

Primary hyperparathyroidism due to ectopic mediastinal parathyroid gland at the level of anterior wall of ascending aorta.

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INTRODUCTION

Parathyroid adenoma is the most common cause of primary hyperparathyroidism (PHPT) resulting in hypercalcemia and hypercalciuria due to autonomous secretion of PTH. Ectopic parathyroid adenoma, as a consequence of variability in the glandular tissue migration during the embryologic life or a super numary fifth parathyroid gland, has an incidence of 25% among patients with PHPT. The incidence of deeply mediastinal ectopic parathyroid adenoma is 1-3%.

CASE REPORT

We report the case of a 61-year-old woman who was discovered with hypercalcemia during routine check for postmenopausal osteoporosis. Calcium levels ranged between 10,8 and 12 mg/dl (8,5-10,2), with increased PTH levels 203 pg/ml (10-65) P=2,5mg/dl (2.4-4.9), Creat=0.8mg/dl (0.6-1.2), 25(OH)D₃=23,2 ng/ml (10-60), ALP=204U/L (<280) and Mg=2,1mg/dl (1,6-2,4). The 24hour urinary Ca was elevated 343mg/24h (100-300) and P=507mg/24h (350-1300). DXA screening revealed osteoporosis in both lumbar spine and femoral neck. Primary hyperparathyroidism was diagnosed and further investigation for localization of the adenoma was carried out. Cervical sonography was unremarkable. Tc-99m-sestamibi scintigraphy was carried out and an accumulation area indicating ectopic parathyroid tissue in the anterior mediastinum, at the level of aortic arch, was demonstrated. Additionally chest-cervical CT scan revealed a 1,7 cm nodule in the anterior mediastinum at the level of anterior wall of ascending aorta. The patient underwent surgical resection of the ectopic parathyroid gland by median sternotomy. PTH and calcium serum levels normalized after surgery (41 pg/ml and 9.5 mg/dl respectively). No calcium and/or alfacalcidol supplements were needed postoperatively.

⁹⁹Tc-Sestamibi and Chest C/T



1. H&E, 10x, Parathyroid adenoma section mainly consisting of chief cells.

2. H&E, 60x, Parathyroid adenoma section consisting of chief and oxyphil cells enclosed by fibrous capsule. Outside the capsule normal parathyroid tissue can be observed.

3. H&E, 10x, Parathyroid adenoma section with fibrosis.

4. Ki-67 immunostaining of parathyroid adenoma. Minimal cellular proliferation is observed (<1%).

CONCLUSION

Ectopic parathyroid adenomas with mediastinum localization proximal to ascending aorta are rare causes of primary hyperparathyroidism. Those masses are considered to be derived from migrating inferior parathyroid glands to anterosuperior mediastinum. Combination of Tc-99m sestamibi scintigraphy and chest-cervical CT scan are indispensable for the preoperative localization of oversecreting parathyroid tumors.

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