

Hyperaldosteronism in patients with Hyperparathyroidism: 3 cases

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Introduction:

Hyperaldosteronism may induce elevated parathyroid hormone (PTH) levels, presumably by increasing urinary and fecal losses of Ca^{2+} and Mg^{2+} . Therefore, this dyshomeostatic balance leads to secondary hyperparathyroidism. Furthermore, PTH stimulates in vitro the secretion of aldosterone in a concentration dependent manner, and increases angiotensin-II-stimulated aldosterone release (by dehydration). Recently, PTH receptors had been described in aldosteronoma tissue in a patient with hyperaldosteronism and hyperparathyroidism.

Material and Methods:

We present three patients who were sent to an endocrinologist for treatment and follow-up of primary hyperparathyroidism, with resistant hypertension, and in whom hyperaldosteronism was diagnosed. Aldosterone (Ald) and Renin (re) (RIA) are expressed in $\mu\text{g/ml}$. The captopril test (CAP) was performed per protocol: minimum of two weeks on doxazosin as sole antihypertensive, minimum 133 mEq sodium intake for three days, basal Ald/re (BAld/re), 1 and 2 hours post-25 mg captopril. Test is positive if after 2 hours ald > 130 or Ald/re > 50.

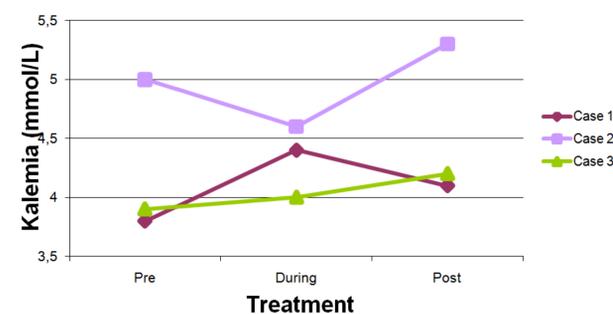
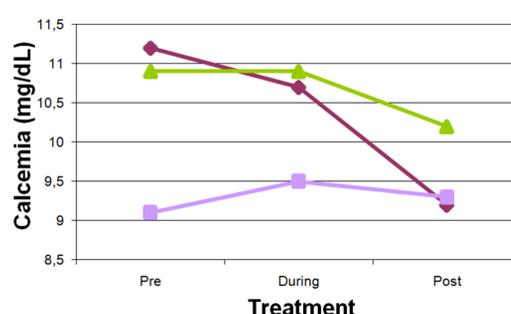
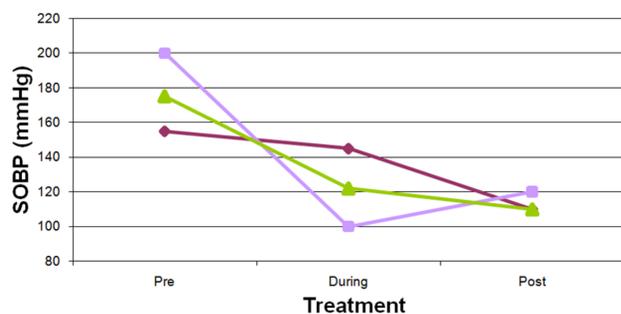
Results:

CASE 1: 74 year old male remitted to follow up of primary hyperparathyroidism. Office BP: 160/95 mmHg, on losartan (100 mg), amlodipine (10 mg), hydrochlorothiazide (25 mg), atenolol (50 mg). The ultrasound examination revealed: parathyroid adenoma located in the left thyroid lobe. He rejects parathyroid surgery. He rejects adrenal catheterization/surgery. **Treatment:** eplerenone 50mg b.i.d, cinacalcet 30 mg q.d.

CASE 2: 68 year old female referred following parathyroidectomy for parathyroid hyperplasia. Office BP: 200/100 mmHg, on losartan (50 mg), hydrochlorothiazide (12.5 mg), atenolol (50 mg). The patient rejects catheterization/surgery. **Treatment:** eplerenone 50 mg b.i.d.

CASE 3: 81 year old female, referred from rheumatology for primary hyperparathyroidism secondary to vitamin D deficit. Office BP: 175/90 mmHg, on nebivolol (5 mg), lercardipine (20 mg), furosemide (40 mg). Parathyroid disease not detected by ultrasound. **Treatment:** spironolactone 100 mg q.d, cinacalcet 30 mg q.d.

	Basal Ca (mg/dl)	Basal PTH (mg/dl)	25 OH Vit D (ng/ml)	Initial K (mmol/L)	Inicial office BP (mmHg)	Antihyp. Drugs	Screen Ald/re (pg/ml)	CAP: Basal Ald/re	CAP: 1h Ald/re	CAP: 2h Ald/re	Post-treat. OBP mmHg)
Case 1	11.1	71 IRMA	44.7 ChL	3.8 (4.4)*	160/95	4	293/2 (146)	352/3 (117.3)	339/2 (169.5)	408/3 (136)	110/70
Case 2	11.4	84 IRMA	47.7 ChL	3.8	200/100	3	171/3 (57)	174/4 (43.5)	222/4 (55.5)	170/5 (34)	126/85
Case 3	10.9	129 ChL	53.5 ChL	4	175/90	3	204/3 (68)	203/2 (101.5)	129/6 (21.5)	169/9 (18.7)	110/70



K: Kalemia. *Kalemia on cinacalcet. Ca: Calcemia. PTH: Parathyroid hormone. ChL: Chemiluminescence. SOBP: Systolic office blood pressure. Antihyp: Antihypertensive. Screen: Screening. Ald: Aldosterone. re: Renin. CAP: Captopril Test (25 mg)

Conclusion:

Three cases of hyperaldosteronism associated with hyperparathyroidism were detected in the clinic of a single endocrinologist over 2 years, suggesting that the association is not infrequent, and underlying the importance of ruling out hyperaldosteronism in patients with hyperparathyroidism and moderate severe or resistant hypertension.