalities should not be overlooked while pursuing the causes of SH.