Twenty patients had preoperative renal vein renin studies. The change in blood pressure after nephrectomy correlated (p=0.04) with the ratio of the renin levels of the affected to unaffected sides. A benefit from nephrectomy was evident above a ratio of 3.

These results indicate that, despite current therapy, nephrectomy for patients with a “pressor kidney” not amenable to revascularisation, successfully aids in blood pressure control and on occasion leads to cure. Renal vein sampling, despite often absent renal artery blood flow, can assist preoperative patient selection.

Key Words: nephrectomy

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ADRENAL CATECHOLAMINES VENOUS SAMPLING IN PRIMARY ALDOSTERONISM

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The pathophysiological significance of catecholamine system in hyper-aldosteronism remains unknown. Previous evidences showed that patients with primary aldosteronism had elevated plasma and urinary total dopamine. Further, medullary cells, especially in the zona glomerulosa, frequently spread into the subcapsular region, forming large nests of chromaffin cells. Aim of this study was to evaluate the adrenal vein catecholamines and chromogranin A levels as indicator of the source of aldosterone excess in 21 patients with primary aldosteronism who had venous sampling. Subjects and Methods: Twenty-one patients (13 males and 8 females, aged 32-58 yr) referred since 1998 to our center were studied. We studied 13 patients with aldosterone-producing adenoma (APA) and 8 patients with idiopathic hyperaldosteronism (IHA). The presence of the dominantly inherited syndrome glucocorticoid remedia-
ble aldosteronism was excluded by either a long-polymerase chain reac-
tion (PCR) test or Southern blot analysis. Results: Adrenal CT and adrenal venous sampling were performed in all 21 patients. Both adrenal veins were catheterized successfully in all patients. Findings on adrenal CT were normal in 8 patients, unilateral adenoma in 13 patients. All the patients showed higher levels of catecholamines than the cortisol levels on the side of adenoma and of hyperplasia, (p<0.01). The difference in levels of catecholamines between adenoma and hyperplasia were not significant. Further, the chromogranin levels found in adrenal veins were in the range of normalcy. Conclusion: Firstly, in all patients we found normal levels of chromogranin A in adrenal veins that excluded the presence of pheochromocytoma and confirmed the functional secretion of catecholamines. Hence, by taking into account the previous evidences of some clinical case of Conn adenomas or primary aldosteronism associ-
ated with catecholamine-secreting pheochromocytomas, our findings may suggest the possibility of paracrine control of the human adrenal cortex by chromafin tissue. Further, adrenal catecholamines sampling may enable preoperative localization of adenoma with more accuracy, especially when the tumour is small or the result of CT and scintigraphy is not consistent. In conclusion, the results of our study indicate that catecholamine together with aldosterone levels in adrenal vein may be a crucial and useful diagnostic tool as indicator of aldosterone excess source in patients with unilateral adenoma or bilateral hyperplasia.

Key Words: primary aldosteronism, chromogranin A, had venous sam-
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SLEEP TIME AND STRUCTURE IN PATIENTS WITH REFRATORY HYPERTENSION AND OBSTRUCTIVE SLEEP APNEA

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Studies in normal human subjects have shown that just a single night of sleep deprivation can cause elevations in systemic blood pressure during the following day. Such studies therefore suggest the potential for sleep deprivation to contribute to the development of hypertension (HT) in some individuals. Obstructive sleep apnea (OSA) is a disorder in which sleep is disrupted by frequent arousals and the total amount of sleep can be reduced. Patients with OSA often have HT, but factors that distinguish those patients who have HT from those who do not have been elucidated. One possibility is that the relative degree of sleep disruption or depriva-
tion might be involved in the pathogenesis of HT in these patients. We hypothesized that OSA patients with refractory hypertension (RH) have a reduced amount of sleep and lower sleep efficiency than OSA patients without HT. We analyzed sleep studies of 31 RH patients with OSA and 36 normotensive (NT) patients with OSA, matched for age, sex, body mass index and apnea-hypopnea index (AHI). OSA patients with and without RH had similar degrees of OSA (AHI: 29.5 +/-3.4 vs 32.1 +/-3.3 events/hr sleep, p=0.59; lowest oxyhemoglobin saturation: 83.1 +/-1.2 vs 79.2 +/-1.8%, p=0.08) and of sleep fragmentation (arousals: 34.3 +/-4.1 vs 33.7 +/-3.6/hr sleep, p=0.91). However, RH patients with OSA had significantly lower total time asleep (277.5 +/-16.7 vs 321.8 +/-11.4 minutes, p<0.03), lower sleep efficiency (69.1 +/-2.4% vs 81.3 +/-2.4%, p<0.005), longer sleep latency (26.9 +/-5.0 vs 16.2 +/-2.3 minutes, p=0.05), and a higher percentage of sleep period time spent awake (26.3 +/-3.3 vs 14.7 +/-2.1%, p<0.003) than NT patients with OSA. There was also a significantly lower percentage of time spent in rapid eye movement (REM) sleep (11.3 +/-1.3 vs 14.8 +/-1.2%, p<0.05) in the RH patients. RH patients with OSA sleep less, have less REM sleep, take longer to fall asleep and are awake for longer periods of time than NT patients with OSA. Our findings indicate that RH in patients with OSA is associated with a state of relative sleep deprivation.

Key Words: obstructive sleep apnea, refractory hypertension, sleep effi-
ciency

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SCREENING FOR OBSTRUCTIVE SLEEP APNEA (OSA) IN PATIENTS WITH HYPERTENSION

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The prevalence of OSA and its significance as a secondary cause of hypertension is increasingly recognized. OSA has been detected in up to 30% of hypertensive patients. Among persons with OSA, 50% or more are hypertensive. Screening for sleep apnea is strongly recommended. Healthcare providers do not commonly include routine assessment of OSA risk. Furthermore, patients are usually unaware of the nature and significance of sleep disturbance to hypertension.