Coexisting renal artery aneurysm and adrenal adenoma in resistant hypertension

Une hypertension artérielle résistante associant adénome de Conn et anévrisme d'une artère rénale

Gabrielle Sarlon*, François Silhol, Bernard Vaïsse

Service de cardiologie, rythmologie et hypertension artérielle, hôpital de la Timone, Assistance publique—Hôpitaux de Marseille, faculté de médecine de Marseille, université de la Méditerranée, 264, rue Saint-Pierre, 13385 Marseille cedex 05, France

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A 58-year-old woman presented with resistant hypertension and hypokalaemia. Biological primary hyperaldosteronism was detected: aldosterone to renin ratio, 37.5; 24-hour urine aldosterone excretion, 25 μg. Computed tomography (Fig. 1) diagnosed a right adrenal adenoma (26 mm diameter) coexisting with a homolateral distal renal artery aneurysm (11.7 mm diameter), confirmed by three-dimensional angiography (Fig. 2). Renal artery ultrasound was performed to eliminate blood flow acceleration into the aneurysm, which could induce hypertension. Blood pressure was stabilized after adrenal surgery and limited aneurysm growth. Coexistence of non-atheromatous arterial disease and adrenal adenoma is infrequent. A cause or effect relationship is difficult to prove because these anomalies are often discovered simultaneously and association may be accidental. This is the first published case of renal artery aneurysm and aldosterone-producing adenoma. Primary aldosteronism has also been described in nine cases of renal artery stenosis, six of aortic dissection (one with coronary aneurysms) and one of multiple intracranial aneurysms. Experimental data show that aldosterone modifies parietal elastin and collagen rate, leading to myocardial and vascular fibrosis. A rat model of hypertension-induced cerebral aneurysms suggests that aldosterone hypersecretion contributes partly to cerebral aneurysm pathogenesis. In our report, difficult-to-control hypokalaemia had been known about for years, suggesting that aldosterone secretion was probably older and that the renal aneurysm was a consequence of this hypersecretion. No cerebral artery aneurysms were detected. In conclusion, primary hyperaldosteronism can be associated with arterial anomalies, such as stenosis, dissection or aneurysms. Effects of aldosterone...
Figure 1. Computed tomography of a right adrenal adenoma (26 mm diameter), coexisting with homolateral distal renal artery aneurysm (11.7 mm diameter).

on fibrosis and parietal vascular remodeling can explain partly this arterial damage. Such arterial diseases in primary hyperaldosteronism must be recognized by clinicians.

Figure 2. Two- and three-dimensional angiography of the distal renal artery aneurysm, showing the large neck of 10.7 mm.

Conflict of interest statement
None.