Adrenal nodule visualised on adrenal vein catheterisation

Queenie Guinto Ngalob, Frances Lina Lantion-Ang

DESCRIPTION
A 36-year-old man underwent adrenal vein catheterisation to investigate the aetiology of hypertension. He had resistant hypertension as high as 220/120 despite three oral medications. He had recurrent lower extremity weakness with documented hypokalaemia as low as 2.1 mmol/L. A diagnosis of primary aldosteronism (PA) was made based on unsuppressed aldosterone of 27.7 ng/dL after 2 L of saline solution was given intravenously. A CT scan revealed a 1.1×1.5×1.3 cm well-defined hypodense nodule in the lateral limb of the right adrenal, while the left adrenal was normal. This was suggestive of an aldosterone-producing adenoma (APA). As recommended by Endocrine Society, an adrenal vein sampling (AVS) was conducted to confirm the laterality of aldosterone excess and establish the diagnosis of an APA. Angiography of the right adrenal vein of the patient demonstrated circular configuration of the veins surrounding a round structure consistent with a nodule (figure 1). Blood sampling yielded lateralised aldosterone excess to the right (selectivity index >2 and lateralisation index=5.74) consistent with an APA.

AVS is an invasive procedure employed to establish the subtype of PA. The Endocrine Society recommends that when surgery is practicable and desired, AVS should be conducted after an adrenal CT scan to establish laterality of aldosterone excess. The absence of laterality is seen in bilateral adrenal hyperplasia for which treatment is medical. Lateralisation is seen in APA or unilateral adrenal hyperplasia for which adrenalectomy is indicated.1 On fluoroscopic image, the adrenal veins adopt a circular configuration to surround the tumour.

Learning points

- Adrenal vein catheterisation and sampling are essential to establish the subtype of primary aldosteronism. It influences treatment decisions.
- The benefit of adrenal vein sampling lies in establishing laterality of aldosterone excess. Lateralisation is seen in aldosterone-producing adenoma for which adrenalectomy may be curative.
- In adrenal adenomas, adrenal veins adopt a circular configuration and this may be seen on venography.

Competing interests None.
Patient consent Obtained.
Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCE