Posture-responsive primary aldosteronism
– the utility of seated saline suppression test, case report

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INTRODUCTION

The diagnostic procedure of primary aldosteronism (PA) includes four confirmatory tests, of which the saline suppression test (SST) seems to be the most convenient one. Current guidelines recommend SST to be performed in the recumbent position. However, a recent preliminary study demonstrated a higher sensitivity of SST when performed in the seated position. Here, we report a case of posture-responsive PA with a negative recumbent SST but clearly positive seated SST.

CASE REPORT

A 60-year-old woman was referred to our department with the suspicion of primary aldosteronism:
- Arterial hypertension since 40, unsatisfactory correction using 3 different drugs (acebutolol, valsartan, amlodipine)
- Tendency towards hypokalemia requiring high doses of potassium chloride supplementation
- Screening test (seated):
  - Plasma renin activity: under detection limit
  - Plasma aldosterone concentration: 710 pmol/l
- CT scan revealing a unilateral mass of 22x15x10 mm in her left adrenal gland

Diagnosis and management:
- Overproduction of cortisol and catecholamines was excluded by laboratory testing
- Recumbent intravenous SST (after overnight sleep) was negative, however the seated one was positive (Table)
- Adrenal venous sampling (including cosyntropin stimulation) confirmed an overproduction from the left side
- Laparoscopic left adrenalectomy was performed
- Now, the patient is without potassium supplementation and the antihypertensive treatment could be reduced

Table: Seated SST vs. Recumbent SST

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<th>Seated position</th>
<th>Recumbent position (overnight sleep)</th>
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<tr>
<td>Prior saline</td>
<td>894</td>
<td>60</td>
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<tr>
<td>After saline</td>
<td>657</td>
<td>100</td>
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Diagnostic criterion for PA: levels above 277 pmol/l after saline infusion test

Fig. 1: CT scan revealing enlarged left adrenal gland

Fig. 2: Histology of cortical adrenal adenoma

CONCLUSION

As many patients may have a posture-responsive primary aldosteronism, the saline suppression test should preferably be performed in the seated rather than recumbent position, thus providing better sensitivity.