

中文題目：原發性高醛固酮血在腎上腺切除術後之腎功能惡化

英文題目：Decline in glomerular filtration rate after adrenalectomy of primary aldosteronism

作者：劉宜學¹ 蔡宜純^{1,2}, 吳秉勳^{1,2}, 黃尚志^{1,2}, 郭美娟^{1,2}

服務單位：高雄醫學大學附設中和紀念醫院內科部¹, 腎臟內科^{1,2}

Introduction

Renal damage is noted in primary aldosteronism (PA), and probably initiated by glomerular hyperfiltration and increased intraglomerular pressure. However, current observation studies and our case showed a decline in glomerular filtration rate after correcting the mechanism by unilateral adrenalectomy.

Case Presentation

This 52-year-old female with hypertension, Diabetes Mellitus and hyperlipidemia, presented to the emergency department due to general muscle weakness for several days. Lab data showed severe hypokalemia (K= 1.56 mg/dL) and impaired renal function (Cr=1.56 mg/dL, GFR= 34.72). EKG revealed normal sinus rhythms with U wave. The further survey revealed TTKG=12.49, Aldosterone=36.43 ng/dL, and Plasma renin activity (PRA) <0.15 ng/mL. Renal echo showed left hypoechoic adrenal tumor, 2.27X1.59 cm. Under the impression of primary aldosteronism with refractory hypertension and persistent hypokalemia, we administered CCB, ARB, nitrate, spironolactone and potassium supplement. Interval recovery of renal function was found initially (Cr:0.93 mg/dL). Therefore, abdominal CT with contrast was arranged, which also showed a small left adrenal nodule (2.4cm). Because of primary aldosteronism with left adrenal tumor, we performed left laparoscopic adrenalectomy, and the pathology showed adrenal cortical adenoma.

After the operation, the conditions of hypertension and hypokalemia were improved, and we tapered anti-hypertensive medication gradually, and then discontinued all of them. However, progressive decline of glomerular filtration rate was found post operation, and the renal function decreased from CKD stage 3 to stage 4 after 3 months (Cr=2.93 mg/Dl, GFR=16.77 ml/min/1.73 m²,). Due to decline in renal function, we arranged renal echo again, which showed no interval change of the kidneys.

Discussion

Previous studies showed the correlation between preoperative serum potassium and postoperative changes in GFR in PA patients. The PRA level and hypokalemia may reflect the hyperfiltration severity. In our case, the patient had a significant decline in renal function, which parallel with the decline of BP. Adrenalectomy itself does not worsen kidney function, because the estimated glomerular filtration rate before

adrenalectomy may be heightened by hyperfiltration, and had a mask effect on previous renal damage secondary to primary aldosteronism.

Conclusion:

Primary aldosteronism may induce renal damage and masking the decreased GFR by glomerular hyperfiltration. We should pay more attention to renal function decline in patients with primary aldosteronism who receive adrenalectomy, especially for CKD patients.